

OPYRA... OSTI
RADIO
and Television
TODAY

On nights like this...
Listen to FM

LIBRARY OF CONGRESS
OCT 27 1957
PERIODICALS DIVISION

OCTOBER



HOW FM
ERASES NOISE

3 YEARS IN THE MAKING!

The New

P. R. MALLORY & CO., Inc.

MALLORY

Replacement

VOLUME CONTROL

Has Swept the Field

In A Few Short Months!

Completely New
... And All-Mallory

THE PERFECT SIZE
FOR EVERY
APPLICATION!



PRECISION-BUILT
LIKE A FINE WATCH!



MORE RUGGEDNESS
THAN YOU'VE EVER
SEEN BEFORE!



AN A-C SWITCH
THAT SNAPS ON
AND STAYS ON!



The new Mallory Replacement Volume Control is *not* just an improved control. It's brand-new in every detail and principle... mechanical and electrical.

It licks the volume-control problems you've always been up against. You get quiet operation... gradual increase or decrease of volume... smooth attenuation... easy installation. And it has a simple, snap-on A-C switch. What's more—only 16 controls fill 85% of your replacement needs!

No wonder it's a hit with service engineers in only a few short months. See it at your Mallory distributor's *today*.

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

Cable Address—PELMALLO



The New MYE Is Going Fast!

Order Yours Now!

Get It From Your
Distributor Today!

More Mallory Replacement
Condensers Being Sold
Than Ever!

Complete coverage... color-coding for instant voltage-identification of paper tubular condensers... mounting features that others have tried to copy... long-life construction. These are some of the reasons Mallory Replacement Condensers are selling faster than ever. They fill every requirement—simplify your service calls—do a job you know is right!



Save your old Aluminum
parts. It is patriotic to give
them to National Defense.

More
than ever
—INSIST ON

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

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

AGAIN Admiral SCOOPS THE INDUSTRY WITH SENSATIONAL Slide-A-Way PHONOGRAPH

NO stooping or squinting into a dark record compartment to change records. No lid to lift. Just open the cabinet doors . . . and out slides Admiral's exclusive "Slide-A-Way" phonograph. Another Admiral engineering triumph that has become a hit feature!

AND AUTOMATIC RECORD CHANGER



Model 4207-A10



Plays ten 12" or twelve 10" records. Will not chip, crack or scratch valuable records. Has only 210 parts (half the number found in others). Changing time only 6 1/2 seconds! Pick-up pressure just 1 oz. Speed variation due to loading reduced to 1/4 RPM (2 3/4 RPM on others). Any wonder Admiral is the world's largest manufacturer of automatic record changers?

All these Features, too, in Model 4207-A10

ADMIRAL "LIFETIME" NEEDLE—No needles to change. Minimum record wear.

RECORD ALBUM COMPARTMENT — Complete with three 12" and two 10" Deluxe albums.

THREE WAVE BANDS—Standard broadcast plus Magna-Band tuning on 25 and 31 meter short wave bands. (S-p-r-e-a-d-s stations for easier tuning and logging.) An Admiral exclusive!

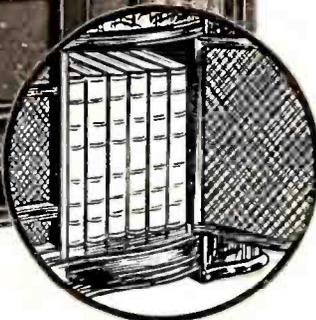
FEATHER TOUCH ELECTRIC TUNING—Electrical . . . not mechanical. Fool-proof, speedy.

TREBLE-BASS COMPENSATION—5 individual controls give distinct tonal variations over entire musical spectrum.

TRIPLE-TUNED RF CONVERTER CIRCUIT—Only Admiral has it! Gives higher sensitivity . . . eliminates tweets, whistles and other background noises.

ADJUSTABLE SUPER AEROSCOPE—No aerial or ground required. Adjustable for maximum signal pick-up.

Also Auditorium electro dynamic speaker . . . push-pull audio system . . . airplane dial . . . luxury walnut console cabinet, etc.



The Lowest Priced Table Model Radio Phonograph With Automatic Record Changer Ever Built!

69-M5—Plays twelve 10" or ten 12" records. Equipped with Admiral "Lifetime" Needle. Superhet radio has super Aeroscope, beam power output, volume control, "Sofglo" dial. New audio circuit produces tremendous power.



RECORD CABINET In Special Deal
Sold complete with five 10" albums (holds 8 altogether) at sensational price when purchased with Admiral radio-phonograph.



OVER 36 MILLION

ADMIRAL MESSAGES in these Leading Magazines

This fall and winter you'll see the biggest national advertising campaign in Admiral history. Full page . . . half page . . . and full column ads . . . over 36 million messages telling the world about Admiral's sensational values . . . values that have boosted Admiral sales to all-time highs.

See your Admiral distributor now for full details about Admiral . . . America's smart set . . . originators of Slide-A-Way—Aeroscope—AC-DC-Battery Bantam—Tilt-Tuning—Touch-O-Matic. (Note—Admiral Radios are equipped with RCA preferred type tubes.)





This Door is Closest to Our Customers

● By truck and by train, a steady procession of Utah parts bridges the distance between this shipping room and scores of receiving platforms. The needs of Utah customers from coast to coast are today being met as promptly and completely as possible.

Co-operation with the National Defense Program and its necessary restrictions on some materials is being met by the all-out effort of Utah engineers. The greatly increased demand for Utah parts is requiring the experience, knowledge and skill of the entire Utah production staff. And the demand for Utah speakers, transformers, vibrators and Utah-Carter parts continues to grow.

Utah is anxious to make new friends—to prove that it is to their advantage to do business with Utah Radio Products Company. Yet, under existing circumstances it may not be possible to meet all new requirements.

Utah appreciates the loyalty of its regular accounts and will continue to give them the best service which can be maintained. The shipping room door will continue to be nearest to our customers.

Utah Radio Products Company, 814 Orleans Street, Chicago, Illinois. Canadian Office: 560 King Street, West, Toronto. In Argentine: Ucoa Radio Products Co., SRL Buenos Aires. Cable Address: Utaradio, Chicago.



TRANSFORMERS
SPEAKERS • VIBRATORS • UTAH-CARTER PARTS

Follow the Ball AT NORTHWESTERN

WITH **RAYTHEON** TUBES

End of the first quarter . . . Northwestern nothing, Notre Dame nothing! The announcer's voice is clear and life-like above the crowd noise because Dyché Stadium—like many other university athletic fields—is using dependable RAYTHEON TUBES.

Remember these RAYTHEONS are "stock" tubes, the kind that are giving such outstanding service everywhere. Backed by the years of experience of expert engineers, who are constantly pioneering in tube design and construction . . . constantly anticipating future requirements in the fast-moving radio circuit field.

When you use RAYTHEONS for replacements you know you are supplying tubes that meet the most exacting demands of important users, yet they cost you no more. RAYTHEONS build good-will . . . good-will builds good business!

No wonder the business men in service work use RAYTHEONS!

Your RAYTHEON distributor is a good man to know . . . see him without delay.

*Raytheon Production Corp.
Newton, Mass. New York Chicago
Los Angeles Atlanta*



WORLD'S LARGEST EXCLUSIVE RADIO TUBE MANUFACTURERS

Collier's
FIVE CENTS

NOW RADIO OWNERS are learning the facts about Radio Service and Servicemen... through this hard-hitting, informative advertisement in the October 11 issue of Collier's!



WHAT YOU SHOULD KNOW ABOUT RADIO SERVICE
During the National Emergency

In this National Emergency, our radios become increasingly important to us all. They keep us in touch with our Government's Defense Program and other events of the utmost significance. They stand as safeguards to national unity and as aids to national defense. Thus, the desirability of keeping old radios operating efficiently becomes evident—and especially so in view of present limitations on the production of new receivers, caused by shortages of certain essential materials.

Actually, the average radio receiver requires little attention. What it does require, however, should not be neglected.

WHEN DOES A RADIO NEED SERVICE?

It is seldom wise to wait for service until a radio stops operating entirely. As a rule, any receiver that has been in use for 18 months or more will benefit from a routine service check-up at a probable cost of not more than \$1.50 or \$2, depending on local rates. Most old receivers could be greatly improved, simply by the replacement of worn tubes. In other cases, the replacement of tuned circuits, the replacement of worn volume controls or other parts may make an amazing difference.

HAVE YOU A "RADIO EAR"?

Deterioration in essential radio parts may result in noise, distortion, tuning difficulties, weak volume, poor tone and other annoying factors. Often, this

occurs so gradually you are not fully aware of it. Your ear comes to accept inferior reception as good reception, or you take poor operation for granted. With occasional attention from a competent technician, however, your radio should continue to perform satisfactorily for many years.

WHAT OF SERVICE CHARGES?

The reliable technician—and you'll have no trouble locating such a man—is equipped for fast, economical service on any radio. He will charge on the basis of time required, plus standard prices for any tubes or parts used. For minor jobs, he will probably charge his advertised minimum service fee. This is sound business practice—for your protection as well as for his.

It is also sound practice for the service shop to have modern test instruments. RCA service equipment, for instance, permits testing along the lines followed in the RCA Laboratories, and in RCA radio manufacturing. Such equipment is conducive to better, faster and hence more economical work.

It is sound practice for a radio serviceman to explain just what is required to repair your radio. No reliable

technician will hesitate to do this. Moreover, he will search beyond the immediate point of trouble and, if necessary, recommend replacement of other parts which show signs of deterioration.

MODERNIZING OLD RADIOS

He may also suggest ways to modernize your radio, such as by adding a record player, by installing a noise-reducing antenna, or by some other means. Throughout his business, he follows the same principles which guide any good professional man. He knows you will judge him, not by "quacks" which exist in his, as well as in other professions, but solely by his ability for reliable, economical service in making your radio perform better and last longer.

CHOOSING A RADIO SERVICEMAN

Like any other good business man, the reliable radio technician is best known by his reputation, by his skill, by his associations and by his equipment, by the manufacturers he represents, and by his standing in the community.

Although Radio itself may be a mystery to you, these common-sense business principles are not. Judge by them, and you will have no difficulty choosing the right man—whether he be the dealer from whom your radio was purchased, a well-established independent serviceman, a department store, or any other concern offering modern radio service facilities.

RCA MANUFACTURING COMPANY, INC., CAMDEN, N. J.
A Service of the Radio Corporation of America



RADIO TUBES • TEST EQUIPMENT

RCA GOES TO BAT
FOR THE RADIO SERVICEMAN

Over three million buyers of Collier's Magazine will see the above advertisement. Millions of other readers will also see it. Reprints supplied for use by dealers and servicemen will reach countless more. Similar RCA advertisements devoted to radio servicing appearing later this Fall will carry on the good work.

These advertisements are published because RCA believes in the serviceman. We believe in his ability to do a competent, workmanlike job. We also believe that, in

view of the national emergency with its curtailment of new radio production, his job of keeping old receivers working at top efficiency looms more important than ever before. Consequently, we regard it as both a duty and a privilege to bring these facts to public attention. A fairer appreciation by radio owners of the competent, honest job the modern serviceman is equipped to do should be a mighty good thing all around.

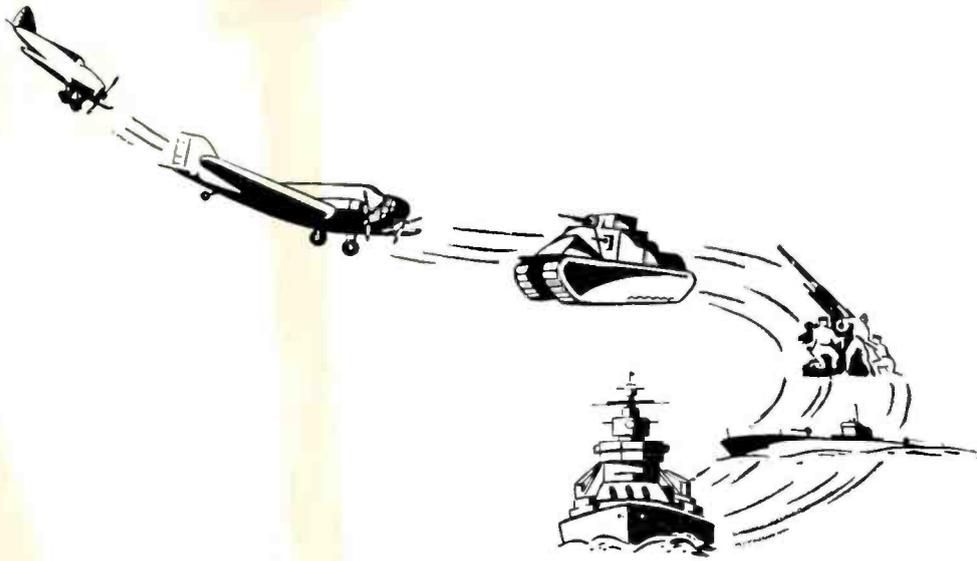


Where else can you obtain this support?



Tubes and Test Equipment

RCA MANUFACTURING CO., INC., CAMDEN, N. J. • A Service of the Radio Corporation of America
In Canada: RCA Victor Company Limited, Montreal



IRC RESISTORS HELP DEFEND DEMOCRACY *ON ALL FRONTS!*

From Reykjavik to Singapore, from Murmansk to Sidney, from Tobruk to Chungking; at sea, ashore and aloft; at home and abroad; IRC Resistors are doing their job. In airplanes and tanks, dreadnaughts and submarines, they have been thoroughly tested in the critical laboratory of actual "shooting" war. From the world's hottest and most humid climates, to the coldest and driest, they are standing the gaff of rigorous service in practically every type of equipment where resistors are required.

This widespread use of many types of IRC Resistors in modern defense equipment is a natural result of IRC's many years of specialization as well as its close collaboration with U. S., British and Canadian defense agencies.



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



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

LETTERS TO THE EDITORS

Radio Men Mustn't Gyp Themselves

Editor, *Radio Today*:

The *Readers Digest* article has provoked a flood of replies from the radio trade, but there is one aspect which has been little discussed.

The author is free with his uses of such words as "gyp", "cheat", "rob" and all the synonyms he can muster up. But he dismisses with a sentence or two the few who charged nothing for making his set work again. The natural inference is that such is the honest and proper way to handle a case of this kind. Yet he knows, just as well as you and I, that those were poor business men. They exhibited gross stupidity in the handling of a minor repair. And if they continue this way they probably won't stay long in business to give this "honest service" he would have you believe is due every radio owner.

DON'T LET CUSTOMER KIBITZ

The author knows all this, but he didn't say so. He knows that when he goes to his physician for an examination and gets it, he expects to pay, whether or not the doctor finds anything wrong. He knows, too, that when the service man tightened the tube or re-fastened the battery wire, he had remedied the trouble which caused the radio to go dead. But not if he were a graduate of every engineering college in the country could the radio man pronounce that set in perfect condition. And why, if he is a good, conscientious worker, should he permit a defective set to leave his place until he knows it has been put in perfect condition?

There are several ways in which service men can profit from these experiences. To begin with, they should never repair a set while the customer waits. They should never repair it in his presence. And they should never tell him exactly what was wrong.

This may sound like advocating sharp practice, but definitely it is not. The reason: it is often hard to make the average man realize that, while he may pay nothing for an insignificant service, it would be entirely fair and honest for the expert to charge for knowing how to perform it.

GIVE HIM A CLAIM CHECK

If the owner doesn't actually see the work, or is not told what it consists, the dealer saves himself the trouble of having to explain all that. Here is a suggestion which, although dealers may want to modify here and there to suit their own businesses, I am convinced will work, will show a fair profit and, in general, create no ill-will:

When the set is brought in for repair, give the owner a claim check, on which it is clearly stated that "Every set brought in for repair is thoroughly inspected as follows: Tubes checked, batteries tested, all soldered joints and connections inspected, power supply measured, etc., etc. The charge for this work is Two Dollars, and the set is guaranteed against any of these defects in normal service for one year. Any minor repairs or adjustments are included in this price, but major repairs are charged on a regular time basis."

You can go further and state that after inspection you will phone the customer in case there are any repairs to be made which are not covered by the minimum charge. It might be well to

put a sticker on the set after such an inspection. This label could bear the date, initials of the man who checked it, and the service shop's name and guarantee.

A ONE-HOUR CHECK-UP

I suggest a check-up that would take about an hour, and for which you can get two or three dollars. Any owner who would balk at such a charge, properly presented, is either unreasonable or looking for something-for-nothing. In most instances he is not a profitable customer for any service station. Remember that even after a repair man had tightened the tube for the *Reader's Digest* representative and got the set working, there was no assurance that the radio would not go bad five minutes after it left the dealer's establishment. In that case the owner would probably have said, "What kind of a radio repair man are you, to let a set go out in that condition?"

I believe that while repair men should be scrupulously careful not to gyp the customer, it is just as important that they exercise the same care not to gyp themselves.

Richard A. Picard

Picard Advertising, Inc.
New York, N. Y.

Pioneer Portable Had Headphones

Editor, *Radio Today*:

In your September issue, page 8, where you have an illustration of an English portable, you call attention to the headphone feature—"a refinement which U.S. engineers seem so far to overlook." Way back in March, 1940, we went into production of our KG-80 portable, and our announcement of this, the first personal portable on the market, emphasized the advantages of the headphone feature.

When we replaced the model KG-80 with our current 1942 "Candid" portables, we eliminated the provision for headphones, since only about 10 per cent of KG's sold also included purchases of headphones.

On page 10 of September *RADIO TODAY* I came to the very familiar scene of part of our production line—used as a feature illustration for your "Surprising Substitutes" article. On page 34 of the issue you explain that this illustration is a portion of our new plant, but I really feel that this explanation is buried to such an extent that it will come to the attention of very few of your readers. Couldn't a foot-note to that effect have been placed below the illustration, without disturbing the impartiality your magazine must naturally maintain?

Herbert S. Hamburg

Sonora Radio & Television Corp.
Chicago, Ill.

EDITOR'S NOTE:

At the present time when so many public gathering places, football stadiums and baseball fields rigorously exclude ordinary portables with loudspeakers, it is surprising that a demand does not exist for earphones on portables with which one or two listeners can follow quietly by radio the experienced sports-announcer's analysis of the plays they are watching.



"It's such a delicate little set, Mister—please don't use any Rube Goldberg machine on it!"

PHILCO INVENTIONS

have made the PHONOGRAPH

a New Source of Profit to

the RADIO Dealer!

The spectacular inventions of Philco engineers have put new glamour and new sales appeal into the radio-phonograph. Thanks to these inventions, thousands of *radio* dealers find themselves in the *phonograph* business, with its higher unit sales and bigger profits. Philco now leads in radio-phonograph sales . . . and leads again, for 1942, in new, dramatic, *saleable* radio-phonograph features:



PHILCO 1012
RADIO-PHONOGRAPH

One of the beautiful Philco models with the exclusive features that make Philco the *profit line* of the radio and phonograph industry!

1. Music on a Beam of Light
2. Philco Automatic Record Changer
3. Stroboscope Pitch and Tempo Control
4. New 1942 Philco Tilt-Front Cabinet
5. Exclusive New Philco FM System

**PHILCO ALL YEAR 'ROUND
FOR PROFITS ALL YEAR 'ROUND**

**SEE YOUR PHILCO
DISTRIBUTOR NOW!**

Now, MORE THAN EVER . . .

Farnsworth quality counts

Recent events have impressed Mr. John Q. Public with the need for getting the most mileage possible out of his dollars. If you display the new Farnsworth radios and phonograph-radio combinations, you can certainly do business with him. For the new 1942 Farnsworth line—and we mean *new*, not just a modification of last year's line—offers:

1. *Value.* You know how costs have gone up, and as for taxes, well they're up too. Compare the Farnsworth line, set for set, price for price, and you'll give Farnsworth the call.
2. *Appearance.* Every model is a display model!
3. *Performance.* "Known for Tone." Plus, service-free dependability of chassis and the famous Farnsworth Record-Changer.
4. *Profit.* Every Farnsworth model, regardless of price, carries a *full* margin of profit to the dealer.

Be sure to compare this new 1942 Farnsworth line on every point. Call your distributor. Or write, wire or phone Farnsworth Television & Radio Corporation, Fort Wayne, Indiana.



(CK-74) The Corinthian, this year's greatest value leader—a cabinet of dignity and simplicity. Superb 9-tube radio and Farnsworth's new "Velvet Action" Record Changer.

(CK-92) The Sheraton leads the "furniture field"—authentic period design. 9 tubes with 11-tube performance. Sapphire stylus. Farnsworth DeLuxe Changer with Play Control and Record Storage.



(CK-93) The Georgian leads the "big set" field—luxurious lines characterize this impressive combination. 9 tubes with 11-tube performance. Solid top. Swing-out Farnsworth DeLuxe Changer. Sapphire stylus.

Frequency Modulation—Farnsworth quality is also available in Frequency Modulation receivers, in both period and modern cabinets.

Farnsworth
KNOWN FOR TONE

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

RADIO *and Television* TODAY

AN INTIMATE LETTER TO A LADY

WHO DESIRES TO BUY AN FM RADIO

My Dear:

So you are going to get an FM radio?

That's fine, because with such a set you will enjoy a magnificent new kind of radio—the most perfect radio reception you have ever imagined.

Radio without static; radio silent in the intermissions; radio without interference; radio with tremendous dynamic range and power, from the softest passages to the crash of the full orchestra; radio with voice inflections and consonants utterly lifelike; radio faithful in every overtone and twinkling sound; radio without fading or distortion.

* * *

Yes, my dear, with an FM radio you can have all these benefits, providing—the FM set you buy is **adapted to your local conditions** and providing, also, it is **properly installed** with whatever antenna proves necessary.* Only an actual test on your premises will tell whether the set, correctly installed, will really bring you **all**—not part—of the benefits of FM.

So, **hear** the FM set you are going to buy, **right in your own home**. Test it thoroughly **there**. And remember, it's not enough just to "be able to pick up" programs from FM stations. Modern FM means FM reception that is crystal-clear and free-of-noise. That's why I urge you to measure the performance of your intended FM set by these yardsticks:

Is it free of all static, interference, and automobile-ignition noise?

Is it "dead silent" during program intermissions?

Does it reproduce the sparkling highs of cymbals, castanets, keys, and "S's" of speech?

Does it deliver full, rich orchestral tones?

If you aren't getting at least these benefits, you are missing the main advantages of modern FM.

Be sure to get **all**—not just part—of the glorious things FM offers you.

O. H. Caldwell
Editor, Radio Today

*For even in FM areas specified by the FCC, a wide range of FM reception conditions exist. The strength of FM programs varies greatly of course, with distance from the station, and with station power. And the intensities of "interference"—electrical and ignition noises—are different in every location, even in the same street. An adequate antenna is necessary to help your FM set develop full tone quality, as well as to suppress interference.

EDITOR, Orestes H. Caldwell;
PUBLISHER, M. Clements;
Managing Editor, Darrell Bar-
tee; Merchandising Editor, H.
L. M. Capron; STAFF, E. T.
Bennett, N. McAllister, Wil-
liam E. Moulie, M. H. New-
ton, R. A. Neubauer, B. V.
Spinetta, R. Y. Fitzpatrick,
201 N. Wells St., Chicago,
Ill.; CALDWELL-CLEMENTS,
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RADIO'S TRENDS

Urges No Pyramiding of New Tax

Following is text of telegram received by RADIO TODAY, regarding the new 10 per cent excise tax on manufacturers' selling prices of radio sets, which took effect Oct. 1:

Editor RADIO TODAY:

We request that there be no pyramiding of the Federal manufacturers excise tax. The increased prices paid by consumers as result of new levies should in no case reflect more than actual dollar amount of total excise tax. This policy should apply where excise taxes are continued and increased, as well as where taxes are now being levied for the first time.

Leon Henderson, Administrator
Office of Price Administration.

It is understood that a similar appeal was made by government officials to radio manufacturers, distributors and retailers to exert utmost efforts to prevent price increases to ultimate consumers exceeding the actual amount of the additional taxes. "Where a manufacturer sells an article for \$100 and passes on the 10 per cent excise tax, it results in a price of \$110 to the wholesaler," the OPM points out.

"Should the latter compute his regular mark-up price on the \$110 price, instead of on the \$100 base, the price to the retailer will be raised by more than the amount of the tax. If the retailer in turn calculates his mark-up on this total the final cost of the article to the ultimate consumer will be raised con-



Maurice S. Despres, new chief of radio division Office of Price Administration. Formerly head of Dale Radio, N. Y., and Admiral distributor.

siderably in excess of the actual excise tax.

"Properly figured, the tax should be left out of all mark-up calculations."

While radio men interviewed expressed every desire to work along the lines suggested by Administrator Henderson, they pointed out that this would be very difficult to accomplish under the billing practices of the radio industry and trade. Such a method of computation, carrying along the tax as a separate item, without mark-up, will involve extensive and complicated changes in the billing forms used in the radio trade, and may prove confusing in well-intended efforts to carry out the aims of the Price Administrator.

Radio men questioned promised to exert all effort to keep down the tax to the original excise figure of 10 per cent on manufacturer's selling price, but they did not hold out much hope that this result could be generally attained.

Philco Broadcasts to Cover All Latin America

This month, Philco has started sponsorship of a daily program of news, to be broadcast seven days a week over the local standard-broadcast stations in every one of the Latin American countries. This huge project is called the first of its kind, and its goal is described by Philco president James T. Buckley as "to make available to the people of Latin America a straight-forward, accurate account of day-to-day happenings throughout the world."

Merlin H. Aylesworth, head of the radio division of the Office of the Coordinator of Inter-American Affairs, has commented that the Philco programs should contribute greatly to a better understanding among the peoples of the Americas.

IRE-RMA Fall Meetings, Rochester, Nov. 10-12

The annual joint engineering meeting of the Institute of Radio Engineers and RMA has been announced for November 10, 11 and 12 at the Sagamore Hotel, Rochester, N. Y. Unusual interest is being manifested because of the added engineering problems, due to shortages and substitutions of material caused by the national defense program, and these problems will be prominent in the discussions at Rochester.

Meetings of many RMA engineering committees and subcommittees, including the RMA Material Bureau, will be held, and several hundred radio manufacturers and executives are expected to attend. The annual stag dinner, with L. C. F. Horle presiding as toastmaster, will be held Tuesday evening, November 11, and the annual message of Dr. W. R. G. Baker, Director of the RMA Engineering Department, will be delivered at the Tuesday morning session.

Moral—Always Have a Personal Radio Along

New uses for personal portables crop up daily.

A Chicago man had tickets for a concert and had invited guests to accompany him that evening, yet he wanted to hear a certain speech to be on the air at the same time. So he took his guests to the concert, but himself carried a little portable with ear-phone attachment. When the hour of the radio speech came, it was a simple act to switch on the radio and listen to the speech, without disturbing anyone in the auditorium, while all the rest of the audience was enjoying the music.



William H. Grimditch, vice-president in charge of engineering for Philco, who also becomes vice-president of Hazeltine Service Corp., N. Y. See page 80.



Lewis M. Clement, director of engineering for Crosley Corp., now becomes vice-president in charge of research and engineering.



Major Edwin H. Armstrong, FM inventor, pictured on his Alpine, N. J., experimental tower, as widely circulated by "American Magazine" and "Readers Digest" this month.

