

DECEMBER • 1940

RADIO *and* Television RETAILING



CO-OP AD RACKET

EXPORT MARKET TODAY

FM PROGRESS REPORT

1941 CAR ANTENNAS

COMMUNICATION RECEIVERS

PROMOTING RECORDERS

INTER-COM SPECIALIST

SELLING REFRIGERATION

MORE ABOUT BUDGETING

CIRCUITS OF THE MONTH

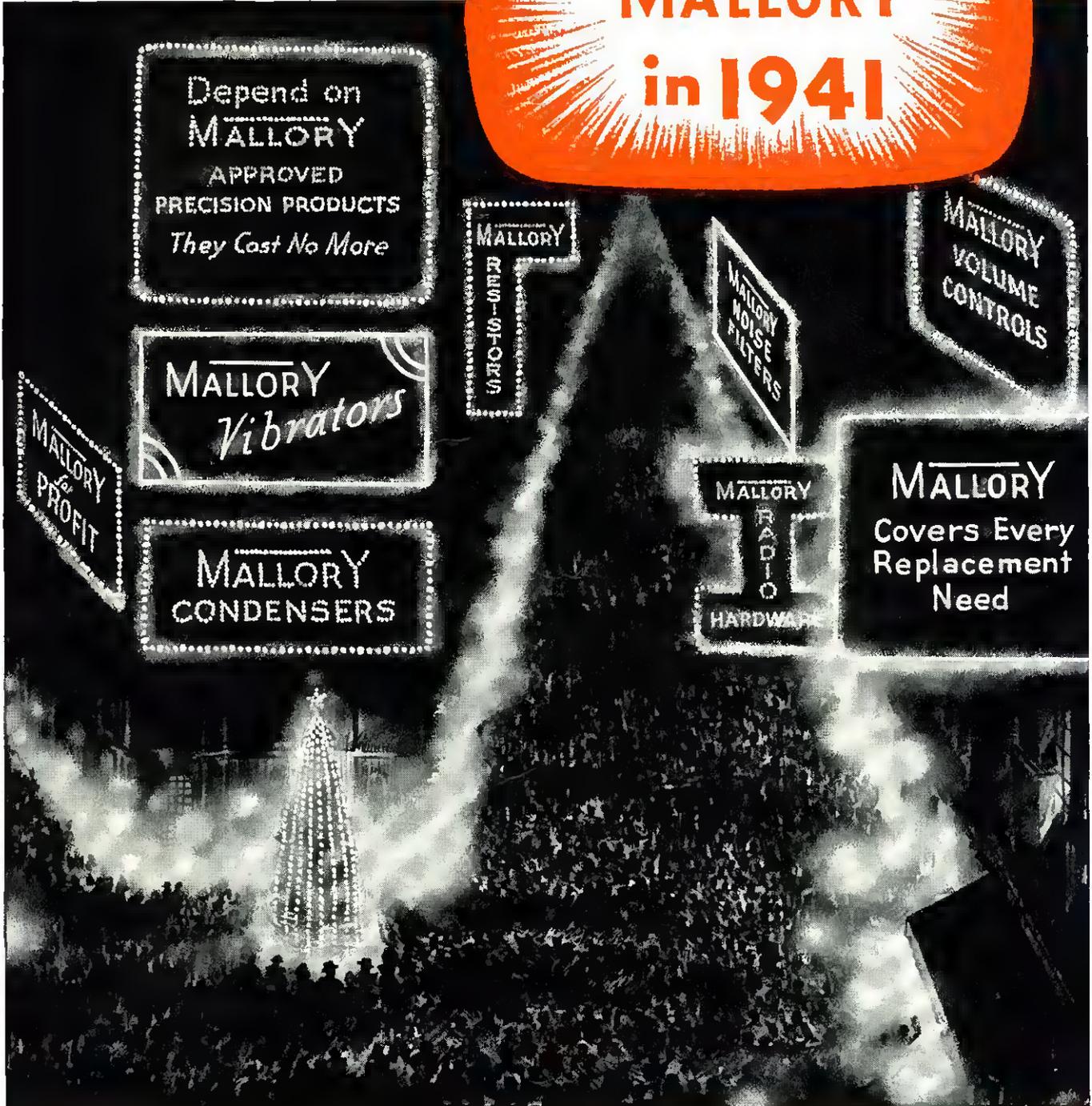
HANDY SERVICE CHARTS

TESTING FM

EVERYBODY Stops, Looks, Listens to the new *Personal Portables*

A
McGRAW-HILL Publication
Price 25c

Watch
P. R. MALLORY & CO. Inc.
MALLORY
in 1941



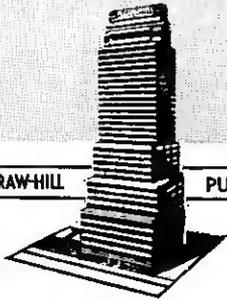
New Developments along Every Front for Your Greater Profit

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

Include
 P. R. MALLORY & CO., INC., INDIANAPOLIS, INDIANA — CABLE ADDRESS: PELMALL
 VIBRATORS • VIBRAPACKS • CONDENSERS • VOLUME
 CONTROLS • ROTARY SWITCHES • SINGLE AND
 MULTIPLE PUSH BUTTON SWITCHES • RESISTORS
 RADIO HARDWARE

RADIO

and Television RETAILING



A McGRAW-HILL

PUBLICATION

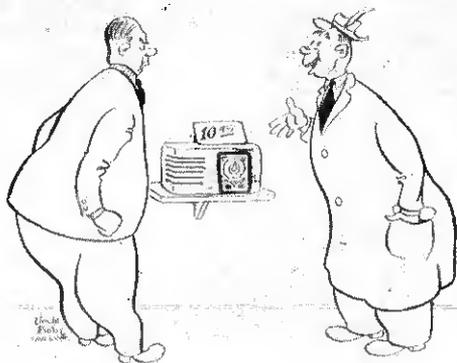
DECEMBER 1940

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SALES STATIC . . . How much off for cash?

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Quiet-Flo

ROLLATOR REFRIGERATION

for EVERY HOME

featuring

*Distinctive Quality
in Every Price Group*

NORGE will soon announce the latest in a long list of "firsts" in refrigerator improvement which have originated in Norge laboratories. Many of these innovations have since been adopted by other manufacturers . . . the highest tribute the industry could pay to the progressiveness of Norge engineering. Other "firsts", protected by patents, are still exclusive to Norge. Some of the Norge "firsts" are:

- 1926** Original Rollator Compressor revolutionized electrical cold-making. "A roller rolls . . . and there's ice."
- 1930** First Plug-in Refrigerator. Norge was the first to present complete package merchandise in refrigeration.
- 1930** Cold Accelerator on Freezer . . . placed for the first time where it belonged, out of the way, yet convenient when adjustments are to be made.
- 1930** Rolled Edges on Food Compartment eliminated cracks and corners around the entire compartment opening . . . for sanitation and easy cleaning.
- 1931** Live Rubber Gaskets to seal food compartment door . . . assured positive sealing and eliminated unsightly strips and exposed brads.
- 1931** Completely Sealed Freezer. Since 1931, Norge has had a sealed ice chest, protected by patent . . . enclosed

at the back as well as the sides and protected with a door that closes snugly on a live rubber gasket.

- 1932** Modern Beauty Styling. Ever since introducing modern styling in place of the old ice box type of construction, Norge has maintained its style leadership . . . again demonstrated by the new Hollywood Beauty cabinets.
- 1933** Easy Opening Door Latch. The Lazilatch, a Norge creation, reaches an entirely new high in easy opening and closing in the 1941 Norge.
- 1939** Permanently Sealed Rollator Cold-Maker . . . the original Rollator principle applied to a compact, hermetically-sealed unit.
- 1939** Refrigerant Cooled Rollator Cold-Maker . . . the only domestic unit with the Motor-Cooler, a ring of flowing refrigerant which cools the compressor unit to its most efficient operating temperature, regardless of how hot the weather.
- 1939** Handdefroster brought a new simplicity to defrosting . . . a separate receptacle used only for defrosting.
- 1939** Coldpack, always usable for meat storage, with no defrosting duties to perform at any time.
- 1940** Cellaret Reserve Storage . . . a convenient compartment, with big shelf and door pocket . . . made possible by the simple, compact Rollator Cold-Maker.
- 1941** A Revolutionary New Development which accomplishes one of the greatest improvements that remained to be made in electrical refrigeration.

SEE NORGE BEFORE YOU BUY

NORGE for '41

This brilliant new Rollator Refrigerator will soon be available through these Norge Distributors...

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LOUISVILLE	THE SUTCLIFFE COMPANY, INC. 855 S. Fourth St.	WICHITA	MAYFLOWER SALES COMPANY 590 W. Douglas Ave.

IN CANADA: CANADIAN RADIO CORP., LTD., TORONTO 2, CANADA

In addition to well-balanced domestic distribution, Norge products have wide acceptance abroad through 159 Distributors in 24 foreign lands.

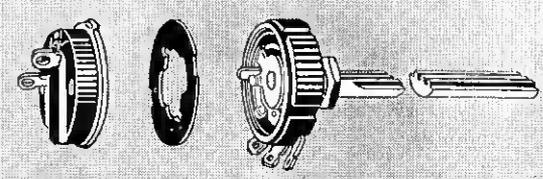
NORGE DIVISION BORG-WARNER CORPORATION, DETROIT, MICHIGAN

NORGE ROLLATOR REFRIGERATION • GAS AND ELECTRIC RANGES • WASHERS • HOME HEATERS • COMMERCIAL REFRIGERATION



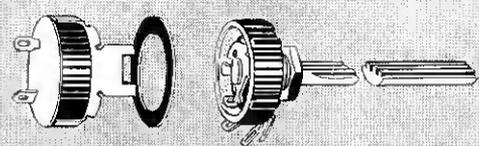
Centralab VOLUME CONTROLS

"Standard Equipment" in millions of receivers, Centralab Volume Controls are more than ever on the "MUST" list whenever a dependable control is indicated. For original equipment or replacement. SMOOTH — performs easier and better.



CENTRALAB STANDARD RADIOHM

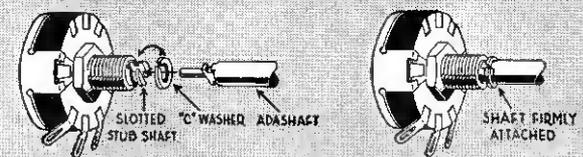
WALL TYPE RESISTOR hugs inner circumference of black molded bakelite case. Exclusive non-rubbing contact band assures quiet, smooth rotation and long life. Case dimensions: 1 3/8" diameter x 9/16" deep. Soft aluminum shaft extends 3 3/8" from case; milled full length for push-on or set screw knob.



STANDARD MIDGET RADIOHM

Companion to the Standard Radiohm, the Midget is necessary to replace original controls in many current models using small controls for space savers. Molded bakelite case, 1 1/8" diameter. 1/4" soft aluminum shaft 3 3/8" long, milled for standard push-on or set screw knob.

... and the Famous ADASHAFT MIDGET RADIOHM



- K-163 4 IN. ADASHAFT, 3/32" FLAT
- K-164 4 IN. ADASHAFT, 1/16" FLAT
- K-165 10 IN. ADASHAFT, 3/32" FLAT
- * K-166 3 IN. AUTO. TYPE ADASHAFT WITH GUIDE FUNNEL
- * K-167 6 IN. AUTO. TYPE ADASHAFT WITH GUIDE FUNNEL
- ** K-177 4 IN. SPLIT-KNURL ADASHAFT
- K-176 1 1/2 IN. SPLIT ADASHAFT
- K-184 SLOTTED INSULATING COUPLER
- K-186 INSULATING COUPLER WITH SQUARE HOLE

I'm in a jaunty mood as I end the year . . . in the second decade of my life. I still enjoy my reputation as an "old smoothie" and count as my friends the countless servicemen, technicians and set builders the world over who continue to boastfully admit that there is nothing finer than a Centralab part. Thanks.

- Ol' Man Centralab

CENTRALAB • Div. of Globe-Union Inc.
MILWAUKEE, WISCONSIN
Cable Address—"CENTRALAB"



20 years ago radio was like this. RCA research and engineering have played an important part in radio's great advance during the past two decades. Not the least of RCA's contribution has been the combining of radio and the phonograph—to bring your customers today's great RCA Victrola.

"JUST WHAT WE ASKED FOR!"

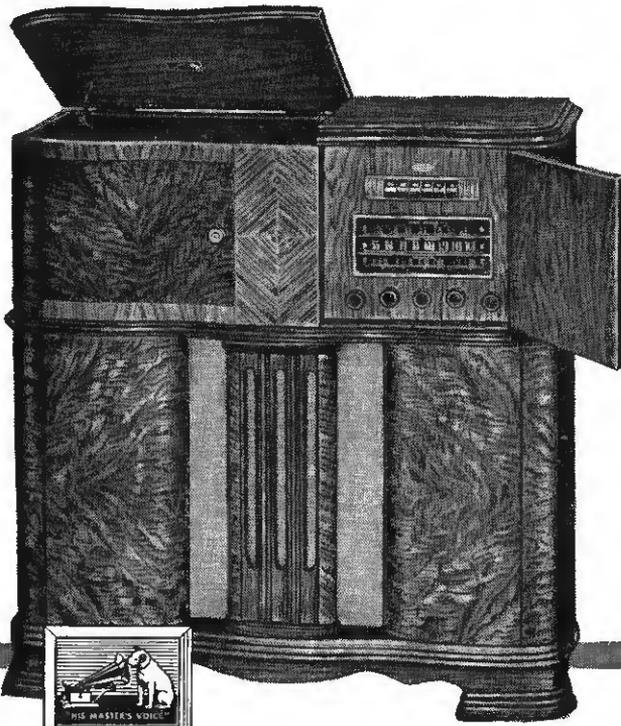
—say dealers about RCA Victor promotion celebrating Broadcasting's 20th Birthday

ANNIVERSARY OFFER

features new 1941

RCA Victrola

with Exclusive Tone Guard



RCA VICTROLA V-205

Feature-packed to sell! • 9 tubes! Gentle-Action Automatic Record Changer! • 12-inch Electrodynamic Speaker! • Exclusive RCA Victor Tone Guard! • Stabilized Electric Tuning (6 Stations) • 12 Watts Output! • Rotatable Magic Loop Antenna!



EVER SINCE the great 40th Anniversary RCA Victrola promotion of two years ago, dealers everywhere were after us for another. This promotion, celebrating Broadcasting's 20th Birthday, was our answer—and dealers everywhere are enthusiastic about it. For it's booming the sales of RCA Victrola Model V-205 . . . it's capitalizing on the intense public interest in phonograph-radios . . . it's upping dealers' profits! Push this great trade-in offer at every opportunity—and it will push your profits skyward!

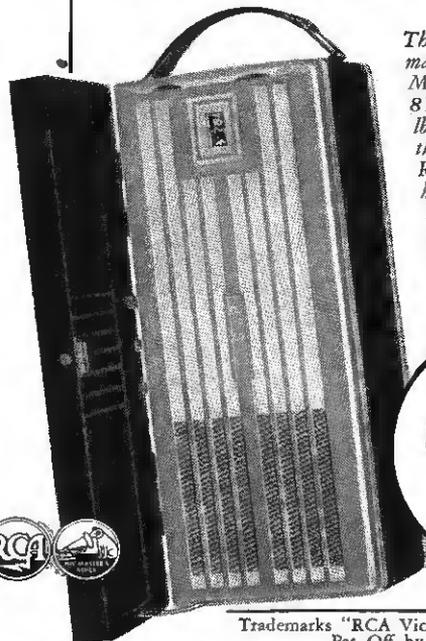


RCA Victrola

COMBINES RECORD AND RADIO ENTERTAINMENT
A SERVICE OF THE RADIO CORPORATION OF AMERICA



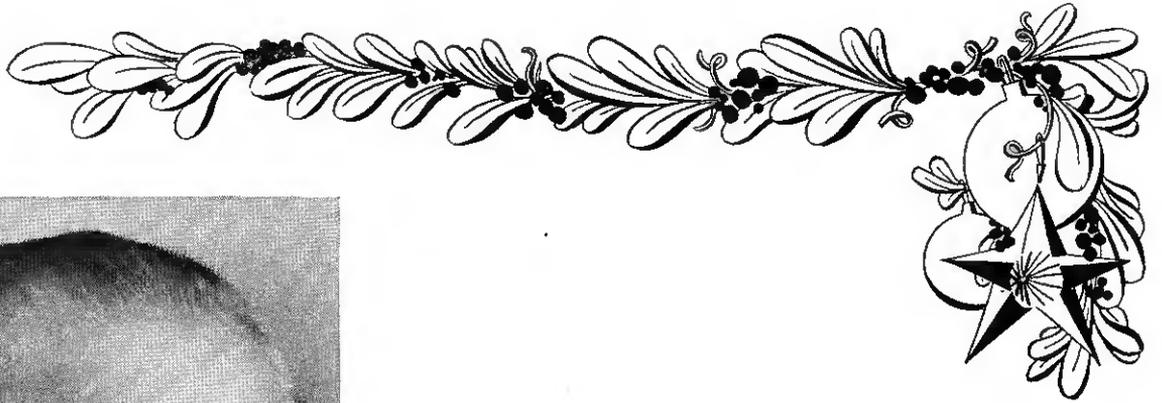
Your Christmas Star RCA VICTOR Personal Radio



The most attractive Christmas gift ever offered in radio. Measures only 3 11/16" x 8 7/8" x 3". Weighs only 4 1/4 lbs. The hit of the nation, the RCA Victor Personal Radio will pay you off with handsome profits if you push it during the Christmas selling season. Get your supply from your RCA Victor distributor today.

Only
\$20⁰⁰

Trademarks "RCA Victor" and "Victrola" Reg. U. S. Pat. Off. by RCA Mfg. Co., Inc.



Our Warmest Greetings ... for this Christmas and for the years ahead

THIS YEAR, Farnsworth will celebrate its second Christmas of volume sales . . . a celebration happily shared by Farnsworth dealers who have been making splendid pre-Christmas sales and profits.

Before the Farnsworth line reached volume production, in the fall of 1939, some dealers perhaps were doubtful of the future of this new organization which had grown so sensationally. From the very first, however, Farnsworth policies had as their main goal the success and prosperity of Farnsworth dealers. For upon your success, our success depended.

Our thinking has been directed to designing the Farnsworth program *from the dealer's point of view*.

Such policies do not permit sensational merchandising schemes that are so often ruinous to the dealer's

own profit picture. Instead, the Farnsworth merchandising program has been founded upon the basis of fair-minded business practices *with profits to all*. We shall continue these fundamental policies knowing that *Farnsworth* dealers can build up a stable and profitable business year in and year out.

Speaking for every member of the Farnsworth Television & Radio Corporation and for myself personally, we wish to extend our most cordial thanks to the rapidly growing Farnsworth family of dealers for the tremendous volume of Farnsworth business this year; and to tell you that in the months ahead you can look forward to many further Farnsworth developments in new merchandise with striking new features . . . and with unusual profit possibilities.

L. C. Nicholas
PRESIDENT

**FARNSWORTH . . . MAKERS OF RADIO AND TELEVISION TRANSMITTERS AND RECEIVERS,
THE CAPEHART, THE CAPEHART-PANAMUSE AND FARNSWORTH PHONOGRAPH-RADIO COMBINATIONS**

20 YEARS OF SERVICE

DELIVERED BY
RAYTHEONS
 IN POLICE
 COMMUNICATIONS



In Operation for 20,000 hours
 ... equivalent to 20 years of service as measured by standard tube guarantees!

That's the record of RAYTHEON Tubes in one of the receiving sets used in the Police Communications System operated by the Sheriff's Office, San Joaquin County, California.

These tubes had to withstand the jarring and jolting of highway police patrol cars driven at high speed. They had to function perfectly at all times, for the briefest breakdown in service might prove disastrous. From every standpoint, they had to be the very best that engineering genius had yet devised. That's why RAYTHEONS were chosen. And they delivered in the most gruelling service imaginable.

This unusual service is typical of the plus satisfaction RAYTHEONS are giving in all types of installations everywhere. And the reason is

that they are the product of the foremost tube engineers... leaders in their profession who devote their time exclusively to the making of better tubes, and to the pioneering in new radio circuit fields.

Little wonder that servicemen and dealers by the thousands are making money on RAYTHEON replacements. Satisfied customers build your business for you. They tell others... and that means more customers. Volume grows. So does profit. More profit, too, because of faster turnover on a smaller investment in stock, for you need carry only ONE line. For RAYTHEON makes them all... and they cost no more! Your RAYTHEON Distributor has an unusual tube deal for you. See him without delay.

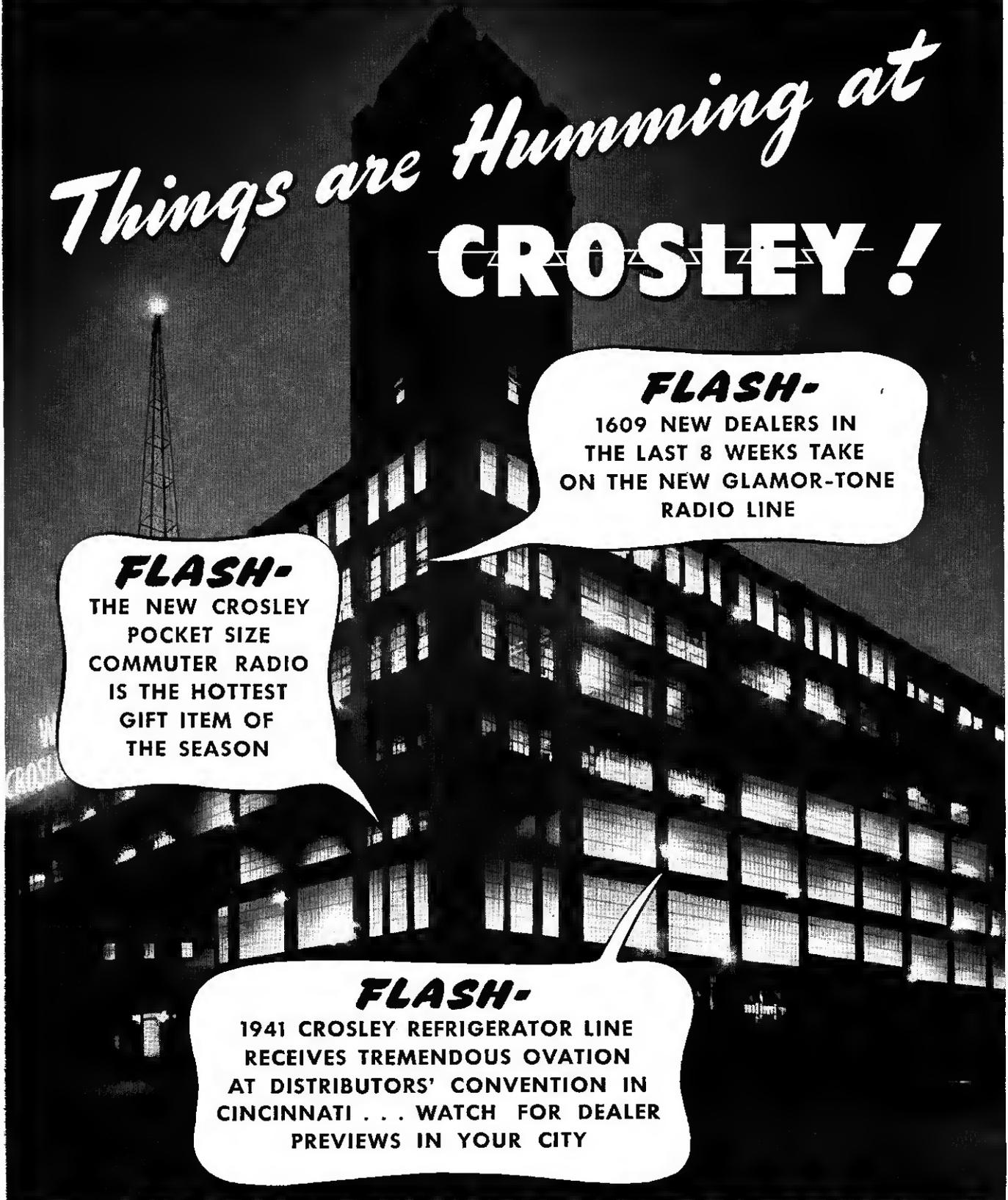
Raytheon Production Corp., Newton, Mass., New York, Chicago, San Francisco, Atlanta.



Reading from left to right: Harvey Blackwell, District Supervisor, California Highway Patrol. John E. Warmen, Radio Technician, San Joaquin County Sheriff's Office. Harvey M. O'Dell, Former Sheriff, San Joaquin County. Captain Leland S. Drais, San Joaquin County Detail.



WORLD'S LARGEST EXCLUSIVE RADIO TUBE MANUFACTURERS



Things are Humming at
CROSLEY!

FLASH-

1609 NEW DEALERS IN
THE LAST 8 WEEKS TAKE
ON THE NEW GLAMOR-TONE
RADIO LINE

FLASH-

THE NEW CROSLEY
POCKET SIZE
COMMUTER RADIO
IS THE HOTTEST
GIFT ITEM OF
THE SEASON

FLASH-

1941 CROSLEY REFRIGERATOR LINE
RECEIVES TREMENDOUS OVATION
AT DISTRIBUTORS' CONVENTION IN
CINCINNATI . . . WATCH FOR DEALER
PREVIEWS IN YOUR CITY

**BEFORE YOU SIGN ANY FRANCHISE FOR 1941,
INVESTIGATE THE SENSATIONAL NEW CROSLEY PROGRAM!**

THE CROSLEY CORPORATION
CINCINNATI, OHIO

Powel Crosley, Jr., President

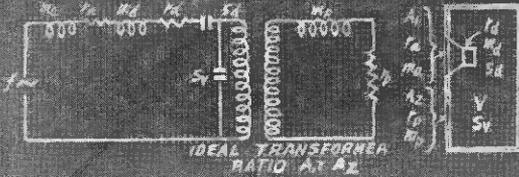
The Home of WLW • The Nation's Station • 70 on Your Dial

10 ACOUSTICALLY CORRECT REPRODUCERS AND CABINETS

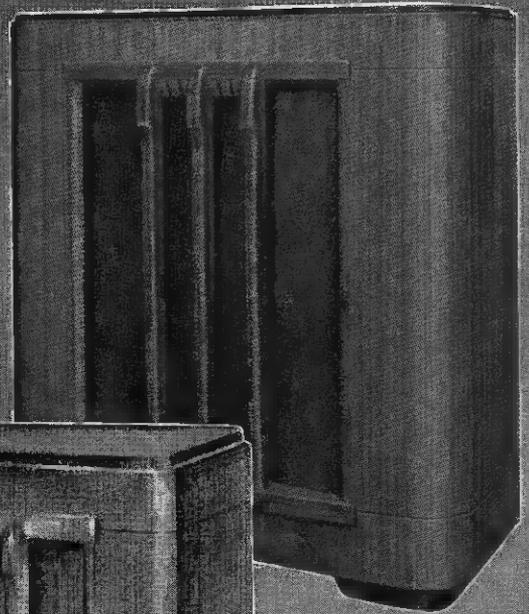
ALL WITH

Bass Reflex

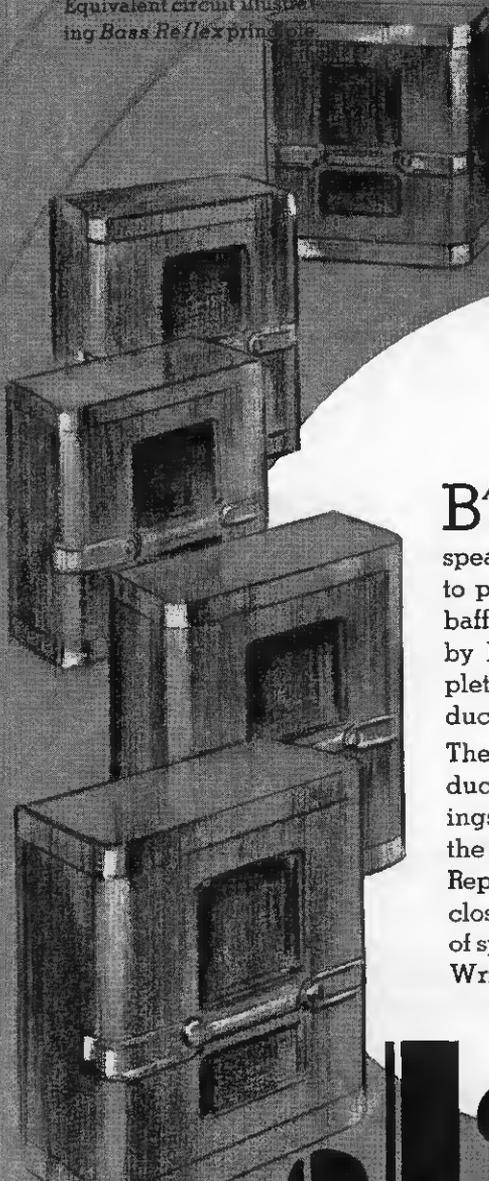
CHOICE OF SPEAKER EQUIPMENT



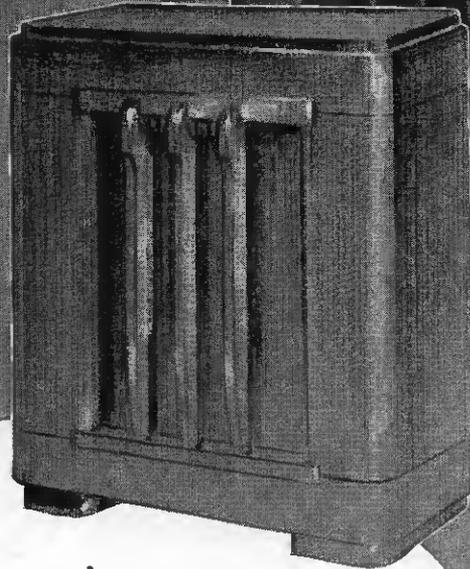
Equivalent circuit illustrating Bass Reflex principle



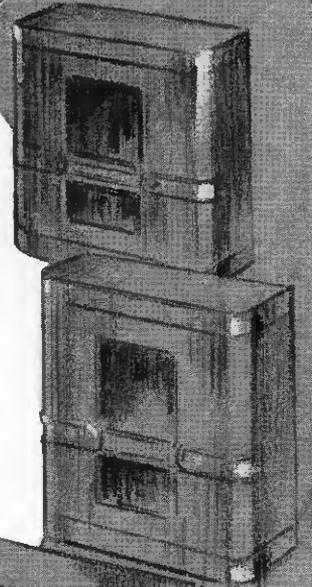
"CR" REPRODUCERS



"BR" ENCLOSURES



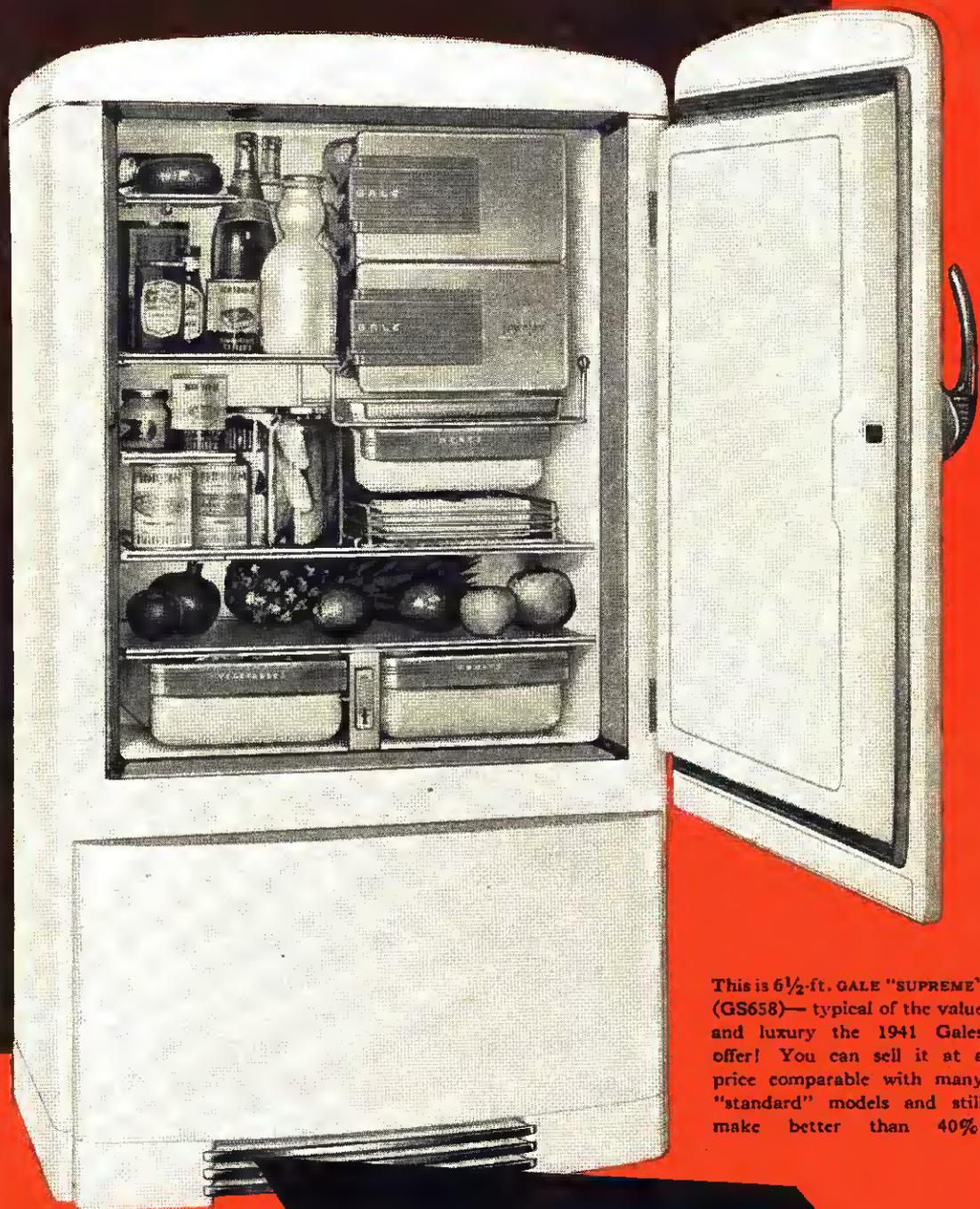
BASS REFLEX gives you *better* sound reproduction because it enables the loud speaker to function with *full* effectiveness, to perform even *better* than with an infinite baffle. This great development, originated by Jensen Engineers, is available in a complete line of acoustically-coordinated reproducers and cabinets for every application. The arresting beauty of the new "CR" Reproducers qualifies them for the finest surroundings. Equivalent performance is provided in the practical, less expensive "MT" Reproducers. Economical "BR" enclosures accommodate your choice of speakers from 8 to 18 inch sizes. Write for complete information.



"MT" REPRODUCERS

Jensen

JENSEN RADIO MFG. CO.
6601 S. LARAMIE AVE., CHICAGO



This is 6½-ft. GALE "SUPREME" (GS658)— typical of the value and luxury the 1941 Gales offer! You can sell it at a price comparable with many "standard" models and still make better than 40%!

GALE has done it again! Again for '41 Gale offers a sensational line at "below the market" prices with a full, generous dealer profit! New beauty—luxurious equipment—superb performance. It's a sure-fire combination for added volume and extra profit!

Gale

**GIVES 'EXTRAS' AT
NO EXTRA COST...**

• *Extras* in beauty—in equipment—in performance—in quality, for the buyer! And, each one means extra, easier sales and extra profit for you! No matter what refrigerator you may be selling now, you'll find greater opportunities—more profits with Gale. Get the facts—judge for yourself. *Judge by comparison!*



Extra Efficiency

New mechanical improvements put Gale another jump ahead! All 'Mechanical Iceberg' units are hermetically-sealed. All have the unique Gale Equalizer. And, now,—the greatest mechanical improvement in years—exclusive with Gale—the new 'FLUID-COOLED' STATIC CONDENSER cools during the "OFF" cycle . . . no fan—no moving parts!

Judge for Yourself

BUT—don't "hand down" your decision until you've compared! *Compare value—compare features—compare quality and performance — compare prices and profits!* Get the facts on Gale NOW.



GALE PRODUCTS
Refrigeration Div., Outboard Marine & Mfg. Co.
GALESBURG, ILLINOIS

GALE Products,
1627 MONMOUTH BLVD.,
GALESBURG, Illinois.

Gentlemen:

Without obligation, I want the whole story on Gale for 1941. Rush information.

NAME _____

ADDRESS _____

CITY _____ STATE _____



WHAT HAS UTAH'S POLICY TO DO WITH YOUR SALES?

YOU have made your business successful by maintaining a policy which has won the confidence of your customers—has made it profitable for both them and you.

Many years ago, Utah Radio Products Company established a policy which has been strictly maintained.

Utah products are distributed through the industry's recognized channels *only*—careful selection is made to avoid unfair competition.

Utah's engineering and designing keep abreast of all industry improvements and developments.

Utah retains outstanding engineers and manufacturing experts.

Utah advertises regularly and effectively in leading publications to inform

the trade and *your* customers of the advantages which Utah products can give them.

Utah's policy is to adhere to relationships which are to the best interests of its customers and the industry as a whole. This policy has been largely responsible for the success of Utah through good times and bad. It has built Utah's 1940 business to greater volume than ever before attained.

Our firm resolve is to maintain this policy which has been so mutually beneficial. Utah Radio Products Company, 810 Orleans St., Chicago, Ill. Canadian Office: 560 King Street West, Toronto. In the Argentine: Ucoa Radio Products Company, S.R.L. Buenos Aires. Cable Address: Utaradio, Chicago.



S P E A K E R S
VIBRATORS • TRANSFORMERS • UTAH-CARTER PARTS

WOMEN *paid to Gossip*

FEMININE TONGUES rival rotary presses in the speed with which they spread news. And in a department store there are many such tongues.

Knowing this, radio buyer Jim Hill of the Denver Dry Goods Company deliberately harnessed the tongue-power of employees to insure initial demand for his first personal portable order.

When the shipment of sets arrived Hill inserted ads in the leading papers, offering terms of \$1 down and \$1 per week, suggesting their purchase as "lay away" Christmas gifts. Simultaneously, company executives were induced to carry receivers with them throughout the store, steaming up employees and customers alike. Certain shopgirls were loaned instruments, subsidized to play and talk about them during lunch in the smartest restaurants in town.

Posted as an inducement for salespeople throughout the store to send prospects to Hill was a \$1 commission on all transactions so closed.

Twenty radios were sold the first day, interest built up by carefully planned publicity.

In this case, it paid to pay women to gossip.



INSIDE—Executives carried a set wherever they went in the store, stimulated invaluable employee enthusiasm

OUTSIDE—Pretty Denver Dry Goods shopgirls took personal portables to lunch in smart restaurants, drummed up public interest





PHOTO *Shorts*

Pictures from the News
to help you SELL



HORSE SHOW SOUND WIRELESS

Judges of the National Horse Show at Madison Square Garden, NYC, found themselves following the equines on the floor of the arena far from the sound booth announcer. NBC supplied a "beer-mug" 37 mc. transmitter and operator to relay winners to horse authority O. H. Trowbridge, in booth with uhf receiver. Interspersed with running comments on their record and family life, winning nags' names went out over the Garden's regular sound system

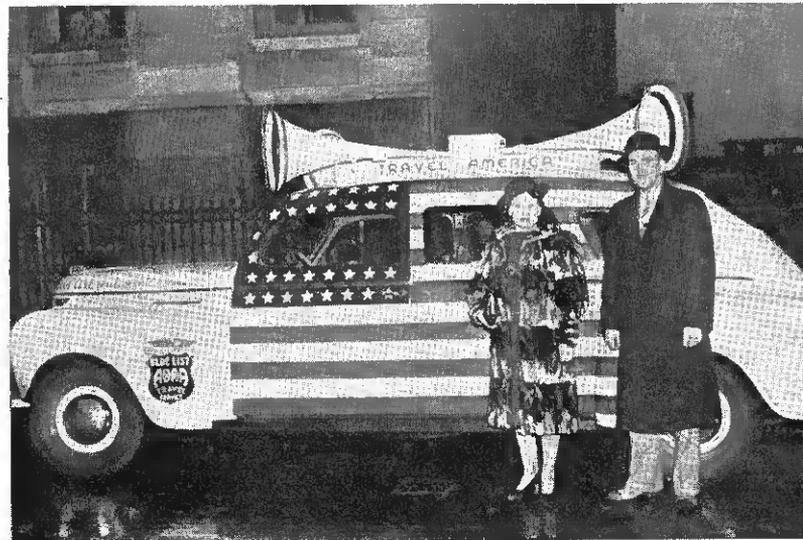
SOUNDMEN FRONT AND CENTER!

Because of an American flag painted on a sound car this Baltimore couple was arrested in New York City. Old Glory should be respectfully displayed, not be used for advertising purposes



PICK YOUR PROPAGANDA

Customer interest in news from foreign lands has helped many a smart dealer boost his sales. In certain areas, in fact, dealers currently report many customers have formed a habit of listening regularly to certain s-w programs





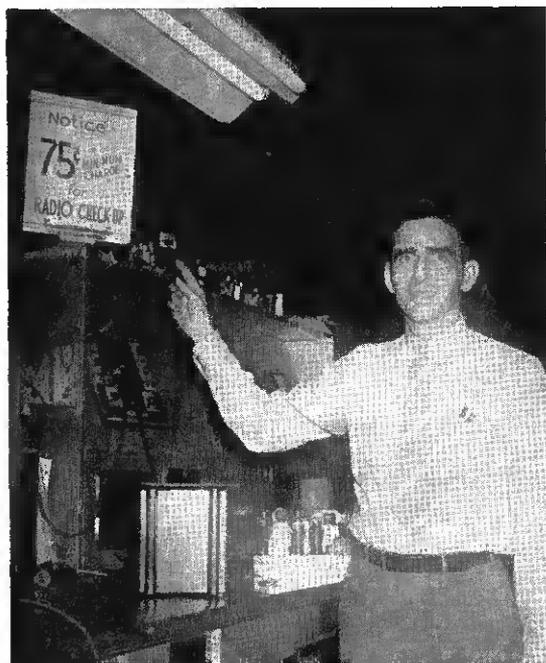
GYPSY HOME BECOMES DITTO SHOP

While visiting in Missouri word got around that Sam D. Young, Jr., could fix radios. Sets piled in, forced him to give up just living in trailer and convert it into shop. No longer a visitor, he now moves shop only when business warrants



KROW QUIZZES CONSUMER

Sherman, Clay and Company, San Francisco, employs a spot broadcast over station KROW for a half hour quiz program staged in Capwell's Department Store at Oakland, California. Awardees receive Philco table models



SIX BITS A LOOK

After eight long years of free inspection H. K. Currey of Nashville, Tenn., switched to a 75 cent charge to scare away the antiques. Concluding a year's trial he says, "I soon found the inspection charge was actually stimulating volume. People now bring sets in when they are really interested in repairs." Time-wasting shoppers tend to go to other shops but competition now charges also

BUT NO CALLIOPE

Every style for every taste might well describe this window of Stern and Co., Philadelphia. A carnival spirit in the background adds life and interest to the complete spread of receivers, puts customer in more sales-receptive mood



COOPERATIVE ADVERTISING

FACTORY ALLOWANCES appear to work to the advantage of department stores and chains

By a BIG CITY DEALER

who, for obvious reasons, prefers to remain anonymous

IN DECRYING the newspaper advertising arrangement practiced by most radio manufacturers the writer states his grievances as a city dealer. In smaller towns where competition is not so keen, the present cooperative advertising setup may have more to offer the retailer.

FOR NEWSPAPER advertising, radio manufacturers will pay part of the cost of the space used, providing such space is devoted exclusively to the promotion of that manufacturer's products and states only the list prices of the merchandise advertised (regardless of who offers the biggest trade-in allowance).

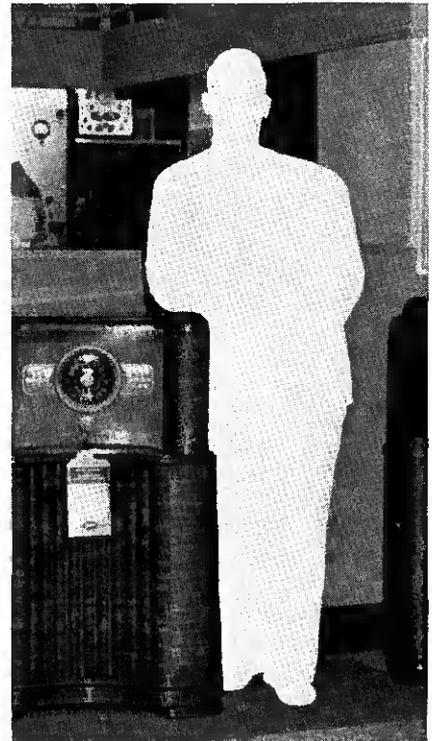
This sounds simple and fair, and the arrangement was undoubtedly meant to be so, but certain technicalities crop up, making newspaper

cooperative advertising profitable for the larger stores and chain radio retailers and unprofitable for the smaller independent.

How Present System Works

In metropolitan newspaper advertising, the local radio distributor grants a fixed line-rate allowance to the retail advertiser. These allowances are standardized according to newspapers. In other words, a metropolitan dealer is allowed, say, 8 cents a line in a certain daily paper for the advertising of a well-known make of radio.

The distributors of competitive brands of radios also allow 8 cents per line for this newspaper. The amount of these fixed line-rate allowances depends upon the newspapers chosen, and with all leading dailies, each paper has its own retail radio rate of advertising coop-



eration, standardized for all leading makes.

For a hypothetical example, under this arrangement a radio chain organization or large store may contract for 100,000 lines of advertising annually in a newspaper to obtain a line rate of 13 cents. The radio manufacturer's or jobber's advertising allowance, per line, for this particular newspaper may be 10 cents. So, under this contract, an ad size 14 inches high by 10 inches wide would cost 14 (height of ad in inches) times 14 (number of agate lines per inch) times 5 (number of columns wide) times 13 cents (agate line rate)—or \$127.40. The manufacturer pays \$98.00 and the chain store pays \$29.40.

Here we see that with cooperative advertising featuring only the products of a single radio manufacturer the retailer actually pays only 3¢ per line. This is pretty good, and if the advertiser is a chain store with ten branches in the area covered by this particular newspaper,

HOT POTATO

THE EDITORS intended this to be a "split" story, half by a dealer, half by a manufacturer.

THE MANUFACTURER was all set to write his half when the *Radio Manufacturers Association* announced that it had formed a new committee to study this and other phases of radio advertising.

OUR SECOND AUTHOR dropped the assignment cold, which is understandable. For his company is represented at the committee's first meeting in New York December 10, under way as this issue goes to press.

MANUFACTURERS ARE, AT THIS VERY MOMENT, COOPERATIVELY STUDYING THE ENTIRE PROBLEM.

could be more **KOSHER**

the space cost of this 14x10 inch ad (about the size of a full tabloid page), for each store is exactly \$2.94.

One Serious Weakness

But what about the independent dealer who wants to compete in this type of newspaper merchandising? Could he contract for the same amount of space and earn the same rates?

Yes, he could — but he won't because of some very good reasons. First, he can't afford \$3,000 a year for newspaper space (his cost, after allowance is deducted); secondly, he doesn't require so much space since he doesn't carry the stock and number of brands of sets;

thirdly, set manufacturers limit annual advertising cooperation money to 5% of annual purchases.

Yet this dealer, doggone it, still thinks he might compete, perhaps just for Christmas or other seasonal business, in newspapers. He decides 5,000 lines will be adequate space for his first year's needs. What is the line rate in this newspaper if he contracts for 5,000 lines? The answer—probably 35¢. What is his cooperative allowance from set manufacturers in this newspaper? The answer—10¢ per line.

So if this dealer did contract for 5,000 lines in this paper, his cost of an ad 14 inches high and 10 inches wide, with his cooperative allowance deducted, would be \$245.00. Compare \$245.00 for a

radio ad for one store and \$29.40 for the same ad for ten stores! While the ad costing \$245.00 might bring in profitable results, the independent dealer is likely to feel the investment too high and be sorry he even considered newspapers for sales promotion.

Another Nasty Angle

Let's go back to this string of radio chain stores and see how its newspaper merchandising is making out.

One fine morning, into the chain's buying office walks the local salesman for a popular line of radios.

"Mr. Jones," the salesman says to the buyer, "we're discontinuing

(Continued on page 56)



FAVORITISM is not deliberate but this is about the way current cooperative advertising allowance systems work out in actual practice

RECORDERS

HERE'S HOW oldtimer
Louis Schwab of Cleve-
land goes about the job

By WICK MILLER

RADIO RETAILERS will do well to keep an eye on the recording bandwagon, now entraining for profitable winter quarters.

Here and there aggressive dealers have "grabbed the handle by the stick" and report that the very novelty as well as the practical features of home recording can be readily capitalized.

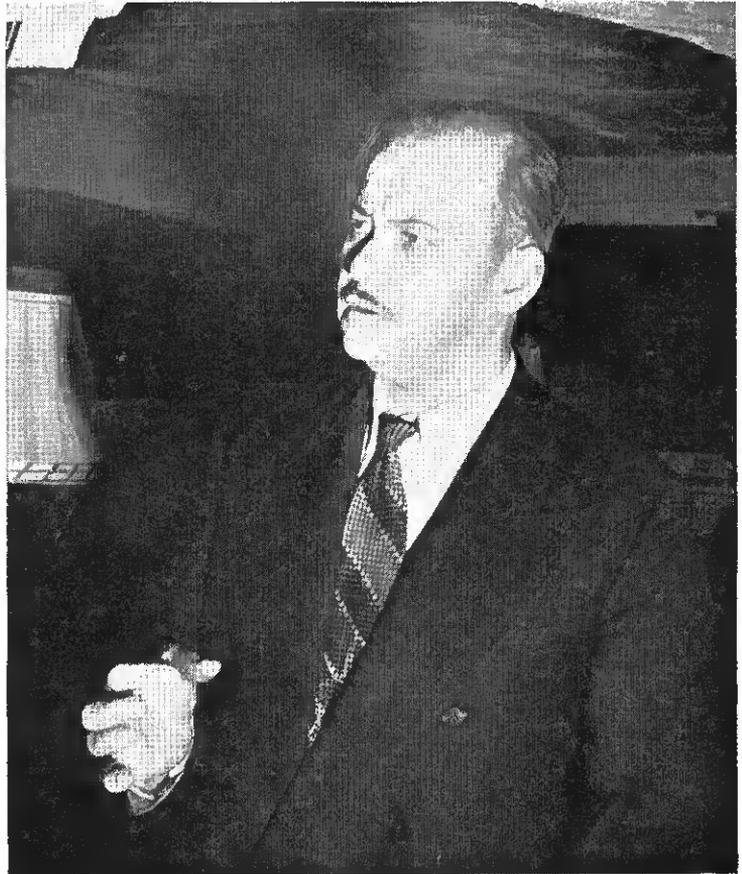
The west side of Cleveland has been the location of one such dealer for the past seventeen years. Oldtimer Louis Schwab still pushes the newest features of the newest merchandise.

Disc List

Located in a state where county fairs are still the chief promotional events, Schwab displayed and sold radio-recording models at several

LESS THAN 5%

LESS THAN 5% of the radio-phonographs shipped in the first 8 months of 1940 included recording. Growing retail showmanship may increase this figure materially before the close of the year



fairs this past summer. Here it was found, as dealers elsewhere discovered, that prospective customers show interest but develop "mike fright" when asked to partake in a demonstration.

Schwab double-barrels them, asks for their name and address. They respond from habit and record their names for his prospect list for future use.

This promotion-minded dealer says that prospects with musically-inclined offspring are a natural for recording models. One family buys at least two packages of blank records a week. Another customer goes in for recording parties and consumes a minimum of three dozen blanks at each gathering.

Page Winchell

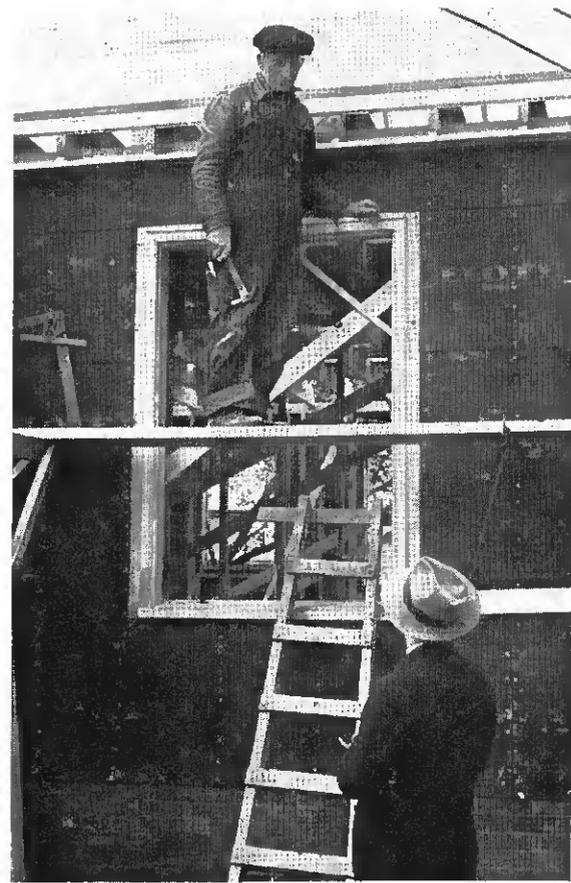
Babies and recorders are a happy combination, but a new sales angle was provided when the organist of a local church decided to have an

infant. Schwab recorded in advance a series of hymns to be played at services in her absence. The salary that a substitute would require provided the recorder-radio, also utilized for small church gatherings to supply air programs and recorded music.