Thousand FM Sets a Day

FM receivers are now rolling from the production lines at an estimated rate of 1,000 a day, according to a statement by the FM head man, Major Edwin H. Armstrong. The inventor has licensed some 17 manufacturers to produce FM receivers under his basic patents, and these firms are expected to send about 75 different models into the Fall radio market.

This report expects that the number of FM receivers now in use will be doubled by the end of the year; distributors say that orders are generally 20 per cent ahead of sets available. Factory output is being speeded as much as possible under today's priority restrictions.

RADIO TODAY AND PATENT CONTROVERSIES

The publishers of Radio Today recognize that patent matters and patent controversies are issues which only the courts can decide. Questions of patent validity and ownership must be determined by due process of law.

Radio Today takes no position on either side of any patent controversy but makes its pages available to both sides—a principle which follows the precedent of radio broadcasting itself.

Through this non-partisan policy, Radio Today aims to insure the fullest possible presentation of all facts and arguments to the radio trade, believing this will in turn serve the best interests of the buying public.

Publishers, Radio Today.

Foreign Inroads on U.S. Export Markets

A special report from the Radio Manufacturers Association's committee on foreign competition says that U.S. set makers are now facing unnecessary handicaps in their efforts to fill their radio orders abroad. Investigators found that "foreign competitors are having built in the United States, under contract, complete radio receivers and are obtaining parts and materials which have been used and will be used to compete with American manufacturers in foreign markets."

The report was based on data assembled by the RMA Export Subcommittee, and was released by Commander E. F. McDonald, Jr., chairman, and Fred Williams of the special committee. It now stands unanimously approved by the RMA Executive Committee, and is being brought to the attention of the Government officials concerned.

RMA experts believe that any extra materials or facilities in the U.S. should naturally be made available to American firms, rather than to foreign interests. Any such diversion, at the expense of our own companies, is called un-American and doubly so in the current emergency.

"Radio Magic" Hits Century-Mark

The 100th program of Radio Magic, the weekly program presented by Editor Caldwell of RADIO TODAY over WJZ and the NBC Blue network, every Friday, at 7:15 p.m. EST (6:15 p.m. CST) is scheduled for Nov. 14, and will review high-spots in radio and electronic history.



Paul Galvin, Motorola president, who now becomes also president of RMA, following the resignation of Stewart-Warner's J. S. Knowlson to be Deputy Director of OPM Priorities Division.

Other Radio Magic programs ahead are:

"First Radio Signal, 100 Years Ago"; Oct. 17.

"Electronics and Animals"; Oct. 24.

"Radio in National Defense"; Oct. 31.

"The Wright Sonovox"; Nov. 7.

"What's New in Radio Toyland" and "How to Select a Radio for Christmas" will be among the topics of interest and promotional value to the radio trade, presented at the height of the pre-Christmas shopping period.



Radio Parts Priorities Committee—S. N. Shure, chairman, J. J. Kahn, K. C. Prince and W. J. Halligan. (H.E. Osmun absent.) See article on committee's operations, page 22.



Mr. and Mrs. William Zeswitz, Jr., Reading, Pa., radio dealers, learn about FM at NY Music Show, from Stromberg-Carlson's C. J. Hunt.

Right—The "turnstile-antenna" top of Yankee Network's 50-kw. tower at Paxton, Mass.

FM TODAY

Below—The Chicago Tribune is host to radio men of Chicago and vicinity, for a demonstration of FM, as Tribune's new W59C station goes on the air.

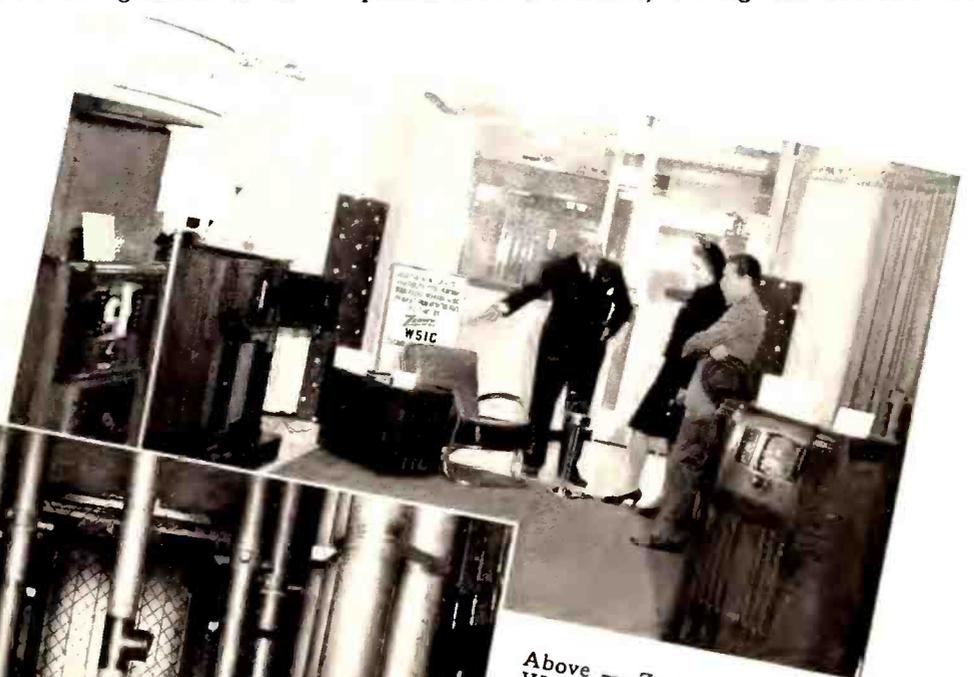
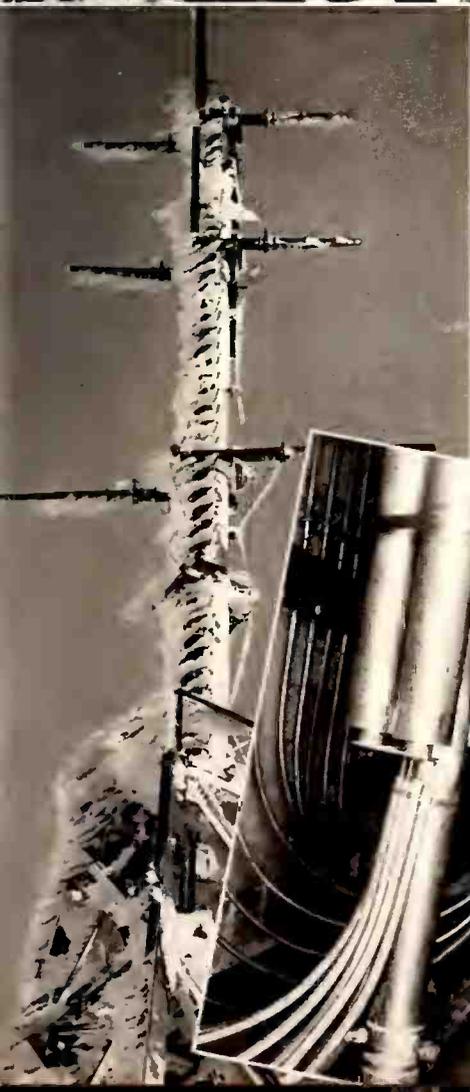
Right—"The big UHF bottles" of Zenith's W51C—now 50 kw.





Left—After a blizzard at the Mount Washington FM tower.

Above—The eye-filling setting of W65H, Connecticut's pioneer FM broadcaster, serving the Hartford area.



Above — Zenith's Wheeler Wadsworth escorts visitors through the exclusive FM showroom in Chicago's Field Building.

Left—Huge coaxial conductors which lead up to the multiple antenna of the Paxton tower pictured opposite.



Municipal Building, St. Charles, Ill., completely equipped with amplified chimes and public address system. Speakers mounted behind tower grilles adjacent to clocks.

FALL & WINTER SOUND

SPECIAL FEATURES SELL PA JOBS

The Fall and Winter PA jobs are now being sized-up by active sound men. With the defense plant construction schedule still below its peak, more and more sound jobs are demanding the attention of speech amplifying specialists. Cities and towns are becoming more defense-minded and are planning to use mobile and fixed sound equipment to expedite plans.

In addition to the direct sound business in industrial plants, there are many related jobs to be found nearby in night clubs, skating rinks, dance halls, and similar amusement centers. These places are springing up fast and are dependent upon good sound installations for successful operation. Don't forget the intercommunicator applications in the restaurant jobs.

With many towns expanding by leaps and bounds, the problems of handling the greater traffic and volume of business are being eased with sound installations.

CITY SOUND JOBS

Civic, memorial and other public buildings are being equipped with sound systems, a typical example of which is shown in the Municipal Building job at St. Charles, Illinois.

An elaborate and unique sound system for amplification of chimes, radio

and phonograph programs, as well as "live pickups" is in daily use in the new St. Charles Municipal Building. This Municipal Building dedicated last year was a gift from St. Charles citizens and is most modern in construction and equipment.

The amplifying equipment was made by Operadio Mfg. Co., of St. Charles. The amplifiers, phono turntables, radio receiver, monitor speaker, volume controls and control switches are all mounted on the rack and panel cabinet. In an adjacent soundproof room, the tubular chimes are suspended near the pick-up mike. The speakers are divided into four groups of three, each group being located back of the grilles as stated before.

CHIME AMPLIFICATION

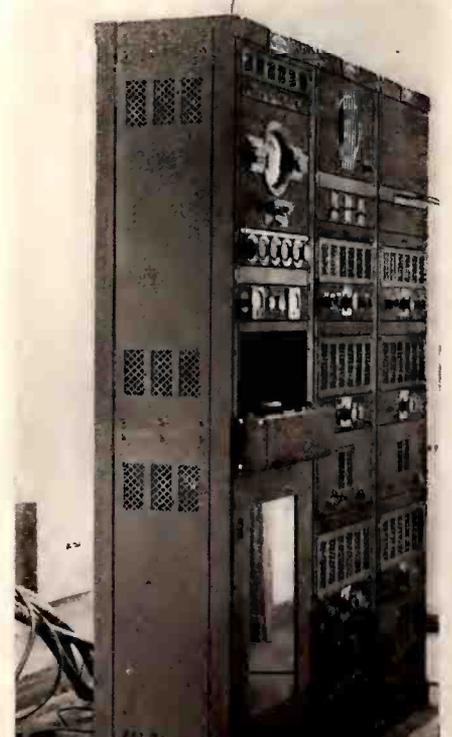
The block diagram of the sound layout shows the arrangement of the various units and the various switching combinations which are possible. The five general purpose microphone channels are brought into the mixing panel where any one of which may be selected for feeding into the pre-amplifier.

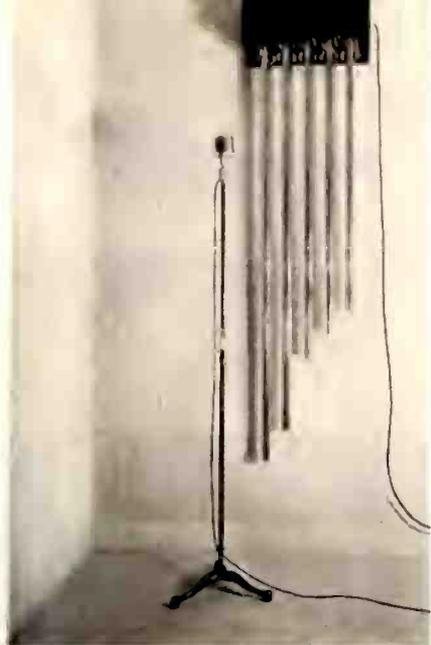
The phono input is through a separate pre-amplifier which feeds the input of the driver amplifier through a gain control. The radio-tuner output goes through a gain control into

the same driver amplifier. Thus, the three services, mike pickup, phono, or radio may be mixed together.

The chime pickup mike feeds its own pre-amplifier, a gain control and

Equipment in rack below, supplied by Operadio Mfg. Co., includes radio tuner, record changer, amplifiers, switching, and monitoring facilities.





Westminster chimes are electrically operated in a sound-proof room. Pick-up is through the mike shown in foreground.

the number two driver amplifier. A selector switch on the control panel makes it possible to feed the output of the chime microphone into the pre-amplifier and driver of the number one channel. This gives emergency service and continuous operation of the chime system if repair or testing of one channel is necessary.

When the system is used to amplify the chimes, it is so synchronized with the master time clock system in the building, that a relay actuating impulse is given which automatically turns on the amplifier and equipment two minutes before the correct striking time. On the exact time, a second pulse is transmitted to set the chime

mechanism in operation. Two minutes after the striking interval, a third pulse turns the sound system off. It remains off until two minutes before the next striking time, when the cycle is repeated.

FOUR 50-WATT AMPLIFIERS

The number of hours per day which the chime system operates is adjustable. The period which is now covered is from 7 a.m. to 11 p.m.

Either of the two driver amplifier outputs is selected by a switch to drive the four power amplifiers. A volume indicator is used at this point in the circuit. The four power amplifiers are fed together and they in turn each drive one set of three speakers. Monitor jacks at the output of each power amplifier and the radio tuner allow the operator to check the output of each unit.

The driver amplifiers in this system function as voltage amplifiers for the power units which are rated at 50 watts each. The harmonic distortion is not over 2 per cent in the 50-watt amplifiers. The overall gain of the microphone channels is 145 db, while the gain in the phonograph channel is 135 db. The radio channel gain is 110 db.

Separate field supplies excite each group of three tower speakers. The speakers used are Operadio model 82-OT air-column horns which are powered by model NNQ 8-inch cone type electro-dynamics. The speakers and horns are completely weather-proofed.

PUBLIC ENTERTAINED

In addition to the regular chime amplification, the system is used for a number of civic functions on holi-

SELL SOUND

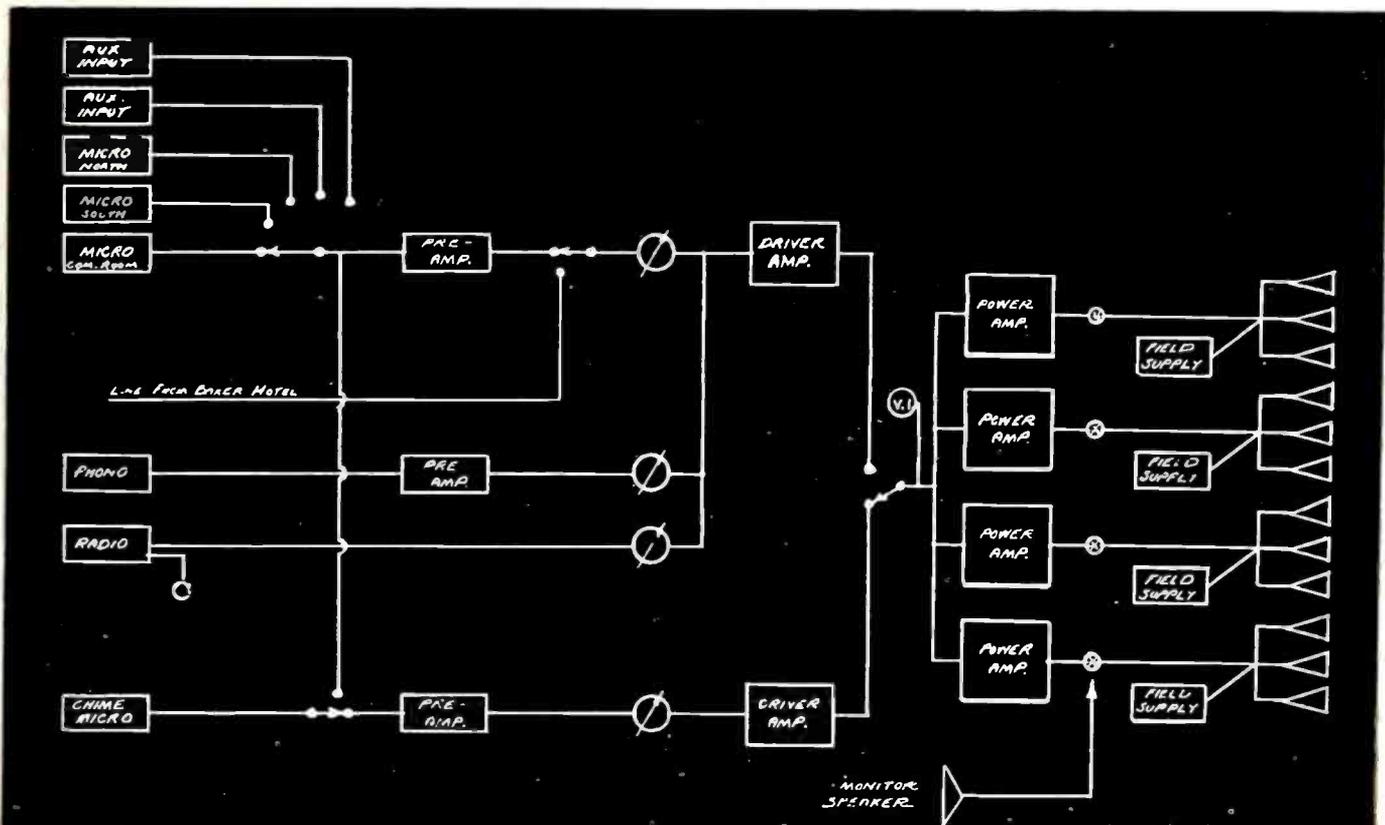
1. At industrial "defense" plants.
2. At night clubs, skating rinks, restaurants, dance halls, etc., springing up in "defense" towns.
3. To police, fire, and traffic departments which are handling larger crowds.
4. To city auditoriums, public buildings, etc.
5. To direct and indirect defense jobs, only after obtaining priority rating and contract number.

days. Musical programs are delivered through the system at Christmas and Easter. Church choirs and outstanding soloists present suitable programs on various occasions. When the nearby Fox River is frozen, appropriate skating music is supplied through the tower speakers. On Sunday afternoons, it is customary to present organ recitals originating in the Baker Hotel across the river from the Civic Building. This program picked up by the remote microphone and pre-amplifier, is fed through a submarine cable under the river to the main amplifiers.

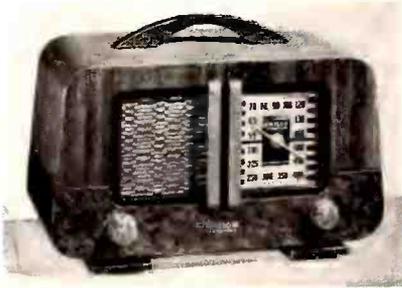
PLAN NOW

Sound men should start immediately to line-up late Fall and Winter jobs. The Christmas holidays will be made more enjoyable with amplified chimes, carols, etc. from community "trees," stores and public buildings.

Either of the two driver channels can be used for the amplification of chimes in Municipal Building sound system. The four power amplifiers are rated at 50 watts each. Gain in microphone channels is 145 db. Eight-inch cone speakers deliver the sound through air column horns. Input line is available from nearby hotel for musical programs.



WHAT'S NEW



Philco Transitone

★ Table set with AC-DC superheterodyne circuit and 5 tubes. Beam power amplification. Built-in loop aerial. High-output speaker. A.V.C. Standard American broadcasts. Walnut cabinet, front panel cocoa wood. Model PT-93, \$16.50. Philco Corp., Tioga and C Sts., Philadelphia, Pa.—RADIO TODAY.



Crosley combo

★ Radio-phono console model 22-CP is a 12-tube AC superheterodyne with four complete bands—FM, 42-50 mc, standard, 550-1600 kc, International shortwave, 5-18 mc, police, amateur, etc., 1.6-5 mc. 14 in. speaker. Crosley floating jewel tone system plays twelve 10 in. or ten 12 in. records. Multi-stage limiter reduces noise on signals from FM stations. Walnut cabinet. Crosley Corp. 1329 Arlington St., Cincinnati, Ohio—RADIO TODAY.



Sonora table combo

★ 5-tube AC superhet table phono-radio with tuning range of 535 to 1720 kc. Dynamic speaker, A.V.C., built-in loop. 78 r.p.m. self-starting motor, crystal pickup, lifetime needle. Plays 10 and 12 in. records with lid closed. Walnut cabinet. Sonora Radio & Telev. Corp., 325 N. Hoyne St., Chicago, Ill.—RADIO TODAY.

Zenith portable

★ A two-tone brown and ivory portable is one of Zenith's 1942 line. Has built-in movable Wave-magnet, 6-tube superheterodyne circuit. Three-way operation. On-off indicator. Cover to protect dials when not in use. \$29.95 factory list. Zenith Radio Corp., 6001 Dickens Ave., Chicago, Ill.—RADIO TODAY.



General Electric's console model LF-115, has 3 bands for FM, standard and short wave broadcasts. 11 tubes, 3 built-in beamscopes. FM Armstrong system.



RCA "Twin Trumpeter"

★ "Floodlight Tone" is available in model 55X, one of 8 table models. It is housed in solid walnut cabinet and has 5 tubes, built-in loop antenna, superhet circuit, A.V.C. and receives standard broadcasts and police calls. Plug-in connection for record player. RCA Mfg. Co., Camden, N. J.—RADIO TODAY.



Emerson Phonoradio

★ AC superheterodyne portable, model 452, tunes American broadcasts and police. Electro-dynamic speaker. Self-starting constant speed motor, crystal pickup. Plays up to and including 12 in. records with lid closed. Case finished in shark-skin grained simulated leather. 8 in. high, 13 3/4 in. wide, 16 in. deep. Also comes for AC-DC operation. Emerson Radio & Phono. Corp., 111 8th Ave., New York, N. Y.—RADIO TODAY.



Admiral plastic

★ Model 4202-B6, AC-DC superhet with 6 tubes. New triple-tuned R.F. Aeroscope. A.V.C. Tilt-tuning dial. 545 to 1630 kc. Heavy duty dynamic speaker. Ivory plastic cabinet. \$19.95. Continental Radio & Telev. Corp., 3800 W. Cortland St., Chi., Ill.—RADIO TODAY.

FOR '42



Zenith's Arlington model in Georgian mahogany cabinet is a phonoglide radio-combo, receiving American foreign and FM broadcasts. Genuine Armstrong FM.



RCA Victrola

★ A compact new table model automatic phonograph-radio, model V-135. Plays automatically twelve 10 in. or ten 12-in. records. Jewel-point pickup, no needles to change. five tubes are used. Built-in Magic loop antenna, electro-dynamic speaker, a.v.c., 2-point treble tone control. Chest-type cabinet. RCA Mfg. Co., Camden, N. J.—RADIO TODAY.



Freed-Eisemann set

★ A 1942 Sheraton model is one of the new line of phonograph combinations featuring automatic phonos, Armstrong FM, dual speakers and foreign shortwave as well as standard broadcasts. 30 to 15,000 cycle reproduction. Freed Radio Corp., 39 W. 19 St., New York, N. Y.—RADIO TODAY.



Sonora compact

★ 5-tube, AC-DC superhet tuning 535-1720 kc., has built-in Sonora-scope loop, dynamic speaker. Walnut veneer cabinet. Overlay lattice type grille, \$19.95. Sonora Radio & Telev. Corp., 2626 W. Washington St., Chicago, Ill.—RADIO TODAY.



Philco table set

★ Model 355T combines Philco FM, standard broadcasts and short-wave reception into a single circuit arrangement. Uses a new radio tube—the XXFM balanced detector. Double channel transformers and special antenna coupling system. Separate bass and treble controls. Philco Corp., Tioga & C Sts., Philadelphia, Pa.—RADIO TODAY.



Sentinel No. 248-NR

★ A 5-tube AC-DC red catalin plastic superhet with marble-like white grille, knobs and escutcheon. Built-in loop antenna. Tunes 540 to 1730 kc. 5 in. speaker. Also comes in amber color. Sentinel Radio Corp., 2020 Ridge Ave., Evanston, Ill.—RADIO TODAY.



Talk-a-Phone home recorder

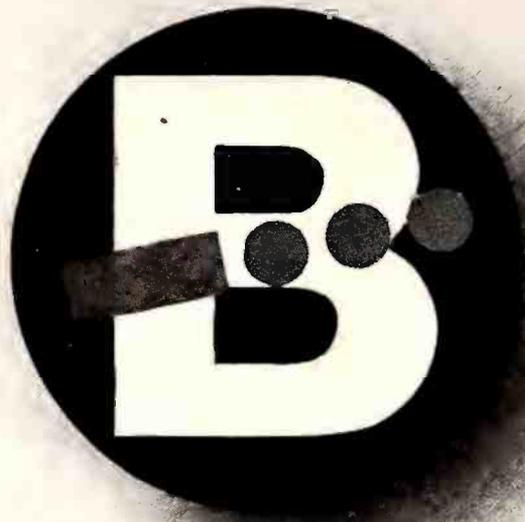
★ Combination, dual-speed recorder, record player and public address system including amplifier. Crystal mike, heavy duty 6½ in. dynamic speaker. Cuts records up to 10 in. size. Plays 10 and 12 in. records with lid closed. Electric eye volume indicator. Known as R-82, finished in striped luggage-cloth. Talk-A-Phone Mfg. Co., 1217 W. Van Buren St., Chi., Ill.—RADIO TODAY.



Howard table radio

★ Model 868T, 10 tube, 3 band, AC table set tunes 540 kc to 22 mc. High Mu 6FG7 for more RF gain. Band expander, flywheel dial controls, push-pull audio system, 8 in. speaker. Howard Radio Co., 1731 Belmont Ave., Chi., Ill.—RADIO TODAY.

★ "B"—in type and radio code—is the symbol of RCA's "Beat the Promise" Campaign ★



Symbol of a Pledge

★ **"Beat the Promise"—RCA's Pledge to Uncle Sam—highlights a campaign to speed National Defense!** ★

Signed by thousands of members of the RCA family, the pledge shown here symbolizes a determination not merely to meet delivery of radio equipment to the Government, but whenever possible to *Beat the Promise* by completing equipment *even sooner* than the commitments specify!

I PLEDGE MYSELF

to do all in my power not only to fulfill all the obligations we have undertaken to meet the requirements of our Country's national defense program, but wherever possible to
BEAT THE PROMISE.

The patriotic spirit behind "Beat the Promise" has been translated into *action*. With traditional RCA cooperation, everyone is helping to speed production and cut down waste. Many delivery dates already have been beaten... and there will be no let-down in the months ahead!



Radio Corporation of America

RADIO CITY, N. Y.

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

Combinations in a customer-stopping island at Geo. Innes Co., Wichita, Kan. E. V. Reynolds "stands behind" them.



Courtesy Wichita Beacon

RECORDS PLUS

COMBINATIONS • SALES IDEAS FOR PAIRING THESE TWO

There are dozens of steps that a dealer can take, to get a closer relation between the selling of records and the merchandising of combinations. The link between these two products is a strong and natural one.

Many retailers make a practice of placing a number of albums or single discs around the floor of a window display, whenever combinations are featured. Or they spot a combination at the end on the record counter, and let it go at that. These are the easiest and the most common, things to do. But there are other methods, more resourceful, more spectacular, more profitable. They apply to the table model record players, of course, as well as to the combinations, but the real emphasis these days is on the bigger models.

IT PAYS OFF

These ideas are based on the fact that the buyers of records are interested in the new combinations, and that the combo shoppers may be interested in a new set of records.

Dealers who have a large and varied stock of combinations like to line them up in record demonstration booths. This is possible only when the booths have a good size, but by using the chairsides and the smaller consoles, you can get more of a dis-

play than you thought. But if you don't have the room, you can still leave circulars and pictures of your combinations alongside the record-players and on the walls in the booths.

When you display the units near the record department, you can get a special effect by spotlighting one of the new models. The blondes are good bets for this purpose. Bleached woods sometimes don't get enough publicity, anyway. Novelties in chairsides are okay, too.

Some retailers like to have a combination continuously playing a good record in, or near, the record department. You have to select the "quiet" music and of course use a unit with an automatic record changer. Thus the disc traffic gets a good sample of good tone, as well as convenience offered in new combo models.

MAIL 'EM BOTH

For those who can figure an inexpensive way to get actual photos of the new radio-phonos, these can effectively be attached to mailing pieces sent to record customers. This device has dignity and style, and won't be too costly if you limit them to the "upper crust" prospects. Otherwise the regular printed circulars on combinations and records can be clipped together and mailed.

When you sell a unit that has plenty of room for a collection of records, be sure to suggest discs to fill up the storage space. A good many of such buyers of combinations will already have a batch of records at home, but yet the idea of new discs with a new instrument has some appeal. Make out a list of records to fit the customer's taste, and if he isn't willing to shell out that much money at one time, then suggest that he buy them a few at a time.

A lot of record customers belong to musical clubs or associations. For their meetings they often need good instruments that will give them the finest reproduction of classical records. Thus, your new models can be loaned, rented, or sold on time payments to the organization.

As for the two types of merchandise being featured in window displays, the idea of "action" is a key one. When you put your combos in motion in your window, either the record changers or the roll-away devices, you sell records, too.

BEST-SELLING RECORDS

Listed for RADIO TODAY in order of importance by Alex A. Gettlin, publisher of Recordaid.

PIANO CONCERTO—Freddy Martin on Bluebird 11211.

CHATTANOOGA CHOO-CHOO—Glenn Miller on Bluebird 11230.

I DON'T WANT TO SET THE WORLD ON FIRE—Horace Heidt on Columbia 36295 and Tommy Tucker on Okeh 6320.

YOU AND I—Bing Crosby on Decca 3840 and Glenn Miller on Bluebird 11215.

BLUE CHAMPAGNE—Jimmy Dorsey on Decca 3775.

JIM—Jimmy Dorsey on Decca 3963 and Dinah Shore on Bluebird 11204.

GREEN EYES—Jimmy Dorsey on Decca 3698.

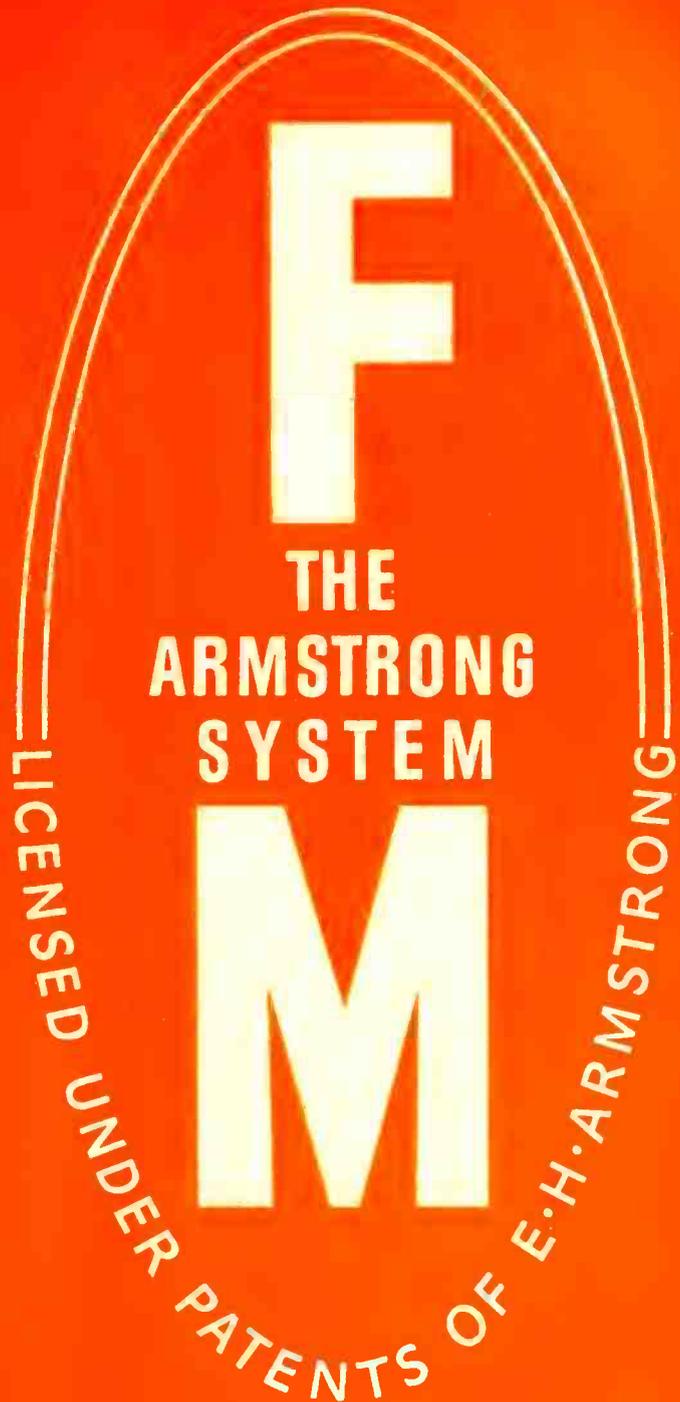
TILL REVELLE—Bing Crosby on Decca 3886.

YES INDEED—Tommy Dorsey on Victor 27421.

TIME WAS—Jimmy Dorsey on Decca 3859.

Records handsomely set among '42 combinations at Sherman Clay Co., San Francisco





**Manufacturers of Apparatus
Under
Major Armstrong's Patents**

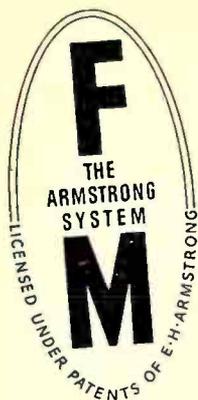
BROADCAST RECEIVING SETS

Ansley Radio Corporation
Espey Manufacturing Company
Fada Radio & Electric Company, Inc.
Freed Radio Corporation
General Electric Company
Howard Radio Company
The Magnavox Company, Incorporated
Meissner Manufacturing Company
Philharmonic Radio Company
Pilot Radio Corporation
E. H. Scott Radio Laboratories, Inc.
Stewart-Warner Corporation
Stromberg-Carlson Telephone Mfg. Co.
Zenith Radio Corporation

**APPARATUS FOR
VARIOUS OTHER PURPOSES**

Cover Dual Signal Systems, Inc.
Doolittle Radio Inc.
Finch Telecommunications, Inc.
General Electric Company
The Hallicrafters Co.
The Hammariund Mfg. Co., Inc.
Howard Radio Company
Fred M. Link
National Company, Inc.
Radio Engineering Laboratories, Inc.
Western Electric Company

**HIGHER FIDELITY
WIDER TONE RANGE
GREATER NATURALNESS
NOISE EXCLUSION
IMMUNITY TO STATIC
REJECTS UNWANTED STATIONS**



A STATEMENT

By EDWIN H. ARMSTRONG

A major revolution is under way in radio broadcasting. Its basis is the new system of radio communication which, because the first system to employ a frequency-modulated wave with advantage, has become known to the public as "frequency-modulation," and as FM.

Frequency-modulation, however, can have two different meanings. It can mean the frequency-modulation that was in the text books when I was a student—any transmitter that will modulate the wave frequency and any receiver that will detect those modulations—or it can mean FM, the system that I announced to the radio world in November, 1935, in a lecture before the Institute of Radio Engineers.

FM is not just frequency-modulation. It is frequency-modulation PLUS. It is the PLUS that eliminates static and makes for a clarity and quality of reproduction impossible with the old system of broadcasting. And it is the PLUS that the radio trade must understand, if the industry is to progress along sound lines, and if the public is to be spared the disappointment of imitation and inferior apparatus.

FM was the product of more than 10 years of research and inventive effort, directed toward a single goal—the development of a radio system in which the transmitter would impress on the wave some characteristic not present in natural and man-made static, and in which the receiver would be deaf to all impulses except that particular characteristic.

In the course of years of experiments I discovered that there was one wave characteristic not found in natural and man-made disturbances—the wide frequency swing. It was that which led me to the basic FM inven-

for the PROTECTION *of the* PUBLIC



tion, the essentials of which are a transmitter that will produce this characteristic and a receiver that will respond to it and that will reject all minor frequency variations and all variations of amplitude.

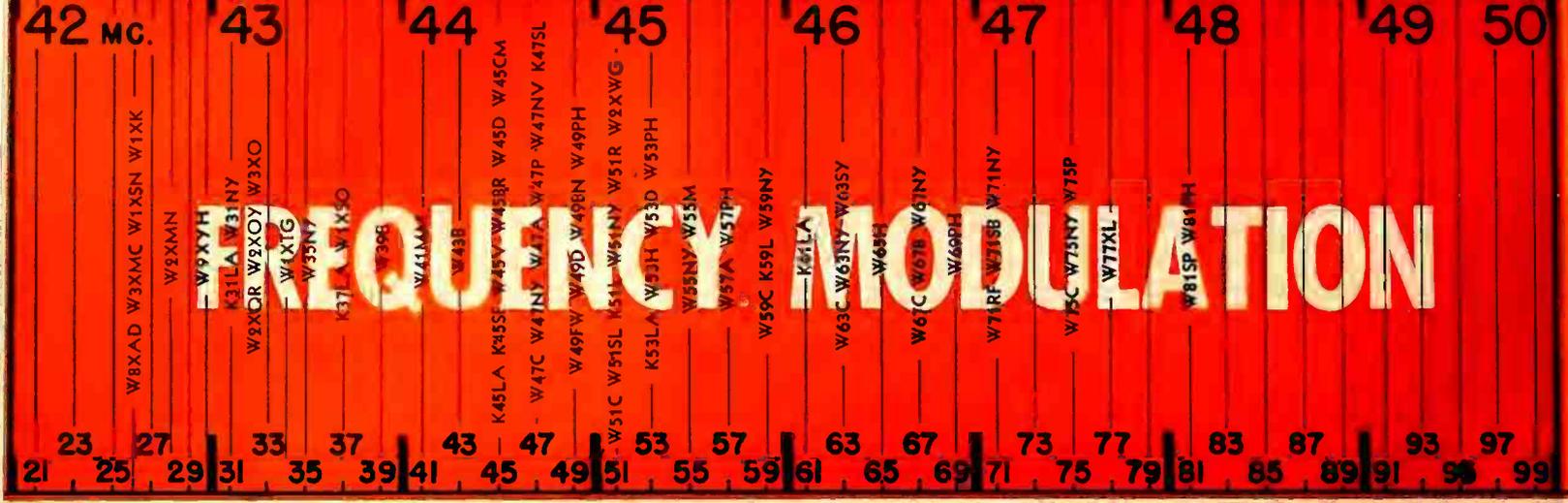
A receiving set does not have to be an FM set in order to detect FM programs. Every amateur knows that his ordinary short wave set will pick up the FM transmitters. But only a real FM set will give the quality and freedom from noise that the public understands FM to mean. If a receiving set will not eliminate the effects of amplitude modulated disturbances it is not an FM set, and it is a fraud on the public to sell it as an FM set.

My experience as the inventor of FM has paralleled that of others who have made basic inventions. It took 10 years to master the unseen forces of nature and arrive at the solution of the technical problems, and several years more to translate that solution into apparatus that would give commercially acceptable performance. Then came 5 years of continuous effort to overcome those intangible forces which exist in every industry and which have their basis in the characteristic resistance of human nature to change.

The fight was won in May, 1940, when the Federal Communications Commission cleared the way for FM to proceed on a commercial basis. FM broadcast installations are now going ahead as rapidly as the present emergency permits, and sales of receivers are exceeding the most optimistic predictions. With the ending of the war, the use of FM is certain to expand at a rate reminiscent of the early days of broadcasting.

FM offers an opportunity such as seldom comes to an established industry. That opportunity will be impaired if the industry permits any part of the radio public to get its impression of FM from counterfeit sets.

Edwin H. Armstrong



The FM portion of the radio spectrum, with the dial positions of stations operating and building. Complete list of all stations will be found on page 48.

THE ABC OF FM

WHAT TO TELL THE CUSTOMER • WHERE TO FIND FM STATIONS

Everybody is talking about FM—and asking questions of the men who sell receivers for this new form of radio.

Why does the FM receiver not reproduce the noise that an AM set does? Why do I hear more “tones” from an FM receiver than from a conventional set? What is “dynamic range”? Why should FM have more “dynamic range”? Won’t an AM set costing as much as an FM set, be just as noise-free and have the same tone quality? Is it necessary to put-up the special FM antenna?

These are typical queries which confront the FM salesman—and, in many cases, his selling success will depend upon how well he answers them. Naturally, the salesman is not expected to give an engineering treatise on the subject of FM, but he should be ready with a simple, and accurate, statement which will be understood by the lay customer.

NO NOISE

Why isn’t FM affected by “static,” electrical noises, telephone clicks, and the million and one other sources of disturbance which mar or destroy ordinary broadcasting? This is one of the most often-asked questions—and rightly too, for the radio public has experienced many disappointments, in the past, with so-called “static eliminators.”

The important point to drive home is that noise-free or static-free reception is characteristic of a correctly designed system of frequency modulation. “FM” is not simply some special gadget on the receiver which might also be applied to an AM set.

SEPARATING THE SOUND

Lightning, neon signs, electric motors, switches, and numerous other causes create radio waves which may travel very short or very long distances just as ordinary radio programs do. These interfering waves are for the most part, amplitude modulated, that is, they vary in strength or intensity. Furthermore, these unwanted radio waves act as carriers for the high pitched whine of an electric motor, the raucous buzz of a neon sign, the click of switches. Thus they are called “noise” waves or signals.

Another characteristic which increases the bad features of noise signals, is the fact that they appear not at a single spot on the radio dial, but instead cover wide “bands” of the spectrum. Thus they do not blot out a single station but ruin reception of scores of stations at a time.

Because the noise signals cover wide “swaths” in the radio band, a receiver, FM or AM, which is tuned to some particular station will also receive any noise signals blanket-

ing the part of the dial to which the set is tuned. Notice that the noise signal is present in both the FM as well as the AM receiver.

But noise is not heard from the FM receiver because the noise can be separated from the FM carrier wave without also losing the speech or music program. With the conventional AM system, however, the noise cannot be separated from program carrier wave and therefore is reproduced along with the speech or music.

The reason why the noise can be separated and sidetracked in the FM set and not the AM, is best shown with accompanying chart.

At the FM transmitter, the sound or program wave is used to change *not* the amplitude but *the frequency* of the radio carrier wave; the louder the sound, the more the frequency is shifted, and the higher the pitch of the sound, the faster the frequency is shifted. From the AM transmitter, the radio carrier wave sent out is a constant frequency and the sound is used to change the amount of power sent out from the station’s antenna. The louder the sound, the greater the power. And the higher the pitch of the sound, the faster the power is changed from maximum to minimum.

LIMITER ERASES

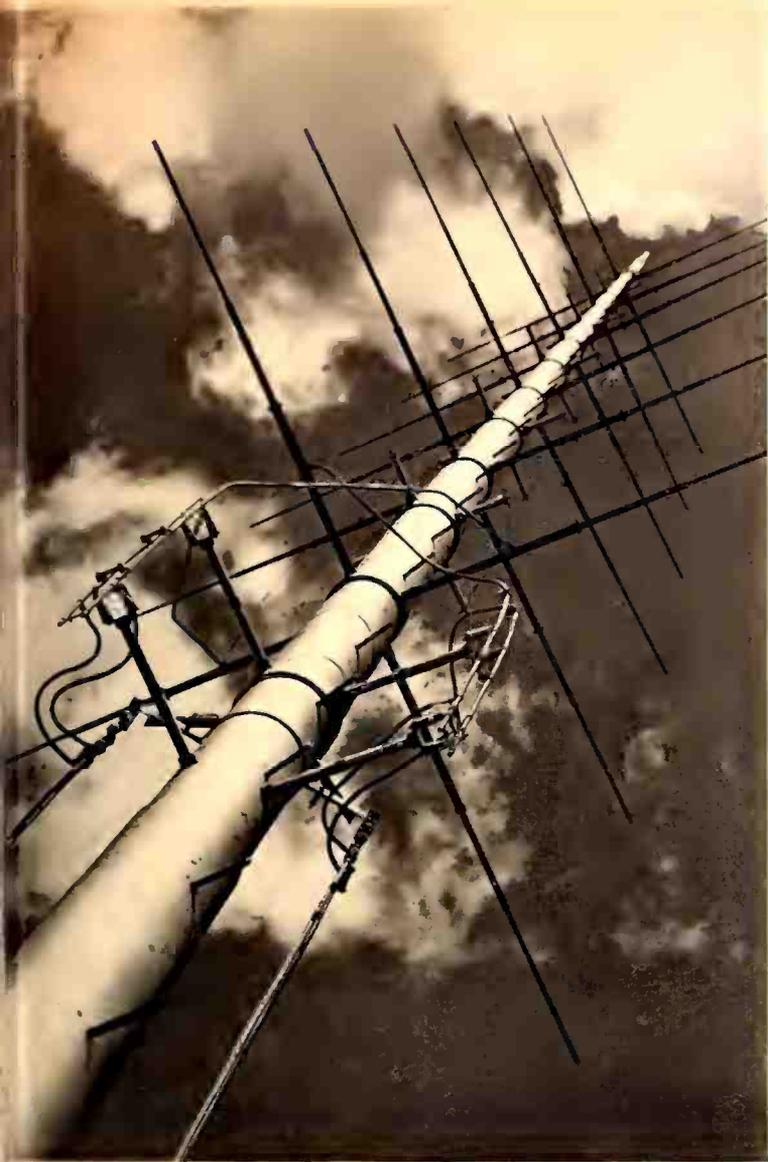
The noise signals which are changing in strength (amplitude modulated) combine with both FM and AM carrier waves as shown by the jagged peaks on the top of the carriers. Thus the FM carrier is no longer only frequency modulated by the sound but also is amplitude modulated by the noise. The AM carrier is further amplitude modulated by the noise. Note carefully that the noise and the sound have the same effect on the AM carrier, namely, to change its amplitude, or power.

Now in the FM receiver, the amplitude modulated component caused by the noise can be eliminated with limiter circuits which prevent changes in amplitude of the signal from going on to the loudspeaker.

HEARING MORE

Of course, these amplitude changes due to the noise in an AM carrier cannot be “erased” with such a limiter circuit, for it would also “erase” the desired sound or program, which is also carried by the amplitude modulations.

The FM receiver reproduces more high tones than an AM set because the FM transmitter is not limited by “room” in the radio spectrum as is the AM transmitter. More spe-



Worm's eye view of the six-bay FM antenna for W65H, Hartford, Conn. Feedlines from transmitter are visible parallel to the tower.

ifically, an AM transmitter needs a "band" of frequencies twice as great as the highest tone it is to transmit. Thus in the crowded broadcast band, only 10 kilocycles are available for each station and therefore the highest tone which can be transmitted is about 5000 cycles. But the pitch of the sound sent by the FM transmitter is determined by the number of times each second that the frequency is shifted, and therefore is limited only by human hearing ability which is 15 to 20 thousand cycles. Beyond these basic limitations is that of the audio system of the set itself. The reproducing ability of the audio system is mainly a matter of price and is not confined to either the FM or AM type of receiver.

DYNAMIC RANGE

A rather new term "dynamic range" is being used to describe the ability of the FM system to reproduce the very softest to the very loudest sounds, without the compression which must be used in AM systems.

A symphony orchestra has a dynamic or volume range of approximately 100 decibels. This corresponds to a change of ten billion to one!

In the AM system, the program must be kept above the background noise level and, at the other extreme, below the peak power rating of the station. Thus weak passages have to be made louder and strong passages softer. This "compression" of the dynamic range is essential to AM operation.

Because of the absence of background noise in the FM system, the weak passages do not have to be made louder, and the strong passages only shift the frequency further, with no danger of damaging the equipment with a power overload as would occur on AM transmitters.

STATIONS AND ANTENNAS

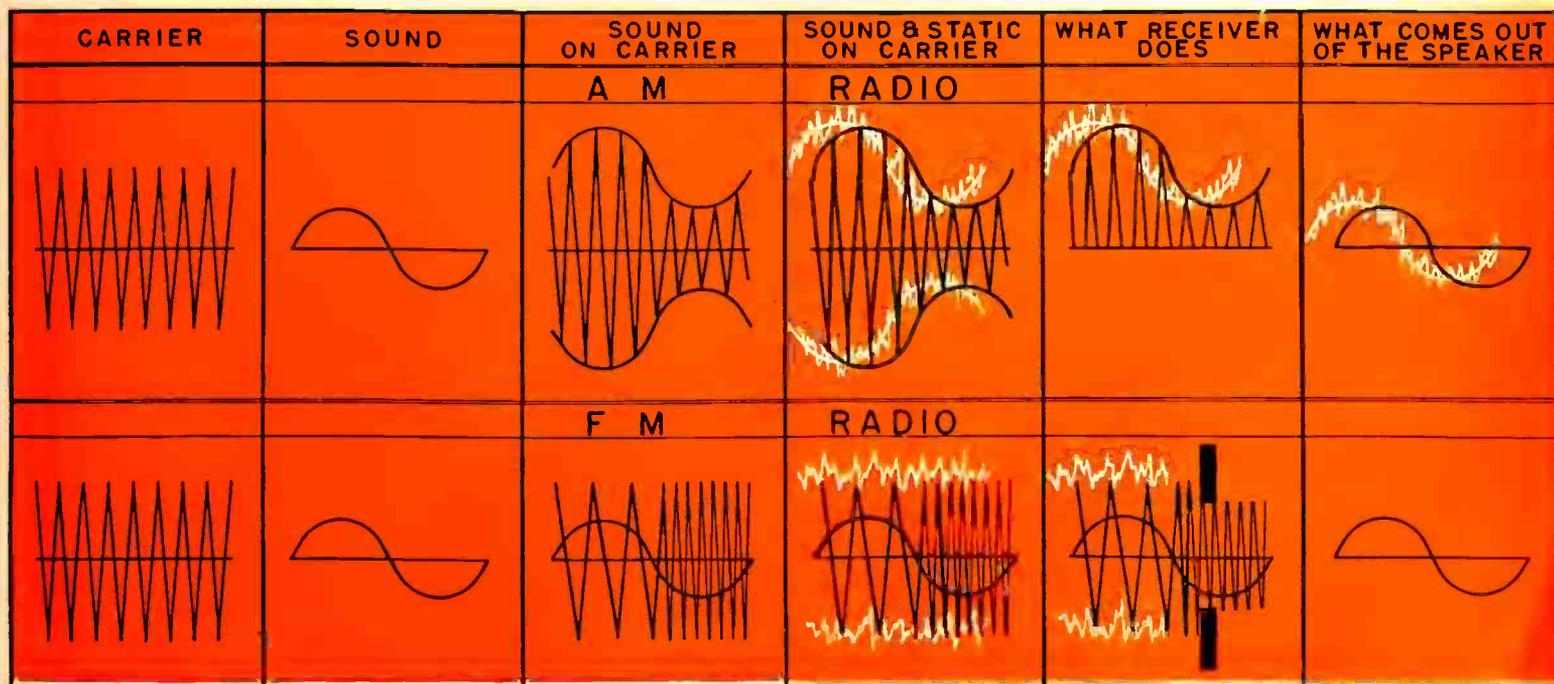
There is some misunderstanding by the public to the effect that an expensive AM receiver should be just as good a noise-free, high fidelity performer as the same priced FM set. This question has already been answered by the fact that both the noiseless and high fidelity characteristics are fundamental to FM and cannot be duplicated in AM sets.

Customers are asking about the installation of an FM set, and especially about the antenna which will be required.

(Continued on page 78)

How FM Erases Noise

Chart shows the combining of carrier, sound, and noise components in AM and FM systems, and how the noise is erased from FM systems by limiting carrier at the receiver.



FM...for all the FaMily

Dad Likes FM's Freedom from Static . . .



Radio without static... broadcasts that reach your living room with all the clarity, the full richness and the naturalness of the studio—that's the modern miracle of FM. Switch on an FM receiver . . . the set is so silent you don't know it's on until the program . . .

Mother Appreciates Concert Hall Quality . . .

This ultra fidelity makes possible broadcasts of amazing brilliance. Great musical masterpieces now with concert hall quality in every home.



The Youngsters Enjoy Their Musical Education

STRIKING ADS TELL FM'S STORY

How Milwaukee Journal Promoted Its New FM Station

RADIO TODAY
October, 1941

... but the FM band played on



FM—THIRD DIMENSION in sound

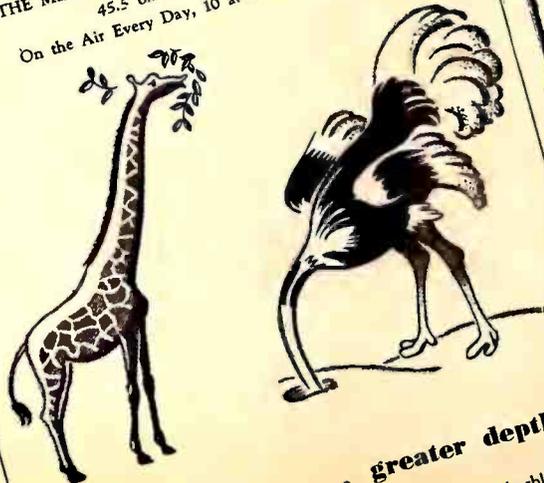
STILLNESS

ing. Storm-stilled trees, stiff and wiry, the leaden sky . . . bushes, puffy and low. A muffled stillness everywhere. Yet the air is brittle and flecked with the spun squeak of ice underfoot—the d in the hedges — the metallic snap ranch—the wild, thin skirl of a lone

conscious of the mechar . . . st. . . for a violinist on the . . . onal illusion may . . . e real thing. . . conscious of reality the performe

THE rains came . . . the light . . . and thunder . . . slopes of June . . . a blast

W55M
THE MILWAUKEE JOURNAL FM STATION
45.5 on Your FM Dial
On the Air Every Day, 10 a. m. to 10 p. m.



Wider range . . . greater depth

All in favor . . . say AYE



for the newest, finest thing in radio like to relax in an easy chair and

Does your radio sound like this?

Fireworks, but unseen . . . the clattering racket of a Fourth of July celebration with out the flags and fun—is that what a sultr summer night, with all its static, does

W55M. The Milwaukee Journal and crisp a clear and a mount

reaches . . . down along the burbling, . . . stomp of lowest bass, . . . every note

apple of her eye and ear

FM



RADIO AND TELEVISION DEPARTMENT

GENERAL  ELECTRIC
COMPANY

1285 Boston Ave.
BRIDGEPORT, CONN.

An Open Letter to Radio Dealers

G-E was First!