Have you covered the social and business clubs in your town? Labor leaders that speak on the air are now being recorded on a Schwab-sold combination by the Cleveland Carpenter's Union. The set fills in with music at meetings, serves as a sound system, and records messages from the officers to committee and small meetings.

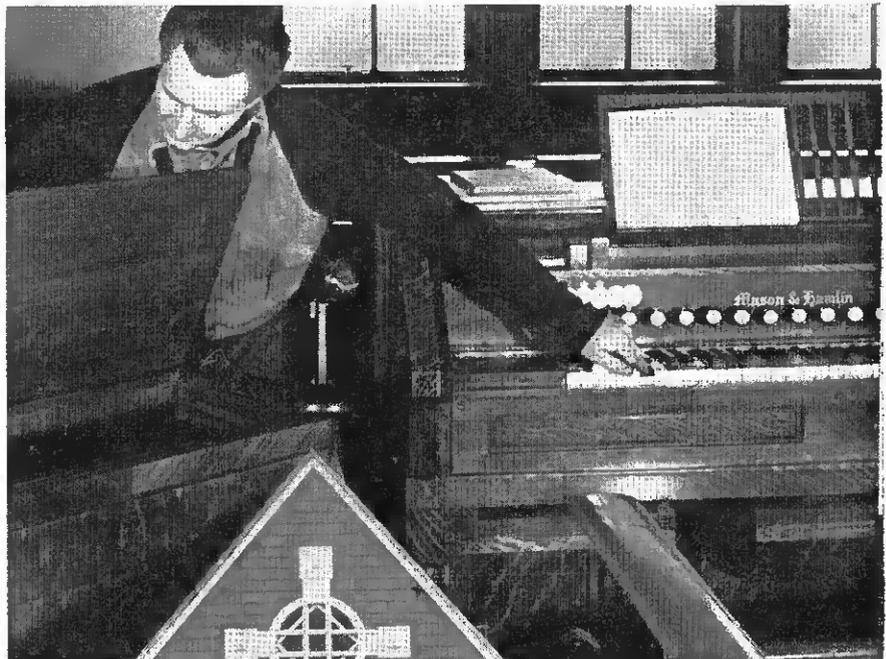
Close cooperation of the seven men now employed has resulted in this outstanding selling job. Recorder-conscious, they look for prospects in every likely or unlikely spot and keep in mind that every sale results in a constant customer for blank discs in the future.

Must Be **PROMOTED**



START WITH GROUPS—Schwab nailed the secretary of the local carpenters' union out on a job, came home with an order for a recorder-radio that has since sold many more

TRICK SALE—When the organist of a local church anticipated a "blessed event" the pastor had her record hymns to be played at services during her absence



WHEN THEY WON'T TALK—Try suggesting that prospects with "mike fright" start by giving their name and address, thus breaking the ice and at the same time obtaining essential sales data

SELL YOUR OWN STAFF—Schwab points out to his own service manager that the profit on the set of tubes the customer doesn't buy is less than that involved in the sale of a single package of blanks



COMMUNICATION Receivers

SHORTWAVE LISTENERS other than transmitting amateurs have become so interested in receiving war news direct that many are now buying extra sets such as these for specialized work

MODEL	TUBES	RANGE (mc)	RF STAGE	NOISE LIMITER	CRYSTAL FILTER	SPEAKER	TUNING METER
Echophone Radio Corp., Chicago, Ill. (Echophone)							
EC-1	6	.54-30.				built-in	
Hallcrafters Inc., Chicago, Ill. (Hallcrafters)							
SX28	15	.54-43.	2	yes	yes	external	yes
SX25	12	.54-42.	2	yes	yes	external	yes
SX24	9	.54-43.5	1	yes	yes	external	yes
SX23	11	.54-44.	1	yes	yes	external	yes
S20R	9	.54-44.	1	yes		built-in	optional
S19R	6	.54-44.				built-in	
S29†	9	.54-30.5	1	yes		built-in	
Hammarlund Mfg. Co., Inc., New York, N. Y. (Hammarlund)							
SP200*	18	.54-20.	2	yes	yes	external	yes
SP200S*	18	1.25-40.	2	yes	yes	external	yes
HQ120X	12	.54-31.	1	yes	yes	external	yes
Howard Radio Company, Chicago, Ill. (Howard)							
490	14	.54-43.5	2	yes	yes	external	yes
435‡	6	.54-43.				built-in	
436‡	7	.54-43.		yes		built-in	
437‡	9	.54-43.	1	yes	opt.	built-in	optional
National Company, Malden, Mass. (National)							
NC44B*	6	.54-30.				external	
NC44	7	.54-30.				external	
NC44A	7	.54-30.				external	
HRO*	9	coil sets	2		yes	external	yes
NC200	12	.49-30.	1	yes	yes	external	yes
NC100 Series	11	.54-30.	1	yes	opt.	external	yes
HRO. jr.*	9	coil sets	2	yes		external	
RCA Manufacturing Co., Inc., Camden, N. J. (RCA)							
AR77	10	.54-31.	1	yes	yes	external	yes
Radio Manufacturing Engineers, Inc., Peoria, Ill. (RME)							
99	12	.54-33.	1	yes	yes	external	yes
E. M. Sargent Co., Oakland, Cal. (Sargent)							
51	10	.52-31.	1			built-in	

* Separate power supply
 † Battery portable
 ‡ 435 can be converted to 436
 436 can be converted to 437

The

By W. MacDONALD

EXPORT SALES represent "grave" business to many manufacturers, permitting production savings (and, frequently, design improvements) which may be passed along to domestic consumers.

Thus the state of the radio export market is indirectly more important to domestic distributors and dealers than the 5 per cent or so of total manufacturing represented would, at first glance, appear to indicate.

EARLY ESTIMATE of 1940 U. S. radio receiving equipment exports pegs the probable total about 8 per cent above last year. This may seem curious in view of wars in Europe and the far east but there is an explanation.

While many countries to the west and east of us have been cut off by blockades or choose to utilize shipping as well as exchange for more essential commodities, several to which sea lanes are still open, such as Portugal, Sweden (through Petsamo on the Arctic), China, the Philippine Islands, Union of South Africa (and to some extent the British Isles themselves) have upped purchases.

Whether quantity orders coming in from such countries indicate merely that they are stocking up for internal consumption in anticipation of still greater shipping hazards or, in certain instances, transshipping to other countries ordinarily considered "beyond the pale" is not definitely known. Exporters here are inclined to believe the former is the case but make no bones about the fact that importers having an "in" with local authorities can generally find ways and means of "skinning any cat."

More important, Latin America must now rely wholly upon the United States for its radio receiving equipment, sources of supply in such places as Holland going by the board as a consequence of invasion plus blockade.

Latin American business increases

EXPORT *Market Today*

RADIO RECEIVER SHIPMENTS will probably wind up the year with about an 8 per cent gain despite wars in Europe and the far east

appear to more than compensate for loss of trade elsewhere and the case of the exporter who has for years placed 40 per cent of his merchandise there and 60 per cent in Europe and the rest of the world but now finds the situation almost exactly reversed is advanced as typical.

Beamed Business Aid

Aiding expansion of U. S. export business with southern "good neighbors" are major chain beamed short-wave broadcasts arranged especially for Spanish and Portuguese-speaking listeners, recently further enhanced at the suggestion of the U. S. State Department through the FCC.

Going the government one better, one chain is now distributing weekly program schedules printed in several tongues to thousands of Latin Americans, mailing some direct on request and placing quantities in the hands of on-the-spot radio distributors through a receiver manufacturing affiliate.

We have looked through a huge stack of letters received by this chain, expressing appreciation of both its broadcasts and its printed programs and, reading between the lines, it is apparent that the goodwill so generated must be reflected in

even greater acceptance for our receiving equipment.

Some Commercial Difficulties

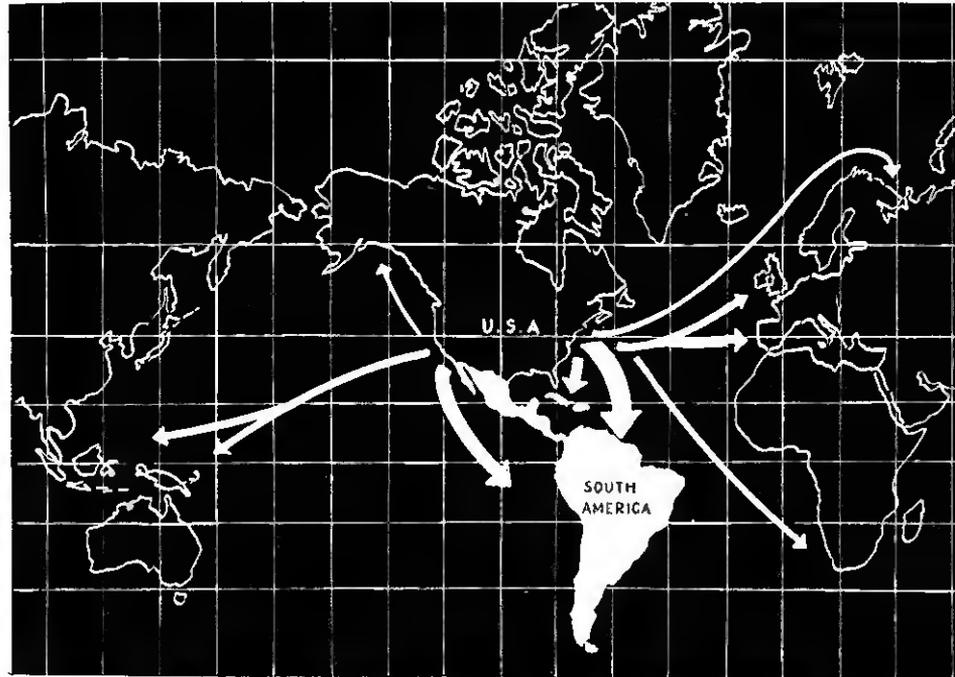
Considered "primary" export markets because of the volume of merchandise they absorb are Cuba,

Mexico. In Central America Guatemala still appears to top the volume list (aside from the U. S. controlled Canal Zone). But the real business boom for radio receiving equipment is occurring in South America itself.

Not all of our neighboring continent is smooth sailing. Certain countries are understandably anxious to stimulate home manufacturing industries and represent a parts rather than a receiver market. Argentina is, perhaps, the outstanding example. There is also a considerable amount of red tape relative to import permits, exchange.

Some idea of the artificial barriers to business at present existing (and Latin American exports are continuing substantial gains in spite of these) may be gleaned from the following information obtained from S. Stern, vice-president of The Chase National Bank, noted for its

(Continued on page 57)



LATIN AMERICA, no longer able to secure radios from Europe, is placing orders with us more than large enough to make up for loss of business elsewhere

FOREIGN SUBSCRIBERS Please Note

AMERICAN EXPORTERS urge customers in other countries to anticipate their needs for even longer periods, order in still larger quantities, say that additional delays and moderately higher prices may be expected

THIS IS NO war profiteering propaganda but genuine interest in the continued success of distant good neighbors. Rapidly increasing production for national defense needs is already upping raw material and labor costs in the United States

Inter-

By W. CARL DORF

Symphony Concert
HANSEN'S
441 North Canon Drive, Beverly Hills, California.
Thursday evening, September 30, 1940 at 8:30 P.M.
Karl Maria von Weber: Oberon Overture
Arthur Fiedler and Boston "Pops"
Orchestra
Also Sprach Zarathustra
Serge Koussevitzky and the
Boston Symphony Orchestra
Piano Concerto No. 4 in G Major
Wilhelm Giese King and the
Saxon State Orchestra
Dr. Richard Strauss
Beethoven



RECORD Concerts

INVITATIONS to attend recorded concerts go out every two weeks to customers of Hansen's, Beverly Hills, Cal.

Only selected symphonic records are presented at these concerts. Planned to please a group, request numbers are usually bypassed from the program as having only individual interest.

On the evening of the concert the store is closed when the guests assemble and no attempt is made from then on to sell any merchandise. Rather, a homey, friendly atmosphere is encouraged.

Cake and coffee after the concert

allow discussion of records and record players but even this gab-fest is kept friendly and informal. The goodwill and personal relationship established with customers are deemed more important by Hansen than on-the-spot sales.

Attracting only the quality music listener, the group has varied from ten to thirty people for each of the fourteen concerts so far presented.

Hansen's specializes in custom-made, remote control installations and has sold some 150 of these, obtaining prospects with advertisements in architectural magazines.



INTER-COMMUNICATING systems were first heavily promoted by the radio trade about 5 years ago. Many dealers and servicemen adopted this then new equipment as another profit possibility.

The most successful were those who realized that it was a *different* kind of "radio" product; that it could not be classified as a window or "wrap-up item"; that it was necessary to promote it on the "outside."

One common stumbling-block, however, was the fact that radio merchant contacts were primarily with the home consumer. *They were not in the habit of meeting representatives of the business world*, where inter-communicators find their greatest use.

Prospects and Approach

There are now a number of companies, relatively unknown to the general radio field, who sell inter-communicators exclusively, cater particularly to business interests. From all reports, they do a "bang-up" job.

With the thought in mind that radio dealers will find the sales methods of such concerns interesting and valuable, *Radio Retailing* interviewed a typical specialist, Execution, Inc. of New York City. Its sales methods are outlined as follows:

The New York sales department of this company is the center of all operations. It is their testing laboratory for all inter-communication requirements. All new models are first introduced in this area and sales potentialities analyzed.

Major prospects for sales are

Communicators for *BUSINESS*



made through cold canvass. All solicitations, however, are carefully analyzed.

The salesman follows this general procedure: (1) On his first call he sells the story of inter-communication. Trained to tell his story well and convincingly. (2) Arranges for a call-back and a demonstration of the system. This is called "booking of demonstration." (3) Survey of consumer needs is the next step and then (4) Submission of Proposals.

Salesmen and Training

Basic reason for the firm's success is the premise that salesmen first sell one Master and one sub-station. Men do not try to sell the whole job on the first call. They sow the seed by first selling basic equipment. The Master is the central unit and any new requirements can be easily met and coupled to this main station. With this equipment installed and on the job, it fills the

role of silent salesmen. Additional units generally follow.

Salesmen are of the executive type. They receive constant training, help and promotion to meet the requirements of this field. All men canvass. The more experienced canvass and close.

The men work on a drawing account. This drawing account is figured on a ratio to earnings but it is not tied to the top returns of the salesman. If bracketed to ceiling earnings, they say the sales kick is lost and it kills the bonus incentive.

High-spotting for prospects is discouraged. Figure a man can be given one square mile of territory to cover and it will take weeks before he canvasses the area thoroughly. Can't see solicitation hither and yon for special pressure on the big shots. Say there are unlimited uses for this product in the salesman's own backyard and it is up to him to get 'em. Salesmen working on concentrated coverage are the ones who make the

RADIO DEALERS must master a new technique if they are to move any great quantity to industrial users

most sales. More calls per day means more sales per day.

Advertising and Promotion

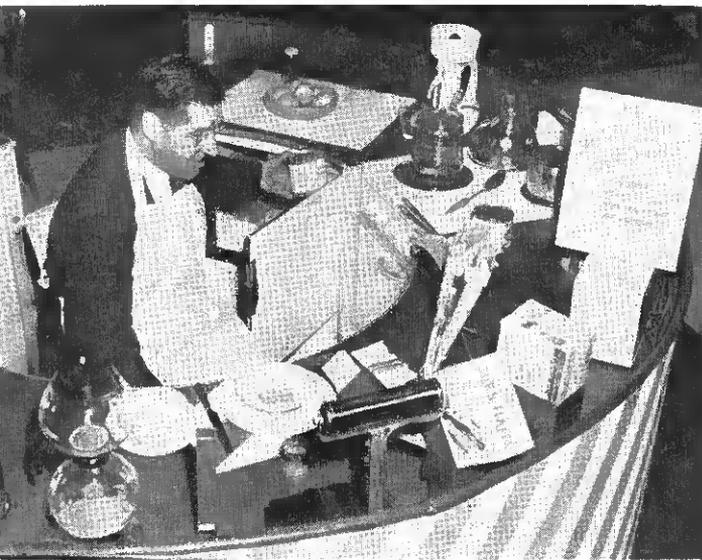
Literature describing the various models informs the prospect what he can expect from the equipment. How the product is made to last. Points out the many features afforded with the use of an inter-communication system.

The literature and the salesman's talk both stress the important fact that it is a time and labor saving instrument. Saves the user many steps. Produces more work with instant 2-way inter-communication. No waiting for phones to be answered, no annoying busy signals. Telephones are kept free for important incoming calls.

Figures have been prepared to show how office or other industrial workers must retrace many steps with time lost when summoned by a buzzer call or other similar one-way signal system. Have figures on the worker's lost time, plus those of the executive waiting for the information. Show that the cost of this lost time can easily pay for the equipment, many times over.

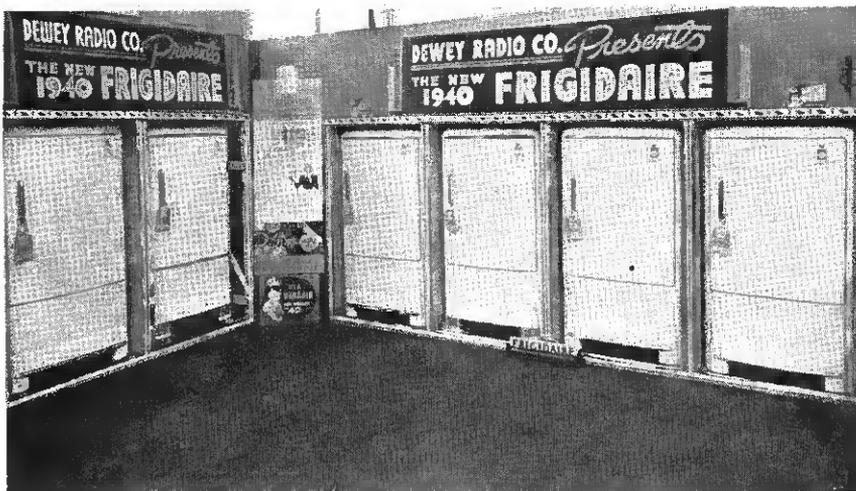
METHODS of a Specialist

HERE'S HOW a concern selling nothing else but inter-communicators finds, handles and sells prospects; selects, trains and pays salesmen



ONE FOR NEXT SUMMER—Amusing and effective display on street floor of McCutcheon's, New York department store, featured G-E and other electrical aids for the man whose wife had gone to the country. Apron demonstrator seated in sliding-track chair read "Dad" on back. Sign worded by company's clever Wallace Speers reminded temporary bachelor to put out cat, write regularly, feed canary

APPLIANCE Ideas



JUST IN CASE—Dewey Radio of Boston dramatizes the newness of its electric refrigerator stock by displaying boxes in the original packing cases, one side ripped off and decorative strips tacked to raw edge

STARTLING AFTER DARK—Down in New Orleans, Brown Appliance canvassers use these two Hotpoint-equipped coupes on calls. Six-volt floodlights concealed behind bumper and similarly lighted box interiors give even increased effectiveness and facilitate explanation of features at night



The

A GOOD SALESMAN, who must canvass for his prospects, is like a doctor pushing doorbells to locate his patients. And an inexperienced man, trying to close a sale, is on a par with a nurse trying to perform a major operation.

For quite a while now I have been telling you that the doctors (salesmen) should perform the operations—and do nothing else but; that the nurses (new men) should locate the patients—and do nothing else but . . . until such time, of course, that any one of them becomes, through experience and not sales lectures, capable of performing the operations.

I know that many readers believe me. But all of you know that, in our business, most of our "doctors" have to solicit for their patients, and most of our "nurses" are expected to try to perform the operations.

I think it is about time I told you why. For it is something of a secret.

Excuses, Not Reasons

Before exposing the real reason, however, I think we should examine a few of the alleged reasons, reasons which are not so secret. They are, in fact, widely known. And since they are not reasons but *excuses*, we can by shooting them full of holes arrive at the real reason in a more receptive frame of mind.

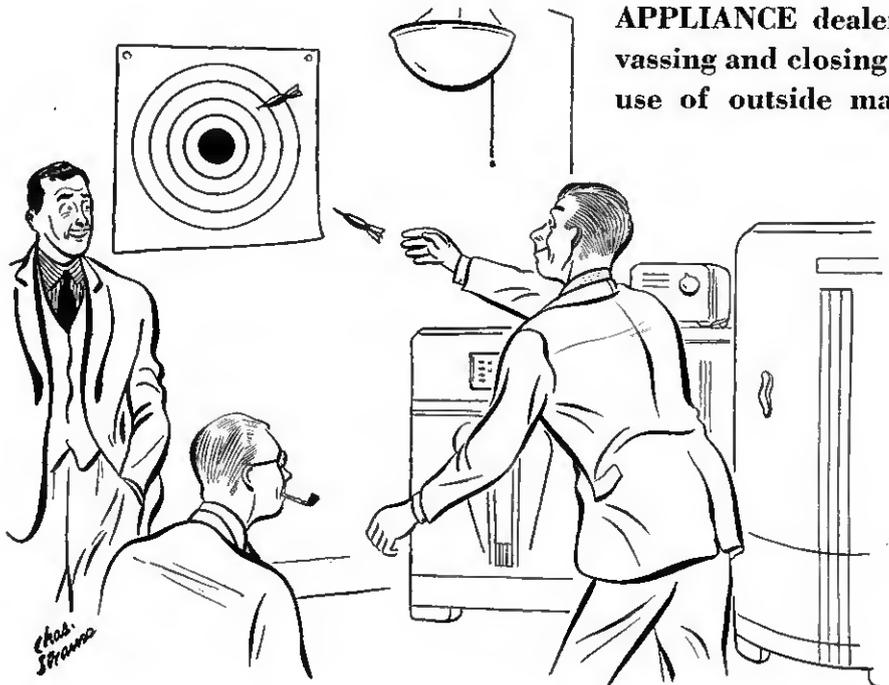
(1) A faucet will discharge more water if it is running all the time than if it is shut off part of the time. (This is something I tried out here at home, and know to be a fact!). By the same token, a good salesman will produce more business if he spends all his time on prospects and not part of it looking for them.

But we will find those who make a provision: "Yes, naturally, he will produce more business—if he has good prospects to work on."

It is a good provision—if we are merely talking about leads as leads. But this provision is certainly a very thoughtless one if it is offered as an argument against the *working methods* I have advocated.

The prospects are out there, and we locate them by pushing their doorbells. The *quality* of each is exactly the same—no matter *who*

REAL Reason Why



SALESMEN wouldn't be shooting so many darts if they weren't fed up with trying to hold down two jobs at the same time

APPLIANCE dealers know that separation of canvassing and closing is the way to make most efficient use of outside manpower but many still duck it

By CASWELL ODEN

But helping a *new* man doesn't weaken him. He's *already* so weak he can hardly stand up. The thing to do is *strengthen* him, strengthen him by closing his prospects for him, getting money in his pocket, *showing* him the merchandise can be sold . . . not telling him about it.

We don't have to do this forever, naturally. But we have to do it *at first*. The man learns the business gradually, and all the time he is learning he is earning—which is the only reason he *sticks* long enough to learn the business.

And after he learns to sell (by sitting in many homes and *watching* his supervisor do it) then he can supervise new men—for he has reached the stage where *his* time is too valuable to be spent pushing doorbells.

Just Easiest Way

And so it goes.

Now I am going to give you the *real* reason.

It is true that some dealers and sales managers have never had pointed out to them, clearly, the basic advantages of separating canvassing from closing. These men we can accuse of nothing but lack of knowledge. Sometimes, when we give them better working methods, they go right out and *use* them!

But to many appliance men little things like helping a new man are not news; they are just poison. So behold the real carbolic acid:

It is so much EASIER (and more conventional, and more trite, and more useless) to advertise for experienced salesmen—and never get them. Never get them because, if they're worth having, they are already working somewhere else.

And it is so much EASIER to
(Continued on page 58)

pushes the doorbell! As a matter of fact, a new man will usually uncover *better* prospects (but not so many) than an experienced salesman. The experienced man, being more adept at talking at the door, will persuade more women to listen to him—whereas the new man will often keep right on going until he runs into a pushover.

Yes, you may be saying, but would he uncover *enough* of them? Now I ask you. . . .

Would he uncover enough of them if you hired him as a *salesman*—if he had to close them *himself*? Heaven knows that if you think he'd make out that way, you ought to be *sure* he'll make out if a *good* man is closing for him.

More of the Same

But after we have convinced our reader on that score, he is very likely to say:

(2) "Yes, I guess you are right—but good canvassers are hard to get."

Well shut my mouth. He *does* try to get *salesmen*—but then he turns right around and says that good

canvassers are hard to get. Heaven knows that if he can't even get men who will *canvass* for his merchandise—he needn't even *try* to get men who will be able to *sell* it!

The truth of the matter is that he can get the canvassers (as you know), and can't get the salesmen (as you know).

(3) Then there is the sales executive who doesn't like our idea *a-tall*. Instead of admitting it is pretty good if only we could iron out all the minor details, he comes right out and gives us a "fundamental bad point." When we tell him new men must have help and lots of it, he says, "Helping a man weakens him."

You know, he's got something there. And, as Fred Allen would say, he can keep it.

If you pour some water into a cup of coffee, you weaken the coffee. Know why? Because you had something you *could* weaken. But if you pour some water into a glass of water, you don't weaken the water. Know why? Because it's **ALREADY** weak.

Certainly we can weaken a *salesman* by closing his sales for him.

FM

WHAT "Green Lighted" stations are doing to get started

THE Federal Communications Commission on October 31st and again on November 20th granted licenses and authorized 17 stations to engage in FM commercial broadcasting "as soon as they are able to do so."

These new stations were told they might at once sell commercial programs and conduct their business on a parallel with that of standard broadcasting.

RADIO RETAILING interviewed the managers of as many of these new stations as could be reached, inquiring as to their plans for serving the public.

Stations were queried on:

A—*Call Letters, Coverage and Frequency.*

B—*When Test and Commercial Programs would start.*

C—*Hours of Operation.*

D—*Types of Sustaining and Commercial Programs planned.*

Their replies are as follows:

CHICAGO, ILLINOIS (*Zenith Radio Corporation 45.1 mc., coverage 10,760 sq. miles, pop. 4,500,000*). Reports construction permit granted with 50 KW power. That test programs using this power would probably start by April 1st. This station now operating experimentally as W9XZR, 42.8 mc. with a daily program from 7:30 a.m. until midnight. Thought initial schedule on new station would be the same. They have no specific plans at this time on commercial programs.

BOTTLENECK

PROGRAM quantity and quality is generally agreed to be the key to substantial equipment sales

COLUMBUS, Ohio (*WBNS, Inc. 44.5 mc., coverage 12,400 sq. miles, pop. 1,100,000*) "Our full authorized antenna output power will be 60,000 watts. Complete equipment will not be ready on Jan. 1 and will restrict initial power to about 2000 watts. On or about April 1 will be on with the full power.

"Equipment tests previous to Jan. 1 if the FCC so permits. Present programs on the experimental transmitter W8XVH to continue until January 1. Regular programs will begin under the new license on the first day of the new year. Have had inquiries on commercial programs but commercials will not come till we have an audience built-up to justify sales.

"Program structure will be heavily sustaining at first. Intend to give the public programs not available on other stations and of a type that will interest them in the purchase of FM receivers. Will operate on a regular schedule each day from 12 noon to 12 midnight."

EVANSVILLE, Ind. (*Evansville On the Air, Inc. 44.5 mc., coverage 8397 sq. miles, pop. 465,000*) Writes: "Commercial programs will begin about April 1st and a full day and night time schedule is contemplated. No commercial programs have yet been signed up, although there is an unusual amount of interest among advertising agencies in FM. Sustaining programs will be largely supplied by local musicians of the better type and both the public schools and Evansville College will be given time for educational purposes."

NEW YORK CITY (*National Broadcasting Company, 45.1 mc., coverage 8000 sq. miles, pop. 11,000,000*) This station says that commercial programs will begin January 1. That there is no sale of time at present. And they are now



INVENTOR—Major Edwin H. Armstrong looks over a new frequency modulation receiver

operating experimentally on station W2XWG with 1 KW power on 43.9 megacycles.

NEW YORK CITY (*William G. H. Finch, 45.5 mc., coverage 8000 sq. miles, pop. 11,000,000*) When interviewed, the manager advised that the order has been placed for transmitter and delivery is expected early part of 1941. Power of the transmitter will be approximately 10 KW. Had no set plans at this time for tests or commercial programs. Would be in a better position to say more on this subject when transmitter is installed and ready for operation.

Also stated that this station, when ready, would simultaneously transmit facsimile with FM programs. Facsimile will use the "guard band" within the 200 kc. wide-channel allowed for FM broadcasting.

NEW YORK CITY (*Marcus Loew Booking Agency, 43.5 mc., coverage 8000 sq. miles, pop. 11,000,000*) This station waiting for construction permit which was ex-

(Continued on page 59)

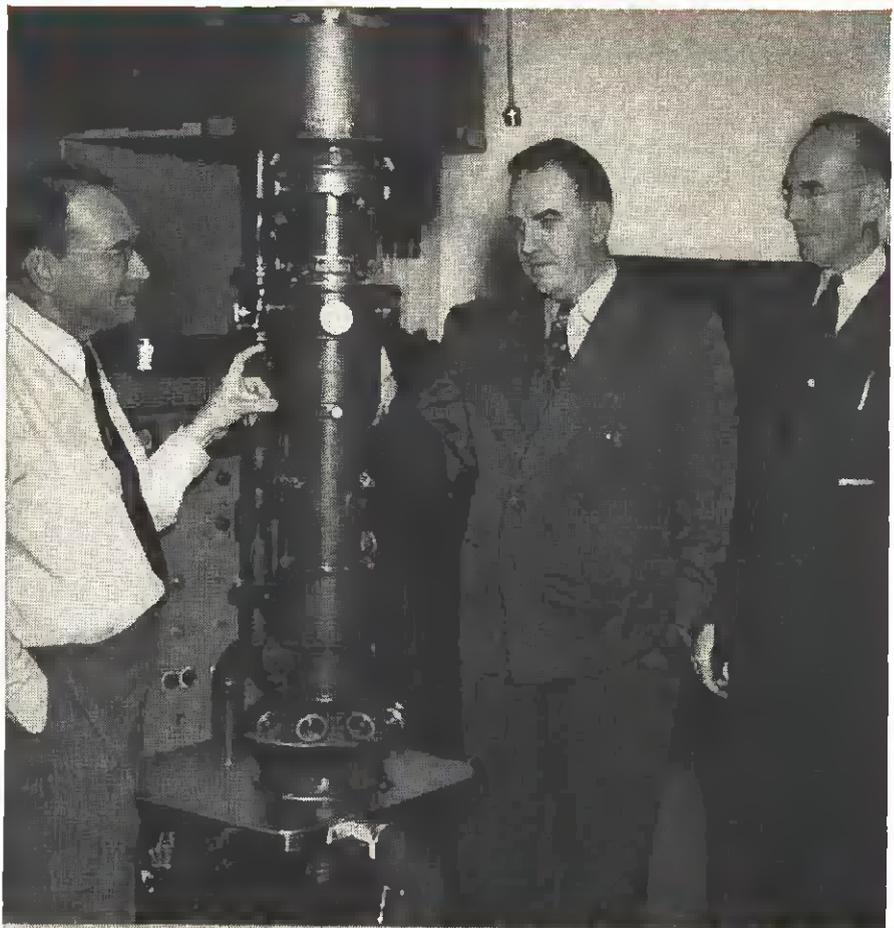
"It's Another RCA Plus!"

"Achievements like the RCA Electron Microscope make RCA Equipment easier than ever to sell!"

TREMENDOUS publicity has greeted the RCA Electron Microscope which extends man's vision far beyond the limits of conventional microscopes—as high as 105,000 diameters! When H. M. Carpenter and Fred Morris visited the great RCA plant at Camden recently, they were quick to see how an achievement like this helps *their* business... and *yours!*

"There," they said, "is one of the greatest RCA advertisements—something no other radio manufacturer can duplicate! Achievements like the RCA Electron Microscope make *all* RCA Equipment better known, more respected... still easier to sell! It's another RCA plus!"

You'll agree that in such achievements lies the prestige of a Name that's a great name to link with your own!... prestige



H. M. Carpenter, center, of Thurow Radio Distributors in Tampa, and Fred Morris, right, of the Specialty Distributing Company in Atlanta—two of America's best-known operators—look over one of America's best-known new inventions... the RCA Electron Microscope. At left is Dr. V. K. Zworykin, internationally-famous physicist and Associate Director of RCA Research Laboratories.

that makes RCA Power Tubes, Receiving Tubes, Test Equipment and Amateur Equipment more profit-producing all the time!

Over 380 million RCA radio tubes have been purchased by radio users... In tubes, as in test equipment and accessories, it pays to go RCA All the Way!



WHERE ELSE CAN YOU GET THIS SUPPORT?

Grow with the



TUBE AND EQUIPMENT

FRANCHISE

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

Give Your Business a Profit Present

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



CONDENSERS

Mallory Replacement Condensers have proven to be just like money in the bank for thousands of radio service engineers. Millions are in use! No other line gives such complete and such dependable coverage of every replacement need. F. P. (Fabricated Plate) Capacitors made by Mallory, Mallory Tubular Condensers—now color-coded by voltage, and Fabricated Plate Tubulars Type B B each fill specific needs that are faced every working day. Be sure you can fill these needs quickly and profitably . . . specify Mallory.

VOLUME CONTROLS

Early in 1941, Mallory will introduce the most startling advance ever made in the field of replacement volume controls. This is a completely new Mallory development that has been years in the making. It incorporates features that will revolutionize volume control replacements. Watch this publication for an early announcement. You'll want to be first to see it . . . first to cash in on its many new advantages!



VIBRATORS

Mallory Vibrators have made the same important contributions in the replacement field as they have made to the efficiency of original equipment. When you install a Mallory Vibrator in an auto radio, or other battery operated receiver you know that you have given your customer the finest there is . . . and that you have fully assured customer satisfaction. Millions of Mallory Vibrators in use as original equipment testify that they have to be good.

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

Mallory Has Great Things in Store for You in '41

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

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

More About BUDGETING

By
**ROBERT LEE
COSHLAND**

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

THERE'S SOMETHING challenging about the word "Budget."

To some executives mention of "Budget" is like a red flag to a bull. Probably these are the very ones most in need of a red flag in their business. Others are challenged in a more practical way. To them, business is a game like golf and the budget represents par.

Figures presented this month will show you how valuable a guide a budget has been to executives who have followed through since our August article, and how you too can influence your net profits through budgeting.

Forecasting Sales

In case you don't happen to have the August number of RADIO RETAILING handy, we'll start by reviewing briefly:

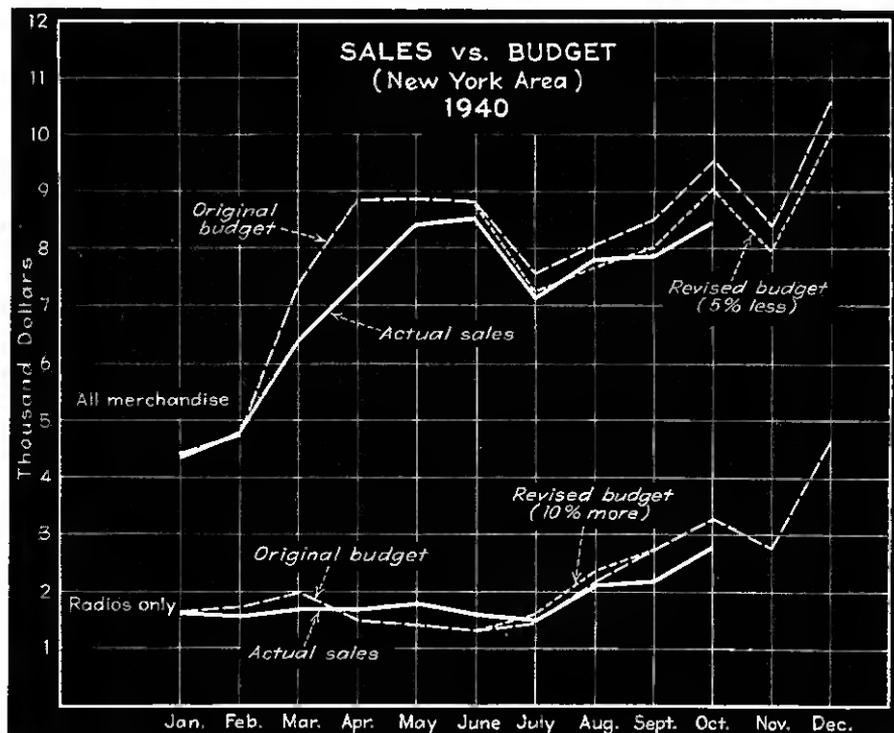
The first step toward Budgetary Control, we said, consists of forecasting sales. Actual figures were presented for a group of stores in the New York area, showing that:

1. Total sales of all types of merchandise for 1939 represented an increase of about 16% over 1938.

2. The bulk of this increase came during the first six months of 1939, indicating the possibility of a tapering-off movement later in the year.

3. Radio sales alone in 1939 increased 8% over 1938.

On the basis of these figures, it was recommended that 1940 total sales be anticipated at a 5% increase over 1939, and Radio department sales at a 2½% increase. The monthly budget for an average store for total and radio department sales was then set up accordingly, and compared with actual sales for the first five months of 1940. These figures are shown in the table on this page, in the first five light face



	ALL MERCHANDISE			RADIO DEPARTMENT		
	Budget	Actual	Difference	Budget	Actual	Difference
Jan.	\$4,428	\$4,392	—\$ 36	\$1,659	\$1,658	—\$ 1
Feb.	4,735	4,758	+ 23	1,715	1,558	— 157
Mar.	7,409	6,383	— 1,026	1,978	1,654	— 324
Apr.	8,837	7,413	— 1,424	1,502	1,658	+ 156
May	8,856	8,403	— 453	1,430	1,771	+ 341
June	8,808	8,544	— 264	1,318	1,584	+ 266
July	7,600	7,156	— 444	1,441	1,534	+ 93
Aug.	8,061	7,785	— 276	2,164	2,110	— 54
Sept.	8,521	7,859	— 662	2,722	2,163	— 559
Oct.	9,546	8,458	— 1,088	3,259	2,753	— 506
Nov.	8,415			2,754		
Dec.	10,629			4,642		
Tot.	95,845			26,584		
Tot. for First Ten Mo.	\$76,801	\$71,151	—\$5,650	\$19,188	\$18,443	—\$745
% Under Budget for First Ten Mo.			— 7.4%			— 3.9%

lines. (The heavy black bold face figures will be discussed a little later.)

Revising Early Estimates

On the basis of the first five month comparison, it was concluded and recommended that:

1. Either the trend of total sales had turned downward, or else total

sales had been temporarily influenced by the unusually cold 1940 Spring in the New York area, which retarded sales of refrigerators.

2. If June sales should not reflect a recovery of lost business, the budget should be reduced for the second half of 1940.

3. If June radio sales should con-

(Continued on page 59)

Thanks—
Mr. Philco Dealer

—for a year of record-breaking
Radio and Phonograph sales
... the 12th Straight Year of
Philco Leadership!

—for a year of record-breaking
Refrigerator sales ... achieving
an Increase of Over 300%

Yes, 1940 was Great...
1941 will be Greater!

PHILCO ALL YEAR 'ROUND FOR

HOME RADIO · PHONOGRAPHS · TELEVISION · AUTO RADIO · RAD

BIG NEWS

NOW ON ITS WAY TO YOU

Philco Announces New Radio and Phonograph Models for January to June Promotion!

The past year has been the biggest year in Philco Radio history. More sales, more advertising, greater promotions than ever before. And, right on the heels of this profitable year, Philco brings you a sensational series of brand-new models to keep your radio profits BOILING after January 1st... to keep your sales UP right through the Winter and Spring.

These additions to the 1941 Philco line are not just new models but amazing PROMOTIONAL values, designed to help you cash in on the tremendous popularity of Philco's great 1941 inventions.

You need "HOT" VALUES in the Winter and Spring. And they are ready for you... the greatest promotional items ever offered in radio... giving you the opportunity for the biggest January to June you have ever known!

Right now, your Distributor is at a special Philco meeting... getting the news about these sensational new radio models. He is bringing the great Philco story... that will mean big business for you from the very beginning of the new year! So prepare yourself for an even greater radio year in 1941.

GREAT REFRIGERATION PROGRAM SPURS PHILCO ALL YEAR 'ROUND PLAN!

Thanks to your confidence and support, Mr. Philco Dealer, Philco Refrigerator sales for the past year showed an *increase of over 300%*... the greatest record of sales growth in the industry.

The sensational 1941 Philco Refrigerators now on the way to your distributors and shortly to be announced to the trade will give you new evidence of the power and ingenuity of Philco engineering and merchandising.

These refrigerators are new and different, chock full of exclusive features that lift Philco out of the crowd... saleable features in every price bracket that only Philco dealers will have to sell.

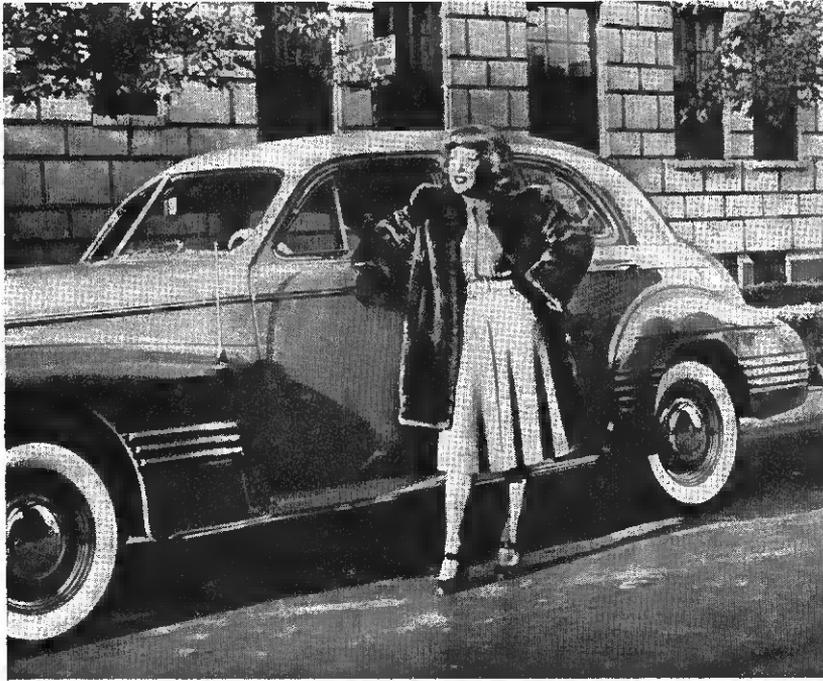
An advertising and promotional program worthy of this great refrigerator is now in the works. It is a typical Philco campaign, dominating, forceful, practical.

Philco All Year 'Round, in 1941, is a policy of vital importance to every Philco dealer. Radio and refrigeration are now linked together in a mutual profit program that makes the Philco franchise the most valuable in the appliance field.

*In Radio and Refrigeration, it's Philco in 1941!
...Get the Story from your Philco Distributor.*

PROFITS ALL YEAR 'ROUND

REFRIGERATORS · AIR CONDITIONERS · DRY BATTERIES · PARTS

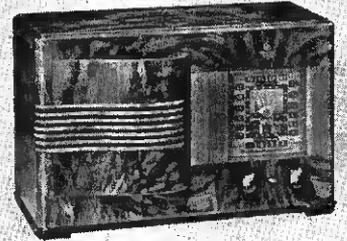


1941 AUTO Antennas

CAR	LOCATION *
BUICK	Top Front (Rotatable) or Fender (Vacuum Operated)
CADILLAC	Side Cowl (Vacuum Operated) for 41-60S, All Others Fender (Vacuum Operated)
CHEVROLET	Left Windshield Pillar (Mechanically Operated) or Side Cowl
CHRYSLER	Top Front (Rotatable) or Side Cowl (Mechanically or Electrically Operated)
CROSLY	Side Cowl
DE SOTO	Top Front (Rotatable) or Side Cowl (Mechanically or Electrically Operated)
DODGE	Top Front (Rotatable) or Side Cowl (Mechanically or Electrically Operated)
FORD	Top Front (Mechanically Operated)
HUDSON	Top Cowl (Vacuum Operated) or Side Cowl
LINCOLN	Left Side Cowl
MERCURY	Top Front (Mechanically Operated)
NASH	Left Side Cowl (Vacuum or Mechanically Operated)
OLDSMOBILE	Left Side Cowl (Rotatable)
PACKARD	Top Front (Rotatable) or Left Side Cowl (Mechanically Operated)
PLYMOUTH	Top Front (Rotatable) or Side Cowl (Mechanically or Electrically Operated)
PONTIAC	Left Fender (Vacuum or Mechanically Operated)
STUDEBAKER	Top Front (Rotatable)
WILLYS	Side Cowl
ZEPHYR	Left Side Cowl

* Suggested by Automobile Makers

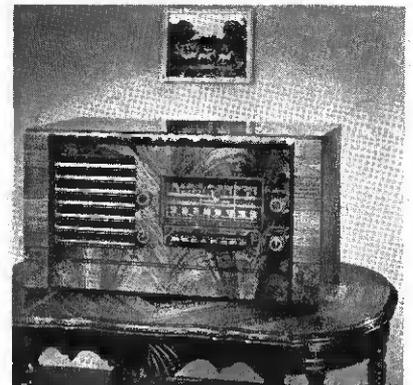
New



EMERSON 350 Table model ac-dc receiver is equipped with standard broadcasts and police calls and covers foreign and American short wave bands. This 5-tube superheterodyne has a cushion-mounted 6 1/2-inch speaker. Cabinet of selected matched built walnut with inset of striped walnut. Price \$29.95.

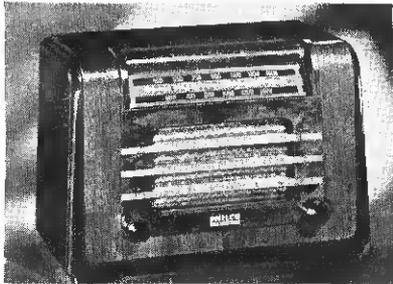


EMERSON 397 Console automatic phonograph has 5 tubes and is equipped with a 12-inch speaker. Covers standard American broadcasts and police. Phonograph plays 10-inch and 12-inch records. Price \$69.95. Emerson Radio & Phono Mfg. Co., 111 Eighth Ave., New York, N. Y.



STROMBERG-CARLSON 520-J Table radio in a new walnut cabinet of modern design. It employs a built-in loop and short wave aerial. It features a built-in loop and short wave aerial, pushbutton tuning, bi-focal tuning eye, and television and FM connection. It receives both standard and short wave broadcasts. Eastern list price \$72.50. Stromberg-Carlson Tel. Mfg. Co., Rochester, N. Y.

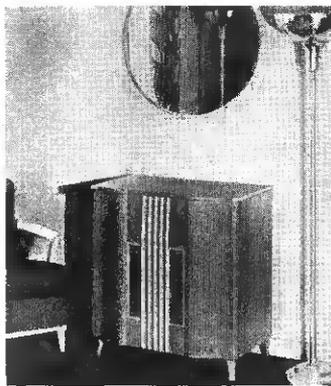
Products . . .



PHILCO PT6 Transitone table model employs a new oval-shaped 6-inch speaker. Receiver is a 5-tube ac-dc superheterodyne with a built-in loop aerial. Measures 8 21/32 high, 12 1/4 wide and 6 15/16 inches deep. Retail price \$19.95.

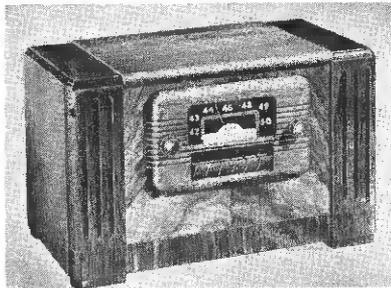


PHILCO 695-P Farm radio-phonograph designed for unwired homes. Receiver has 5 tubes and phonograph plays 10 or 12-inch records through a 1 1/2 volt farm radio circuit. The tilt-front console cabinet measures 37 high, 24 1/2 wide and 13 inches deep. Philco Radio & Tele. Corp., Philadelphia, Pa.

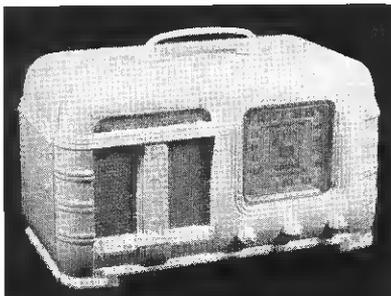


CAPEHART-PANAMUSE Modern designed cabinet, model 17-K-3, available in honey color or walnut. Has gracefulness of form and structure. Measures 33 x 30 3/4 x 18 3/4 inches. Equipped with an 11-tube chassis. Capehart Division of Farnsworth Corp., Ft. Wayne, Indiana.

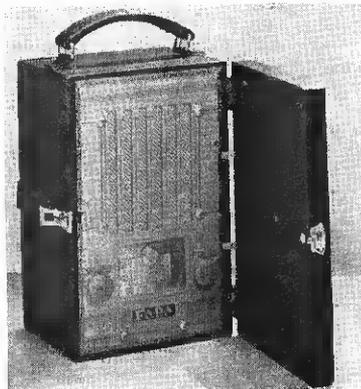
STEWART-WARNER FM 9 Frequency Modulation *interpreter* can be attached to any present style radio equipped with phonograph jack. It consists of a small compact cabinet which can be placed upon the top of set. Employs nine tubes, operating on 110 volt, 60 cycle current supply. An extra jack is provided for phonograph pick-up for use with existing record players. List price below \$50 f.o.b. Chicago. Stewart-Warner Corp., Chicago, Ill.



FADA 119-V Ivory plastic radio with carrying handle has 5 tubes, 5 1/2-inch speaker, *Fa-Da*-scope loop antenna. List price \$22.95. This model is also available in a de luxe walnut bakelite cabinet with carrying handle, model 119-W, list price \$19.95.



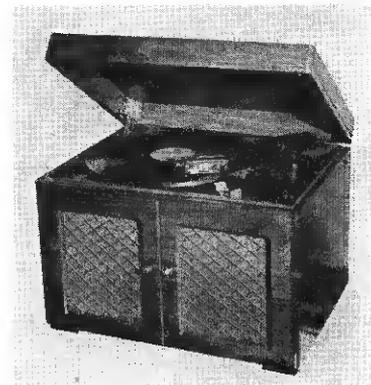
FADA 33 Portable battery camera-type radio measures 8 high, 4 3/4 wide and 4 1/4 inches deep and weighs 4 1/2 lbs. Available in model C33—black simulated leather case; model B33—dark blue simulated leather with ivory stripes; model M33—maroon simulated leather with ivory stripes; list price \$20.00. Model L33—genuine cowhide leather case, list price \$25.00. Fada Radio & Elec. Co., 30-20 Thompson Ave., L. I. City, N. Y.



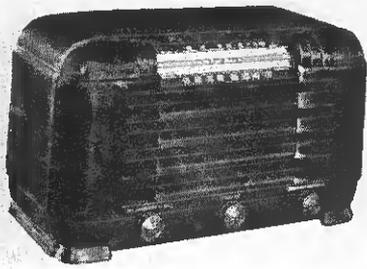
G-E J-629 Home recording radio-phonograph combination in a table type model. Housed in a two-toned American walnut cabinet. Features 8 1/2-inch speaker and 6 pushbuttons. Plays 12-inch records with the lid closed. Equipped with crystal microphone, model JM-9.



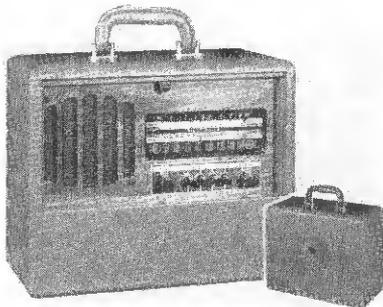
G-E JFM-165 Frequency Modulation console 3-band receiver features triple beam-a-scopes—shortwave, standard and FM.; 12-inch speaker; 12 pushbuttons—six for standard American broadcasts located at the front of set, and six for FM broadcasts, located under the top lid. Has a 7-tube AM chassis and a 9-tube FM chassis. Names of foreign cities and their location appear on the AM dial. General Electric Co., Bridgeport, Conn.



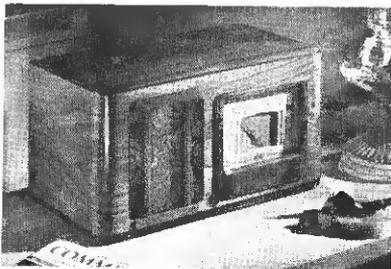
COLUMBIA Table model phonograph available in walnut (T1), or mahogany (T2) veneer cabinets. Features 115 volts 60 cycle operation, rim drive, 78 r.p.m., 6 watt output. Has crystal pickup; 8-inch speaker; 3-tube amplifier. Plays both 10 and 12-inch records. Incorporates an automatic stop switch. Retail price \$69.50, f.o.b. New York City. Columbia Recording Corp., 1473 Barnum Ave., Bridgeport, Conn.