The General Electric Company was the first manufacturer of radio apparatus to receive a license under Major Armstrong's wide-swing Frequency Modulation patents -- October 15, 1938.

G-E Experience!

Since then, General Electric has engineered and marketed four different lines of FM receivers for the home -- designed, built, and installed a large percentage of the country's leading FM transmitters -- designed, built, and operated its own "proving ground" FM broadcasting station. No other radio manufacturer has so comprehensive a background of actual experience in FM.

Your Opportunity!

Dealers who become identified with the FM business, in its early stages, will stand to enhance their profit opportunities, today as well as tomorrow, by being accepted as the leader in FM in their communities.

Investigate!

Why not take time off and visit your G-E radio distributor. See the new 1942 General Electric radios with FM. You will return with a new conception of the future of the radio industry and a new stimulation of present opportunities in your own business.

Very truly yours

W. R. G. Baker.

W. R. G. Baker
Manager, Radio & Television Department

Announcing
NEW
GENERAL ELECTRIC
Radio Line

**FEATURING
 GENUINE
 ARMSTRONG
 SYSTEM**

FM



MODEL LFC-1228 with noise-free FM

De luxe automatic record changer. Motor stops at conclusion of last record. Three built-in Beam-a-scopes receive FM, Standard Broadcasts and Foreign short-wave. Dual cascade limiters for noise-free FM. Inter-station silencer. Dynamic speaker with acoustical tone chamber. Three-gang condenser. 12 tubes including rectifier. Figured mahogany veneer cabinet.



MODEL LC-758

Automatic record changer with lightweight tone arm. Provision for attachment of FM Transiator. Built-in Beam-a-scopes receive Standard Broadcasts and Foreign short-wave. Dynamic speaker. Broad-band R.F. stage with Hi Mu tube. Feather-touch tuning with drift-proof station settings. 7 tubes including rectifier. Smartly styled American walnut veneer cabinet.



MODEL LC-619

Automatic record changer with lightweight tone arm. Built-in Beam-a-scopes receive Standard Broadcasts and Foreign short-wave. Feather-touch tuning with drift-proof station settings. Dynamic speaker. Broad-band R.F. stage with Hi Mu tube. 6 tubes including rectifier. Cabinet in two-tone walnut veneers.



MODEL LC-648

Automatic record changer with lightweight tone arm. Built-in Beam-a-scope receives Standard Broadcasts plus Police Band. Dynamic speaker. Broad-band R.F. stage with Hi Mu tube. 6 tubes including rectifier. 18th Century Period styling in two-tone walnut veneers.



MODEL LC-638

Plays 10-inch or 12-inch records with lid closed. Built-in Beam-a-scope receives Standard Broadcasts. Dynamic speaker. Broad-band R.F. stage. 6 tubes including rectifier. American walnut veneer cabinet.

Model LC-649 with Underwriters' approval

MODEL LC-658

Table radio-phonograph with automatic record changer. Long-life "Pfanstiehl" needle. Built-in Beam-a-scope receives Standard Broadcasts. Mirrored-glass illuminated dial. 6 tubes including rectifier. Cabinet in mahogany veneer.

Model LC-669 with Underwriters' approval





MODEL LFC-1128 with noise-free FM

Automatic record changer with lightweight tone arm. Built-in Beam-a-scopes receive FM, Standard Broadcasts, and Foreign short-wave. Dual cascade limiters for noise-free FM. Inter-station silencer. Dynamic speaker. Three-gang condenser. 11 tubes including rectifier. 18th Century styled walnut veneer cabinet.



MODEL LFC-1118 with noise-free FM

Automatic record changer with lightweight tone arm. Built-in Beam-a-scopes receive FM, Standard Broadcasts, and Foreign short-wave. Dual cascade limiters for noise-free FM. Inter-station silencer. Dynamic speaker. Three-gang condenser. 11 tubes including rectifier. Cabinet of American walnut veneers.



MODEL LF-116 with noise-free FM

Three built-in Beam-a-scopes receive FM, Standard Broadcasts and Foreign short-wave. Dual cascade limiters for noise-free FM. Inter-station silencer. Dynamic speaker with acoustical tone chamber. Three-gang condenser. Tuned R.F. on all bands. 11 tubes including rectifier. American walnut veneer cabinet.



MODEL LF-115 with noise-free FM

Three built-in Beam-a-scopes receive FM, Standard Broadcasts, and Foreign short-wave. Dual cascade limiters for noise-free FM. Inter-station silencer. Dynamic speaker. Three-gang condenser. Tuned R.F. stage on all bands. 11 tubes including rectifier. Cabinet in American walnut veneers.



MODEL L-915

Provision for attachment of FM Translator or record player. Built-in Beam-a-scope receives Standard Broadcasts and Foreign short-wave. Tone Monitor Circuit. Broad-band stage with H Mu tube. Dynamic speaker. Feather touch tuning with drift-proof station settings. 9 tubes including rectifier. American walnut veneer cabinet.



A MESSAGE FROM A. A. BRANDT, Sales Manager, Receiver Sales

If you have FM broadcasting in your area, start selling FM—now. A moderately-priced radio with FM offers your customers something that the most expensive radio without FM cannot give them.

Even if you don't have FM broadcasting now, you can begin to develop the market. Tell your customers that buying a set which receives FM is a protection for their radio investment. Tell them how rapidly FM is spreading.

General Electric has produced a line of home receivers with FM every year since 1938. This is our fourth line. General Electric is the only manufacturer building FM receivers who operates a complete "proving ground" FM station and builds complete FM broadcasting station equipment.

In addition, G.E. offers you a complete sales promotion and advertising plan to help you sell FM. Ask your G-E radio distributor about it—today. FM is your opportunity.



GENERAL  ELECTRIC



FM'S FIRST INDEPENDENT STATION
on-the-air
with a G-E 1-kw transmitter



Proof That the Public Regards "FM" as More than a Strange Radio Symbol

W47A started operation July 17 with 36 sponsored programs, none less than 15 minutes long. It serves the Capitol District of New York State—covering 6589 square miles—16½ hours daily, 18½ hours Saturdays.

Owned and operated by the Capitol Broadcasting Co., Inc.—devoted solely to FM—it is the first commercial FM station unaffiliated with any broadcast interest.

W47A is also the first station in the country to get a construction permit from the F.C.C. for STL equipment. It will operate on 331 megacycles with W2XEO as the call letters. This studio-to-transmitter equipment is being built by G.E. and will soon be installed.

General Electric offers the only comprehensive line in FM today—broadcast and relay transmitters, receivers, tubes, frequency and modulation monitors, high-gain turnstile antennas, and crystals. G.E. is the only manufacturer of FM broadcast transmitters and receivers operating an FM station as a proving ground. To benefit from actual operating experience look to General Electric for all your FM needs. Just get in touch with the nearest of our 80 offices.

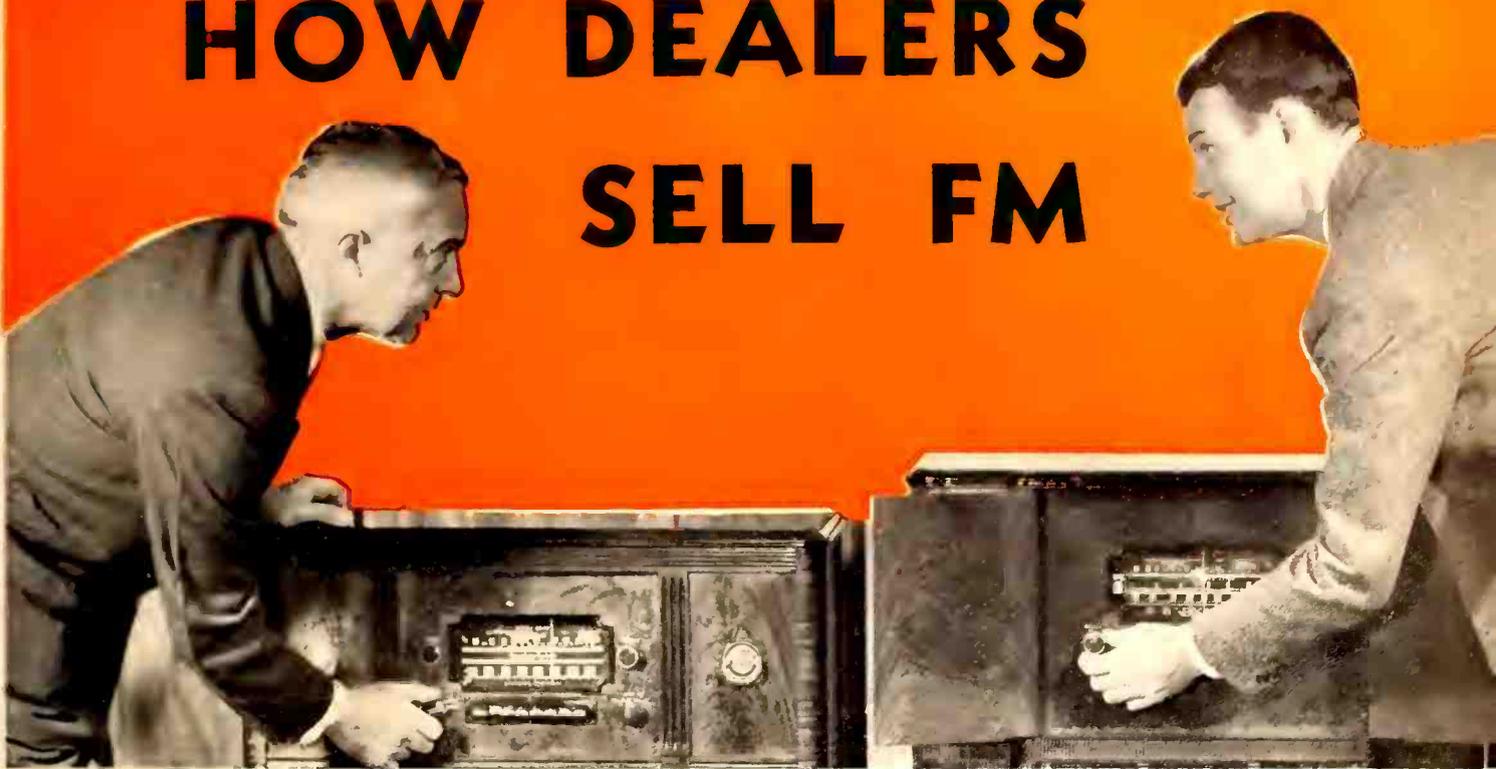
Dwelle S. Hoag, Chief Engineer of W47A, takes readings on the 1-kw FM transmitter



Free!
HOW TO PLAN AN FM STATION
HINTS ON OPERATING FM TRANSMITTERS
HOW TO MAKE MEASUREMENTS IN FM TRANSMITTERS
 Three valuable guides, written by G-E engineers, to help you in the FM field. Get them from your G-E representative, or write General Electric, Section E160-16, Schenectady, N. Y.

GENERAL  ELECTRIC
160-16-6914

HOW DEALERS SELL FM



NEW METHODS USED IN "QUALITY RADIO" MERCHANDISING

When a retailer can average up his unit sales in receivers and get a figure over \$300 he's sitting pretty. It's happening in FM today.

But a dealer does not inherit that kind of business simply because his battered shingle hangs on the street. He has to do some extra work, and make some sales plans that are specific, aggressive and enlightened.

In the FM areas, many radio men have already roused themselves to new merchandising procedures. To report these, *RADIO TODAY* has consulted both the specialist in the skyscraper and the man at the whistle stop.

In the first place, retailers should sail into the merchandising of FM with some pioneering plans, declares Ben Gross, the Stromberg Carlson executive who is widely recognized as an expert on selling higher-priced radio. Mr. Gross reminds us that dealers have searched long and desperately for a radio development that would give the buying public a valid and dramatic reason for buying a new radio. Many of the AM "gadgets" have failed in this respect, in spite of vigorous promotion efforts to describe them as major radio improvements.

FM is the answer, he says, to the retailer's plea for merchandise that is spectacularly and genuinely new. Thus it deserves a specific sales procedure of the all-out character.

First among his store-tested suggestions as to how to handle the new sales, is one about how to reply intelligently to the many folks who come in with the simple query, "What's this FM I hear about?" This question is a frequent one, and the answer often determines the success or failure of the whole encounter.

GET THE INFO

To be able to answer in a sales-producing manner, Mr. Gross recommends that the dealer school himself carefully on (1) what it is, (2) how it was developed, and (3) what it will do. This information should be assembled with the confident feeling that such matters are not for engineers

only. An adequate "talking" knowledge of FM can be grasped and packaged for the public, by the most non-technical of radio men. It should be regarded as an interesting and comfortable advance in a major radio development.

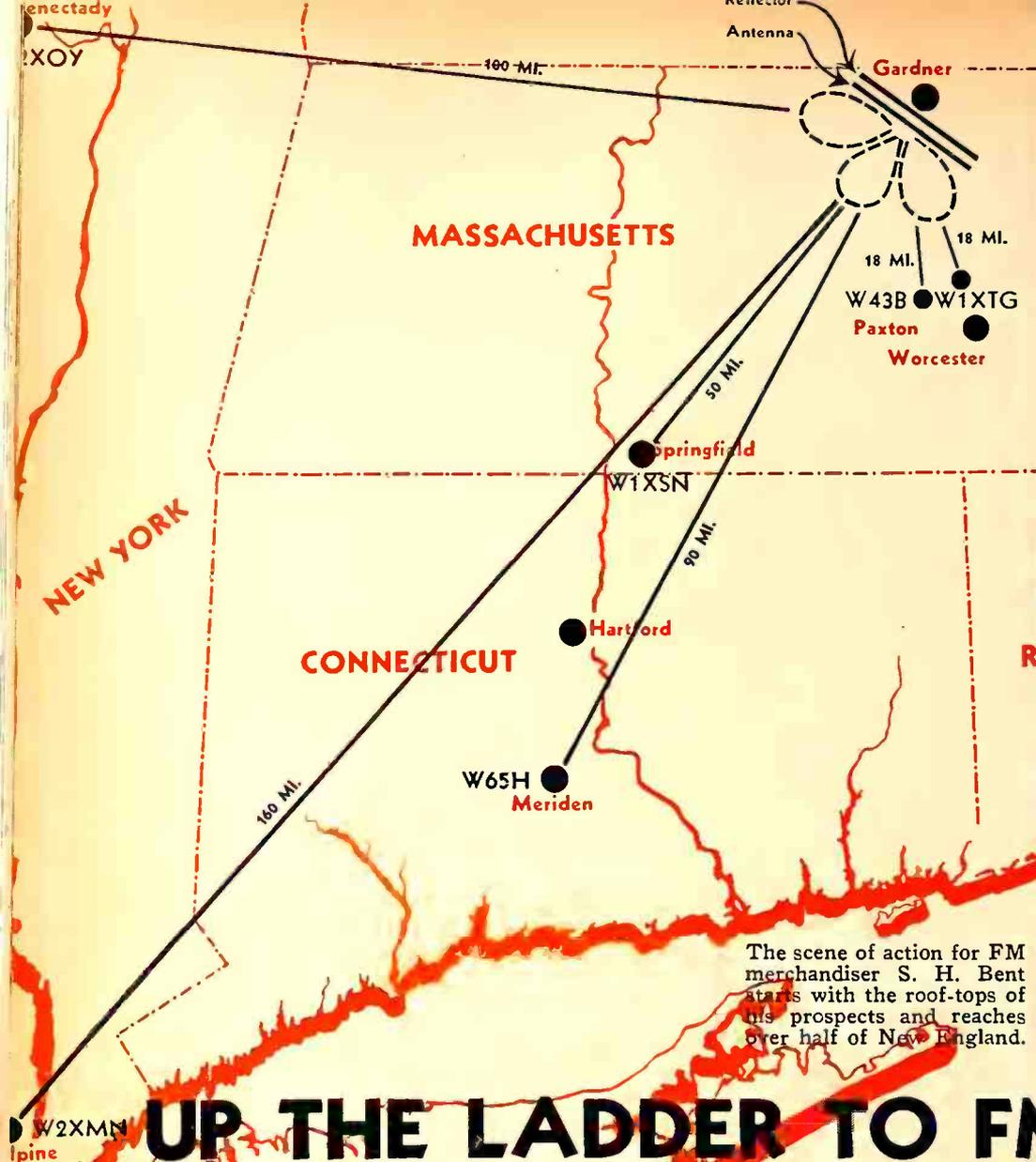
As for actual demonstrations in stores, this executive suggests that the prospect be taken first to hear a first-rate program on a good AM set. There is no need of mentioning at this point that AM is being demonstrated. Proceed to "destroy" this by a noise-creating device, such as an electric razor or some other item familiar to the prospect, which will give the result desired. Now you turn to FM, in magnificent contrast to the noisy AM, and then demonstrate how it is untouched by the noisy appliance. Sets used in this stunt should all be the same make so that the emphasis goes directly onto the system, rather than the make.

Home demonstrations, says Mr. Gross, now have an entirely new meaning for the dealer, and 1941 store policies should be based on this fact. It is pointed out that once the luxuriant tones of FM are produced for the prospect in

(Continued on page 58)

A resounding demonstration of FM by GE experts, working with noisemakers plus miniature AM and FM transmitters.





The scene of action for FM merchandiser S. H. Bent starts with the roof-tops of his prospects and reaches over half of New England.

UP THE LADDER TO FM SUCCESS

MASSACHUSETTS DEALER HOISTS ANTENNAS AND GETS RESULTS

"Here in my town we have devised a method of selling which proves to the prospective customer that FM is not only the biggest change and advancement in radio, but when correctly installed will give him radio enjoyment he never dreamed of!"

These are the energetic words of S. Harold Bent, prominent radio dealer of Gardner, Mass. He says that FM represents an opportunity for the legitimate radio dealer to get back into "real" radio business, selling sets priced from \$175 to \$1,000. But the radio man has to be prepared to prove that the new radios are worth the high prices.

"This requires a complete revolution in selling and installing," declares Mr. Bent. He has been staging his own "revolution" for nearly a year now, and has emerged with flying colors. Mr. Bent takes the matter seriously because "during these days of merchandise shortages the dealer must more than double his unit sales prices to break even. . . . FM offers the solution to that problem."

FIRE-ENGINE TACTICS

One of the keys to Mr. Bent's success with FM is a long one, with rungs. It's a demonstration ladder—but let him tell the story:

"My method is to use a step-ladder 22 feet long, made light enough so that it may be erected by two men. This

is tied to the side of the customer's house in a position that will give the least signal reflection from tin roofs, gutters and service wires. Through the center is raised a 20-foot steel tube which is light and strong (not galvanized iron pipe) and on top of this is the dipole antenna with reflector. The antenna is constructed so that it can be matched as to impedance with the transmission line which is E01 cable. The adjustment of the matching bars will vary considerably if the line is long or short.

"The matching is done with the use of an electronic voltmeter measuring limiter voltage, listening to a lower power transmitter (we use Worcester, W1XTG, 18 miles from us at 1000 watts. A high power transmitter such as W43B, Paxton with 50,000 watts, (ten bay turnstile antenna) about the same distance from us as W1XTG is using so much power that AVC action makes the signal useless for antenna matching).

"After the antenna and transmission line are matched for impedance we orient antenna for direction, raising and lowering antenna above the ground for ground reflection factor so that most stations, W1XTG, W43B, W1XSN, W2XMN, W65H, (see accompanying map) come in on the "big lobe" in front of the antenna and others on a lobe about 45 degrees on the side. The lobe varies as to angle with ground reflection factor and has to be determined by raising and lowering and orienting antenna. In some

(Continued on page 52)



ZENITH RADIO CORPORATION

6001 DICKENS AVENUE

CHICAGO

OFFICE OF
E. F. McDONALD, JR.
PRESIDENT

TO RADIO DEALERS:

In this letter I want to talk to you about FREQUENCY MODULATION and its importance to you ... your pocket-book and your business.

First of all, let me go on record as saying that I firmly believe Frequency Modulation is going to play a big part in your business from now on. It will start making profits for you this year and should grow by leaps and bounds.

Even in those areas where FM stations are not yet erected or applied for, the public will be so interested in FM that they will demand this new feature in their radio, so when FM comes to their locality they will not have bought a set that fails to receive all the local stations.

FM should substantially raise the unit sale of your radio receivers. It gives a real reason for trading-in all radios, because radios without FM will soon be obsolete. Furthermore, trade-ins will be at far lower figures because FM represents something distinctive — fundamentally different and desirable.

But here I want to warn you on FM receivers built to a price level instead of a quality level.

We could build a so-called FM receiver to retail at \$30.00 — but a starting point over \$100 at this time represents the best judgment of our entire organization.

In deciding our policy on, and design of, the new Zenith FM sets, we took all factors into consideration. . . . A so-called \$30.00 FM set would not only ruin the market for us and for you but would not give you the inherent quality of FM reproduction. It would give you no margin to work on.

All Zenith FM receivers are built under the original Armstrong FM patents, assuring you and your customers quality sets capable of reproducing the superior tone and fidelity the public has a right to expect from FM.

The manufacturer who tries to build an FM set on price is inviting ill will among buyers and starving his dealers in prestige and profit.

Cordially yours,

E. F. McDonald, Jr.

ZENITH
**MICROSTATIC
 ARMSTRONG**

FM Radios

BY THE WORLD'S

Over a quarter of a century of experience in making fine radios for the home has been built into the new Zenith Master Series of DeLuxe Frequency Modulation musical instruments. In close collaboration with Major E. H. Armstrong, inventor of genuine FM, we are proud to have pioneered FM broadcasting in the Chicago area, and to have been among

WHAT THE NEW ZENITH FM MASTER SERIES CAN DO FOR YOU

The New Zenith FM Master Series gives you that all-important opportunity of "Selling Up"—of moving more merchandise in the higher price brackets—and of maintaining the dollar volume you have experienced in recent years. The Zenith FM Master Series will identify you store as being the aggressive outlet interested in supplying the latest and finest in radi

SELL UP ALL THE MERCHANDISE IN YOUR STORE

Under a defense economy you may not be able to make as many radio sales as you have in the past—but the sales you do make can be more profitable ones. In place of the small, popu priced, low-profit units, sell up the finer units which offer you a larger dollar profit per :

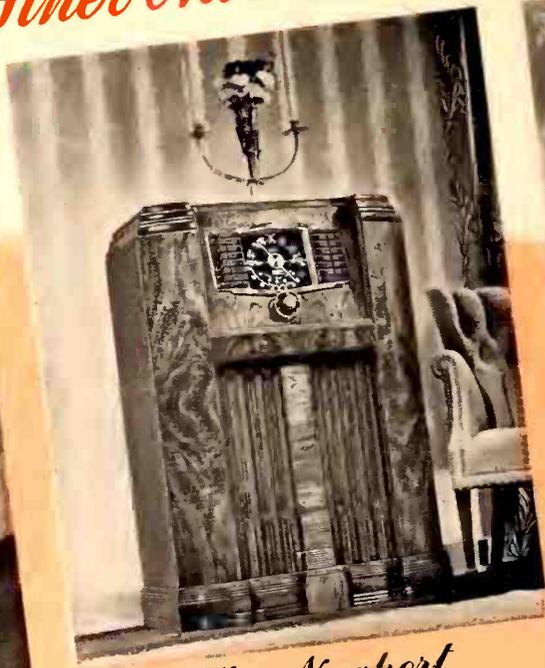


★ *These Are The Finer More Beautiful Radios America*



The Lenox

Model 12-H-650 provides FM, standard and short wave reception. Custom equipped with Radiargan, Wavemagnet and the big black diol—12 tubes including rectifier.



The Newport

Model 12-H-670. A full console styling for FM, standard and short wave reception—12 tubes including rectifier. High fidelity tone through 14 inch speaker.



The Kenwood

Model 12-H-689. A complete musical instrument that plays and automatically changes phonograph records. Receives FM, standard and short wave—12 tubes including rectifier.

BEST MAKER OF FINE HOME RADIOS

the first to engage in the manufacture of fine FM receiving instruments for the homes of the entire nation. This new Zenith line of complete FM receivers offers you the greatest opportunity in years to get the old radios out of the homes and sell quality instruments that give the radio owner something new—distinctive—fundamentally different and desirable.

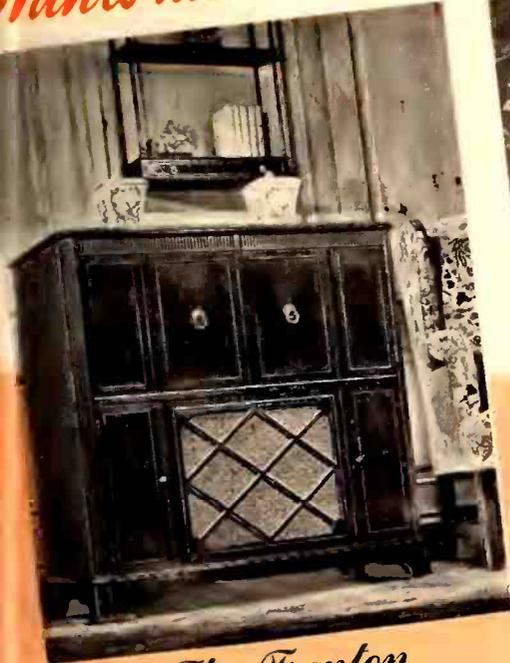
INCREASE YOUR DOLLAR VOLUME ON INDIVIDUAL SALES You know and we know there's more profit in one \$150 radio than there is in six \$25 radios—and yet it only takes about as much time to sell one \$150 radio as it does six \$25 radios—so, take the logical step—Sell up and increase your Dollar Volume on every individual sale you make.

RESTORE THE GOOD OLD AMERICAN CUSTOM OF A FULL PROFIT ON EVERY SATISFACTORY TRANSACTION

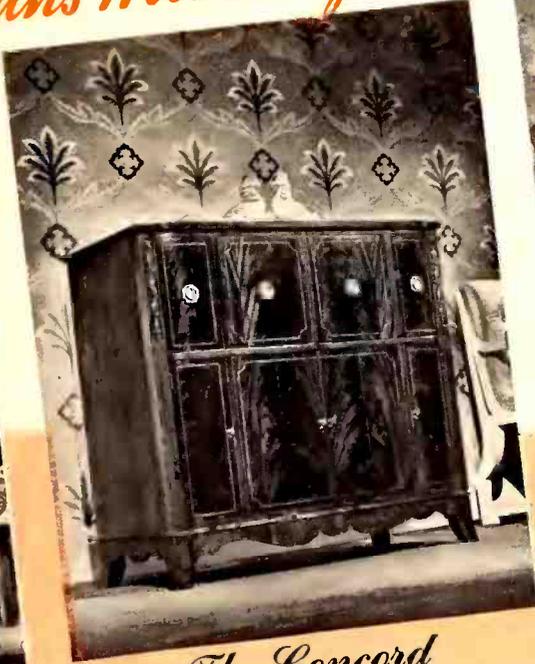
Wants and Americans Will Buy!