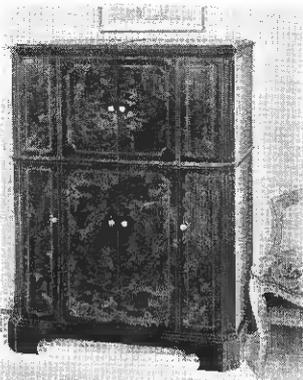
PILOT B1 Walnut plastic cabinet features six tubes, rf stage, standard broadcast and full shortwave bands. Has built-in antenna. List price \$19.95.



PILOT T186 Three-way portable radio has 6 tubes, 2 bands, and a 5-inch speaker. Features four pushbuttons to control battery, ac-dc, standard broadcast, or shortwave. Pilot Radio Corp., 37-06 Thirty-Six St., L. I. City, New York.



SONORA KZ-111 A 4-tube 1.4 volt table model farm radio is equipped with a 7 x 6 1/2 inch clock-type dial, and 6-inch speaker. Has compartment for housing battery pack. Walnut veneer cabinet measures 18 1/2 x 10 1/4 x 9 1/2 inches. Sonora Radio & Tele. Corp., Chicago, Ill.

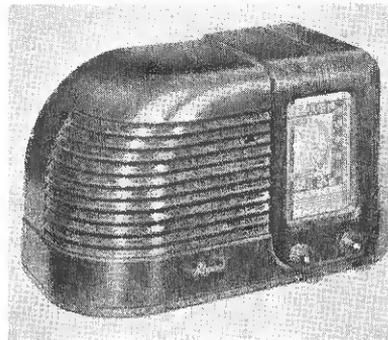


FREED-EISEMANN FM-45 A 20-tube automatic phonograph-radio combination in a Chippendale console with FM and AM broadcast bands. Available for AC-DC current in mahogany or walnut. Freed Radio Corp., 39 West 19 St., New York.

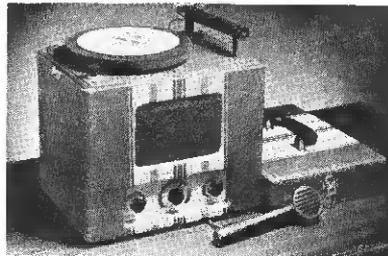
ADMIRAL 27-G4 Portable *Bantam* camera type radio housed in an ebony Lumarith plastic case with simulated snake skin trim. A 4-tube battery superhet covering all standard broadcasts 545 to 1630. Weighs 4 1/4 lbs., and measures 8 1/4 high, 4 1/2 wide and 4 inches deep. List price \$14.95, slightly higher in far West and South. Available is model 27-G5, a 5-tube, ac-dc-battery, list price \$19.95.



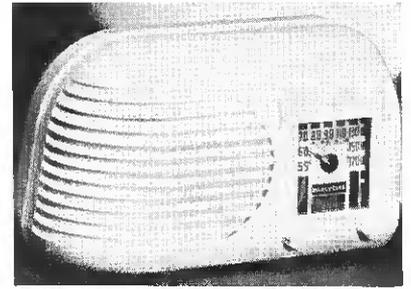
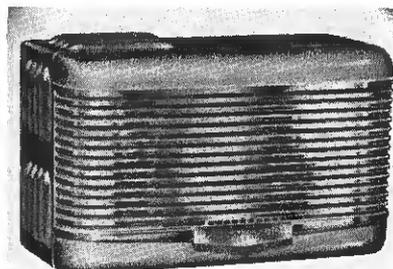
ADMIRAL 15-D5 Mahogany plastic streamliner houses a 5-tube ac-dc superheterodyne with built-in *Aeroscope*. Price \$9.95. Continental Radio & Television Co., Chicago, Ill.



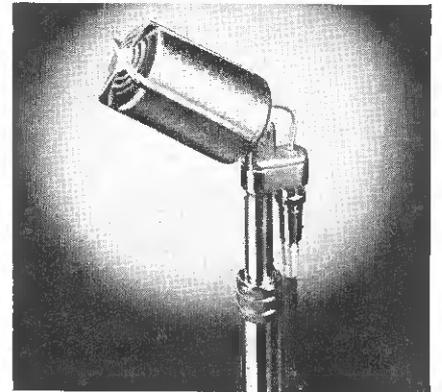
WILCOX-GAY Portable radio, phonograph and recorder combination *Recordio Junior*. Phonograph plays 12-inch records. Measures 12 1/4 x 12 1/2 x 9 3/8 inches. Includes microphone. List price \$39.95, f.o.b., Charlotte, Michigan. Wilcox-Gay, Charlotte, Mich.



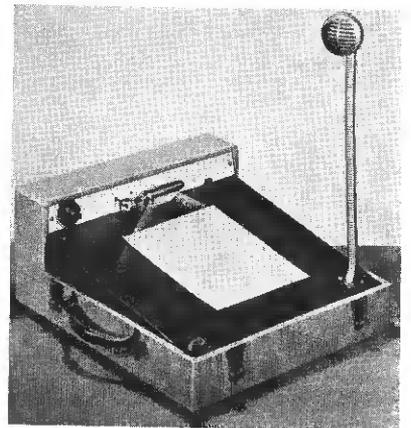
PHILCO AR-50 Single unit auto radio housed in newly designed case with all chrome speaker grille, finished with crystal green hammertone finish. Has 6 tubes, 6-inch speaker, 5 pushbuttons and built-in interference filtering. Retail price \$39.95. Philco Radio & Telev. Corp., Chicago, Ill.



GENERAL 588 Table type model, the *Torpedo*, is housed in an ivory Bakelite cabinet. A 5-tube AC-DC superheterodyne with patented *syncro-tenna* (*Wavescope*), a synchronized antenna system, matched with the antenna coil. Covers standard American broadcasts. General Tele. & Radio Corp., 1240 N. Homan Ave., Chicago, Ill.



WEBSTER-CHICAGO Dynamic microphone designed to give high level output with fidelity response of 40-10,000 cycles. Utilizes a new design of alnico magnet to give highest flux density per unit gap, dural diaphragm, and edge wound flat wire voice coil. Assembly is in a compact and neat streamlined case, finished in gun-metal with polished chrome bars. The Webster-Chicago Corp., Chicago, Ill.



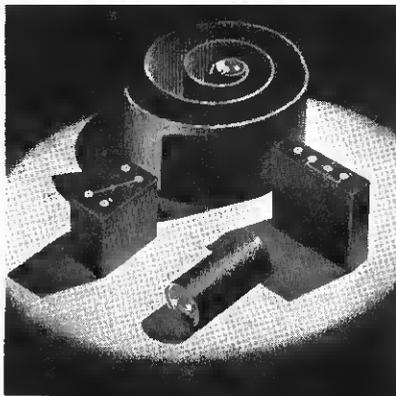
ERWOOD R-6 New *Rostrum* portable sound system consists of 4-tube amplifier with 4 watts output, 6 1/2-inch electro dynamic speaker, and an unidirectional crystal microphone. Speaker is self-contained in unit in the front of the amplifier. Has a chrome-plated reading lamp. Measures 8 x 14 x 17 inches. List price \$48.75. Erwood Sound Equipment Co., 224 W. Huron St., Chicago, Ill.

SELMER Recording discs with stroboscopic labels for checking turntable speed. Available in No. 2200, 6-inch \$.25; and No. 2201, 10-inch \$.45. H. & A. Selmer, Inc., 1119 N. Main St., Elkhart, Indiana.

GENERAL TEST A new service instrument, the *Pen-Oscil-Life*, is a self-contained signal generator, about as small as a fountain pen. Useful for receiver circuit tracing, IF and RF alignment, servicing PA systems, checking receiver sensitivity, checking antennas, indicating shielded locations, locating source of chassis ignition pickup in auto radios, etc. General Test-Equipment Co., 213 Crosby Ave., Kenmore, N. Y.



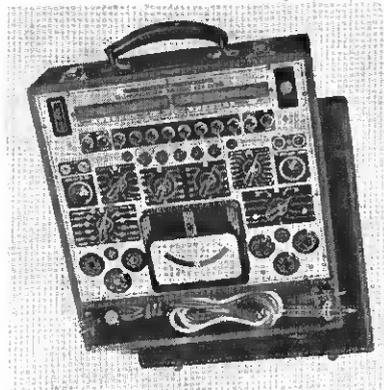
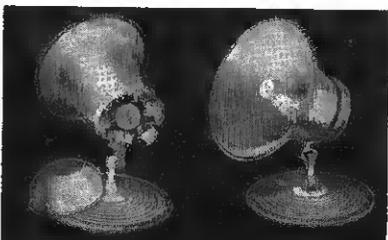
P. R. MALLORY A new line of AC motor starting capacitors featuring round types housed in small metal containers. Each unit is wrapped in a specially developed "size adjuster" for use when replacing original units of greater diameter and height. Rectangular types in universal sizes packed with complete hardware to replace original capacitors of either lead, solder lug or stud types. P. R. Mallory & Co., Inc., Indianapolis, Indiana.



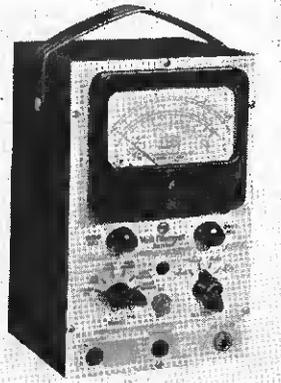
SPRAGUE LF-2 Multi-section plug-in filter designed for installation at the power outlet to which the interfering device is connected. Keeps troublesome kind of noise out of radio receivers. Measures $2\frac{1}{2} \times 1\frac{3}{4} \times 1\frac{7}{16}$ inches. List price \$3.50. Sprague Products Co., North Adams, Mass.



UNIVERSITY LABS Model 4XR *Bull* loud-speaker is designed for 100-watts continuous audio input. The driver units for this speaker consist of 4 standard 25-watt, model PAH units. List price \$255 including 4 PAH units, 4XH multiple horn, mounting bracket less flat platform. Bell 31 inches, overall 27 inches. University Laboratories, 195 Chrystie St., New York, N. Y.



PRECISION 954 This combination dynamic tube tester and 37 range ac-dc mutual conductance type tester is a complete compact unit. 20,000 ohms per volt including ranges of 6,000 volts ac-dc; 60 microamperes; 12 amperes and 60 megohms. Available in four models. Precision Apparatus Co., 647 Kent Avenue, Brooklyn, N. Y.



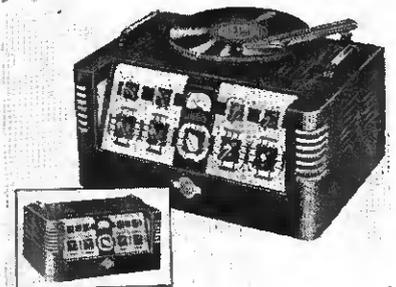
RCA This *Junior VoltOhmyst*, an electronic volt-meter-ohmmeter, provides for the complete meter overload protection on the DC voltage and ohm scales. No damage can be done if the probe slips to a high voltage point when a low DC voltage is being measured. DC volt-meter circuit has 6 ranges 0 to 3, 10, 30, 100, 300 and 1000 volts. AC voltage measurements on five scales 0 to 10, 30, 100, 300, and 1000. List price, \$34.95. RCA Mfg. Co., Camden, N. J.



ALLIANCE Phono-motors in new individual cartons aid the parts jobbers and service dealers because the cartons are easier to handle. Alliance Mfg. Co., Alliance, Ohio.

HICKOK 530-M New tube tester merchandiser, tests tubes by measuring dynamic mutual conductance in micromhos. Has a large 9-inch square meter with illuminated dial. Tests all tubes including ballast tubes, magic eye tube, miniature tubes, etc. It tests for shorts, gas and noise. The Hickok Electrical Instrument Co., 10304 Dupont Ave., Cleveland, Ohio.

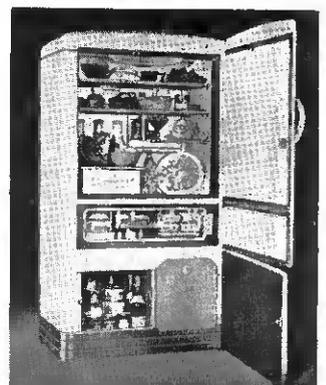
McPROUD PADGET A handy gadget that enables soundmen to determine the resistors required for attenuators without extended calculations, price \$1.25. A *QuadGet* is also available for simplifying the design of constant impedance equalizers, price \$1.50. Norman B. Neely, 5334 Hollywood Blvd., Hollywood, Cal.



CLARION Sound equipment features 4 beam power tubes in inverse feedback. The microphone gain is 125 db. Rated output 71 watts, peak output 99 watts. This amplifier, complete with 15 tubes and volume indicator meter, model No. A-93K, lists at \$157.55. Transformer Corp. of America, 69 Wooster St., New York, N. Y.



CROSLY DM841 Deluxe, 8 cu.ft. refrigerator with new *Super Shelves* which features 6 extra shelves in door with break-proof egg rack holding 16 eggs, bottle shelf holding 11 six-ounce or 10 twelve-ounce bottles. Extra fast freezing with 2 refrigerated shelves and self-closing door in the freezer compartment. Crosley Corp., 3401 Colerain Ave. Cincinnati, Ohio.



STEWART-WARNER 871 *Dual Temp*, deluxe, 8 cu.ft. refrigerator is equipped with a freezing locker located near the center of the refrigerator with 5 snapout ice trays (one of double width); 4 shelves including 2 sliding shelves and 4 removable sections; vegetable basket; dry storage cabinet. Price \$259.95. Stewart-Warner Corp., Chicago, Ill.

Westinghouse

MEANS BUSINESS IN 1941!

**...and it's YOUR BUSINESS
we're talking about!**

Everyone says 1941 is going to be a great refrigeration year. We say it's going to be a great *Westinghouse* year! That's *our* business—but you can make it *YOUR* business as well. Read what Westinghouse is doing about it. Then *do something about it yourself!* Write, wire or call your Westinghouse Distributor. Keep posted on developments that are going to put Westinghouse Dealers over with a bang on the *money side* of the refrigerator business!



NEW PRODUCTION CAPACITY!

Westinghouse is increasing production capacity on 1941 refrigerators through a \$1,500,000 building program at Mansfield. This includes a new metal-stamping plant and a new warehouse to release present warehouse space for production. **YOU** can share in the dividends this investment is going to pay!

RADICALLY NEW PRODUCT!

Westinghouse design and laboratory engineers have been working for a solid year to give you the finest, most salable, most foolproof product ever offered to the public. When you see it, you'll forget there ever was anything called an electric refrigerator before! And it's **YOURS** to **SELL** at a **REAL PROFIT!**

NEW, GREATER PROMOTIONS!

Westinghouse sales promotion and advertising for 1941 has been planned to hit a new high in force and convincing power! Every detail is designed to turn the spotlight on Westinghouse and Westinghouse Dealers as never before! It not only *delivers* prospects—it helps you *sell* them—at a **PROFIT!**

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
MANSFIELD, OHIO

WE'RE PRODUCING!

**.. the most popular line of
ELECTRIC REFRIGERATORS
in Westinghouse History!**

WATCH WESTINGHOUSE IN 1941!



Westinghouse Refrigerators

FROM THE *Leisure Line* OF ELECTRIC HOME APPLIANCES



NOTHING...WE MAY CALL OUR OWN BUT TIME...*Seneca*

AT THIS PARTICULAR SEASON we are the more cognizant of time's passage, adding up the accounts of yesterday and setting up our hopes for the future. In this annual book-keeping of good will we find the entries on both sides of the ledger, past and future, to be not ours alone but rather a combination of your cooperative efforts with our own, each nourishing the other to the eventual prosperity of both.

We hold priceless your recognition of our ceaseless quest for the ultimate in quality. Your approval has spoken far more eloquently than volumes of fancy words.

In return, we take your faith as an obligation, as well as an inspiration, to strive to excel in the important sciences of sight and sound.

HYGRADE SYLVANIA CORPORATION
EMPORIUM SALEM ST. MARYS CABLE HYSYLVANIA, N. Y.



RCA CONFERENCE—E. J. Rising (center) San Francisco district sales manager, at Camden headquarters talking over company's latest manufacturing, advertising and merchandising plans with F. R. Deakins, vice-president (right) and Fred D. Wilson, manager of field sales activities

Crosley Convention

Distributors see new '41 merchandise. Powell Crosley, Jr. delivers welcome address

CINCINNATI—The 1941 models of Crosley Shelvador electric refrigerators, ranges, washers and ironers were introduced at the Cincinnati convention of Crosley distributors from this country and Canada, December 2 and 3. Also presented at the convention were the full line of Crosley radios.

Netherland-Plaza Hotel of this city was convention headquarters and the convention proceedings and showing of new models were held at the Taft theatre.

R. C. Cosgrove, v.p. and general manager opened the convention Monday morning Dec. 2nd. Powell Crosley, Jr., president, delivered an address welcoming the distributors and their representatives. R. I. Petrie, v.p. and general sales manager, spoke on the merchandising program for the coming year. J. F. Crossin, manager refrigeration division, made the presentation of the new Shelvador models.

W. T. Wallace, manager radio division presented the radios, together with sales and advertising plans. The advertising program for the coming year was detailed by L. Martin Krautter, advertising manager.

Tuesday Dec. 3rd. was devoted to addresses by other Crosley executives on various phases of the merchandising and advertising program.

Willard Names Murray

New V.P. and General Manager

CLEVELAND—Claude E. Murray, veteran of 30 years' service with the Willard Storage Battery Company, has just been appointed vice-president and general manager.

For the past 11 years, has been vice-president and general manager of the company's Canadian affiliate in Toronto. Succeeds S. W. Rolph as general manager of the Willard organization. Rolph becoming vice-president of the Electric Storage Battery Company.

On the Newsfront

Eight Million For Television

FCC approves 10 new experimental licenses

WASHINGTON—Development of television to a workable unified system is being speeded by an aggregate of \$8,000,000 which has been budgeted for that purpose by some two score individuals and firms which, to date, have been authorized by the Federal Communications Commission to engage in such practical research and experimentation on a nation-wide basis.

Expenditure of more than \$3,000,000 is proposed by 10 television projects which received the Commission's approval Nov. 15th. Two of these grants are to the Hughes Productions Division of the Hughes Tool Co., which has \$2,000,000 available for stations in Los Angeles and San Francisco. In both cities the Hughes concern will operate on Television Channel No. 2 (60-66 mc.) with 10 kilowatts aural and visual power.

At the same time the Commission authorized like experimental operation for five other Los Angeles applicants:

Columbia Broadcasting System, Inc., to operate on Channel No. 8 (162-168 mc.), 1000 watts aural and visual power.

Earle C. Anthony, Inc., to operate on Channel No. 6 (96-102 mc.), 1000 watts aural and visual power.

Leroy's Jewelers to operate on Channel No. 10 (186-192 mc.), 1000 watts aural and visual power.

May Department Stores Co., to operate on Channel No. 12 (210-216 mc.), with 1 KW, aural and visual power.

Television Productions, Inc., a subsidiary of Paramount Pictures, to operate a television relay station on Channels Nos. 13 and 14 (234-240, 240-246 mc.), 250 watts

visual power, to supplement television broadcast station W6XYZ, also in Los Angeles, for which the applicant has a construction permit. The latter, using Channel No. 4 (78-84 mc.), proposes experimentation with the "DuMont standards".

In addition, the Commission granted stations to New York, Chicago, and Manhattan, Kans., as follows:

Metropolitan Television, Inc., New York, to operate on Channel No. 8 (162-168 mc.), 1 kilowatt aural and visual power.

Columbia Broadcasting System, Inc., Chicago, to operate on Channel No. 4 (78-84 mc.), 1 kilowatt aural and visual power.

Kansas State College of Agriculture and Applied Science, Manhattan, Kans., to use Channel No. 1 (50-56 mc.), 100 watts aural and visual power.

An investment of \$5,000,000 is represented in previous television authorizations by the Commission.

Peabody Radio Awards

ATHENS—Twelve nationally prominent Americans will constitute the personnel of the George Foster Peabody Radio Awards Advisory Board, announced President Harmon W. Caldwell of The University of Georgia and Dean John E. Drewry of the Henry W. Grady school of Journalism: The first awards will be made in 1941, probably at the annual Georgia Press Institute.

To honor a distinguished benefactor and life trustee of the University of Georgia, the George Foster Peabody Awards were established last May by the Board of Regents of the University System of Georgia. These awards are designed to provide the field of radio with the same stimulus and incentive to public service that the Pulitzer Awards give to newspapers and literature. The Awards were set up with the approval and active cooperation of the National Association of Broadcasters.



NOTHING BUT FM—Coming off the Freed-Eisemann production line today are hundreds of FM receivers. The firm makes nothing else



ON NOVEMBER 14TH—The 15 millionth Philco radio receiver rolled off the assembly line and Philadelphia's Mayor Robert F. Lamberton was presented with an exact replica of the set by George E. Deming, v.p. in charge of production. Pictured here are the Mayor and Helen Lawrence, Miss "Philco Jubilee" inspecting the new receiver

G-E Names H. J. Deines Radio Ad. Mgr.

BRIDGEPORT—P. F. Hadlock, manager of General Electric Company's receiver sales division, announces the appointment of H. J. Deines as manager of advertising and sales promotion, receiver sales division of the radio and television department.

Deines has been associated with G-E for several years in advertising work at Schenectady and Bridgeport. The advertising and sales promotion activities of the radio and television department formerly handled by A. A. Brandt, who several months ago was advanced to the post of sales manager.

Reps. Elect 4 New Members

NEW YORK—At regular meeting on November 13th. "The Representatives" elected the following new members: Carl A. Stone, 1406 So. Grand Ave., Los Angeles, Cal., Geo. H. Peiroe, 618 Girod St., New Orleans, La., T. C. Rugling, 304 Burt Bldg., and Ernest L. Wilks, 7935 Eustis St., both of Dallas, Texas. The organization has a membership now of almost 200, so reports its secretary, David Sonkin, 220 E. 23rd St., New York City.

Moves To Larger Quarters

SPOKANE—The Standard Sales Company, Crosley distributor of this city has just moved into its new headquarters at 1219 West First Avenue. Reported that business men from all parts of the territory attended the opening and were enthusiastic in their praise.

G-E Starts FM Programs

W2XOY on the air 7 hours daily

SCHENECTADY—FM broadcasting, was inaugurated by the General Electric Company, November 20, when its experimental station, W2XOY, began a regular schedule of seven hours daily. This announcement was made by Robert S. Peare, manager of broadcasting.

The initial program features Phil Spitalny's famous all-girl orchestra. Short talks were given by Charles E. Wilson, president of General Electric, and Dr. W. R. G. Baker, manager of the company's radio and television department and chairman of the National Television Systems Committee.

After this formal opening, programs will originate in the new WGY studios in this city and will be presented from 3 o'clock in the afternoon until 10 o'clock at night, seven days a week.

Trade Tour Features FM

MINNEAPOLIS—The "Repers" have concluded a trade tour to the cities of Duluth, Minn., Fargo, N. D., Sioux Falls, S. D. and wound up in Minneapolis. Engineering talks, clinics and displays of new equipment featured each meeting.

Marion Arvin of Yaxley Mallory and Robert Thompson of Meissner were the technical speakers of each evening. Bob Thompson also presented an interesting demonstration of FM. Joe Marty of RSA conducted each meeting.

Rounds Out 15 Years with Aerovox

NEW BEDFORD—Louis Alexander, in the capacity of sales engineer, has just celebrated his fifteenth anniversary with the Aerovox Corp. "Alec" traces his radio career back to the early days of the industry. Was purchasing agent for the DeForest organization from 1918 to 1920. Became associated with Aerovox in 1926.



BON VOYAGE TILL NEXT JULY—Emerson's traveling representative Robert Schasseur (formerly Paris distributor) starts on an 8-months' tour visiting Emerson distributors in Mexico, Central and South America. Itinerary ends at Rio de Janeiro



HOWARD GATES—Associated with radio industry for past 21 years

Majestic Elects Howard Gates President

CHICAGO—Howard Gates, well known pioneer of the radio industry, has just been elected president and director of the Majestic Radio and Television Corporation. He succeeds Walter Glenn Scott, acting president and a director who has resigned. During the last four years Gates has been connected with the Detroit Radio Corp. as vice-president in charge of engineering.

12th Annual Charities Dinner

NEW YORK—The twelfth annual Radio Dinner held Sunday, November 24 at the Waldorf Astoria, was the first in a series of 38 dinners and other meetings for the 1940 campaign of the New York and Brooklyn Federations of Jewish Charities.

More than 1,200 leaders in the radio, musical instrument, refrigeration and allied fields dined at this \$100-a-couple Radio Dinner.

Jules M. Smith and Max Kassover are co-chairmen of the Radio Division. Henry Benjamin, Samuel Kassover and H. M. Stein are honorary chairmen. Associates serving with Mr. Smith and Max Kassover are: Benjamin Abrams, Abe Bloom, William Brand, Samuel Salzman and Irving Sarnoff.

S-C Plans Big FM Program

ROCHESTER — Wesley M. Angle, president of the Stromberg-Carlson Telephone Mfg. Co., recently reported that: "To-date this year, Stromberg-Carlson enjoys more than a 10 percent increase in billing over the same period last year. The radio business alone has extended last year's figure when more sets were sold by the company than in any other year since 1929. That plans are under way for an ambitious program in the radio division based upon the government's granting of commercial licenses to FM broadcasting.



ON THE PLATFORM—F. E. Basler, Gibson's general sales manager

Gibson Presents 1941 Line

Jobbers preview new boxes and ranges at 4 conventions

GREENVILLE—The four regional conventions of the Gibson Electric Refrigerator Corp. got under way with the first previews at Chicago and San Francisco on Nov. 15 and 16. The eastern meeting for the jobbers was held in New York City on Nov. 22 and 23 and the southern

meeting in New Orleans Nov. 29 and 30.

At the Chicago and New York previews F. E. Basler, general sales manager presented the 1941 "Freezer Shelf" refrigerators and new range line. Charles J. Gibson, president and L. W. Hamper, vice president were on hand to address the meetings. J. L. Stephens, sales promotion manager outlined the new "Four-Way" sales promotion program and other elaborate plans for advertising and promotion.

The San Francisco show was given by western division sales manager Les Taufenbach, Frank S. Gibson, Jr. treasurer and Jerry Klintworth of the service department.