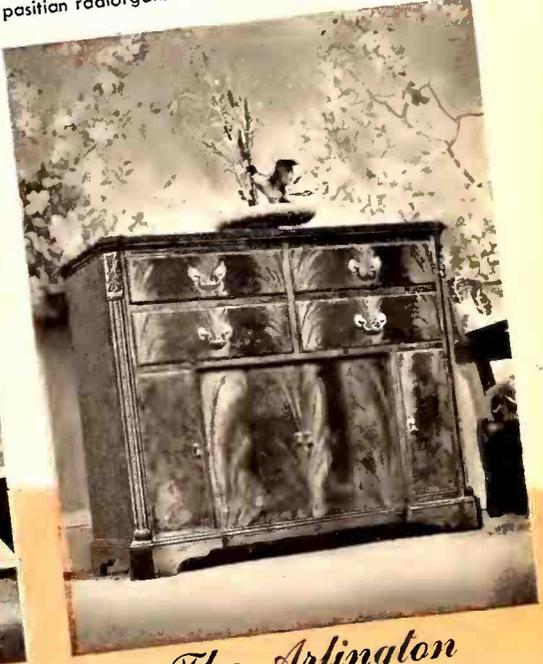
The Williamsburg
Model 12-H-695. A radio-phonograph combination that receives FM, standard and short wave broadcasts. Has a deep tone, 14 inch speaker and 64 position radiorgan.



The Trenton
Model 14-H-697. A home recorder and automatic radio-phonograph combination that receives FM, standard and short wave broadcasts. Has a big 14 inch speaker.



The Concord
Model 22-H-699. A luxury automatic radio-phonograph combination. Receives FM, standard and short wave reception. Three matched high fidelity speakers. Remote speaker available. Mahogany cabinet.



The Arlington
Model 22-H-698. A quality radio-phonograph combination in a luxurious mahogany cabinet. Has the genuine Armstrong FM circuit. 3 matched high fidelity speakers.

WHEN YOU BUY A ZENITH FM RADIO
You Are Sure of Getting the
Genuine Armstrong FM
BE SAFE—INSIST ON IT!
Don't Accept an Imitation

ZENITH
MICROSTATIC
ARMSTRONG

FM Radios

Over a quarter of a century of experience in making fine radios for the home has been built into the new Zenith Master Series of DeLuxe Frequency Modulation musical instruments. In close collaboration with Major E. H. Armstrong, inventor of genuine FM, we are proud to have pioneered FM broadcasting in the Chicago area, and to have been among

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SELL UP ALL THE MERCHANDISE IN YOUR STORE

Under a deflation economy you may not be able to make as many radio sales as you have in the past—but the sales you do make can be more profitable ones. In place of the small, popular, low-profit units, sell up the finer units which offer you a larger dollar profit per sale.



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Model 22-H-695. A quality radio-phonograph combination in a luxurious mahogany cabinet. Has the genuine Armstrong FM circuit—3 matched high fidelity speakers.

BY THE WORLD'S OLDEST MAKER OF FINE HOME RADIOS

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INCREASE YOUR DOLLAR VOLUME ON INDIVIDUAL SALES

You know and we know there's more profit in one \$150 radio than there is in six \$25 radios—and yet it only takes about as much time to sell one \$150 radio as it does six \$25 radios—so, take the logical step—Sell up and increase your Dollar Volume on every individual sale you make.

RESTORE THE GOD OLD AMERICAN CUSTOM OF A FULL PROFIT ON EVERY SATISFACTORY TRANSACTION



The Williamsbury

Model 12-H-695. A radio-phonograph combination that receives FM, standard and short wave broadcast. Has a deep tone, 14 inch speaker and 4 position radiogon.

Wants and Americans Will Buy!

**WHEN YOU BUY A ZENITH FM RADIO
You Are Sure of Getting the**

Genuine Armstrong FM

**BE SAFE—INSIST ON IT!
Don't Accept an Imitation**

HOW FM STATIONS AID LOCAL TRADE

Recognizing that radio dealers can be the principal factors in building FM audiences by the sale of FM receivers, the managements of new FM stations have been active in helping local dealers to promote the FM idea.

In Milwaukee, Boston, Chicago, Schenectady, Baton Rouge, La., Hartford, Conn., New York, and other cities, FM stations have cooperated with dealers in every way possible, to stimulate local sales. At Baton Rouge and Schenectady for example:

Dealers were invited to the station for a complete presentation and demonstration of FM, prior to the official station opening. Servicemen likewise were fully informed of what FM had to offer, so that local technical men would be thoroughly instructed in the kind of information to pass along later to the public.

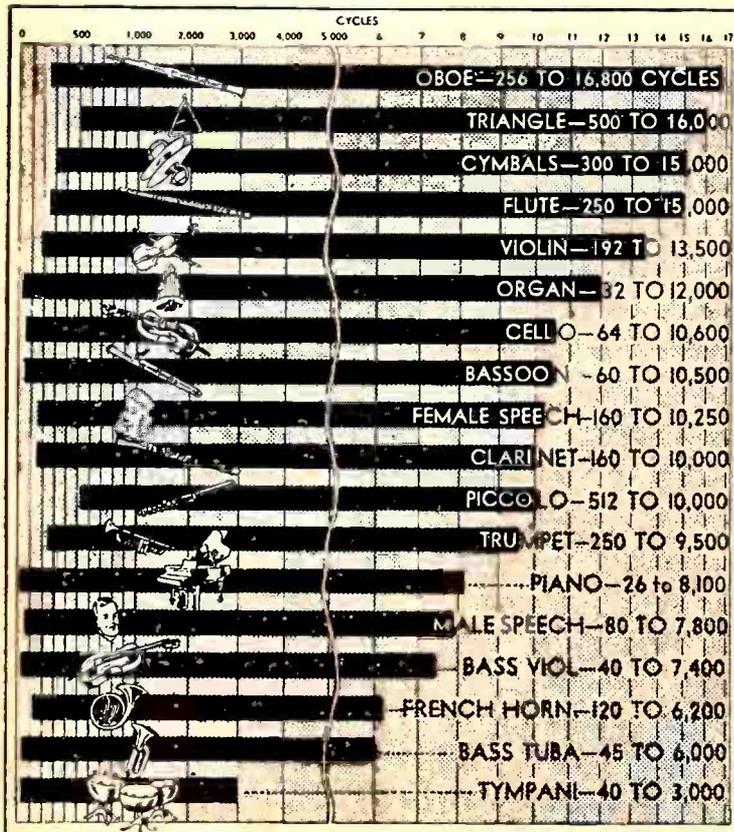
"DEALER-DEMONSTRATION" PROGRAMS

The FM stations put on special "dealer-demonstration" programs each afternoon so that dealers could demonstrate high fidelity and noise suppression to prospects.

The broadcasting stations carried spot announcements concerning FM on free time available on their regular AM schedules.

Stations supplied speakers and artists, and actually conducted public demonstrations wherever and whenever possible,

This chart caught eyes of Chicagoans, showing fundamental and overtone ranges in cycles per second. It appeared in Chicago Tribune's issue celebrating opening of FM station W59C. Wavy line around 5,000 cycles shows limits of AM; FM extends to over 15,000.



Connecticut station uses four of these big time roadside ads, to invite public into local radio stores.

Stations in as many newspapers as possible listed the FM programs on the radio page.

FM OWNERS REPORTED

The Milwaukee Journal FM station, of which Walter J. Damm is general manager, keeps track of all local sales of FM sets through cooperation with Milwaukee distributors and dealers, who send to the station a card with the name of each purchaser of an FM set. These names are used in a once-a-week program, "Welcome to FM," in which these FM listeners are saluted by name. This program has made quite a hit and has done much to publicize FM.

In announcing the opening of the regular schedule of FM broadcasts from the transmitter atop Wisconsin Tower in downtown Milwaukee, full-page advertising was run in The Milwaukee Journal. This copy was planned not only to create an urge to hear the new high-frequency broadcasting, but directed listeners to dealers' places where reception was available. Names and addresses of these dealers stores were conspicuously displayed in the advertising. Proofs of the ad were posted in windows and showrooms of all cooperating dealers.

"LIGHTNING" WINDOW POSTERS

Radio dealers in Milwaukee and vicinity were also sent a window and store poster headed by the line "Enjoy FM On Nights Like This!" and showing the spectacular photo of forked lightning over downtown Milwaukee, which appears on the front cover of this issue. This picture is copyrighted by the Milwaukee Journal. The poster carried the story of FM's staticless performance, and was followed by W55M's weekly program schedule and a breakdown of type of program contents, in terms of hours and minutes per week.

The idea behind this promotion piece was to help dealers show prospects how FM eliminates static and improves reception generally, and also to show the wide range of excellent programs which are available each week on the

(Continued on page 68)

A STATEMENT FROM STROMBERG-CARLSON



Stromberg-Carlson Telephone Manufacturing Company

MANUFACTURERS OF
TELEPHONE APPARATUS
CABLES AND SUPPLIES
RADIO APPARATUS

ROCHESTER, NEW YORK

GENERAL OFFICE AND
FACTORY
100 CARLSON ROAD
TELEPHONE QUVER 250
ROCHESTER, NEW YORK.

BRANCH SALES OFFICES
5640 WEST ADAMS STREET
TELEPHONE STATE 4238
CHICAGO, ILLINOIS
2017 GRAND AVENUE
TELEPHONE HARRISON 498
KANSAS CITY, MISSOURI

To Radio Retailers
of the United States

Gentlemen:

Major Edwin H. Armstrong has added new horizons to radio. With his invention of Frequency Modulation radio comes of age.

From our years of working closely with Major Armstrong in developing receivers that do FM full justice, we have a personal satisfaction at the rapidity with which FM has grown. And we extend our warm greetings and congratulations to Major Armstrong on the success of his epic achievements.

To your customers, jaded with the limited tone range and noisy reception of ordinary broadcasting, the Armstrong system of Frequency Modulation is a thrilling, fresh reason for buying a new receiver. And not just any receiver, but a finer, quality set. One that sells above the average market.

Now as never before, it pays to sell Stromberg-Carlson. For now you can demonstrate the superiorities which, under FM, for the first time get full play.

A range of natural tone wide enough to satisfy the most critical ear, for example. Or the exclusive Acoustical Labyrinth that eliminates wild tones. And the exclusive, "full-floating", tone-true Speaker that prevents tone distortion at any usable volume.

These superiorities, coupled with Stromberg-Carlson's carefully guarded price structure, assure you maximum profits. I hope you make the most of them.

Cordially yours,

Ray H. Manson

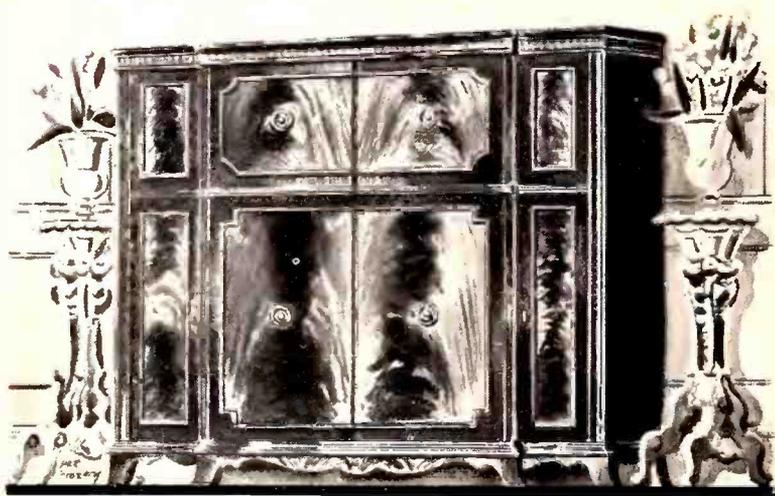
Ray H. Manson,
Vice-President & Gen. Mgr.



AND 2 ANNOUNCEMENTS.

ANNOUNCEMENT #1

PRESENTING THE FINEST INSTRUMENT THAT STROMBERG-CARLSON HAS EVER MADE!



Just as Beethoven looms above the world of music, so this new "Georgian Model" of Stromberg-Carlson stands apart from all other radio receivers and phonographs in the perfection and purity of its reproduction of great music.

Far into its construction, without regard to cost, has gone every significant refinement and engineering advance resulting from 47 years of pioneer work in sound transmission and reception.

Under the magic of this instrument's flawless reception the surging power of Sibelius . . . the elfin grace of Haydn . . . or the fiery rhythm of De Falla are brought to you with a depth and musical brilliance never before heard outside the concert hall.

This is music as the masters meant it to be heard!



Above, Model 955-PF*, genuine walnut or mahogany.

The "Georgian Model" is the ultimate expression of the engineering that has given Stromberg-Carlson these "firsts" in Frequency Modulation.

FIRST

with a complete line of FM radios . . . and with a complete line of FM phonograph combinations.

FIRST

to advertise FM.

FIRST

with push-button tuning for FM as well as AM.

FIRST

manufacturer of FM radios to operate an FM station.

FIRST

to complete two years' continuous FM FIELD EXPERIENCE, with more FM sets—in more models—in more homes than any other manufacturer.

FIRST

to introduce a Coaxial Speaker expressly designed for FM.

FIRST

to provide stock sets that permitted Major Armstrong to demonstrate the utmost of FM's possibilities.

FIRST

and ONLY FM receivers with the Labyrinth and Carpinchoe Speaker.

FIRST

to introduce Automatic FM-AM Range Shift.

FIRST

to show publicly that, side-by-side, FM reproduction is indistinguishable from live talent.

"THERE IS NOTHING FINER

ANNOUNCEMENT #2

DO YOUR BIT FOR NATIONAL DEFENSE—WITH A CALENDAR!

O C T O B E R						
			1	2	3	
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	



Mark on this calendar the days that you have had to wait for deliveries of the new Stromberg-Carlson line. Every one of them is a sign of your cooperation in America's great defense program.

For Stromberg-Carlson, along with other manufacturers of vital products, is doing its share in speeding the government's emergency demands.

Naturally this has caused great readjustment of normal peacetime business. But be assured that we are bending every energy to get merchandise to you, consistent with our government's requirements for defense products and the availability of supplies and fine workmanship.

And the full new Stromberg-Carlson line is worth waiting for. It gives you FM leadership based on the longest field experience with FM reception . . . dramatic, human interest advertising in *Life*, *Time*, and *The New Yorker*...quality products backed by 47 years of pioneer work in sound transmission and reception...and a price structure and franchise that protect your profits.

You can sell these instruments with the confidence that "There is nothing finer than a Stromberg-Carlson!"

STROMBERG-CARLSON
ROCHESTER, NEW YORK

A FINER RADIO FOR STANDARD PROGRAMS • THE ONLY RADIO FOR FM AT ITS BEST

THAN A STROMBERG-CARLSON!"

INSTALLING FM SETS

Insuring perfect performance with the correct antenna system

Any radio receiving set will give better performance if it is installed properly with a good antenna, and ground. This statement means *any* radio, FM, AM, or television. Although most of the AM and many of the FM sets are now equipped with loop antennas which are satisfactory for many installations, it is a fact that you can demonstrate any time, that a good outdoor antenna will give improved reception for more stations.

FM receivers and the FM system are outstanding for several reasons, one of which is ability to discriminate against noise. While this ability is remarkable, there is no reason to handicap it with a poor installation.

For all conditions the outdoor di-pole antenna will give the best results on FM. This, of course is due to the greater signal strength which can be developed, and usually there is less noise voltage surrounding a high di-pole. The noise is, of course, wiped off on strong signals but it can come through on weak, distant stations.

DI-POLE ANTENNAS

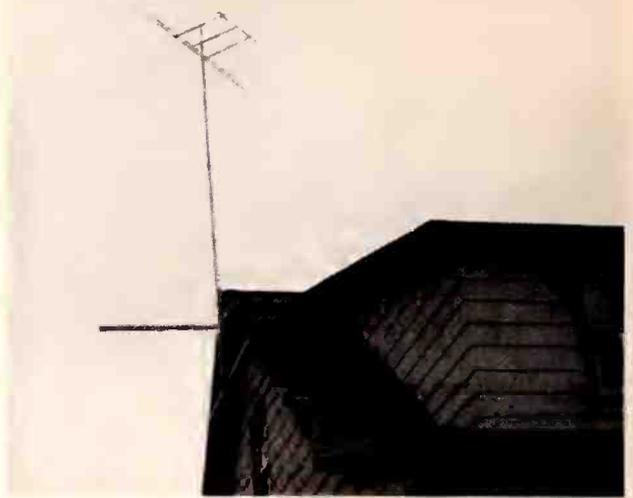
Di-poles may be unfamiliar to servicemen who have not encountered them in "ham" activities or FM and Television work. Fundamentally, the di-pole aerial is two quarter-wave conductors, in-line, with the inner ends separated a short distance and the two conductor feed-line attached to the inner ends for the transfer of energy.

The two-conductor feed-line is usually a twisted pair of specially insulated wires designed for low losses at medium high frequencies. Typical losses for transmission cable of the type used for FM antennas is about 6 DB per 100 feet at 40 mc. This 6 db corresponds to a loss of 50 per cent of the voltage present at the di-pole. Usually the runs are less than 100 feet, and not as much voltage is lost. The surge impedance of the transmission line is usually 72 ohms. This matches the impedance at the center of the di-pole and must be terminated at the receiver with a like value of impedance.

This problem of matching the impedances will not be troublesome to servicemen who use complete antenna kits. If the transmission line is bought separately, its surge impedance should be known since some of the lines are as high as 100 ohms. A few ohms mis-match is not important, but 100-ohm lines should not be connected to a 72-ohm di-pole.

DIRECTIONAL POINTS

Di-pole antennas are broadly directional on the "side" and have sharp minimum reception points on the ends. Theoretically, the pick-up of the antenna will be maximum when the line of the di-poles is at right angles to the line between the receiver and the station. Reflections and intervening objects occasionally change this, and the di-pole should be rotated for maximum signal from the weakest



Home installation engineered by S. H. Bent, Gardner, Mass. Mast is iron pipe. Horizontal member is strut for guy wire. See page 34.

station if this does not interfere with the reception of other FM stations.

One important consideration of installing an FM antenna is to get it high. The extra length of transmission line and possible loss will be more than compensated for by the greater signal. Noise-free FM reception is dependent upon sufficient signal level to insure complete action by the limiter.

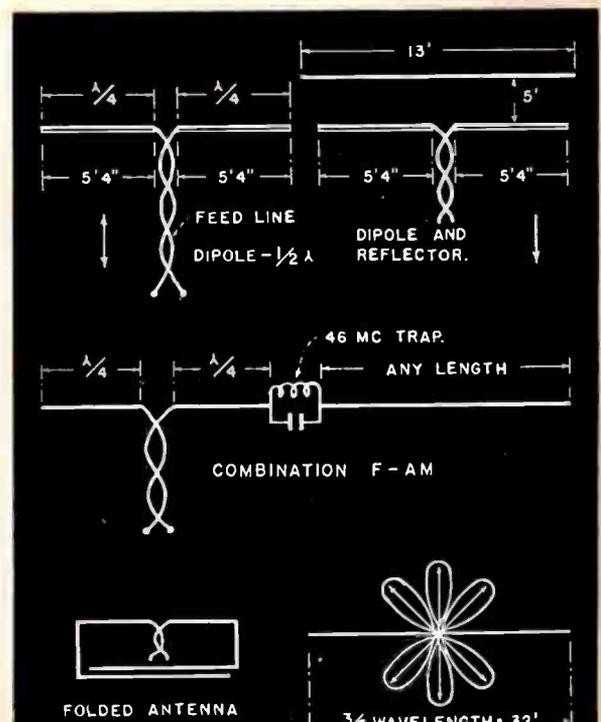
COMBINATION A-FM ANTENNAS

Since most of the FM sets are also AM sets, it is desirable to combine the FM and broadcast band antennas. This can be accomplished in several ways. Some antenna manufacturers are selling units which consist of a long wire section connected to the open end of one di-pole through a wave trap resonated at 46 mc. This trap isolates the long antenna section from the ordinary FM di-pole for the 40 to 50 mc. range but permits the full length of the wire to operate on the BC band.

This type of A-FM antenna is shown in the diagram. The tuned circuit connecting the end of the quarter wave dipole with the long wire BC antenna is usually a single layer solenoid wound on an insulator and tuned by its distributed capacity.

(Continued on page 68)

Typical FM antennas with dimensions for di-pole types. Multiples of half-wave lengths are less directional.



F.M. for everyone Today

By Using This

MEISSNER F.M. CONVERTER

With ANY Radio Set

There is now no need for anyone to be denied the pleasures and advantages of Frequency Modulation. The Meissner F-M Converter is easily connected to any radio set—in neat, compact, walnut cabinet to match any set. Only 13" wide, 7" high and 6¾" deep—includes 8 tubes—AC powered—provides a complete new R-F and I-F system—uses only the audio system of the present receiver! The radio public is rapidly becoming F-M minded and will welcome this economical attachment!



Incorporating the Genuine Armstrong System of Frequency Modulation

All Meissner F-M products are fully licensed under patents of E. H. Armstrong and are guaranteed to conform in design to his recommendations and specifications. The Meissner F-M Converter is the most popular member of this F-M family and maintains the high standards of design and performance that insure complete satisfaction.

MEISSNER F-M CONVERTER, Complete
 Model 9-1047A List Price \$44⁹⁵—

Write Today for Free Meissner Complete Catalog!

Address Dept. T-10



FM SERVICE METHODS

New alignment procedures and circuit adjustments

Other articles in RADIO TODAY have given the technical description of the special circuits used in FM receivers and the service techniques that are different from ordinary AM practice. (See footnote list of FM service articles.)

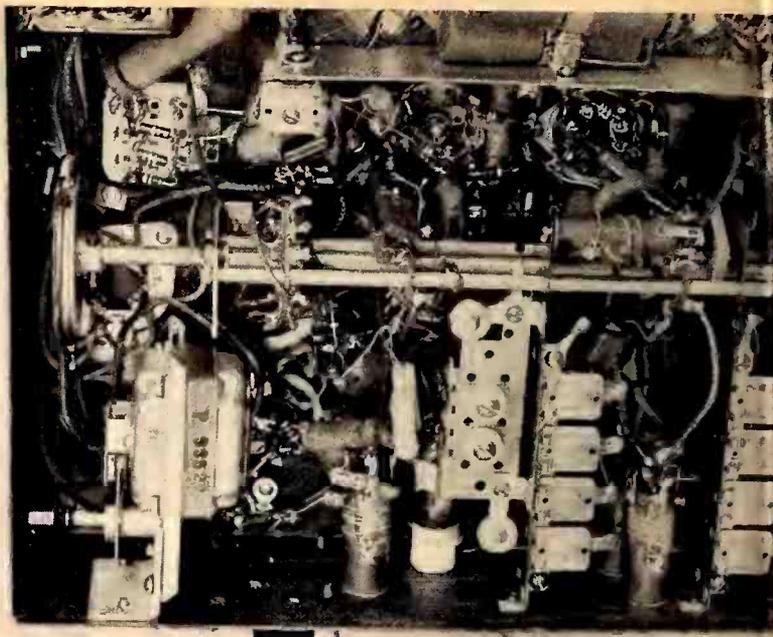
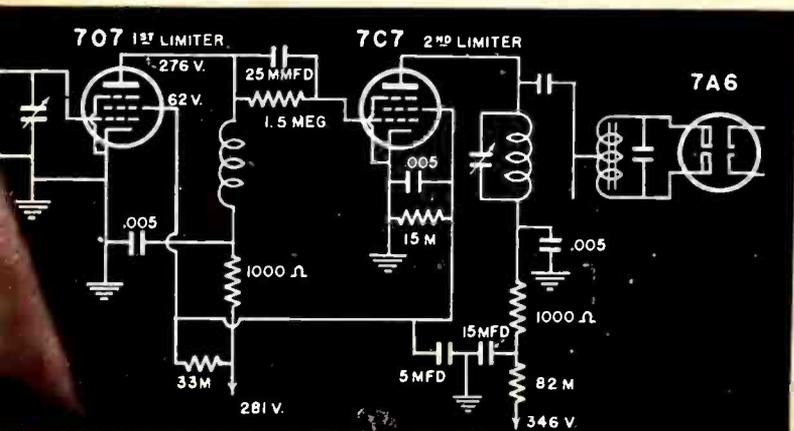
New FM circuits are featuring better drift compensation and push button tuning that is practical. Cascade limiters are being used in many circuits for better action on the weaker FM signals. Higher intermediate frequencies are being used in the FM section to reduce interference and give a wider channel. Zenith models with the 12B2 chassis are using 8.3 mc. as an intermediate frequency.

An unusual cascade limiter circuit for the Zenith 12B2 chassis is shown in an accompanying diagram. The first limiter tube is a 7C7 sharp cut-off pentode operated at low screen voltage to give the initial limiting at the upper bend of the characteristic. The plate load is an RF choke coil. The signal from the first limiter is coupled through the 25 mmfd. capacitor to the grid of the second limiter. This second 7C7 is operated with a positive grid and very low plate voltage. A 1.5 megohm resistor from the plate circuit provides a path for the DC grid current of the second 7C7. This high resistance limits the grid voltage to a value which gives proper limiting action on both positive and negative peaks of the carrier. Stromberg-Carlson sets are using negative coefficient capacitors with 2-watt heaters to compensate for drifting during the warm-up period.

INSTRUMENTS USED

Servicing equipment required for modern FM receivers should be about as follows: (1) Signal generator with upper limit at least 50 mc., (2) Frequency modulator (usually built into the signal generator) with a minimum sweep of about 300 kc., (3) Oscilloscope, (4) A vacuum tube voltmeter or 0-200 microammeter, (5) Regular complement of serviceman's equipment, tools, etc.

Double limiter circuit used in Zenith models uses two 7C7's capacity coupled. Second limiter has positive voltage on control grid, very low plate voltage.



Chassis view of RF section of Stromberg-Carlson set which uses negative coefficient oscillator padders visible at left of center trimmer strip. Small heater units help to eliminate "warm-up" drift.

The problems of servicing FM circuits, other than alignment, are almost exactly the same as those of AM sets. Troubles can be hunted down in the same manner in both systems. The point to keep in mind, however, is the high frequency currents which have to be dealt with in FM. Small stray capacities become important at 50 megacycles. When replacing components, especially in or near the RF, IF and oscillator circuits, avoid moving the wiring and other parts from their original position. Dust and moisture also do a lot more damage to signals at these frequencies.

ALIGNING METHODS

The alignment of FM circuits is considerably more complicated than the ordinary AM procedure. Several methods are recommended by the manufacturers. The exact procedure in the service notes for each type of receiver should be carefully followed.

The more common method and the one first recommended is that of using a 0-200 microammeter across half the discriminator load while the primary of the last transformer was adjusted for maximum deflection at the "center" intermediate frequency. The meter was then connected across the entire load network and the secondary was adjusted for zero deflection on the meter. A 0.5 meg. or 1.0 meg. resistor is used in series with the microammeter for protection. A center O meter is very useful for getting the zero-point adjustment of the discriminator secondary. A 0-200 microammeter can be changed into a 100-0-100 instrument by using a 1.5-volt flashlight cell connected in series with the meter and a 15,000 ohm resistor. This will bring the pointer up to the center of the scale. Connect the test leads to the meter terminals exactly the same as if the battery circuit were not there. Use the 1/2 or 1 meg. series resistor as before. The IF stages are aligned by adjusting the trimmers for maximum deflection on the 0-200 microammeter connected between the limiter grid resistor and ground.