FCC and NTSC To Meet Jan. 27

WASHINGTON—Early standardization of television will be considered at a Federal Communications Commission conference in Washington on Tuesday, January 27, with the National Television System Committee. A status report and possible tentative television standards will be submitted by the NTSC. Agreements have been reached by some of the panels, or subcommittees, on television standards. The Commission will be advised of necessary work to conclude television standardization.

Preliminary to the January 27 conference at Washington, members of the FCC will visit the New York area on January 24 and personally inspect late television developments.

Kelvinator's Finance Plan

Big Factor in '40 Sales

DETROIT—Stressing the importance of financing programs which tie-in completely with sales programs, Frank R. Pierce, Kelvinator's general sales manager, said that his company's special 1940 ReDisCo plan had been an important factor in this year's sales program which upped sales to a level 2½ times the 1939 volume.

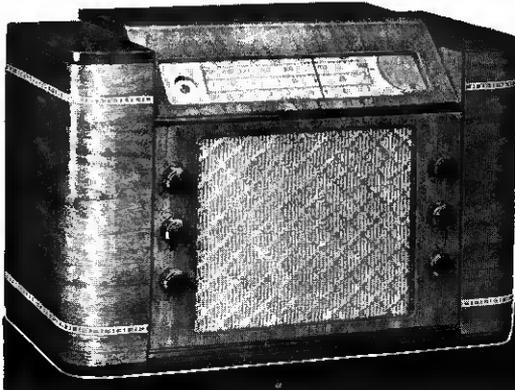
This new plan measurably helped sales, Pierce said, because they considerably minimized price differences between models by enabling buyers to purchase any six-cubic-foot cabinet for \$6 down and \$6 a month and any eight-cubic-foot cabinet for \$8 down and \$8 a month.

Pierce said that the financing plan had proved particularly effective this year in the six-cubic-foot line, which consisted of six different models. Although these models had a spread of more than \$95, he explained, this wide differential almost completely disappeared when all prices were quoted in the same terms of \$6 down and \$6 a month. ReDisCo is a Nash-Kelvinator Corporation subsidiary.

RCA Transfers Dobbs

CAMDEN—Fred Dobbs, well known throughout Texas and the southwest as a Tube and Parts salesman attached to the RCA Manufacturing Company's Dallas district office, has been transferred to the New York RCA office.

New Short Wave Thrills



HOWARD

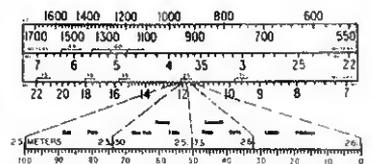
"Band Expander" tuning on HOWARD International Receivers electrically S-P-R-E-A-D-S short wave bands sixteen times. The dial diagram shows the ordinary crowded 25 meter band and illustrates the increased band range. All models have "Fly-Wheel" Tuning Controls, "Eye-Angle" Dial, and RF Stage for world-wide reception and high image ratio. The sensational new HOWARD International Receivers are profit producers! Send for information today!

America's Oldest Radio Manufacturer

HOWARD RADIO COMPANY

1731-35 Belmont Av., Chicago, Ill. - Cable Address: HOWARDCO, USA

with exclusive
**"BAND EXPANDER"
TUNING!**



**HAVE YOU EVER SEEN ALL THE CLIPS
THAT MUELLER OFFERS?**



**Special Clips for Every Use
Solid Copper—Insulated Clips**



Send for Free Samples & Catalog 701

MUELLER ELECTRIC CO., 1584 E. 31st, Cleveland, O.

QUALITY RADIO PRODUCTS

Representing in the export field many of America's foremost manufacturers of radio material; including complete transmitters as well as components for both transmitters and receivers.

To assist our clients, a technical staff is available, assuring the most advantageous use of our manufacturers' products. Let us help you with your problems.

AD. AURIEMA, INC.

116 Broad Street Cable Address—AURIEMA, NEW YORK
New York, N. Y., U. S. A. All Codes Used

JENNY LIND

might have been a radio star

...and sung to every American!



HUNDREDS of enthralled men and women packed New York's Castle Garden on the night of Sept. 11, 1850, and heard Jenny Lind's first American concert. The next morning, the story of her artistry swept the nation, and Jenny Lind became the most famous singer of the century. But only a few thousands actually heard her sing.

Had radio existed in 1850, every American—the clerk in Boston, the planter in Alabama, the farmer in Illinois, the sailor on a clipper bound for California—would have thrilled to the glorious voice of the Swedish Nightingale. Through broadcasting, her concerts would have reached countless American homes. Through Victor Records, her voice would have been preserved to be enjoyed by music lovers for all time.

Today, radio provides more than musical entertainment for Americans. It gives us vital news as soon as it happens; it keeps us the best informed people. Two great nationwide networks of the National Broadcasting Company, an RCA service, operate 35 hours a day in the aggregate to provide the most interesting radio broadcasting service in the world.

Another vital radio service is performed by R. C. A. Communications, Inc., with its direct transmission to and from foreign countries, and between leading American cities. Radiomarine provides communication with ships at sea. RCA Manufacturing Company designs and builds transmitting equipment, home radio sets and RCA Victrola phonograph-radios, Victor Records, and other radio and sound apparatus. And—that this equipment may constantly be improved—RCA Laboratories continuously pioneer new developments in radio.



RADIO CORPORATION OF AMERICA

Radio City, New York

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



ONLY
\$34.95
COMPLETE

UP TO

3,666,666
OHMS per VOLT!

Negligible Voltmeter Loading
No Ohmmeter Resetting

NEW RCA JUNIOR VOLT-OHMYST

Here is a D.C. *Electronic* push-pull Volt-Ohmmeter, using the famous Rider VoltOhmyst circuit—plus a convenient isolated A. C. 1000 ohms-per-volt Rectifier-type Voltmeter—all at a price scarcely higher than the price of an ordinary volt-ohmmeter!

Constant input resistance of 11,000,000 ohms on D.C. Voltmeter ranges of 0-3, 10, 30, 100, 300, 1000 volts—permits checking A.V. C. and A.F.C. voltages, and oscillator grid-bias voltages under actual operating conditions *with the signal present*, through an isolating 1-megohm signal-tracing probe! Sensitivity is as high as 3,666,666 ohms per volt!

As an ohmmeter, too, this new RCA test instrument gives accurate resistance-readings . . . from 0.1 ohms to 1000 megohms, in 6 Decade steps. No zero resetting is necessary when changing scales. See the RCA Junior VoltOhmyst at your RCA Distributor's.

Over 380,000,000 RCA Radio Tubes have been purchased by radio users . . . in tubes as in test equipment and accessories it pays to go RCA All the Way.



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



ARTHUR C. NODINE—Newly appointed national supervisor for Philco-York Air Conditioning

Philco Ups Nodine

PHILADELPHIA—Arthur C. Nodine, former sales manager for refrigerators and air conditioners in the north eastern states, has been appointed national supervisor of Philco-York Air Conditioning, according to an announcement made by Harry Boyd Brown, manager of the air-conditioning division.

Nodine has been with the Philco Corporation for the past 14 years. Prior to that he was employed by the Electric Vacuum Cleaner Company, as advertising manager.

Dealer Helps

SALES KIT—*Wilcox-Gay Corp.* is offering a big 4 section sales kit on its 1941 Recordio line. Individual pieces of material included in the kit are available to the dealer for mailing to their customer lists.

CALENDARS—*Westinghouse Electric & Manufacturing Co.* has mailed its retailers throughout the country a calendar of its national advertising for the month of December. Advertising theme "More Free Time For Mothers". Calendar acts as a guide sheet for dealer in planning own local activities.

SALES AIDS—For *RCA Victor* dealers, selection of holiday merchandising aids from window displays to striking envelope enclosures. Heaviest piece of ammunition in the program is the Christmas window display which includes a Santa Claus head and familiar bag of gifts.

POSTER—*Emerson Radio and Phonograph Corp.* announces new "Gary Cooper" indorsement poster for stores and windows. Ties-in with national magazine advertising copy.

XMAS DISPLAY—Special *Motorola* Christmas display, announced by *Galvin Mfg. Corp.*, contains life-size Santa Claus, 2 Christmas trees, 2 window streamers and 6 price cards.

DISPLAY CARD—A new three color display card featuring the model No. 601 announcer is being distributed to the jobbers by the *Worner Products Corp.*, 1019 Lake St., Chicago, Ill. Suitable for use in windows, counters or on walls.

OHMS CALCULATOR — Problems in Ohm's Law can be solved in a jiffy with a slide calculator made available by *Ohmite Mfg. Co.*, 4835 Flournoy St., Chicago, Ill. Send ten cents in coin to cover the cost of handling.

WINDOW DISPLAY—Eight color display for *Hygrade Sylvania* servicemen and dealers for release through jobbers. Display cut in the shape of a giant tube. Shows interior of a TWA airliner cockpit. Stands 40 inches high.

DISPLAY CARD—Featuring model 411 Supertester of *Radio City Products, Inc.*, a four color display card offers direct buying appeal. 18 inches by 10 inches wide.



RECORD PROMOTION—Timed for Christmas buying season is the new *RCA Victor Player-Pak*. As illustrated, when closed looks like smart piece of airplane luggage. Open, forms attractive counter display.

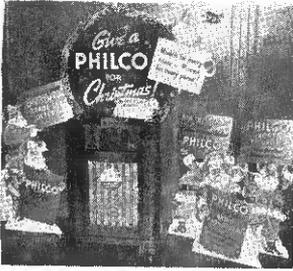
FM CARD—A black and gold card available from *Stromberg-Carlson* invites shoppers to get a demonstration of "staticless" FM reception. Copy stresses one dial reception.

SAMPLE CASE—Ice-cube trays, polish, phono needles, household cement and lubricator are among the products contained in a new display sample case. *Philco* make it available to servicemen for the cost of the contents.

NEW LITERATURE—*Recoton Corp.*, 178 Prince St., New York City, announces new printed matter on its numerous products they manufacture in the recording field.

TUBE PAMPHLET — "Preferred Tube Types, What They Mean to You" is the title of a booklet being distributed to dealers and servicemen by *RCA Mfg. Co.* A list of manufacturers using the preferred types is included.

CATALOG—Just issued an 8-page folder describing all the latest *Radiart* automobile type aeriels. Also amateur and television antennae. Complete with prices and illustrations.



XMAS CAMPAIGN—Philco dealers throughout country to launch Christmas sales campaign with help of seven Santas pictured here. Center display contains key slogan and others point out features.

TRANSFORMER CATALOG—Transmitter kits, transformers and power packs are all combined in condensed form in catalog No. 140B of *Standard Transformer Corp.*, 1500 North Halstead St., Chicago, Ill. Mechanical and technical data is given on each unit.

TESTER CATALOG—Over forty-five models of the Dependable line of test equipment are described in a sixteen page catalog announced by *Radio City Products Co., Inc.*, 88 Park Place, New York City. Ask for No. 124 when writing.

CONDENSER CATALOG—The *Sprague Products Co.* has just issued a new condenser catalog carefully arranged for the utmost convenience in selecting the right condenser for the right job. Free upon request.

MICROPHONE CATALOG—Free to anyone mentioning *Radio Retailing*, the new catalog of *The Turner Co.*, Cedar Rapids, Iowa, shows leading numbers of the Turner line of microphones and accessories.

PROMOTION BOOKS—Two books on plans for using the *Hotpoint* motion picture, "Blame It On Love", for fall merchandising programs may be secured free of charge from *Hotpoint* distributors.

ANTENNA CATALOG—Vertical, mobile and marine antennas of steel, aluminum and monel are described in a 16 page catalog of *Premax Products Division of Chisholm-Ryder Co., Inc.*, Niagara Falls, N. Y.

Distribution News

HOTPOINT—The *Graybar Electric Co., Inc.*, 9th & Mulberry Sts., Des Moines, Ia. is the new distributor for all Hotpoint home appliances in the Des Moines area. Formerly served by *Electric Supply Company*.

STROMBERG-CARLSON—H. T. McCaig, manager of the Chicago division announces the appointment of *O. E. White* of Rockford, Ill., as Stromberg-Carlson's manufacturer's agent to handle its radio line in nine counties of Illinois.

SOLAR—*R. C. Merchant* of 4829 Woodward Ave., Detroit, Mich., has been appointed district manager for Michigan by *Solar Mfg. Corp.*

Here's the one you have been waiting for!



This "different" Meissner Portable

PHONO-RECORDER

can bring YOU extra profits!

Whether you are a Jobber, Dealer-Serviceman or Sound Technician, this new Meissner Portable Phono-Recorder should be the means of putting extra money in your pocket!

Its outstanding high quality, professional appearance and operation, fidelity of recording and reproduction, facility and flexibility in handling all sizes of records up to 12"—plus its additional features including its use as an auxiliary P-A System for small groups, make its demonstration and sale almost a matter of form in many widely variant fields.

Housed in an attractive airplane-luggage case, only 16" x 17" x 7", this instrument is readily handled on any kind of job. Contains built-in, high-quality audio amplifier, complete with tubes; space for crystal mike and power cord inside case; record storage space conveniently placed inside demountable cover. Operates directly from any 110-volt, 60-cycle power line. Sturdy 6" dynamic speaker furnishes full volume output on reproduction or P-A use, without distortion.

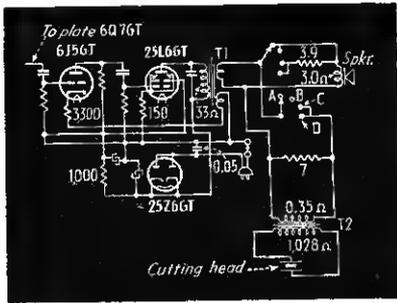
Fully equipped with complete control equipment for making high-grade recordings—Volume Control, Tone Control, Selector Switch for Recording, P-A and Reproduction, Normal and Overload Indicators; provided with first quality magnetic cutting head and wide-range crystal pick-up. Furnished with combination hand-and-stand crystal microphone.

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ADDRESS DEPT R-12





Cutter Transformer

Another method of supplying audio voltages to a cutting head is shown in the diagram. Employed by G-E in the model J-629, a transformer feeds the cutting head.

The complete circuit consists of six tubes and the diagram shows the second audio, power output stage and rectifier. The ganged switch leaves the voice coil connected to the proper winding on the output transformer for the first two positions, radio and phonograph operation.

The third position, recording, connects a resistor in series with the voice coil winding to cut the volume to the speaker but permitting its use as a monitor speaker. At the same time the other section of the switch connects the voice coil winding of the output transformer T1 to the low impedance input winding of the coupling transformer T2.

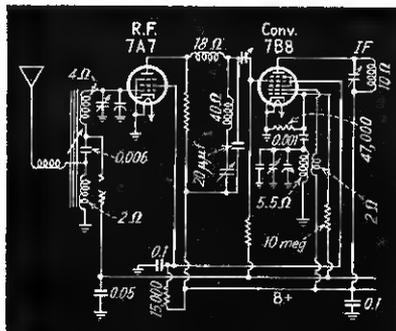
The output winding of this transformer matches the high impedance of the crystal cutting head and supplies it with the a-f voltage originating in the radio or microphone circuits.

An additional winding on the output transformer feeds a-f voltage back to the cathode of the second audio stage for inverse feedback.

The triode portion of a 6Q7GT comprises the first audio stage and is employed for each function, radio, recording and phonograph.

I-F Trap

Resistance coupling between the r-f and first detector stages has been described in these pages in recent months but an interesting wrinkle turned up in one of the new auto radio models. As

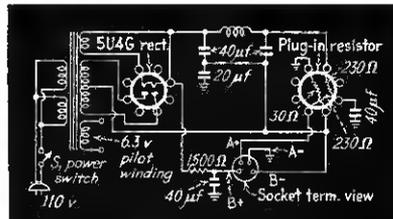


the circuit shows a trap circuit has been introduced in the coupling circuit and is tuned to the i-f frequency of the set, 455 kc.

When alignment of the i-f transformers is necessary the signal generator can be set at 455 kc and fed to the antenna circuit of the receiver. The trap circuit can now be tuned off resonance and the i-f signal from the generator will feed through to the first detector stage and eliminate removing the cap and completing the grid circuit with a resistor.

After alignment of the i-f trimmers the trap circuit can be adjusted for minimum signal and the r-f trimmers can then be adjusted with the usual signal.

In this model 6MN595 Zenith also employ the voltage developed across the oscillator grid leak to supply a small amount of negative voltage to the r-f, first detector and i-f stages for delayed avc and minimum bias use. Another set using this oscillator voltage was described in November *Radio Retailing*.



Battery Replacer

Shown in the diagram is the circuit of the CV-40 power unit that RCA recommend for use with the battery models BK-41 and BT-41, when operation of these receivers from the 110 volt ac line is desired.

The power transformer has two primary windings and for 110 volt operation they are connected in parallel. If 220 volt operation is desired these windings may be connected in series to obtain the same output voltages.

The output connections are made to a socket that will fit the battery plug of the receiver to supply the same voltages. Since the filaments of the tubes in the receiver are connected in parallel the dc voltage must be dropped to 1½ volts. This is accomplished through the plug-in resistor.

The filament supply circuit is properly filtered by the choke and the three 40 mfd condensers shown. However this filter system is not employed for the B supply. A 1500 ohm resistor and another 40 mfd condenser are used for separate filtering of the plate voltage.

A 5 U4G rectifier supplies the current requirements and a six volt wind-

The Service

ing on the power transformer can feed a pilot bulb. The set when used on batteries has a small neon bulb blinker connected through a four megohm resistor to the B battery circuit to indicate when the set is turned on.

Automatic Switch

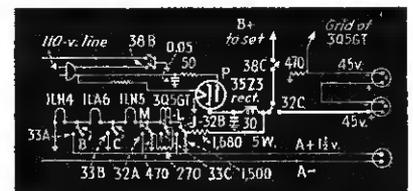
Several models of three-way portables have required insertion of the power plug into the back of the chassis to complete the power supply circuits for battery operation.

These have depended only on electrical contact but one of the new portables incorporates a switch that operates mechanically to connect the set for battery operation.

When the plug is inserted in the slots in the chassis the switches 32 and 33 in the diagram close the filament circuits for parallel operation from the 1½ volt A battery. The two sections of the filament of the 3Q5GT are also connected in parallel by the switch for battery operation.

The 470 ohm resistor in the B- lead has the total B current flowing through it and supplies five volts grid bias for the 3Q5GT output tube.

Removal of the power plug from the slots in the chassis allows the switch to connect the circuits for ac-dc operation. Switches 32 and 33 now connect the filaments of the tubes in series and to the B voltage supplied by the 35Z3 through the 1680 ohm resistor shown. The two sections of the output tube filament are now connected in series.



Stewart-Warner, in this model 15-5Y, also include the 270 and 470 ohm resistors shown in the filament circuit to keep the current through the filaments on the grounded side of the circuit at rated value by draining off the excess current caused by the flow of the plate and screen currents of the tubes operating on the

Department

positive side of the circuit.

The 1500 ohm resistor keeps the voltage across the 30 mfd filter condenser from rising above the rated value when any of the battery tubes are removed from the set.

FM-AM Receiver

One of the new FM receivers employs the same audio system and the same r-f, converter, and i-f tubes for both AM and FM reception.

In the Pilot model 12 series the i-f transformers for both systems are connected in series and operate with the common i-f tubes but separate second detectors are used.

A band switch connects the required antenna, r-f and oscillator tuning circuits and transfers the audio system from one second detector to the other.

Not shown in the simplified diagram, the audio output stage consists of a pair of 6L6G tubes in push-pull, class AB1, and fed by a 6C8G twin triode first audio amplifier and phase inverter.

A portion of the a-f voltage from

the voice coil is fed back to the cathode of the first audio stage to reduce the grid cathode voltage for inverse feedback. A condenser and a variable resistance are connected between the plate of one of the output tubes and ground and forms part of the feedback net work to control the cutoff frequency.

Tuning of the i-f stages to the FM i-f frequency of 2100 kc is accomplished with trimmer condensers while permeability-tuned i-f transformers are used to adjust the i-f stages to the 455 kc i-f frequency.

To secure freedom from noise and distortion, tuning of an FM receiver to obtain best results from the balance frequency characteristics of the discriminator is recommended. At the balance frequency the dc potential of the two cathodes of the discriminator tube are equal but a slight detuning in either direction causes a potential difference, the polarity of which denotes the direction of detuning.

This potential difference causes the cathode of a balance rectifier 6H6 tube to become positive when there is a potential difference in either direction between the discriminator cathodes.

Since the signal at the limiter tube produces a negative potential this positive voltage from the balance rectifier is used to neutralize the negative potential and prevent closing of the 6G5 tuning eye indicator.

When the signal is tuned "on the nose" the positive potential does not develop and the negative voltage tends to close the shadow on the eye tube.

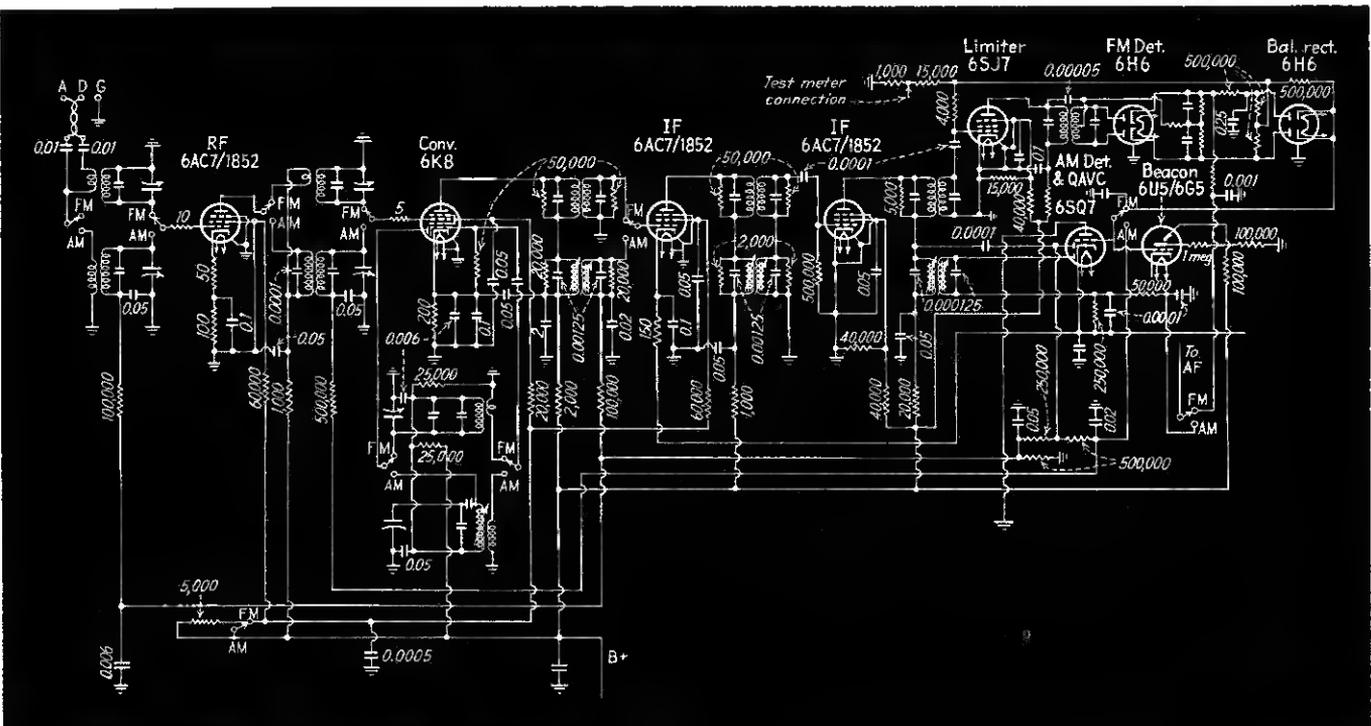
Another point of interest in this receiver is the use of a 6SQ7 in a qavc circuit. The current flow to the plate of this tube, shown grounded in the simplified diagram, actually flows through a biasing resistor in the grid circuit of the first audio triode.

The grid of the 6SQ7 is in turn controlled by the balance rectifier circuit described above and is biased to cutoff when the signal is properly tuned in. Plate current flow of this tube stops when this happens and the grid of the first a-f stage operates at its normal bias.

This squelch circuit also tends to operate on AM signals if a very small antenna is used but the main use will probably be found on FM signals.

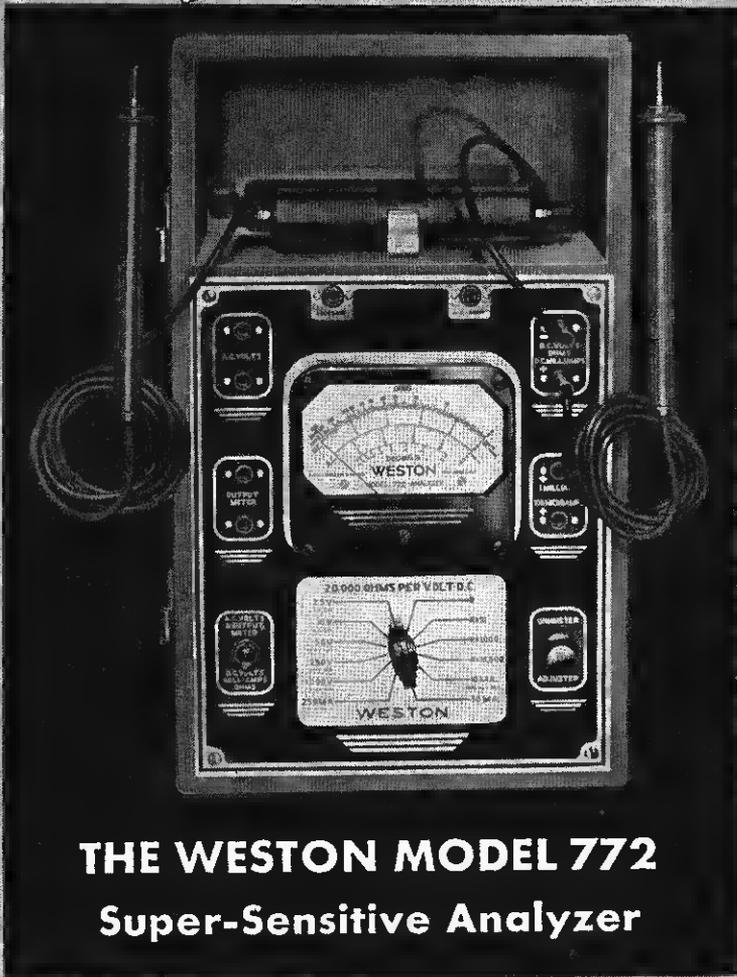
AM alignment at weak signal inputs may be done by grounding the plate supply of the 6SQ7 tube.

For FM alignment of r-f and i-f stages a one mill milliammeter may be connected across the 1000 ohm resistor shown in the limiter grid circuit. The positive terminal of the meter should be connected to ground. A microammeter can be connected across the cathodes of the 6H6 discriminator for adjustment of this circuit if a 250M ohm resistor is in series with each meter lead.



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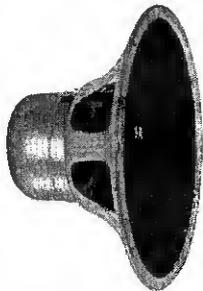
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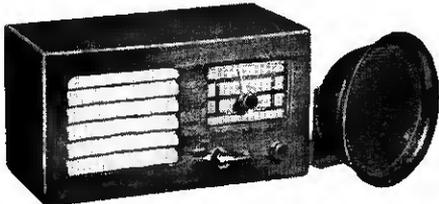
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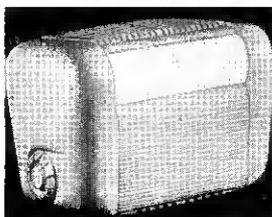
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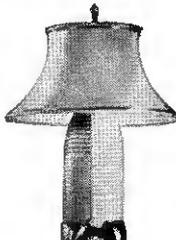


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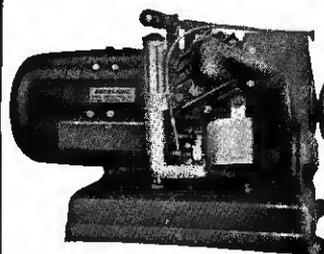
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How To *Estimate* REACTANCE

LAWS of parallel resistances and series condensers are fairly well understood but effects of placing *resistance* and *reactance* in parallel or series remain somewhat of a mystery to many servicemen

By JOHN M. BORST

“**V**ECTORIAL addition” has proved a stumbling block to many in the easy comprehension of the effects of reactance and resistance in series or parallel.

Such knowledge, however, is desirable for anyone engaged in radio work; it will, to mention but one instance, serve to answer problems in tone control changes that customers request occasionally.

Knowing that a condenser placed across a resistor (such as a plate-load) will bypass the high notes, how much will the reduction in response be at any given frequency when the size of the condenser and resistor is known?

What would be the largest allowable capacity across a resistor so as not to cut the 10,000 cycle notes more than 10% below the 1000 cycle notes?

Curves Help View

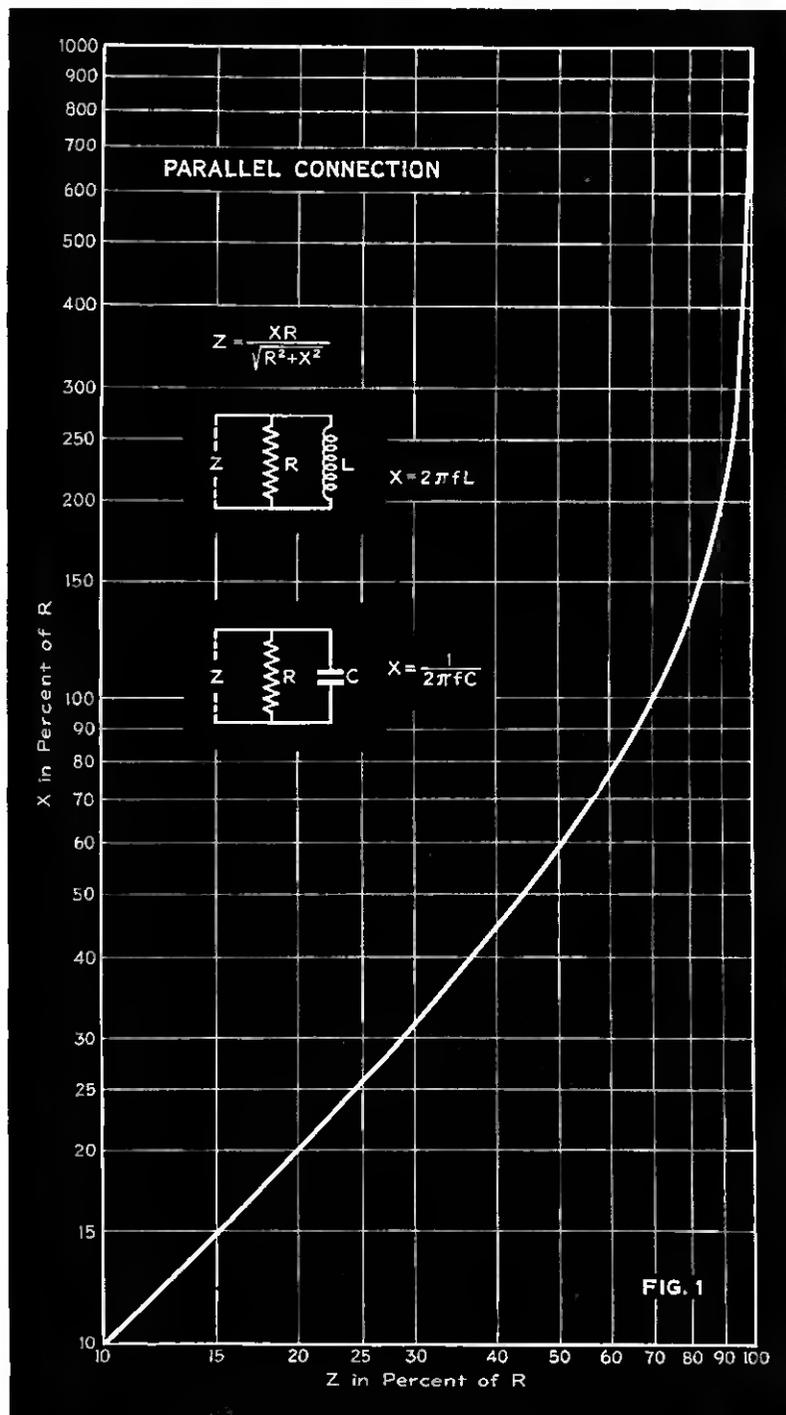
The curves illustrated, plus a few simple rules, are intended to give a “bird’s eye view” of all the possible effects obtainable.

Figure 1 shows the result of placing a reactance and resistance in parallel. The reactance may of course be a condenser or an inductance. In order to make the curve suitable for all possible conditions, the values of reactance and impedance have been expressed in percent of the resistance.

Suppose a resistance of 100,000 ohms is connected in parallel with a reactance of the same value. X is then 100% of R and, looking at the intersection of the curve in Figure 1 with the line X = 100, one finds Z = 71. This means Z is 71% of R or 71,000 ohms.

Similarly, if a resistance of 25,000 ohms is paralleled with a reactance of 75,000 ohms at the frequency under consideration, then X is 300% of R and the curve shows that Z equals 95% of R or 23,750 ohms.

It should now be noted that the curve was made for values of X between 10% and 1000% of R, in other words for values of reactances between one tenth and ten times the



Its British!

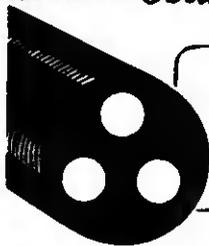


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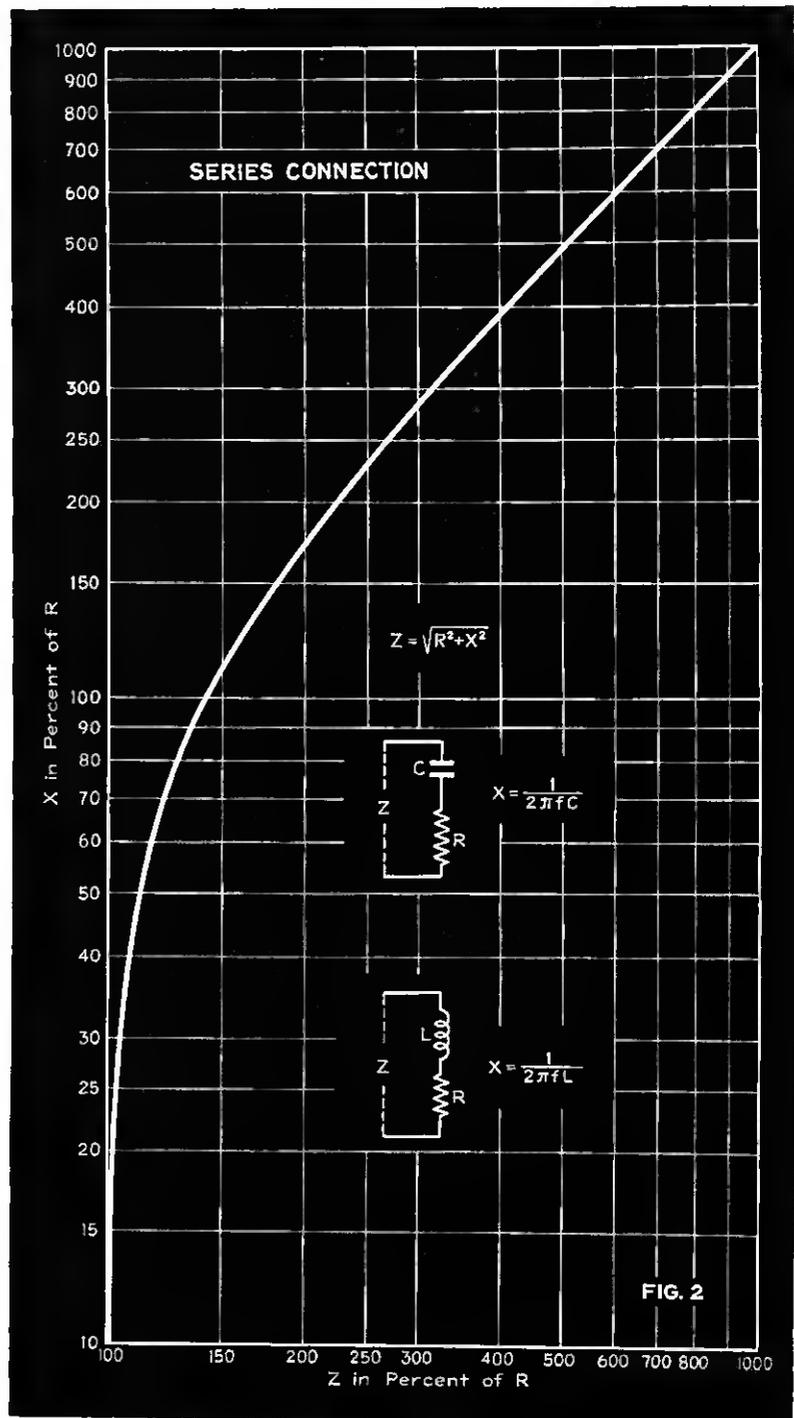
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value of the resistor across which they are connected. This range is rather generous for we can now formulate the following rule which is evident by inspecting the curve.

When a resistance and reactance are in *parallel* and the impedance in ohms of one is more than *three times* that of the other one, the impedance of the combination *differs less than five percent* from the value of the smaller one. Similarly, when one of the branches is more than *ten times* the impedance of the other the parallel combination equals the impedance of the smaller one within *one half percent*.

A Practical Application

Consider now an amplifier stage such as a pentode with a plate load of 200,000 ohms (plate resistor, grid resistor and tube's plate resistance all in parallel). What will the effect be of a capacity across the load of 100 mmf, at 10,000 cycles, 5000 cycles, 1000 cycles and 100 cycles?

The reactance of 100 mmf at 10,000 cycles is 160,000 ohms which is 80% of the plate load resistor. Looking at the curve shows that when X equals 80% of R, Z equals 63% of R or 126,000 ohms. The voltage gain at this frequency is then but 63% of

that at very much lower frequencies. At 5000 cycles, X becomes twice as high or 160% of R. According to the curve Z is then 85% R or 170,000 ohms and the gain is still reduced to 85% below what it would be without this capacity.

No Loss Lower

At 1000 cycles, the reactance is 800% of R and the impedance is then about 99.5% R there being practically no loss due to this cause. At 100 cycles the reactance is 8000% of R. This is beyond the range of the curve but according to the rule, since this is more than 10 times the value of R, the impedance is within one half percent of R and there is practically no loss at this frequency.

Now we might ask for instance, what is the maximum allowable capacity across this resistor if the highest frequency notes, say 10,000 cycles, are not to be reduced more than 10%. In other words, at 10,000 cycles the gain may be reduced to 90% of that at 100 cycles and as we have seen this means that at 10,000 cycles Z shall be 90% of R. From the curve it is seen that X must then be not less than 210% R, or not less than 420,000 ohms. The maximum allowable capacity is then 40 mmf approximately.

The Series Circuit

Figure 2 gives the relations for reactance and resistance in series. Here again both X and Z are expressed in percent of R. We may again formulate the following rules: In a series combination of reactance and resistance, the impedance of the combination is *within 5 percent* of the larger one if one of the elements is more than *three times* as large as the other. The impedance of the combination is *within one half percent* of the value of the larger one if the impedance of one element is more than *ten times* that of the other.

This effect has been utilized in use of capacity multipliers in connection with rectifier-type ac voltmeters. Since the resistance of the rectifier varies from 400 to 1000 ohms and more due to the current passing through it, a special ac scale is needed for the low ranges with resistance multipliers.

In the case of capacity multipliers this effect is reduced and the d.c. calibration can be used. Thus on the 10 volt scale with a 0 — 1 ma instrument we need an impedance of about 8500 ohms. When the value of R is 1000 ohms, Z equals 850% R. The curve shows that this is the case when the reactance of the series condenser is also 85% of R (actually 85.6% as found by calculation).

Now when the resistance of the rectifier reduces to 400 ohms at the other end of the scale, the reactance

is more than 21 times the resistance and according to the rule given above the impedance of the combination is still practically equal to that of the condenser alone. Therefore, the impedance of the combination is within one half percent of 850,000 ohms at all points of the scale which permits the use of the original dc scale divisions.

This calibration and this multiplier are good for one frequency only, of course, since the reactance varies with frequency.

The reader will find many more practical cases where the curves here presented will prove useful.

New Technical Book

Servicing by Signal Substitution, by G. N. Goldberger, is the title of a new book published by Precision Apparatus Co., 647 Kent Ave., Brooklyn, N. Y.

Consisting of a 120 page manual on dynamic receiver testing, it is available from distributors or directly from the factory at 35 cents. The book contains helpful information for the serviceman who is interested in obtaining the maximum utility from his signal generator. Titles of the important sections are: a.v.c. substitution; FM receivers; a.f.c. circuits.

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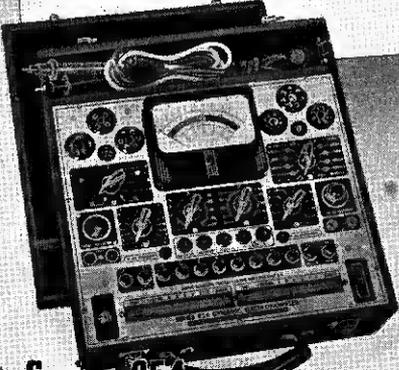
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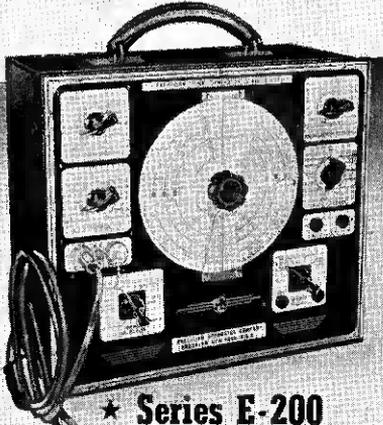
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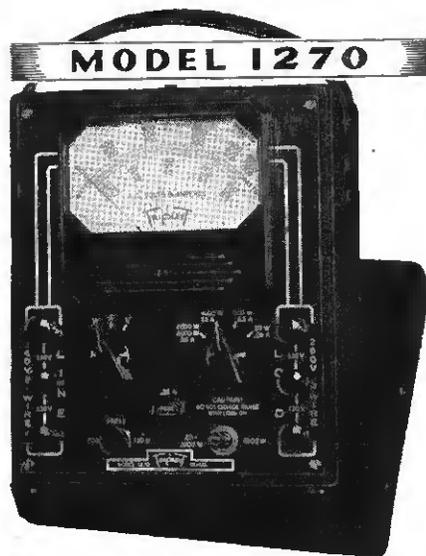
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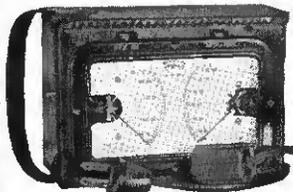
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- Model 2001—Same as Model 2000 but has an additional switch to permit use with any current transformer having a 5 amp. secondary, for higher single phase wattmeter readings. Dealer Net Price.....\$20.67
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WRITE FOR CATALOG SECTION 2012 HARMON DRIVE

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How to ALIGN FM Receivers

NOT SO DIFFICULT when you know just where and how to connect what kind of test instruments

By JAMES PARKER

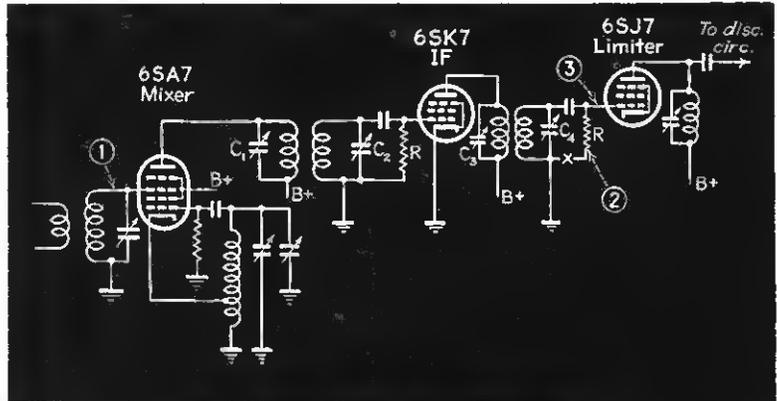


Fig. 1—Simplified FM receiver circuit

THE PROBLEM of aligning FM receivers does not differ materially from that of aligning conventional superheterodynes.

The i-f amplifier is peaked in the same manner, the r-f and oscillator stages are similarly adjusted, and the discriminator is handled in the same way as in sets in which a-fc is employed.

Where instruments designed especially for FM receiver alignment are available many difficulties involved when attempting to use more conventional equipment are avoided.

The difficulties which arise in FM alignment where conventional means are employed are primarily due to the fact that the ordinary output meter cannot be used in conjunction with an AM signal generator in the usual manner unless certain simple changes are made in the circuit connections of the receiver.

This is because the amplitude modulated signals from the generator do not readily pass to the a-f amplifier and therefore the a-f output meter cannot ordinarily serve to indicate peaking. There are, however, other methods of obtaining an output indication using meters readily available.

Imagine More Stages

A representative circuit showing a typical mixer, i-f and limiter stage of an FM receiver is given in Fig. 1. While two or more i-f stages are ordinarily employed, the same principles

apply as in the simplified version shown.

For the signal source, any conventional r-f oscillator may be employed, provided it covers the required frequency range. Except when otherwise specified, the signal should be unmodulated.

I-F Alignment First

To align the i-f amplifier, the test signal is fed to the mixer signal grid. This is done by disconnecting the signal grid lead to the mixer and connecting the "hot" lead of the test oscillator to the grid at point 1. If the grid cannot return to ground through the test oscillator attenuator, due to the presence of a blocking condenser in the test oscillator output circuit, a grid leak of 10,000 ohms or more must be connected from point 1 to ground.

The meter is connected in the limiter grid return circuit, at point 2. The circuit should be opened at X and a 1,000 ohm resistor should first be connected from point 2 to ground, to provide a short return path for the grid resistor. An ordinary 1-ma meter (or one of greater sensitivity) may then be shunted from point 2 to ground, using a twisted pair for connecting the meter. When a signal is fed to the i-f amplifier, grid current flows in the limiter circuit and this grid current is indicated on the milliammeter.

Adjustment of the trimmers C1, C2, C3 and C4 is made for maximum indication on the meter. A fairly weak

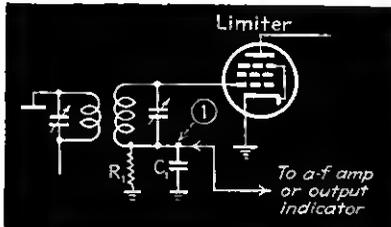


Fig. 2—Limiter becomes detector

signal, about .5 to 1 millivolt, should be used, since the peaking for a strong signal may be slightly different from that of a strong signal, because most modern FM receivers employ no avc.

For those who have signal tracing equipment, the electronic voltmeter probe may be connected to point 3 and alignment may be made as described above, the electronic voltmeter serving as an output meter.

Use Audio

In some FM receivers, the limiter grid return circuit is made as shown in Fig. 2. In such receivers it is possible to remove the 6H6 discriminator and connect the input to the audio amplifier, (corresponding to point 2 in Fig. 3), directly to point 1 in Fig. 2.

Then, if a 400-cycle modulated signal is fed to the i-f amplifier, a conventional output meter may be connected in the a-f system and the i-f amplifier may be peaked in the usual manner. This is possible because an audio signal is developed across R1-C1, due to demodulation by the limiter.

Align Discriminator

The simplest way to align the discriminator is to connect a dc vacuum tube voltmeter from point 1 to ground (Fig. 3) and adjust C1 for maximum indication, the signal being fed as before to the mixer grid. Then adjust C2 until the meter reads zero.

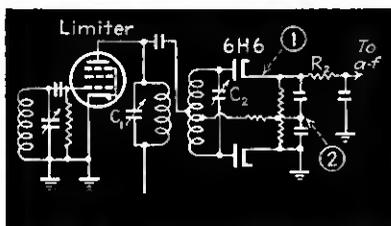
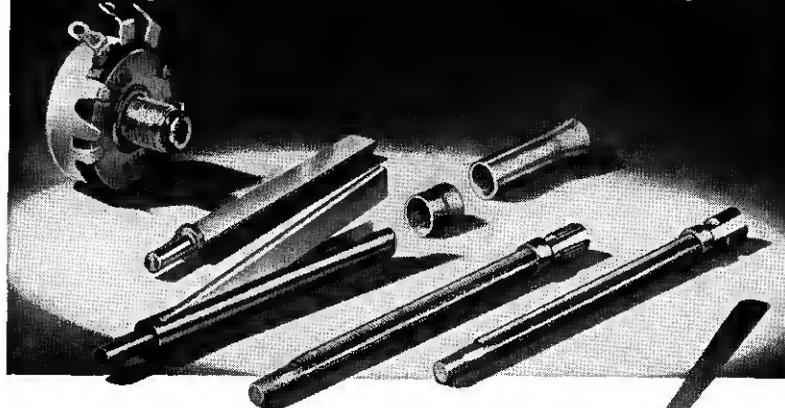


Fig. 3—Discriminator alignment

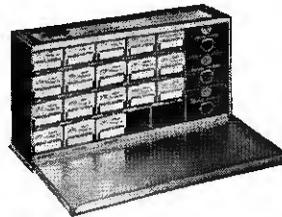
If no such voltmeter is available, disconnect the connection of R2 to point 1 in Fig. 3 and connect it to point 2. If a 400-cycle modulated signal is now fed to the i-f amplifier, and an ordinary output meter is connected in the a-f circuit, both the discriminator transformer trimmers may be peaked for maximum indication on the output meter.



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STOP WASTING TIME ON VOLUME CONTROL REPLACEMENTS



FREE!

The 18 Type D Controls, 6 switches and 5 extra Tap-in Shafts, factory-packed in this IRC Master Radiotrician's Cabinet, handle from 60% to 75% of all control replacements. You pay only \$14.97 net—the standard price of the controls, switches and shafts. The Cabinet (of dust-proof, all-metal construction) is included at no extra cost. Ask your IRC jobber to show it to you or write for folder. It's a time-saving, money-saving development no serviceman will want to miss!

Stop wasting time by ordering a volume control every time you need one for a job! Stop wasting time puzzling how to fit a control with shaft attached into a crowded chassis without removing other parts! Stop wasting time waiting for a more costly "special" replacement, when a standard IRC Type D Universal Volume Control with a special Tap-in Shaft will turn the trick!

In short, use IRC Type D Controls with Tap-in Shafts *universally*. Learn how a stock of only 18 of these controls equips you for prompt service on *about two-thirds of all types of replacements*. Study the construction of these sturdy little controls and see how amazingly superior Type D's are to ordinary midgets—fully equal in quality to the larger Type C Controls and with all the same features *plus* the added convenience of Tap-in Shafts which make them far more universal in use and much easier to install in a crowded receiver. Catalog free.



Tap-in Shafts Stay Put!
Don't pull loose.
Don't vibrate loose.

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TRICKS of the TRADE

AIRLINE 62-99

Poor volume . . . usually caused by leaky tone control condenser.

AIRLINE 62-215

No reception . . . replace of .5 tubular condenser mounted on side wall of chassis. Used for bypassing separate power supply cable socket to ground.

AIRLINE 62-327

Poor volume . . . leaky .02 con-

denser part no. 46 x 197 bypassing 1/2 watt brown resistor, located in center of r-f choke assembly. Replace.

CROSLY B425

Reception only when 22 1/2 volt C battery is disconnected . . . check 2M ohm flexible resistor on volume control for open.

FARNSWORTH AT50

Modulation hum . . . connect a .25 mfd. condenser from rectifier cathode to chassis.

Low volume in audio amplifier cir-

cuit . . . check shielded wire connecting grid of 6SQ7 to arm of volume control for leakage between enclosed wire and shield.

FORD MAJESTIC 40-18805

Unstable . . . bond tuning gang and vibrator shield more completely to chassis. Ventilation holes drilled in case under vibrator lengthens life of condensers located there.

G-E H625, H630 to H633

60 cycle carrier modulation . . . choke coil (L8) from ant. system to one side a.c. line, open. Replace with any r-f choke coil.

G-E E50 & E52

Audio feed back and distortion . . . pronounced on higher volume. Replace low capacity of section of 8-8 mfd filter.

G-E G-105, 106

Volume varies slowly . . . plate resistor of 6F5 tube changes value.

G-E H-504, 505

Oscillator inoperative, all voltages ok . . . coil A apparently shorts a turn, decreasing the inductance and preventing oscillation. Squeezing of the winding to clear the short will permit reception but replacement is more permanent. When necessary to check coil A for continuity remember it is isolated from grid and chassis by the condensers shown.



WHERE'S OUR RADIO!
I DON'T THINK YOU KNOW HOW TO FIX IT!

WOW!
I WANT TO HEAR THE LONE RANGER
WOW!

Cut Out the Panic From Your Work —

Stop having to apologize for delivery delays. Stop wasting hours in "guessing" the trouble in a set. **KNOW** with RIDER MANUALS. They provide the

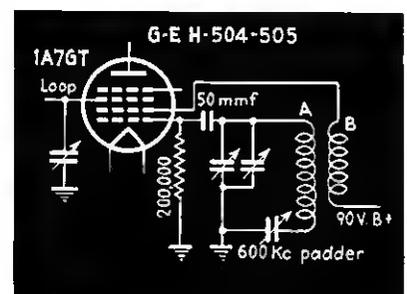
only source, where you will find in one place, complete data on alignment, I-F peaks, operating voltages, parts lists and values, voltage ratings of condensers, wattage ratings of resistors, coil resistance data, gain data, and all the other essential information you need for trouble shooting on all receivers. There is a reason why every successful service shop is equipped with a complete set of RIDER MANUALS! Stop in at your jobber's today and get those volumes YOU'VE been intending to buy.