A second method of alignment is to adjust the primary and secondary of the discriminator transformer as described in the first method. Then, the IF stages are adjusted to resonance when the microammeter across one-half of the discriminator load shows peak deflection. RF alignment is also made for peak deflection. Oscillator tracking is adjusted by getting a zero deflection across the entire load

(Continued on page 80)



What Stewart-Warner Believes *...and is Doing...about F.M.*

DEALERS who have followed the development of Frequency Modulation will remember that Stewart-Warner was one of the earliest to realize the tremendous possibilities of this new development. In fact, we were fourth in the entire industry to secure a license to utilize F.M.

As soon as that early license was granted, research and development of F.M. receivers was begun in our laboratories—and has been carried on continuously ever since.

But, in the meantime, many things have happened—of vital importance to you and to us. For well over a year, our radio division has been called upon to make an ever-increasing contribution

—both in engineering and production facilities—to America's defense work.

Under these circumstances, we could have scattered our effort—and produced a few F.M. receivers at the expense of the rest of the line. But instead, we felt it wiser to concentrate all production available on the kind of radios *all* of our distributors and dealers could sell, and thus assure them all a reasonable volume.

When we will announce our F.M. models will be decided—not by our interest in F.M.—but by far more pressing considerations of national importance. But, as soon as outside circumstances permit, Stewart-Warner will give you F.M. receivers you can sell proudly and with complete confidence.

STEWART-WARNER CORPORATION
Chicago, Illinois

FIRST AIDS FOR SELLERS OF FM

MERCHANDISING HELPS FOR NEW BUSINESS

Some of the tailor-made merchandising materials on the subject of FM are now becoming the "musts" of the radio business. They have interest, color and money-making value.

Among these "first aids for FM salesmen" are streamlined demonstration kits, illustrated booklets, store displays by the dozen, new recordings, talking movies, banners, billboards, etc., issued for both the retailers and the public. They come from manufacturers and from the trade groups interested in explaining, promoting and selling FM. Most of them are free.

Listed herewith are a number of these sales aids, presented alphabetically by sources. Where manufacturers are named, it usually means that the material is also available locally from their distributors.

ANSLEY RADIO CORP., 21-10 49th Ave., Long Island City, N. Y.—FM identification card, counter size, for dealer use, recommended for display with Ansley's actual wood exhibit showing finishes in which the Dynaphone is available.

BRUNSWICK RADIO & TELEVISION CORP., 206 Lexington Ave., New York City—Deluxe catalogs for both consumers and radio store buyers, showing new FM receivers among AM jobs.

FM BROADCASTERS, INC., 52 Vanderbilt Ave., New York City—"FM—Broadcasting's Better Mousetrap", a complete explanation in booklet form, in plain words. Also a "Profile of FM" booklet giving short historical sketch of FM and its inventor. FMBI further issues timely bulletins on FM developments and lists of stations.

FREED RADIO CORP., 39 West 19th St., New York City—New catalog "A Compliment to Your Home and Taste". Also counter cards, window streamers and give-aways. "The ABC of FM" in new revised edition, presented as "most authentic factual consumer booklet". All Freed-Eisemann literature is in FM selling aid class, as this firm makes only combinations built around Armstrong FM.

GENERAL ELECTRIC CO., Bridgeport, Conn.—Talking movie 25 minutes long in full color titled "Listen, It's FM". Newspaper ads both for on-the-air areas and for general use. Series of 5 minute recorded radio programs, "Swing to FM" featuring the swing pianist Hazel Scott and the Golden Gate Quartet. (These artists also make demonstration albums for dealers). Demonstration kit with miniature AM and FM transmitters. Static-maker display with a vibrator to create interference. FM "Primer" giving complete facts in simplified manner. Outdoor ad poster for cooperative advertising. Store window displays and banners. New design line folders and invitation postcards on dealer shows and on "Swing to FM".

MAGNAVOX CO., INC., Ft. Wayne, Ind.—Full line catalog showing models featuring optional FM unit.

PILOT RADIO CORP., 37-06 36th St., Long Island City, N. Y.—Catalogs and portfolio sheets showing features and prices of

FM models. Outdoor advertising signs. Institutional newspaper ads in FM cities (big new campaign to start in November). FM announcements on Dorothy Thompson broadcasts. Ads in Esquire and trade magazines.

STROMBERG-CARLSON TELEPHONE MFG. CO., 100 Carlson Road, Rochester, N. Y.—Bulletin service called "FM Notes" covering all angles of FM news and developments, interpreted for dealer salesmen. Series of SC "First" cards naming Stromberg's pioneering feats. Group of display cards in two colors to fit dealers' Lucite display frames. Complete string of dealer newspaper mats featuring listening scenes. Line folders done in quality style. Booklet titled "FM for Finer Music" answering common queries on FM. Retail salesman's guide to differences between Stromberg FM and unlicensed FM-type radios.

ZENITH RADIO CORP., 6001 Dickens Ave., Chicago—Dealer ad mats exclusively on FM, stressing quality. Special booklet explaining the new system in popular language and describing advantages in readable way; this includes an appendix listing available books on FM. Feature window display adaptable to floor use. Consumer folders showing FM models. "Quality" booklet including FM models along with others. Weekly booklet on Zenith station W51C programs for Chicago listeners. Bulletin Service on FM news for jobbers, jobber salesmen, district men, etc.

Hazel Scott stars with Golden Gate quartet in GE's promotion "Swing to FM," on recorded programs and in albums.



For Superb FM-AM-Short Wave Reception

You Would
Choose
This Radio!

If you were in the market for an FM-AM Phonograph Combination for your own home, you would check feature against feature, quality against quality, value against value—and finally you would choose a Howard. That's what hundreds of discerning buyers are doing every day.

Incorporating all of the electrical, mechanical and construction features that have made Howard famous both in and out of the industry, plus numerous new added refinements, Howard 1942 Receivers are the finest and most modern ever built. No mere photos can do them justice—they must be seen and "fussed with" to be truly appreciated.

No wonder dealers and distributors from coast to coast are "going" Howard stronger than ever. Once you get a real close-up of the 1942 Howard line, you will, too. Take the first step towards greater and faster radio profits by investigating the Howard Franchise today!



HOWARD
For 1942

The "VICTORY"
Model 718X-FM-C

Truly worthy of its name, "Victory" Model 718X-FM-C embodies every refinement that signifies enjoyment and perfection in radio reception. Just look what it has! Fourteen tubes; four tuning bands, including standard broadcast, short-wave and genuine Armstrong Frequency Modulation; R.F. stage on all bands; special 12" Jensen FM type speaker; 10 watts of beam power push-pull output; base and treble tone controls; automatic record changer with "feather-

weight" pick-up—all in one of the most beautiful Chippendale Period Cabinets ever designed. Cabinets available in Stump Walnut or Diamond Matched Mahogany—"Custom-Made" in Howard's own cabinet plant. Has convenient compartment for record albums. Split top provides easy access to record changer without removing objects on top. Truly a masterpiece of Howard design, craftsmanship and value—the greatest FM value on the market today!

See the Complete Line of HOWARD
HOWARD RADIO CO.

CABLE ADDRESS:



Radios and Phonograph Combinations
1731-35 Belmont Ave., Chicago

HOWARDCO, U.S.A.

::: America's Oldest Radio Manufacturer :::

FM STATIONS

CALL	LOCATION	FREQ.	OWNER	CALL	LOCATION	FREQ.	OWNER
CALIFORNIA				NEW YORK			
K31LA	Hollywood	43.1	Columbia Bdcst. System	W31NY	Alpine, N. J.	43.1	Major E. H. Armstrong
K45LA	Los Angeles	44.5	Don Lee Bdcst. System	W2XMN	" " "	42.8	" " " "
K37LA	" "	43.7	Earle C. Anthony, Inc.	W71NY	New York	47.1	Bamberger Bdcst. Service
K53LA	" "	45.3	Standard Bdcst. Co.	W2XQR	" "	43.2	Interstate Bdcst. Co.
K61LA	" "	46.1	MGM Studios	W2XWG	" "	45.1	National Bdcst. Co.
K45SF	San Francisco	44.5	Hughes Tool Co.	W35NY	" "	43.5	Municipal Bdcst. System
CONNECTICUT				W47NY	" "	44.7	Muzak Corp.
W65H	Hartford	46.5	WDRG, Inc.	W51NY	" "	45.1	National Bdcst. Corp.
W53H	"	45.3	Travelers Bdcst. Service	W55NY	" "	45.5	William G. H. Finch
W1XSO	"	43.7	" " "	W59NY	" "	45.9	Interstate Bdcst. Co.
ILLINOIS				W63NY	" "	46.3	Marcus Loew
W51C	Chicago	45.1	Zenith Radio Corp.	W67NY	" "	46.7	Columbia Bdcst. System
W59C	"	45.9	WGN, Inc.	W75NY	" "	47.5	Metropolitan Television
W47C	"	44.7	WJJD, Inc.	W??NY	" "	....	Frequency Bdcst. Corp.
W63C	"	46.3	National Bdcst. Co.	W49BN	Binghamton	44.9	Wylie B. Jones
W67C	"	46.7	Columbia Bdcst. System	W8XAD	Rochester	42.6	WHEC, Inc.
W75C	"	47.5	Moody Bible Institute	W51R	"	45.1	Stromberg-Carlson Co.
W71RF	Rockford	47.1	Rockford Broadcasters Inc.	W47A	Schenectady	44.7	Capitol Bdcst. Co.
INDIANA				W57A	"	45.7	General Elec. Co.
W45V	Evansville	44.5	Evansville on the Air	W2XOY	"	43.2	" " " "
W71SB	South Bend	47.1	South Bend Tribune	W63SY	Syracuse	46.3	Central N. Y. Bdcst. Co.
W49FW	Fort Wayne	44.9	Westinghouse Stations	NORTH CAROLINA			
KENTUCKY				W41MM	Winston-Salem	44.1	Gordon Gray
W51SL	Lexington	45.1	American Bdcst. Corp.	OHIO			
LOUISIANA				W8XFM	Cincinnati	43.2	Crosley Radio Corp.
W45BR	Baton Rouge	44.5	Baton Rouge Bdcst. Co.	W45CM	Columbus	44.5	WBNS, Inc.
MASSACHUSETTS				PENNSYLVANIA			
W43B	Boston	44.3	The Yankee Network	W49PH	Philadelphia	44.9	Penna. Bdcst. Co.
W67B	"	46.7	Westinghouse Stations	W53PH	"	45.3	WFIL Bdcst. Corp.
W1XK	"	42.6	" " "	W57PH	"	45.7	Westinghouse Stations
W81SP	Springfield	48.1	" " "	W69PH	"	46.9	WCAU Bdcst. Co.
W1XSN	"	42.6	" " "	W81PH	"	48.1	Seaboard Radio Bdcst. Corp.
W1XTG	Worcester	43.4	Worcester Telegram	W47P	Pittsburgh	44.7	Walker-Downing Radio Corp.
MICHIGAN				W75P	"	47.5	Westinghouse Stations
W45D	Detroit	44.5	The Evening News Assn.	TENNESSEE			
W49D	"	44.9	John Lord Booth	W47NV	Nashville	44.7	National Life Ins. Co.
W53D	"	45.3	WJR, the Goodwill Station	UTAH			
W77XL	Lansing	47.7	WJIM, Inc.	K47SL	Salt Lake City	44.7	Radio Service Corp.
MISSOURI				WISCONSIN			
W9XER	Kansas City	....	Midland Bdcst. Co.	W55M	Milwaukee	45.5	The Journal Company
K51L	St. Louis	45.1	St. Louis University	W9XYH	Superior	....	Head of the Lakes Bdcst. Co.
K59L	" "	45.9	Columbia Broadcasting	DISTRICT OF COLUMBIA			
NEW HAMPSHIRE				W3XO	Washington	43.2	Jansky & Bailey
W39B	Mount Washington	43.9	The Yankee Network	W3XMC	"	42.6	McNary & Chambers

Bold face stations operating; others under construction.

Applications for FM stations in the following cities are pending:
 California; Los Angeles, San Francisco, Oakland, San Bernardino.
 District of Columbia; Washington.
 Florida; Fort Lauderdale.
 Illinois; Cicero.
 Iowa; Cedar Rapids.
 Indiana; Indianapolis.
 Kentucky; Ashland, Louisville.

Louisiana; Alexandria.
 Maine; Falmouth.
 Maryland; Baltimore.
 Massachusetts; New Bedford, Worcester, Boston (2).
 Michigan; Detroit (2), Grand Rapids (2), Lansing, Battle Creek.
 Missouri; St. Louis (3), Kansas City.
 New Hampshire; Manchester.

New Jersey; Ewing Township.
 New York; New York City (8) Albany, Rochester.
 North Carolina; Winston-Salem.
 Ohio; Cleveland, Youngstown.
 Pennsylvania; Pittsburgh, Philadelphia (2).
 Rhode Island; Providence (2).
 Texas; Amarillo.
 Wisconsin; Superior, La Crosse.



and **FM**



MAGNAVOX and **FM** are natural companions. The best in wide-range FM reception is limited to the excellence of the audio system . . . and in this, Magnavox has been the leader for many years.

The new Magnavox Duosonic speaker system was designed expressly to provide for the expanded tonal range of FM reception. The two 12-inch speakers, with built-in separate high frequency cone, cover not only the **extended** audio range, but give heretofore unattained smoothness of tone over that entire range.

So . . . to hear FM at its very best, listen to the new Magnavox Regency Symphony . . . the model illustrated here.

The Magnavox policy of restricted distribution remains unchanged. This gives Magnavox dealers a comforting sense of security . . . a foundation on which they can build a lasting business, goodwill and steadily increasing sales through the years ahead. A limited number of franchises are open to dealers who can qualify.

FM DIVISION, THE MAGNAVOX COMPANY, INC., FORT WAYNE, INDIANA



New England's *First* FM Stations Are A Boon To Dealers

W43B
(44,300 KC.)
New England's FIRST FM
transmitter at Paxton, Mass.



THIS pioneering achievement in static free broadcasting creates a brand new source of sales for New England retailers of radio sets equipped to receive FM.

The Mt. Washington and Paxton FM stations assure adequate coverage, an important selling point to emphasize when showing sets.

First

The first FM seven-days-a-week commercial in New England, Monday through Saturday 6 to 6:15 p.m., sponsored by Socony Vacuum Oil Co. Inc., the Mobilgas News Service, May 26, 1941.

Dealers! Tell Prospective Buyers of FM Sets . . .

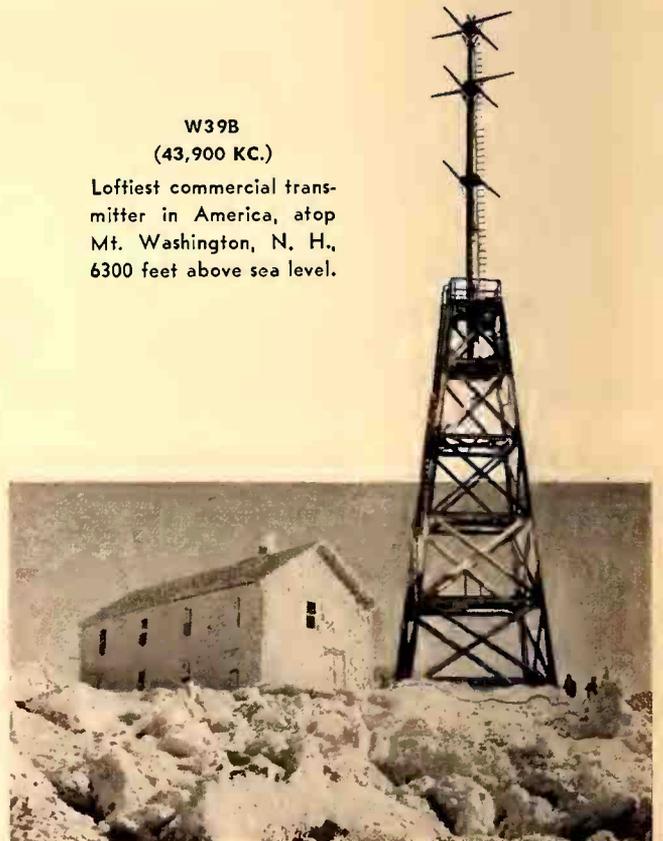
—that since July 24, 1939, sixteen hours of FM broadcasting have been on the air daily, beginning at 8 A.M.

—that favorite programs can be heard on FM . . . weather . . . news . . . commentators . . . dramas . . . comedy skits . . . vocal and instrumental music . . . sports . . . educational talks . . . interviews.

With this complete daily program, demonstration of FM sets can be made at any time during the day or evening. W43B, Boston, 44,300 KC., W39B, Mt. Washington, N. H., 43,900 KC.

W39B
(43,900 KC.)

Highest commercial transmitter in America, atop Mt. Washington, N. H., 6300 feet above sea level.



THE **YANKEE NETWORK, INC.** FM STATIONS

21 BROOKLINE AVENUE, BOSTON, MASSACHUSETTS

AMERICAN NETWORK, INC., Exclusive National Sales Representatives

THE Accepted STANDARD OF FREQUENCY MODULATION



Typical Federal Communications Commission monitoring car with Hallicrafters equipment.

Pioneering in FM circuits, up to 300 mc. (1 meter), the FM products of the Hallicrafters laboratories have been adopted by government agencies, broadcasting stations, manufacturers of FM home receivers and general purpose users because of uniformly high FM standards.

We do not build FM home receivers or recommend Hallicrafters FM equipment for use in the home except in cases of exceptional operating skill.

Had it not been for Major Armstrong's contributions to radio science none of these developments would have been possible.

USED BY 33 GOVERNMENTS • SOLD IN 89 COUNTRIES



the hallicrafters co.
CHICAGO, ILLINOIS

UP THE LADDER TO FM SUCCESS

(Continued from page 34)

installations after lobe has been found, W2XOY will come in strong or drop out entirely with a slight turn of antenna mast.

"We then leave the radio for the customer to listen to for a night or two and if he buys we try to impress upon him the importance of buying the dipole type of antenna.

CAREFUL ADJUSTMENT

"In a location on a hill we use the ladder and demonstrating antenna to determine the orientation of a FM wire doublet such as the Stromberg No. 6 Antenna Kit. The results obtained from a dipole and reflector against a wire doublet is about five to one, due to the fact a wire V doublet suspended between two points cannot be raised and lowered or oriented close enough and while a 70-ohm line is supposed to be 70 ohms plus or minus, actually the plus or minus can be from 30 ohms to 100 ohms. Even though there has been some sales resistance to the dipole and its extra cost a demonstration as above generally convinces the customer. The final installation, correctly matching, orientation and ground reflection work, takes nearly a day.

"One word about cheap transmission lines. While the current involved in receiving is infinitesimally small compared to the transmission, we have tried all sorts of lines from twisted lamp cord to Basset cable and have definitely found that the larger size wire No. 12 in EO1 cable gives by far the best results and is easier to handle.

"One thing a dealer or his service man should do is get acquainted with conditions in his territory such as having some method of determining the field strength of signal that is necessary to give the proper drive to get a good limiter action. This will vary in residential, business or rural sections.

ANTENNA HEIGHTS

"Here at my store, with autos starting and stopping on all sides of us, we have had to build the antenna above the building 85 feet. We also use a coaxial transmission line.

"In residential sections the best working height above the ground is between 30 and 40 feet, making the transmission line as short as possible. Incidentally, in residential sections there is no great advantage in going much over 10 to 15 feet above the roof. In fact, the added resistance of EO1 cable from length can offset the advantage of height.

"On the map on page 34 are the relative positions of FM transmitters from Gardner, and the dipole and reflector orientation, the main lobe and small lobe off one side which gives us W2XOY. In locations farther south and nearer to transmitters than we are, a turnstile antenna would probably work out better. However, individual dealer's technicians will have to work out for themselves the type of antenna to use. Our condition in Gardner is different than that found in Worcester, 20 miles south.

"I have tried stacked arrays as well as adding a director but the adjustments have to be made with the antenna absolutely in place and that requires tower construction too expensive for domestic use of radio.

IMPRESSIVE REACH

"Factory engineers have inspected our results from W2XOY and the reception is equal to W43B with about 5 per cent fade as indicated by the limiter grid voltage. This is not enough to be noticed by the ear. Alpine, W2XMN, at times fades maximum 85 per cent, but will hold up sometimes one hour at a time so that at home I listen mostly to W2XOY and W2XMN.

"Based on reception of some seven or eight FM transmitters varying from 18 to 160 miles away, noticing the limiter drive against noise level and observing installations

with different types of antenna from built-in to the best we have been able to construct, it is my guess that the dealer problem will divide itself into two distinct sections. Namely, installation in city and suburban locations, and in remote small cities and country.

"However, dealers located within the square-mile service area specified by the FCC will be able to set up their radios using very simple antenna construction. They will do well to study the more complicated antenna because as transmitters increase their power, even though the radio will bring in perhaps six or seven programs, distant transmitters with their special programs are going to cover much more than the FCC anticipates. Theoretically the antenna can give the effect of the transmitting station increasing its power 200 and 300 per cent which would bring a distant signal above noise level.

"FM bends over hills much more than at first supposed. I have a customer who enjoys W2XOY, 100 miles away, and the top of his antenna is back of a hill by about one tenth of a mile. The hill is more than twice the height of his antenna.

EXCELLENT PROGRAMS

"From results we have had in Athol, Mass., only 550 feet above the sea level and with the Hoosac Mountains between Heidelberg Mountain and Athol, when W2XOY increased from 1000 watts to 2000 watts there was a noticeable difference. When W2XOY goes to 20,000 watts the signal will bend and come in strong enough I am sure to give an excellent program. At another point in Athol 800 feet above sea level a customer now enjoys W2XOY.

"All of which means with an antenna properly installed in remote sections, say in the neighborhood of 100 to 125 miles from a 50,000 watt, 10 bay turnstile transmitter, much better and greater distance will be had in the future.

"To sum up, I believe that a radio technician should study U.I.F. the same as 5 meter amateurs do.

"The dealer should not attempt to sell FM unless he can show the customer that FM is worth the price that a real FM receiver will cost."



H. M. L. CAPRON,
Merchandising Editor

CAP SAYS:—

**"MAKE ALL OUR
DREAMS COME TRUE"**

• Not since the socket-powered radio made its debut, and swept the country with a tremendous buying wave, has the radio industry had an economic condition to compare with the present. We have:

- A product which the public has long wanted.
- More people with more money to spend than ever before in our nation's history.
- More radio sets obsolete and crying for replacement than ever before.
- Prices rising, the public buying—demand for quality superseding the search for prices.

• And FM—a high quality, high price, high profit set which can make all others obsolete. And make the dreams of the industry come true.

• But in the final analysis, FM will mean no more than we of the industry make it, though its potentialities are beyond the vision of many.



The Freed-Eisemann Aristocrat, as photographed at the Waldorf-Astoria

*A crowning achievement in
musical reproduction and cabinet design . . .*

EARLY in 1941 the makers of Freed-Eisemann instruments set as their goal the manufacture of the ultimate in radio-phonographs—FM radio-phonographs which would not only establish Freed-Eisemann as one of the finest *quality* lines in radio, but which would establish Freed-Eisemann *leadership* as well.

Today that goal has been achieved. Freed-Eisemann quality and leadership are recognized now as major factors in the quality radio world. As a result, Freed-Eisemann dealers everywhere report consistent success—*greater* success, in fact, than they had at first anticipated.

Protected under a plan of exclusive territorial franchise, these dealers have sold and are continuing to sell—*profitably*—these masterpieces among radio-phonographs. (Although these instruments are almost entirely sold for the remainder of the year, a limited number may be still available to dealers who appreciate and are capable of selling quality—

in territories where dealer appointments have not yet been made.)

Housed in magnificent period and modern cabinets, Freed-Eisemann radio-phonographs offer Armstrong FM and regular radio reception at their glorious best, while Garrard Mixer Record Changers and the exclusive Dual Panphonic Speaker System achieve unsurpassed reproduction of recorded music.

HISTORICALLY SPEAKING . . .

Honored as one of radio's pioneers, the makers of Freed-Eisemann were the *first* to produce crystal sets . . . neutrodyne sets . . . sets with self-contained speakers . . . non-battery sets. And when Major Armstrong invented Frequency Modulation, thus writing a new chapter in radio progress, the industry witnessed another example of Freed-Eisemann pioneering as Freed-Eisemann became the first to produce FM sets *exclusively*.



Freed-Eisemann
RADIO - P H O N O G R A P H S

ARMSTRONG'S LATEST CONTRIBUTION to FM A NEW PHASE-SHIFT MODULATOR

Used Exclusively in the New **REL** DL Line of FM Broadcast Transmitters

SIMPLER — MORE EFFICIENT



MAJOR E. H. ARMSTRONG — the inventor of FM — has recently developed a new phase-shift modulator circuit which REL has now incorporated in all of the new DL line of FM broadcast transmitters — now available for early delivery in five power ratings from 250 W. to 50 KW.

Remember — when you deal with REL — you deal with FM's Pioneer Manufacturer — with experience and knowledge gained from having built and put in operation — more FM broadcast transmitters than all other manufacturers combined.

The general overall characteristics of DL FM transmitters are:

★ **OPERATING FREQUENCY:** Available to operate on any predetermined frequency from 40 to 50 mc. The exact frequency must be specified when the order is placed.

★ **FREQUENCY STABILITY:** These transmitters are guaranteed to maintain their frequency within less than 200 cycles of the assigned frequency. The frequency is directly controlled by a single crystal, without the use of complicated mechanical or electronic devices.

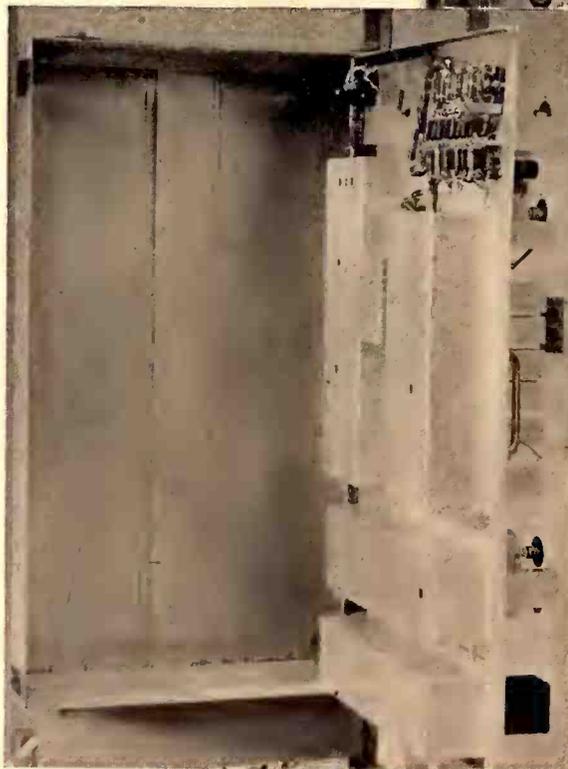
★ **FIDELITY:** The overall response is within plus or minus 1 db from 30 to 15,000 cycles.