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You NEED RIDER MANUALS



MAJESTIC 850

Weak reception . . . hi-fidelity switch frequent offender. For best results replace with good s.p.d.t. rotary switch.

PHILCO PORTABLE

Dead . . . the .05 mfd bypass on screen of 1N5G leaky. Drops screen to about ten volts.

Whistles on 2 or 3 points of control setting . . . two meg grid resistor of 1H5 lays on top of plate output condenser of 1C5. Move resistor further away.

PHILCO 16

Motorboats . . . check 1 mfd condenser in filter pack for open.

Dead on high end of short wave band . . . check stator lug connection of tuning gang for high resistance caused by corrosion.

PHILCO 37-116

Distortion on strong stations . . . if avc and afc works improperly or not at all check the tertiary winding on the third i-f transformer.

PHILCO 39-116

Noisy . . . plate resistor of 6Q7 tube opens, changes in value or develops noise.

PHILCO 40-100T, 95, 105

Volume control and switch hard to turn on . . . off-on indicator hangs. File corner of the plate on the control shaft where it engages the fibre roller at the other end of the flag.

Oscillation on high volume . . . set up by audio lead coupling. Pushing down close to chassis often sufficient, but experiment with output transformer leads and grid leads of 7C6 to volume control.

RCA M104

Intermittent oscillation . . . replace dual .05 grid return condensers C1 and C5 in diagram.

RCA 118

Erratic operation on the 25 and 49 meter bands . . . condenser bypassing the oscillator anode voltage dropping resistor is leaky. Increase in signal to noise ratio will result if the 6A7 grid lead is disconnected from the waveband switch and connected directly to the stator of the first tuning condenser. Realignment will be necessary.

RCA T-5

Needle pressure . . . can be reduced to three ounces by removing the two 1½ ounce weights from the arm of the pickup.

SPARTON 30

Failure of indicating mechanism to adjust itself for 10 or 12 inch records . . . switch in the kick-off arm compartment will need to be adjusted. Contacts should close when the rollers pass over the surface of a 12-inch record. The mounting screws of the solenoid should be loosened and the solenoid adjusted to free the plunger if the plunger arm binds.

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NEW

"ALL ANGLE"
ALL PURPOSE
AERIALS
FIT ALL CARS
ON FENDER,
COWL OR
UNDERHOOD

LOOKEE! -
ALL 5 SECTIONS
COLLAPSE TO ONLY
2 INCHES ABOVE
THE BRACKET!

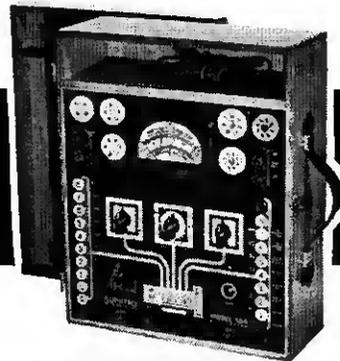
SURE -
IT COLLAPSES
BELOW THE LINE
OF VISION!

A-5, 5 Section Type, collapses entirely below line of vision.
EASIEST INSTALLATION
MINIMUM STOCK
(only 2 types for all needs)
WATERPROOF shielded LEAD
FITS ANY BODY ANGLE

Write for Bulletin 197

THE RADIART CORPORATION
Cleveland, Ohio

**Unbeatable
and
Easy to Own**



SUPREME MODEL 504

MORE than 3,000 SUPREME Model 504 Tube & Set Testers in constant and profitable service prove it to be the unbeatable value in the test equipment field. There are many combination tube and set testers but only SUPREME offers those necessary and desirable advantages found in the Model 504.

Take SPEED, for instance. As a multimeter, 31 ranges and functions are at your finger tips. Only two pin jacks and two rows of quick acting push buttons are necessary to give you complete control. Functional switches are on one side of the panel and range switches on the other side of the panel. All that is necessary is to press one button on the left hand row for the function desired and one button on the right hand row for the range desired.

As a tube tester, merely rotate the smooth acting roller chart to the type desired and "follow the arrows." Leakage tests are equally simple. With the same set-up just press one button after another on the right hand side of the panel.

Protection against OBSOLESCENCE is important. The Model 504 is built to be modern today, to stay modern tomorrow. It provides for all filament voltages from 1.4 volts to the full line voltage, of course, but much more than that—it is the only instrument having the PATENTED DOUBLE FLOATING FILAMENT RETURN SELECTOR SYSTEM which automatically re-connects every tube socket to the proper arrangement while the

instrument is being set up from the roller tube chart. Tube base connections on future tubes may change to any of the many hundreds of POSSIBLE arrangements and the 504 will take care of it—automatically—even unknown to the operator. That's why the 504 has only one socket for each type of tube—it is impossible to put a tube in the wrong socket.

Speed in testing electrolytic condensers too. All electrolytic capacitors, including high voltage filter capacitors and low voltage—high capacity by-pass condensers are checked at their CORRECT WORKING VOLTAGE on an English reading scale.

These are just a few of the many PLUS advantages you have when you own a Model 504 Tube & Set Tester. It is beautiful in appearance, sturdily built, carries a year's free tube setting service, and best of all, it is EASY TO OWN. If you can afford a telephone or if you can afford your cigarettes, you can afford the Model 504. This complete laboratory, combining a 7-way tube tester, a 31-range set tester and a complete condenser analyzer, costs you no more than 18c a day on the world's easiest installment terms.

THE MODEL 543 is one of those rare values in a completely self-contained multimeter. A single rotary switch provides automatic operation of the four basic functions, OHMS, AC VOLTS, DC MILLIAMPERES,



SUPREME MODEL 543 MULTIMETER

DC VOLTS at 1000 ohms per volt standard sensitivity. This handy little instrument uses a full size 3" meter and beautiful bakelite case measuring only 3"x5¼"x2".

This is truly a tester that will fit your pocket and your pocket-book.

THE MODEL 542 is a regular little pocket laboratory with five multimeter functions including: AC VOLTS, DECIBELS, DC VOLTS, DC MILLIAMPERES, and OHMS-MEGOHMS. The unit is complete in every respect requiring no external batteries for the ohms and megohms ranges. A full size 3" meter with a sensitivity of 5000 ohms per volt (200 microampere movement) indicates the readings for 24 carefully selected ranges. This is a value that is not being overlooked by those who desire an ultra portable instrument that possesses the accuracy and utility of the larger testers.

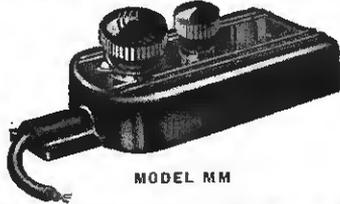


SUPREME MODEL 542 MULTIMETER

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**Gives Tremendous Volume to
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Forget Returned-Goods
Headaches**

The toughest, most reliable and efficient mike in the entire Turner line, and the model specified by internationally-famous manufacturers on their finest equipment. Discount assure real profits on a mike that stays sold. Model 99, List \$29.50.

Send for Complete
Jobber Plan Today

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Crystals Licensed Under Patents
of The Brush Development Co.
Exported thru Ad Auriema,
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COOP ADVERTISING

(Continued from page 17)

a \$99.95 model and we've got 200 left. You can have the lot at \$39.00. Why should we be bothered contacting the small dealers and sending our trucks all over town?"

"Sold," says Mr. Jones, the buyer, after perhaps an hour of dickering.

The chain's advertising manager is called in to prepare the ads to move these sets from ten stores. Of course, he won't advertise these discontinued models for \$99.95 because he knows the response would be awful.

"We'll close them out for \$60.00," decides the buyer.

Now, these sets can be illustrated in ads, fully described, marked down to \$60.00, with the manufacturer's name omitted. The manufacturer, in this case, does not contribute a cent towards this promotion. That doesn't matter financially to this chain organization because, after all, here is a sensational price-cutting ad that will sell radios and at the

same time inform the public that the chain sells at cut prices.

Cooperative advertising plays no direct part here but don't forget that allowances given the chain throughout the year on sets that are advertised at list permit it to place a wad of space, get the benefit of the newspaper's own volume discount.

The Nastiest of All

Can radio manufacturers adjust their cooperative newspaper advertising policies to give independent dealers a better "break"? Or are the present standards as fair as they can be?

It is agreed generally that in metropolitan advertising, the independent radio dealer reaps only a small percentage of the returns from an ad devoted exclusively to the products of a radio manufacturer with good distribution outlets.

The bulk of the business obtained from that ad is done by larger competitors who are more conveniently located to the purchaser intrigued by the ad.

In all this, I have neglected to mention that some manufacturers

THE M. SIMONS & SON COMPANY, INC.

25 WARREN STREET, NEW YORK

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of

- AUDAK CO. INC., New York, N. Y.
- CINCH MANUFACTURING CORPORATION, Chicago, Ill.
- CLAROSTAT MANUFACTURING CO. INC., Brooklyn, N. Y.
- CONTINENTAL CARBON INC., Cleveland, Ohio.
- CORNISH WIRE CO. INC., New York, N. Y.
- HARVEY RADIO LABORATORIES, INC., Cambridge, Mass.
- E. F. JOHNSON COMPANY, Waseca, Minnesota.
- PIONEER GEN-E-MOTOR CORPORATION, Chicago, Ill.
- PRESTO RECORDING CORPORATION, New York, N. Y.
- RACON ELECTRIC CO. INC., New York, N. Y.
- RADIANT LAMP CORPORATION, Newark, N. J.
- RADIART CORPORATION, Cleveland, Ohio.
- READING BATTERIES, INC., Reading, Pa.
- UNITED ELECTRONICS CO., Newark, N. J.
- UNITED PRESSED PRODUCTS CO., Chicago, Ill.
- WRIGHT-DECOSTER, INC., St. Paul, Minn.

CABLES—SIMONTRICE, NEW YORK



**CRYSTAL
UNITS**

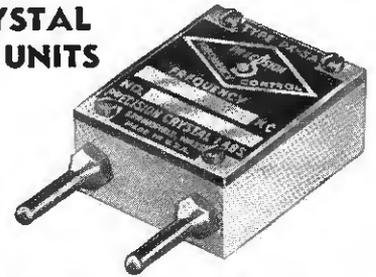
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BROADCAST • MARINE**

Satisfied customers in all lines of commercial and amateur communications—in both domestic and export markets proved by continued patronage.

Let us quote on your specifications on Crystalline Quartz Bars, Plates and Rods for special application and research work. Special discounts on quantities of two or more crystals—give complete details on quantity, application, etc.

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**DEPENDABLE
RADIO TUBES**

Dealers and servicemen will find KenRad Radio Tubes their best choice because of liberal sales and adjustment policies, plus tubes of known quality. Write for the Ken-Rad proposition.

KenRad Tube & Lamp Corporation
Owensboro, Kentucky

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

Progressive Thinking
WILCOX - GAY!

are not above extending larger cooperative advertising allowances to certain chains and department stores than to smaller independents, using the allowance as a concealed extra discount.

Neglect is deliberate for in what I have said about cooperative advertising's other aspects I feel that criticism can result in constructive changes in the setup.

It is useless to waste words on this last mentioned angle. Obviously the only way to correct it is to just stop it.

EXPORT MARKET

(Continued from page 21)

foreign exchange information service: (Data, of course, applies to merchandise of all kinds rather than just radio.)

ARGENTINA -- Requires import permit. Designates type of exchange applicable. Uses prior exchange permit system. Exchange delays experienced up to 7 weeks.

BAHAMAS—Import permit necessary. Exchange obtained in normal way. Little or no exchange delay.

BERMUDA—Import permit necessary. Exchange obtained in normal way, with import permit. Little or no exchange delay.

BOLIVIA—No import permit necessary but dispensable articles cannot be cleared without proof of purchase of exchange. Collecting bank remits exchange if available, upon payment of equivalent and proof of arrival of goods. Exchange delays variable to four months.

BRAZIL—No import permit necessary except for petroleum products and wheat flour. Exchange may be applied for prior to clearance, upon filing "bond" to produce customs documents. Exchange delays depend upon clearance formalities.

CHILE—Import permit necessary before placing order. Operates on quota system. Exchange obtained by collecting bank which holds documents until exchange obtained. Exchange quotas fixed for certain commodities classed as luxuries. Exchange delays up to 8 weeks. Customs retains goods until import, clearance, and exchange permits produced. Exchange permits are good for 15 days.

COLOMBIA—Import license must be sent to exporter for presentation to consul with shipping documents. L/C available for essentials only.

COSTA RICA—Import permit necessary. Importers must register orders with exchange board prior to ordering. Necessities receive preference in allotting official exchange. Exchange delays up to 5 weeks. L/C obtainable for authorized imports. Payment may also be made from funds held abroad.

DOMINICAN REPUBLIC—Law of 9/12/39 authorizes regulation of imports, exports and sale of certain products.

ECUADOR—Import permit necessary. Exchange obtained with import permit. Permits valid for 30 days. Exchange delays up to 7 weeks. Import permit must be presented to consul at point of shipment.

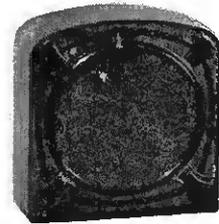
FRENCH WEST INDIES—Import permit necessary. Exchange obtained with import license and exchange allotment certificate. Exchange delays indeterminable. Importers have exchange allotted on basis of past requirements. Little U. S. exchange available at present.

HONDURAS—Import permit not necessary. Importers have a monthly exchange quota allotted, but severe shortage of exchange exists at present.

JAMAICA—Import permit necessary. Ex-

Oxford

The Finest in Small Speakers



Model 32M-CA List 3.50

3" Permagn in Cabinet

Oxford's newest cabinet model 32M-CA in attractive bakelite cabinet measures only 4" x 4" x 1 7/8". Excellent response makes this unit ideal for extension speaker.

IDEAL FOR INTERCOM.

This 3" unit is also available under Model 32M-CM with special "MIKE" transformer for simple intercom. systems. List 4.50.

See your jobber for complete OXFORD Literature

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MORE POWER HOURS

DYNAMOTORS

ROTARY CONVERTERS

SMALL MOTORS

HIGH FREQUENCY CONVERTERS

POWER PLANTS

A SIZE FOR ANY JOB

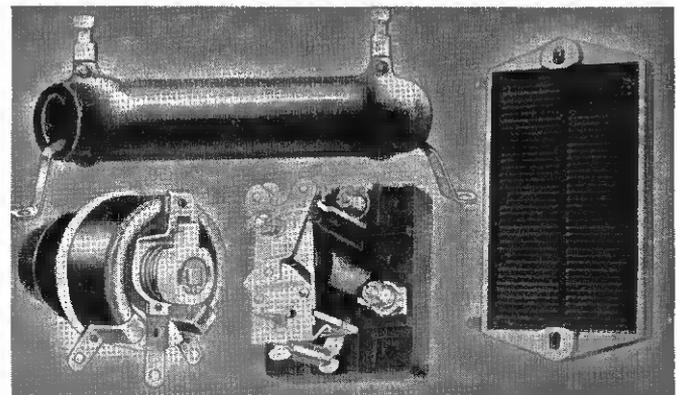
DYNAMOTORS

Pincor Dynamotors assure thousands of hours of smooth, quiet, trouble free service under all conditions. Available in any size, type, or capacity for aircraft, marine, and broadcast service, police units, sound systems, auto radios, etc. Input 6 to 110 volts, output up to 1750 volts, 5 to 850 watts. And, as always, Pincor is first again with its new DUAL VOLTAGE Dynamotors, affording double input and double output. Complete information on request.

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WARD LEONARD ELECTRIC COMPANY

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ELECTRIC CONTROL DEVICES SINCE 1892

SOLVED! CASE #6794



Eureka!
He's done it again!

Homer G. Snoopshaw, B.R.S. (Battery Replacement Specialist), once more comes through in his capacity as Replacement Adviser in Bud's Radio Shop.

After studying this troublesome mail-order Dynamic DeLuxe for only four days, he is able to state emphatically that the correct battery for this portable is Burgess No. 4GA4z. A call to the Burgess Distributor and the customer is satisfied and on his way.

How could Homer's employer possibly get along without him?*

*By getting a free copy of the Burgess replacement guide from his local distributor, or writing direct to the Burgess Battery Company, Freeport, Illinois.

BURGESS
The Complete Replacement Line



Readrite
with **RANGER** brand
MODEL 432-A

The Outstanding Tube Tester Value . . . Checks all types tubes including Loctals, Bantam Jr., 1.4 volt Miniatures, Gaseous Rectifier, Ballast, High Voltage Series, etc. Filament Voltages from 1.1 to 110 volts. Direct Reading GOOD-BAD Meter Scale. Professional-appearing case with accessory compartment large enough for carrying Model 739 AC-DC Pocket Volt-Ohm-Milliam meter, thereby giving the serviceman complete testing facilities for calls in the field. . . . Model 432-A with compartment, Dealer Net Price . . . \$18.85. Model 432-A in case less compartment. . . \$17.85. Model 739, Dealer Net Price. . . \$9.90.

WRITE FOR CATALOG—Section 1220 College Drive

READRITE METER WORKS, Bluffton, Ohio

change obtained if import permit granted, obtainable through usual channels in normal way. Little or no exchange delay.

NICARAGUA—Import permit necessary, prior to shipment and valid for 3 months. Imports may be covered by L/C if importer guarantees to pay with exchange purchased from Nat'l. Bank of Nicaragua. Exchange delays variable to 2 months. Copy of import permit must be furnished shipper for presentation to consul at point of shipment.

PARAGUAY—No import permit needed. Exchange obtained through Argentine market. Exchange delays variable. Import and exchange control abolished.

TRINIDAD—Import permit necessary. Exchange obtainable through usual channels in normal way. Little or no exchange delays.

URUGUAY—Import permit necessary and, if obtained prior to shipment, exchange, assured. Exchange obtained with import permit, which in any event must be obtained prior to clearance of goods. Little or no exchange delay if import permit granted. Bill of exchange must be used for all freight shipments; post office certificates for parcel post shipments.

VENEZUELA—No import permit required (unless new regulation imminent is so interpreted). Exchange obtained through local banks at official rate. Exchange delays variable to sixty days.

Radio Type Preferences

Many countries in Latin America soak importers according to weight (or bulk) of products imported. This probably explains, to a large extent, the fact that table type radios dominate this market to an even greater extent than the domestic, but it is also noted that large table types move fast (undoubtedly due to the need for maximum sensitivity).

Shortwave tuning is, of course, essential in practically all cases and moisture-proofing desirable (to put it mildly).

The demand for phono-radio combinations has not, so far, shown any indication of rising to the peak virtually certain in the domestic market this year. (Weight and size may, here again, be the chief factor.) Nor have farm type receivers and portables yet made an appreciable dent, the latter probably because of the absence of the essential shortwave feature.

REAL REASON WHY

(Continued from page 25)

offer a job to a new, inexperienced man on a straight commission basis—and never get him. Never get him because he is certain he won't earn a dime (and is right, on that basis). But he is quite willing to let you prove him wrong—if you pay his expenses while you're proving.

It is so much EASIER to direct a sales force where each unit directs itself. All you have to do then is take the signed contracts. Talk to the men about once a week, and pound your fist on the table. Lovely. You may not have many men work-

Simplest

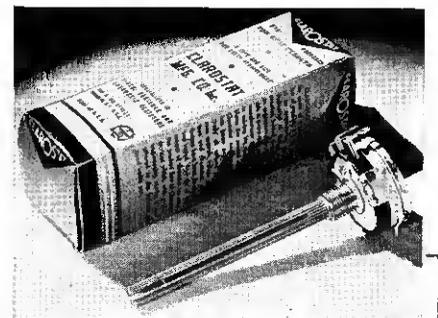
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- 4 STANDARD TYPES of Amperite Regulators replace over 200 types of AC-DC Ballast Tubes now in use.
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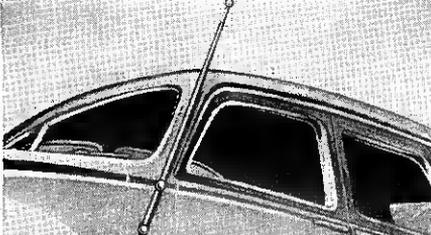
AMPERITE



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★ Series KS Clarostat Serrated-Shaft Replacement Volume Controls are designed as replacement volume and tone controls for 1940 and 1941 receivers using slot and knurl type shafts with special knobs. By using these replacement controls, it's no longer necessary to hunt for knobs that will fit and match. Serration runs full length of brass shaft. ★ 2 3/8" long shaft. All required values. ★ Ask jobber about these and other Clarostat controls. ★ Or write us direct for data: Clarostat Mfg. Co., Inc., Dept. RR, 285-7 North Sixth St., Brooklyn, N. Y.

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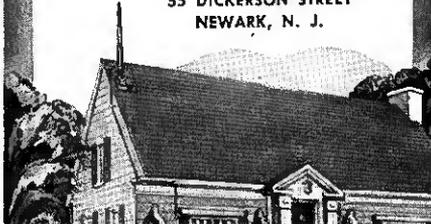


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ing for you, and you may not be getting much business . . . but it's still easier.

It doesn't require very much ability on *our* part to take signed contracts from good salesmen. But a sales force composed of some units (canvassers) which lean on other units (supervisors) requires DIRECTION.

That, my friends, is the reason, the real reason. And I'm quite willing to admit that all this "seeing to it" is no cinch.

But isn't it better than having no men at all? Isn't it better than having two or three expert dart shooters?

They wouldn't *be* shooting so many darts if they weren't fed up with trying to hold down two jobs at the same time.

FM

(Continued from page 26)

pected daily. Antenna for new FM station is to be erected on top of the Palisades, New Jersey, directly opposite 125th St., New York City.

Engineering staff working day and night on station plans and transmitting design. Thought there was some "knotty" problems that had to be solved before the complete "go" signal could be given. For instance, in covering service area, said there was variant opinion on the best way to meet this requirement.

With reference to sustaining programs, said would make use of AM station WHN, within regulations. Could not say now when station would be set for commercial programs.

SCHENECTADY, N. Y. (*General Electric Company, coverage 6600 sq. miles, pop. 968,000*) Formal opening of this company's new FM station took place on November 20th at which time a regular daily program schedule from 3 p.m. to 10 p.m. was inaugurated. Now operating by special authority on W2XOY, frequency 43.2 mc. with 2500 watts.

BUDGETING

(Continued from page 29)

tinue substantially above the budget, expectations for the second half of 1940 in this department should be increased.

Now look at the black, bold face

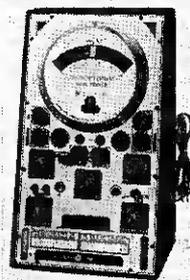
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It's a mighty sweet test instrument, but more than that, RCP's "Sales Promoter" is just what its name implies—a busy tube merchandiser. 9 inch Jumbo meter is unusually impressive—a profitable display on any counter. Model 312 features the newest roll-type "Rolindex" tube test chart, brass geared for smooth, positive and speedy operations. Also, famous RCP Dyaoptimum test circuit. Tests every type tube: for noise, hum, shorts, leakage, intermittents and bad connections. Line voltage indicated directly on D'Arsenal meter. Dealer Net Price. . . **\$29.95**

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THE EASY WAY TO CUT HOLES IN RADIO CHASSIS



Here's a handy tool to help the radio worker save many hours of work when cutting holes for sockets, plugs, connectors, and meter holes in radio chassis. No tedious drilling, reaming, or filing is necessary. A cap screw is inserted in a small drilled hole, and the punch is easily forced into the die by a few turns of the cap screw with an ordinary wrench. Ten punches are available for cutting 3/4, 7/8, 1, 1 1/4, 1 1/2, 1 3/4, 1 3/8, 1 1/2 and 2 1/4-inch holes. Write for more information.

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1708 Columbia Ave., Rockford, Ill.

Please Send Information On Greenlee Radio Punches.

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CITY..... STATE.....

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Although Radio & Television Retailing takes every precaution to insure accuracy, we cannot assume responsibility for an occasional change or omission in the above index.

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figures and see what actually happened.

If previously lost refrigerator volume had been appreciably recovered, total June sales should have been somewhat above the budget. Instead they continued to run behind. The alert executive took this cue to reduce his sales expectancy for later months by 5%, action which the results justified.

June radio sales continued about 20% ahead. The radio budget should then have been increased 10%, as recommended. The cautious executive, however, would have watched July and August results very closely; and when their trend became apparent he would have either restored the original radio budget for September and October, or perhaps even cut it further, on the basis that radios were evidently paralleling the decline in total sales.

(It is interesting to note the ten-month totals in the table. Total Sales, the budget for which was 5% over 1939, were 7.4% behind the budget, whereas Radio Sales, budgeted at a 2½% increase, were only 3.9% behind.)

What Budgets Can Do

What does the comparison of figures with a budget mean, in terms of net operating results?

Fundamentally, net profit varies with three factors. Sales volume multiplied by gross profit rate equals gross profit dollars; these, minus expenses, equal net profit (or loss, if expenses are excessive).

To produce a particular net profit, therefore, these three factors must be in balance. If the balance shifts, to preserve that net profit expense increases must be offset by increases in sales volume or gross profit rates, or both. Decreases in sales volume must be offset by higher gross profit rates or lower expenses, or both. Decrease in gross profit rates must be offset by greater sales or lower expenses, or both.

Whether net profit is affected favorably or not by changes in this balance depends on which factors are altered most, and in which direction.

The use and comparative follow-up of three budgets—one for sales, as illustrated, one for gross profit rates, and one for expenses—will enable you to predict, several months in advance, which way the wind will probably blow.

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New • Made of Stellite
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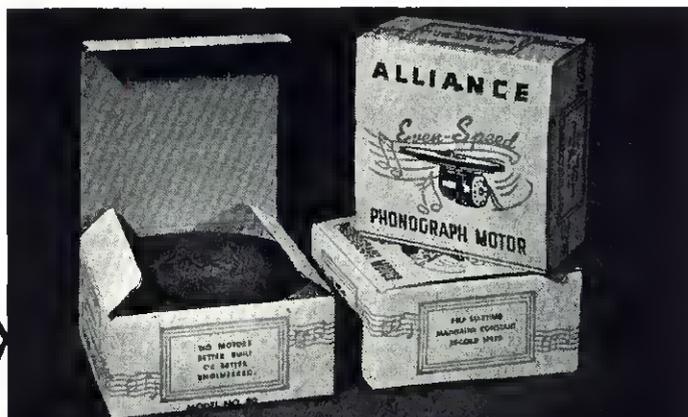
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