★ **DISTORTION:** The measured r.m.s. harmonic distortion is less than 1% for all signal frequencies between 50 and 15,000 cycles at ± 75 kc. swing, (100% modulation) AND IS LESS THAN .2% FOR FREQUENCIES FROM 400 to 15,000 CYCLES.

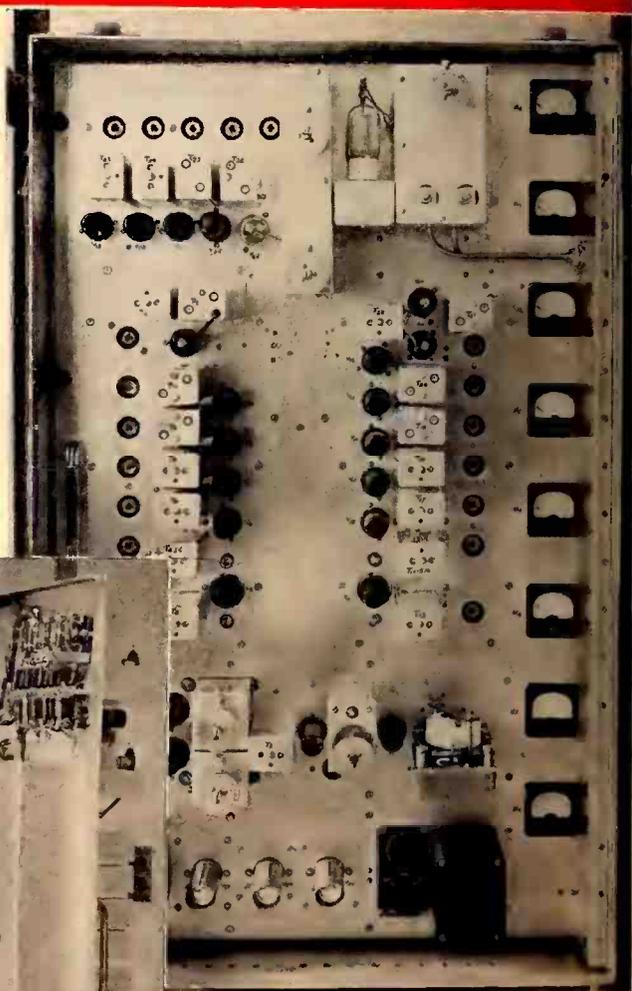
★ **NOISE LEVEL:** The signal-to-noise ratio is better than 70 db, measured at the output of a monitor receiver. This is an unweighted measurement, with 150 kc. maximum swing, and includes hum.

★ **INPUT:** The audio input to the transmitters is zero level, 500 ohms, 6 milliwatts.

★ **ECONOMY:** New Type 558 Modulator employs only 28 small tubes from program input to operating frequency — affording lowest possible tube cost; for example, a complete set of tubes for the new catalog 518 DL 1000 W. transmitter including modulator is only \$238.



Illustrating a new, exclusive REL feature: Type 558 modulator panel hinged to swing out of its cabinet — making all parts quickly and easily accessible for adjustment and maintenance.



The new Type 558 modulator — built directly into the 250 and 1000 watt broadcast transmitter units, which are used to drive amplifiers of all higher powers.

Write for booklet describing this new DL line of FM transmitters.



RADIO ENGINEERING LABORATORIES, INC.

35-54 36th Street

Long Island City, New York

Pacific Coast sales offices:
5334 Hollywood Blvd., Hollywood, California
420 Market Street, San Francisco, California



THE PRODUCT

— and the Background!

National was a name to conjure with in the earliest days of broadcasting, when Browning-Drake kits stood for quality in a chaotic industry. For all of the seventeen years since then, National has designed for performance and built with care. For most of those years National has specialized in high frequency receivers. This background means more than just "know how"; it means a complete group of parts specially designed for high frequency work, ranging from tuning condensers to sockets, from cabinets to chokes. . . . The superb FM receiver shown above is not only a tribute to Major Armstrong's genius, it is the flowering of more than twenty-five years of craftsmanship.

NATIONAL COMPANY, INC., MALDEN, MASS.



If You Want the Best

... We Recommend these new "Coaxial" Speakers

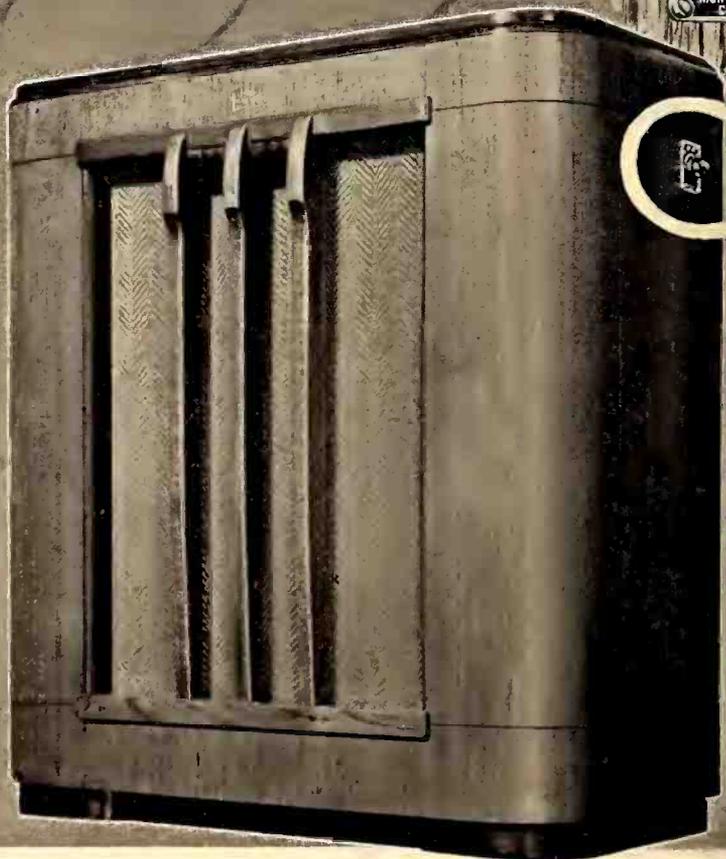
Ideal extension reproducer for home, club, or institution. Insures full realization of the potentialities of the finest FM or AM receivers.



Excellent "across-the-room" unit for natural, more enjoyable reproduction with chairside tuners and combinations.



Recommended by manufacturers of professional type FM/AM receivers. Be sure you can enjoy FM at its best!



Brilliant Performance plus Complete Versatility with these New Jensen "Coaxial" Speakers

Not one—but two important achievements are combined in these new Jensen Coaxial Speakers and Reproducers! First... extended-range high-fidelity performance that meets the most critical professional requirements. Second... complete versatility, made possible for the first time by the new Jensen High Frequency Control. Now one reproducer covers every listening requirement, instantly adjustable for most satisfactory results on everything from wide range FM to home phono records! And the cost is so low it will surprise you. Data Sheet No. 120 gives complete details. Write for it today.

Four complete reproducer types with 12" to 15" speaker sizes, priced at \$75.25 to \$118.75 list in striped walnut cabinets. Utility cabinet models down to \$64.25 list. Coaxial speakers only as low as \$29.50 list.



Smooth, extended-range high-fidelity response eminently qualifies these reproducers for the most exacting service in FM/AM broadcast and recording monitoring.

Jensen

JENSEN RADIO MFG. CO., 6601 S. LARAMIE AVE., CHICAGO
CABLE ADDRESS: "JERAD" CHICAGO



HERE'S THE NEWS YOU'VE BEEN WAITING FOR!

Pilot genuine Armstrong *FM* at a popular price

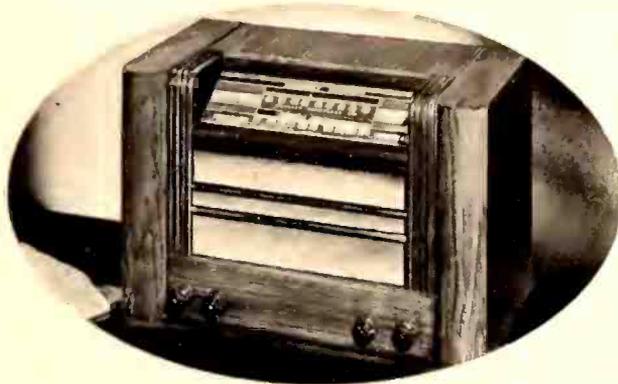
Price will no longer retard volume sales of genuine Armstrong FM radio . . . for Pilot's amazing new T-301 is priced within the reach of *every* family's budget.

This new low-priced model supplements the regular Pilot line of superb FM—AM phono-combinations; giving greater balance and appeal to your showings.

Now, every retailer can count his FM prospects in thousands instead of hundreds. Now, every retailer can forget unlicensed FM. For Pilot's complete range of styles and prices cater perfectly to every family's preference and every purse.

Write or wire for full details.

*The remarkable, new,
popularly priced
Model T 301.*



Two bands . . . FM & AM—8 tubes—AC—DC genuine Armstrong circuit housed in handsome walnut cabinet Continental design, Antenna circuit for use with outside aerial. Continuous variable tone control provides sharp cut-off.



THE ADAM



THE CONTINENTAL

the Superb
PILOT Radio



Both of these handsome cabinet models represent the utmost in FM—AM phonograph radios. Two AM bands covering broadcast and shortwave; a full FM band; push buttons; built in loop antenna; 45 watts maximum output; automatic record changer with lightweight pick-up; two tuned stages of R.F. on FM; two speakers; 17 tubes plus tuning beacon, etc.

PILOT RADIO CORPORATION • 3706 36TH STREET • LONG ISLAND CITY • N. Y.

HOW DEALERS SELL FM

(Continued from page 33)

his own home, the sale is practically made.

Another tip is that dealers should make special efforts to identify their stores with this new development, immediately. FM should be kept in windows, displays, and all forms of advertising. Reproductions of national ads should be stressed now, because these represent, in many cases, the public's first introduction to FM, and it is important to establish local headquarters for a national trend.

Wave charts, and explanatory discussions of the subject in trade magazines, are valuable sales tools because some customers need visual aid. Manufacturers, likewise, extend comprehensive help in this respect. An example is the company which Mr. Gross represents. It has issued dozens of instructive materials covering both the fundamentals and the current developments in FM. (Note the complete lists of FM Sales Helps elsewhere in this section.)

On the subject of the complexity of the system, don't let the customer get started in negative thinking about this—beat him to it, by explaining how your service and installation facilities have been streamlined in advance.

CHICAGO SHOWS

The "Radio Show" idea as a feature way to describe store demonstrations of FM is being widely used by dealers. Retailers in the Chicago area including Lyon & Healy, Hudson-Ross, Inc. and others are calling attention to a "show" event.

Also used in this area to publicize FM are charts of musical ranges, pictures of the sound effects which demonstrate FM's fidelity, testimonials from musical celebrities, maps of station coverage, and sketches of sources of static. Dealers here are cooperating with local stations, jobbers,

with newspapers and with the local utility, as well as with each other, in order to get big-scale publicity for the new system.

Demonstrations at G. Fox & Co., Hartford, Conn., take the form of comparison of FM reception with the performance of an in-the-room artist. The events took place in the store auditorium, with a pianist on the stage. A part of a piano solo was heard through an FM receiver, and the rest of it from the artist in person. Most of the guests declared that there was practically no difference. Sound effects were also used.

George Tomaccio, radio buyer at Fox's, says that "we hesitate to sell an instrument without FM, as we believe that the unit may become obsolete within a comparatively short time."

AUTUMN SALES

"Don't be discouraged about the fact that summer static is now disappearing and that at first thought, staticless radio is not such an advantage in the winter time," advises Mortimer H. Fogel, N. Y., dealer. "All you have to do now is to emphasize the tone supremacy of the FM units presented as more important for more listening during the winter months."

This dealer has found that whether people understand FM or not, they all regard it as the "newest" in radio, and they want it. This store has been promoting it for two years, successfully switching a lot of AM customers to some kind of an FM unit. Average sale here now is over \$300; receivers as high as \$1250 are ordered for coming months. It is pointed out that salesmen have got to get used to thinking in terms of these higher unit prices; in the past they paled at the thought of a job over \$200 and thus approach the new era with a couple of strikes on them. They should ditch that attitude and regard FM as a real opportunity for a higher and cleaner type of business.

ESPEY FM CHASSIS



**—for PRIVATE BRAND MERCHANDISERS
—to ELIMINATE PRICE COMPETITION
UNSURPASSED PERFORMANCE AT A PRICE**

MODEL 2143 — 14 tubes — 3 bands, broadcast, short-wave, and FM — bass and treble tone control — push-button tuning control — auditorium type electro-dynamic speaker — 12 watts output.

Armstrong Licensed
Hazeltine Licensed
R. C. A. Licensed

ESPEY MFG. CO. INC.
Manufacturer of Phonographs and Radios
305 E. 63rd St. New York



Urge your customers to use the New A-FM MULTICOUPLER ANTENNA SYSTEM

—the genuine, noiseless antenna system, licensed under A.A.K. patents now includes FM reception. 20 outlets from a single antenna! Ideal for apartments and large dwellings.

A. A. K. INDIVIDUAL ANTENNAS

Leading manufacturers of radio receivers furnish individual antennas licensed under A.A.K. patents, and recommend their use for best performance on FM, short-wave, and standard broadcast reception.

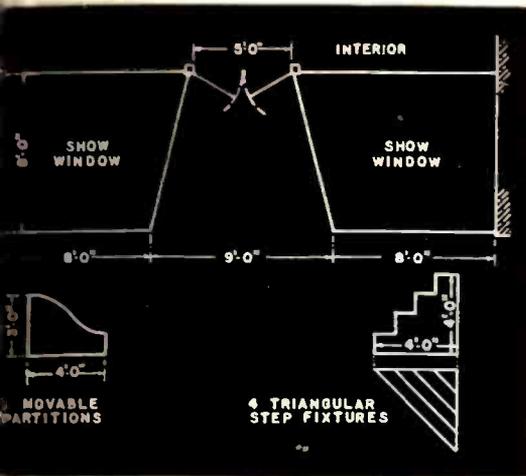
AMY, ACEVES & KING, Inc.

Engineer-Specialists in
ANTENNA SYSTEMS

11 West 42nd Street • New York City

THE JOB OF DISPLAY

PLANS FOR GETTING YOUR MERCHANDISE EFFECTIVELY SHOWN



How to arrange a 25-ft. store front, to get 32 ft. of radio display space.

In order to produce the maximum sales results from every square foot of his store space, a dealer must give his basic display facilities a regular and careful check.

During these days when the available radio models are undergoing a violent re-shuffle, it is particularly important that the matter of effective display be reviewed. Changes must be made, to show off the sets on hand to best advantage.

The first consideration in general display is the store front. This factor is closely linked with the matter of store location, which has been discussed fully in previous articles in *RADIO TODAY*. It will be remembered that the store front should be styled according to four standards (1) It should be attractive, to draw favorable attention to it, (2) It should be distinctive in order to identify it and differentiate it from your neighbors, (3) It should be dignified, to create a lasting and desirable impression on all who see it, and (4) It should be modern because radio and appliances are modern and they deserve modern stores and facilities.

WINDOWS THAT WORK

Now for the display windows, which of course are particularly important if your store is located in a district where the street traffic is heavy.

To do a REAL display job for radio, "combo and compact," you should have at least two windows, with a recessed center entrance.

Remember that your windows are the "eye ways" to your store.

An excellent window arrangement, on a 25 foot front, consists of two

8 foot windows, 8 feet deep, with a center entrance 9 feet on the window line, tapering to 5 feet at the door.

This gives a 5 foot entrance and 32 lineal feet of windows on a 25 foot front.

By the use of movable partitions, each window can be divided into two or three sections, each large enough to accommodate a step fixture for mass display of small units, or for the individual display of large units.

Such a window layout provides high background, against the walls, without obstructing light or vision, and lends itself to a wide variety of displays, institutional, seasonal, mass, bulk, or individual.

If you are lucky enough to have a large assortment of models, no single window can properly display ALL of them, and so, unless your window facilities are ample for the job they must do, you will lose much of the advantage of the high-traffic location you are paying high rent for.

FLOOR DIVISION

The actual floor space, both size and shape, is almost as important as the windows, in getting the most out of the total space.

It is generally agreed among radio merchandisers, that a full assortment of radio and records cannot be properly displayed and sold in less than 2,500 square feet of selling space.

The service department needs not less than 100 square feet.

And the office needs some 60 square feet.

Floor display of quality radios is smartly changed to handle heavy traffic during a big "Radio Show" event at Clark Music Co., Syracuse, N. Y.



Smaller stores than these are being used to sell radios and records, but in every case to this writer's knowledge, they are working under the handicap of too short assortments, congested selling space, poor display, for which they pay the price of lost sales.

And that is only another way of saying that given the proper amount of space, with these selling handicaps removed, sales volume would be much greater than the increased space, proportionately.

Too much space, on the other hand, might produce a store beautiful and spacious to look at, yet fail to produce the sales per square foot necessary to hold the rental to a 5 per cent of sales figures, which is "tops" for really profitable retail radio operation.

Hollywood Dealer Tries Recorder Promotion

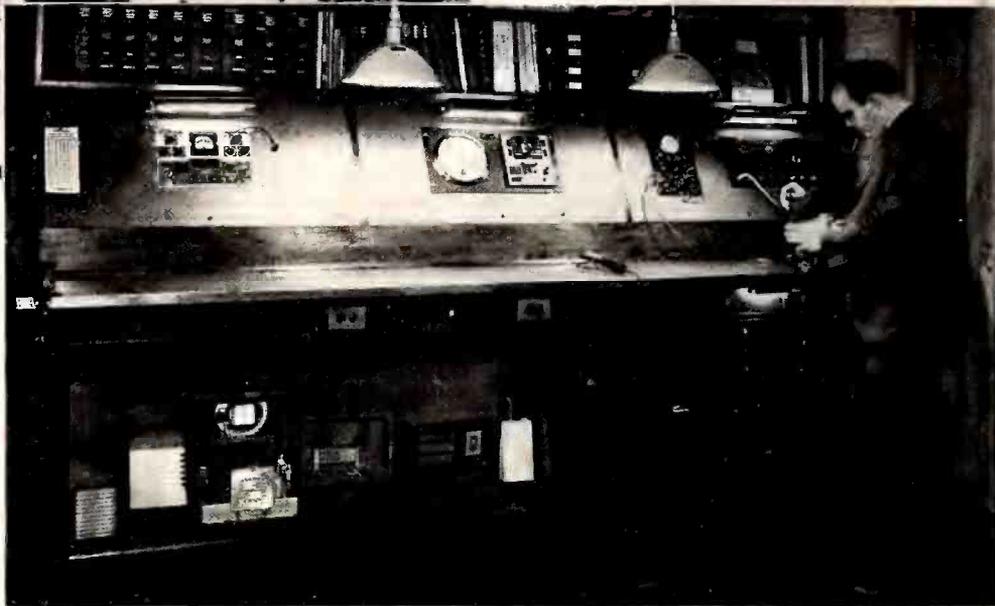
A dealer in Hollywood, called Glen Wallich's Music City, is now working with local theaters in a promotion stunt which has successfully hiked the sale of recorders and blanks.

Theater-goers are given a free recording blank when they buy tickets, a 5" record with a photo of the theater on one side and a view of the retailer's shop on the other. During premiere events, celebrities make the recordings at the theater, thus giving the matter a dramatic and highly publicized send-off. Thereafter, patrons come to Wallich's to have their recordings made free.



1935 is the date for picture of Keith Martin, left, and shop of Sterchi Bros., Knoxville, Tenn. Martin has been serviceman for the store for almost ten years, likes fishing, and experimenting with radio operated metal locators. A special service truck, equipped with ladders and test equipment is used. A complete record of repairs is kept for each set serviced. Service calls are \$1.50 minimum in the city, and \$1 at the shop. Martin sees 1941 and '42 as "red letter years of the serviceman."

SERVICE SHOPS



The picture above shows the service bench after its recent modernization, 1941. A screened room at the right facilitates noise tests and alignment. Note the flush-mounted instruments and individual panel lamps.



The Radio Hospital shown at the left is located at 427 S. Washington St., Peoria, Ill. The neon sign attracts plenty of attention. Serviceman Gene Oakes, in picture above, is kept busy with radio, refrigeration, and vacuum cleaner repair. Tools are mounted along the back of the wall above the bench and the test equipment is on a shelf above the tool rack.

Let Your Motors Do Some Selling . .

Get the Benefit of G.I. "Smooth Power"



FLOOR demonstrations Model CX of phonographs, combinations and recorders go over better—sales come easier—when G. I. "Smooth-Power" Motors are on the job. With advantages in design and precision construction, they deliver the ultra-smooth turntable speed that is so important in reproducing distinct fidelity of fine record tone.

All customers like G. I. "Smooth-Power" motors, changers, recorders and recorder-and-changer units, too, because they operate so simply, look attractive in cabinets—and stay on the job. Specify them when ordering.

For replacement and rebuilding work, order through your jobber. The General Industries line of phono power mechanisms is the most complete line of its kind made by any one manufacturer. Write for catalog and prices.

The GENERAL INDUSTRIES CO.

Dept. 15 Elyria, Ohio
Order your Cutting and Play-Back Needles from our Affiliate, GENERAL PHONOGRAPH MFG. CO., INC., PUTNAM, CONN.

No shortage here . . . and SALES ARE BOOMING!

WALCO Genuine Sapphire **NEEDLES**

LIST PRICE now \$1.00



Always the leader — again the season's big volume seller—WALCO Genuine Sapphire Needles enjoy greater popularity than ever! Many leading phonographs employ WALCO sapphire jewel points—similar to those used in WALCO Sapphire Needles—as permanent equipment.

Music lovers everywhere prefer WALCO. Here's one fast-moving line you can keep on selling, keep on profiting from, for WALCO's supplies and facilities are equal to the tremendous demand.

Let this WALCO Dispenser SELL FOR YOU!



Attractive, sales-boosting WALCO package—mounted 12 to a self-selling counter card. This eye-arresting WALCO merchandiser is designed to quadruple your needle sales.

CALL YOUR JOBBER TODAY

or wire us for complete information, prices and consumer literature on WALCO Genuine Sapphire Playback Needles and Cutting Styli, and the new WALCO Jewel Point Pickups.

ELECTROVOX COMPANY, INC.

356 GLENWOOD AVENUE • EAST ORANGE, N. J.

— HE SAYS THESE NEW WILCOX-GAY METAL DISCS GIVE HIM THE QUICKEST TURNOVER!



SELL WILCOX-GAY RECORDING DISCS

This fast-growing market offers steady, substantial year around profits. Consider these advantages:

SMALL INVESTMENT • Like "five & ten" merchandise, Wilcox-Gay discs produce volume and quick turnover on a small investment.

CONSISTENT TRAFFIC-BUILDER • Disc buyers are steady customers. They afford a valuable contact for additional sales.

READY-MADE MARKET • A huge disc market exists and is expanding rapidly in stride with home recording.

Wilcox-Gay is the world's leading manufacturer of home recording equipment and recording discs. Investigate Wilcox-Gay's new disc-merchandising program. Contact your Wilcox-Gay distributor or write the factory.

WILCOX-GAY RECORDIO

RECORDER-RADIO-PHONOGRAPH COMBINATION
WILCOX-GAY CORPORATION • CHARLOTTE, MICH.

TRY IT FOR 5 DAYS AT OUR RISK

MORE THAN 400 NEW PAGES



710 BIG 8½ x 11 PAGES IN ALL

HERE'S MORE PROFIT! FOR YOU!

GHIRARDI'S REVISED & ENLARGED **RADIO**

NOW ONLY \$3.50 COMPLETE **Troubleshooter's HANDBOOK**

USE COUPON WHEN ORDERING

SAVES TIME, LABOR, MONEY!

Trouble case histories for over 4,600 models of receivers and automatic record changers to guide you . . . troubleshooting charts, codes, alignment instructions for over 15,000 superhets, 20-page tube chart, and dozens of other data charts and tables to refer to. Over 700 pages chock full of money-making time-saving data in all—everything you need for faster trouble-diagnoses and more profitable repair. Nowhere else will you find ALL the helpful factory-checked information that is contained in this single volume. Order your copy today! Does not duplicate any data now in your servicing manuals. Mail coupon now . . . take advantage of our 5-day Trial Offer.

Here—boiled down to essentials and skillfully assembled, tabulated, charted, indexed to save your valuable time and help you to profit more—is the whole vast fund of WORKING DATA essential to every service man. Here is the information you need to do your service work more SPEEDILY—in one handy volume. Never before has there been a Handbook like Ghirardi's. A filing cabinet couldn't hold all the vital servicing data bound between its sturdy covers for quick, easy reference!

FREE!

COLOR-CODE WALL CHART

Send for your FREE copy of Ghirardi's new, easy-to-read, up-to-the-minute Capacitor and Resistor color code chart. It's original . . . the only one of its kind available and gives all RMA coding arrangements at a glance. Free to you; use the coupon at once.

RADIO & TECHNICAL PUBLISHING CO.
45 Astor Place, New York (Dept. RTO 101)

- Please rush my copy of Ghirardi's Revised Handbook on 5-day Money-Back trial. I enclose \$3.50. (\$4 foreign)
- Please send me a copy of your Resistor-Capacitor color code wall chart FREE.
- Please send me additional info on the new Handbook.

Name

Address

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

NEW

YOUR CUSTOMERS WILL USE A NEW KIND OF RECORDING DISC THIS YEAR!



THE ALUMINUM base recording blanks you have sold in the past will not be available this year because the entire aluminum supply is being used for national defense.

Here is the information you need to order the new Presto recording blanks and needles.

PRESTO GLASS BASE DISC: The highest quality disc now made, smoother, more rigid than the metal base discs, acknowledged by recording engineers to be the finest disc ever developed for sound recording. Recommended for use in broadcasting stations and recording studios. Overall thickness (.104"). Made in the following sizes:

TYPE	SIZE	LIST PRICE
912-A	12"	\$1.25
913-A	13½"	1.50
916-A	16"	2.50

NOTE:—The 12" and 13½" discs are packed 20 to a case, the 16" 15 to a case.

PRESTO STEEL BASE DISC: A new disc equal in quality to the Presto Orange Seal disc which was widely used for educational recordings. Gives excellent reproduction of both speech and music. Overall thickness (.036"). Made in the following sizes:—

TYPE	SIZE	LIST PRICE (Box of 10)
307-A	7"	\$4.50
308-A	8"	5.50
310-A	10"	8.00
312-A	12"	10.00

PRESTO MONOGRAM DISC: An eco-

nomical composition base disc ideal for test recordings of speech or music. Coated with the same compound as the Presto glass disc assuring long playing life and faithful reproduction. Used extensively in schools and recording studios. Overall thickness (.050"). Made in the following sizes:—

TYPE	SIZE	LIST PRICE (Box of 10)
706-A	6"	\$2.00
708-A	8"	3.50
710-A	10"	5.00
712-A	12"	7.00
716-A	16"	15.00

PRESTO SAPPHIRE CUTTING NEEDLES: Make as many as 100 perfect 5 minute recordings on one sharpening. Outlasts several dozen steel needles. List price per needle, \$6.00. Cost of resharpener, \$2.50.

PRESTO STELLITE CUTTING NEEDLES: Make 50 or more perfect recordings before becoming dull. Cutting point is a specially hardened alloy ground to a high polish to cut cleanly and quietly. More durable than sapphire. Will not break or chip. List price per needle, \$1.25. Cost of resharpener, \$.75.

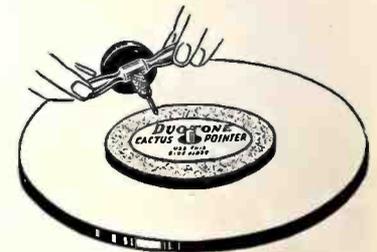
PRESTO SAPPHIRE PLAYING NEEDLES: One needle will play 500 records or more. Highly polished point saves wear on valuable record libraries. Ideal for playing instantaneous recordings. List price per needle, \$1.25.

Write today for details of our new exclusive distributor's franchise.



Multicoupler antenna system

★ A new multicoupler antenna system for apartment houses and other multi-radio buildings includes FM reception. 20 couplers can be served with a single aerial and transmission line. Provided with a built-in polarized outlet. No switching required in changing from broadcast to shortwave, to FM reception. Amy, Aceves and King, Inc., 11 W. 42 St., New York, N. Y.—**RADIO TODAY.**



Duotone sharpener

★ One objection to cactus needles is overcome by a new, simple sharpener, which uses the turntable of the phonograph like an emery wheel. Lists at \$1.00. Duotone Co., Inc., 799 Broadway, New York, N. Y.—**RADIO TODAY.**



Pincor Dynamotor line

★ New line of Pincor Dynamotors includes units from tiny Model DS rated up to 15 w. to the giant model TS, 850 w. output. Featured also is a double input and double output dynamotor for both receiving and transmitting. Pioneer Gen-E-Motor, 5841 Dickens Ave., Chicago, Ill.—**RADIO TODAY.**

PRESTO RECORDING CORP. 242 WEST 55th ST. N. Y.

In Other Cities, Phone... ATLANTA, Jack. 4372 • BOSTON, Bel. 4510
CHICAGO, Mar. 4240 • CLEVELAND, Me. 1565 • DALLAS, 37093 • DENVER,
Ch. 4277 • DETROIT, Univ. 1-0180 • HOLLYWOOD, Hil. 9133 • KANSAS
CITY, Vic. 4631 • MINNEAPOLIS, Atlantic 4216 • MONTREAL, Wel. 4218
PHILADELPHIA, Penny. 0542 • ROCHESTER, Cul. 5548 • SAN FRANCISCO,
Yu. 0231 • SEATTLE, Sen. 2560 • WASHINGTON, D. C., Shop. 4003

World's Largest Manufacturers of Instantaneous Sound Recording Equipment and Discs

THINGS



Echophone EC-2

★ A communications receiver for AC or DC covers continuous range from .55 to 20. megacycles. 5 in. P.M. speaker mounted inside the cabinet top. RF stage on all bands, separate electrical band-spreading. Noise limiter. BFO. Stand-by switch. Echophone Radio Co., 201 E. 26th St., Chicago, Ill.—**RADIO TODAY.**

Shallcross limit bridge

★ No. 618 Per Cent Limit Bridge for rapid and accurate testing of multi-tapped resistances with varying unit values. Has binding posts, special mercury wells, rotary selector switch and a high-low tolerance key switch. Shallcross Mfg. Co., 10 Jackson Ave., Collingdale, Pa.—**RADIO TODAY.**

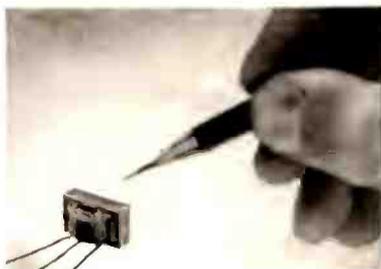


Solar "Elim-O-Stat"

★ Type AFL, radio-noise-suppressor is designed to eliminate radio interference created by fluorescent lighting equipment. It is supplied in a small, narrow metal case for channel mounting. Solar Mfg. Corp., Bayonne, N. J.—**RADIO TODAY.**

Dunco latching relay

★ New midget-size mechanical latch-in electrical reset relay, type ABB-IN, with contact rating of 110 v., 6 amps. Coils may be obtained ranging from 6 to 220 v. AC or 2 to 230 v. DC. Struthers Dunn, Inc., 1335 Cherry St., Phila., Pa.—**RADIO TODAY.**



UTC transformers

★ For hearing aid, aircraft and similar applications, these output coupling units weigh only 3/10's of an ounce and are 7/16 in. x 7/16 in. x 3/4 in. Inductance of approx. 70 Hys. United Transformer Corp., 150 Varick St., New York, N. Y.—**RADIO TODAY.**



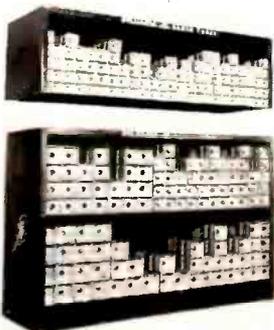
151

Jones terminal strips

★ Six barrier strip series have body of heavy molded Bakelite with barriers between each set of terminals. New 150 series have been added to the 140 series. The No. 151 has 12-32 screws with 3/4 in. metal-to-metal spacing. Howard B. Jones, 2300 Wabansia Ave., Chicago, Ill.—**RADIO TODAY.**

Aerovox resistors

★ Improvements in resistance elements permits smaller insulated molded carbon resistors. New 1/2 and 1 w. units smaller than previous units bearing same ratings and numbers. Aerovox Corp., New Bedford, Mass.—**RADIO TODAY.**



Sylvania stock boy

★ An olive green enameled metal cabinet base unit measuring 34 in. wide by 22 1/2 in. high, by 12 in. deep has 2 shelves. The shelf "add-a-unit" is 34 in. wide by 9 3/4 in. high, by 12 in. deep. Each shelf will hold 70 to 140 tubes, 1 row deep or as many as 420 tubes, employing full capacity of the shelf. Available at Sylvania jobbers. Hygrade Sylvania Co., Emporium, Pa.—**RADIO TODAY.**

CLEAN AS A BELL



THE DYNAMIC SONORA PACKAGE SELLING PLAN

This, the first successful Jobber Package Plan for profitable radio selling, is another milestone in the long series of SONORA successes.

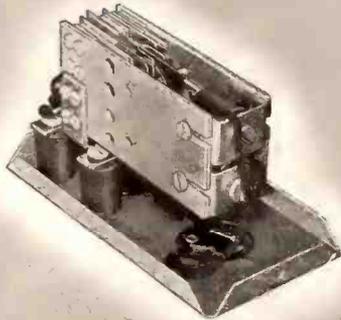
In a nutshell, the Package Plan is built around a complete home entertainment line of proved and tested "Best Seller" models. They are priced for attractive, protected profits. They are easy to sell right over the counter. There are no service problems. There are no heavy inventories . . . turnover is quick. Promotional cooperation is aggressive, complete—backed by all the power of a great name in the music reproducing world—to help you sell . . .

SONORA Jobbers everywhere endorse the Package Plan enthusiastically . . . just another evidence of SONORA's progressive merchandising . . .



SONORA
RADIO & TELEVISION CORP.
CHICAGO

ELECTRONIC VIBRATORS



...The Industry's
Standard for Mobile
Amplifiers!

THE selection of *Electronic Vibrators* by the following major manufacturers of public address systems... *over 95% of the industry*... is sincere tribute to the high efficiency and unequalled dependability which *Electronic* builds into its product:

Barr Manufacturing Company
Erwaad Sound Equipment Company
The Hallicrafters
Knight
Mantgamery-Ward
Rauland Corporation
Sears-Raebuck
Transformer Corporation of America
Webster-Rauland Corporation
And many others

Illustrated (at top) is the Type 490 Heavy-Duty Vibrator with which most amplifying systems are equipped. It is self-contained, precision-built for long, trouble-free operation... with accurate 60-cycle adjustment and easy "plug-in" servicing.

In addition to being the overwhelming *first choice* for commercial applications, *Electronic Vibrators* are widely used by the American Defense Forces... fully meeting the rigid tests and specifications of the U. S. Army, Navy and Coast Guard.

To assure maximum customer satisfaction, and save yourself time, trouble and money, insist on *Electronic Vibrators* in the amplifying equipment you sell!

ELECTRONIC LABORATORIES

INC.

INDIANAPOLIS, INDIANA



Hallicrafters Sky rider 32

★ Model SX-32 receiver offers 2 tuned r.f. stages, 6 degrees of selectivity, 3 with crystal. "S" meter. Six tuning ranges, 500 kc to 40 mc. All bands fully calibrated on main dial. Electrical bandspread system. The Hallicrafters Co., 2611 S. Indiana Ave., Chicago, Ill.—**RADIO TODAY**.



Atlas volume control

★ Speaker power volume control, RC-1, has an essentially constant impedance for use across the voice coil of any speaker. Provides gradual control of volume from a full ON to OFF position. Power-handling capacity—10 w. Mounted in gun-metal CB utility box. 3 in. diameter. Lists at \$3.50. Atlas Sound Corp., 1449 39 St., Brooklyn, N. Y.—**RADIO TODAY**.



Knight sound system

★ 30-watt mobile sound system designed to operate from either 6-v. storage battery or 110-v., AC-power. Comes in 2 compact cases, with amplifier and phono top, two 12 in. PM speakers with cable, dynamic microphone with cable; and floor stand. Four input channels, 2 for high-impedance mikes with individual volume controls. Base and one treble tone control. Allied Radio Corp., 833 W. Jackson Blvd., Chicago, Ill.—**RADIO TODAY**.

NEW

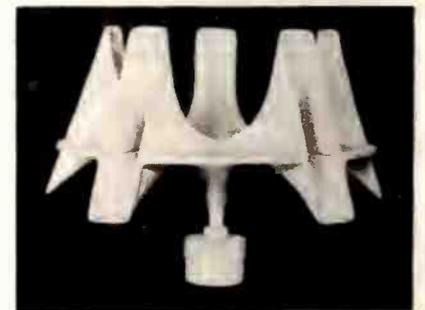
Usalite flashlight

★ A practical flashlight which throws a powerful pre-focused 750 ft. beam straight forward or at any angle due to a swivel-head. Black plastic case, chrome trim. Plastic lens. Belt clip, snap-back bottom ring hanger. Also will stand on table. 3-point safety lock switch. Can be used as fuse or bulb tester. \$1.80, case and lamp. United States Elec. Mfg. Corp., 222 W. 14 St., New York, N. Y.—**RADIO TODAY**.



Bell Sound amplifier

★ Model 700—100 w. amplifier—powered by twin units of 50 w. output with not more than 2 per cent distortion. Mike gain—135 db; phono-channel—90 db. 30 to 12,000 cycles within plus or minus 1½ db. Multiple output impedance from 1.25 to 500 ohms. Bass and treble tone control. Bell Sound Systems, Inc., 1183 Essex St., Columbus, Ohio—**RADIO TODAY**.



RCA speaker baffle

★ New loudspeaker baffle projects sound uniformly over a 360° area through five evenly spaced apertures, arranged in a horizontal plane. For use in industrial plants. Operates from a single speaker. Constructed of non-metallic non-vibratory acoustic material. Designed to operate with 5, 10, 12 or 15 w. speakers. RCA Mfg. Co., Camden, N. J.—**RADIO TODAY**.

THINGS



Bitter album cabinet

★ A new album stock cabinet No. 110 holds about 250 album sets and measures 2 ft. 10½ in. long x 7 ft. 2 in. high x 15 in. deep. Design is same as the standard record rack No. 100 so as to be interchangeable and is also finished in walnut birch. A. Bitter Construction Corp., 27-01 Bridge Plaza N., Long Island City, N. Y.—**RADIO TODAY.**



Audiograph Duplex 70

★ Model B-70D contains two 35-watt amplifier chassis and makes possible centralized control of a complicated system of microphones and speakers. Mounted complete in 17½ in. cabinet. Built-in monitor speaker and volume level meter. Switch for monitoring and metering each output channel separately. 8 input channels each with separate volume control. John Meck Industries, 1313 W. Randolph St., Chicago, Ill.—**RADIO TODAY.**

Vibracloc baffles

★ New group of wall and corner mounting baffles range in size for 5 to 18-inch speakers. Triflex baffles are corner mounted and have bass reflex principle. Dual paging speaker baffles are supplied in four colors. Vibracloc Mfg. Co., 325 Miguel St., San Francisco, Calif.—**RADIO TODAY.**



MOBILE Model AB-8M PICKUP

Designed especially for sound trucks, airplanes, automobiles, trains and other mobile units.



Model AB-8M Astatic Crystal Pickup is mechanically counterbalanced so as to track on recordings even in a vertical position, as illustrated, without jumping the groove. Hinged head may be tilted upward for quick and easy changing of needles. Model AB-8M incorporates all the advantages of Astatic Models AB-8 and S-8, and provides wide range performance with full bass and brilliant highs, free from distortion and surface noise. Mounting center, 8 inches. List Price \$12.50.

PUBLIC ADDRESS MICROPHONE

*Exceptionally Smooth
Frequency Response*

Astatic N-Series Microphones, while highly practical to many uses, are especially desirable for modern public address installations. Here is a microphone that insures faithful reproduction and at the same time incorporates special features to facilitate directional or non-directional positions and the quick interchange of cables. Swivel joint tilting head, internal diaphragm protector and concentric cable connector. All chrome finish. Complete with 25-ft. cable and spring protector.



N-SERIES

Model N-30
wide range
List Price \$17.50
Model N-80
voice range
List Price \$17.50

ASTATIC

THE ASTATIC CORPORATION

YOUNGSTOWN, OHIO

Licensed Under Brush
Development Co. Patents

In Canada:
Canadian Astatic Ltd.
Toronto, Ontario

Service Notes for G. E. L-630

The L-630 circuit shown includes a tuned RF amplifier stage which is coupled through an untuned choke to the converter. Two loop antennas are used for the two bands, 540 to 1720 kc., and 5.3 to 18 mc. Bass compensation is accomplished with a high-pass filter from the volume control tap to ground. The tone control is the variable high-pass system from the first audio plate to ground. Notice that the tone control is also the grid resistor for the 6V6GT. De-generation is used in the IF amplifier and the output stage.

ALIGNMENT

All RF and oscillator trimmers are accessible through a slot in the back cover of the cabinet. All RF alignments must be made with the chassis and loops securely fastened in the cabinet. The IF alignment may be performed with the chassis out of the cabinet.

Set the dial to 550 kc. on the BC band and feed a 455 kc. signal through a 0.05 capacitor to the 6SK7 grid. Adjust the output IF transformer for maximum output. Move the signal back to the 6SA7 converter grid, and adjust the input IF transformer for peak output.

For the RF alignment, the chassis and loops should be in their normal positions in the cabinet as mentioned before. Do not place any tools or meters on top of the set during alignment as this will change the inductance of the loop. Couple the signal from the generator to the set through the capacity of a two-foot piece of wire on the generator output placed about two feet from the set. Tune the set to a 580 kc. signal. While rocking the gang, adjust the series oscillator padder for peak output. Tune to 1500

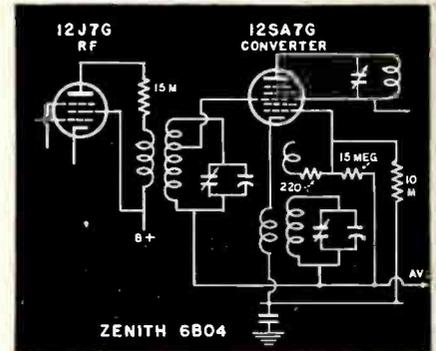
NEW EQUIPMENT

SERVICING

kc. signal and adjust the oscillator trimmer for maximum while rocking the gang. Repeat the adjustment at 580 kc.

Tune the set to a 18 mc. signal coupled in the same manner as the broadcast signal. Adjust the oscillator trimmer for maximum output. While rocking the gang, tune the antenna trimmer for peak output.

The gain figures on the diagram apply when the AVC bus is shorted to ground. Variations of plus or minus 20 per cent permissible.



Electron Coupled Converter in 1942 Models

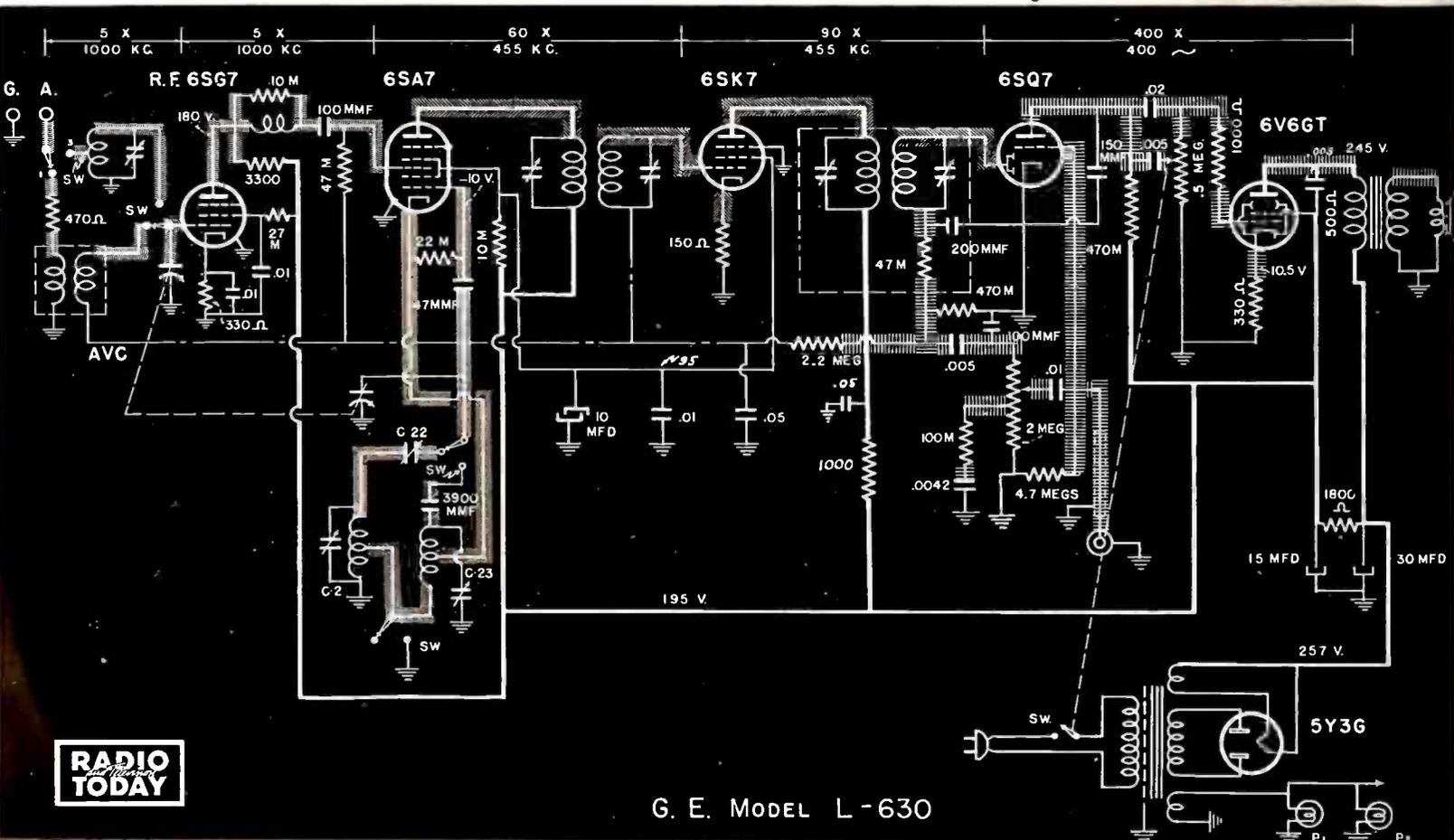
Many of the new sets in the various lines are using a pentagrid converter tube in a Hartley circuit with a cathode coil for feedback. The oscillator grid is capacity coupled through several turns of wire on the coil. The tuned circuit has the AVC potential on it and makes a direct connection between the antenna tuning condenser and coil possible without the usual isolating condenser. Notice in the Zenith circuit for chassis 6B04, the use of the DC oscillator voltage as a delay potential for the AVC circuit. The 15 meg resistor from the oscillator grid to the AVC bus divides the oscillator voltage so that 1 to 2 volts is available as a negative bias for the AVC controlled tubes.

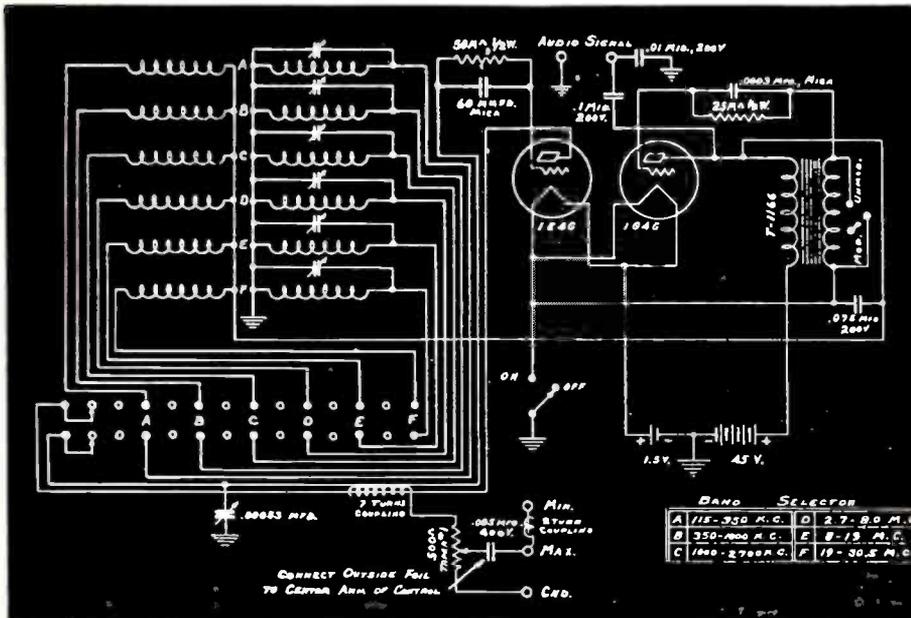
The RF stage has a 15M ohm resistor in the plate circuit to increase the plate load. The secondary of the

transformer is tapped to cut down the RF voltage applied to the converter grid.

Test Oscillator Operates from Batteries

Model 1231A signal generator just introduced by Triplet Electrical Instrument Co., operates from its own self-container batteries. It is extremely useful for rural, automotive, and other jobs where AC power is not available. The accompanying circuit shows the 1E4G RF oscillator with six band ranges from 115 kc. to 30.5 mc. A 1G4G is used as the audio oscillator to supply the 400-cycle modulating signal. The audio signal is also available externally. A variable output signal voltage is obtained from two terminals, Min. and Max.





Circuit of the battery operated test oscillator, model 1231A made by Triplett. Tuning range is 115 kc. to 30.5 mc. See story on page 66.

"Gyp" Story Boosts Serviceman's Biz

"The Readers Digest attack on the honesty of the servicemen has been a windfall for my business," says Carl Thomas of Jersey City, N. J. "Since the appearance of this article, old customers have brought several sets, which have been out of commission for some time, to my shop for repair, and more important, a healthy influx of new customers from outside my neighborhood has increased business by 25 per cent."

Thomas explains the new customers and greater volume of business from the fact that his shop has been in the same neighborhood for twelve years, and, although he charges full list prices for all tubes and parts, set owners are afraid to go to his near-by "free inspection" competition because they feel that the free service they get must mean poor work, inferior parts, etc.

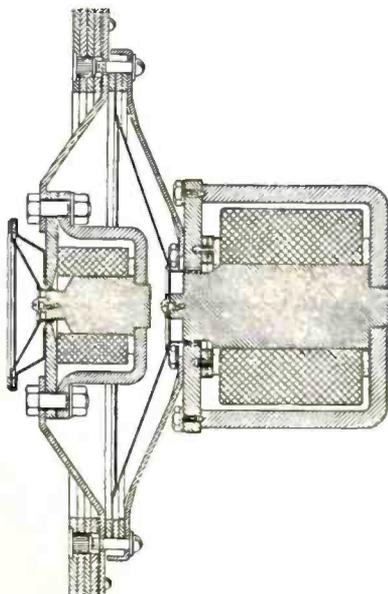
A minimum service charge sign is prominently displayed over the bench in Thomas' shop. His shop is very well equipped. Thomas reports that customers often express amazement at the fact that his charges are many times not higher than so called "free service" shops. He explains that because his shop is adequately equipped and he knows how to do the job, less cost-consuming time is spent fixing each set. Jobs are turned out within 48 hours if parts are available.

Thomas also points out, "I always stress a thorough bench test before giving an estimate in fairness to the customer as well as myself. Also it is my general practice to render an itemized bill explaining work done

and material used on each job. I also point out that in my service to a customer I am selling my knowledge of radio service and not only the parts. Repairs are gladly pointed out if requested."

Patent Granted on Stromberg Co-axial Speaker

The U. S. Patent Office has just granted Benjamin Olney, head of research at Stromberg-Carlson Telephone Mfg. Co., patent claims covering the



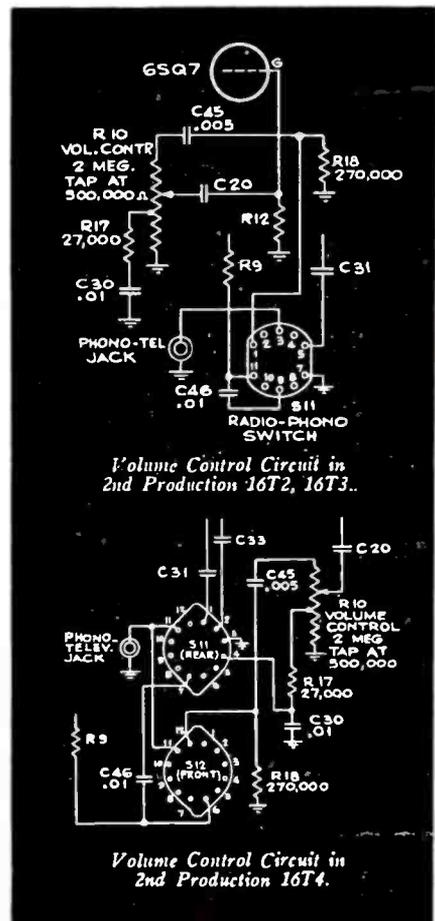
co-axial speaker used in that company's FM receivers.

This co-axial speaker system shown in the accompanying cross-section view, is designed to cover a range of 50 to 15,000 cycles per second. This wide range is reproduced without "peaks" or "valleys" in the response. The low frequency end of the spectrum is, of course, reproduced by the large cone system mounted behind the smaller high-frequency "tweeter."

An important feature of this co-axial speaker is the wide-angle distribution of the highs. Because of the very narrow "beam" characteristics of the highs coming from a speaker cone, listeners have failed to get the full benefit of a full-range reproduction system unless they were almost directly in front of the speaker. Wide angle distribution of the highs is realized in this speaker due to the small (2½-inch diameter) cone used on the tweeter. Good acoustical efficiency for this small unit is obtained by totally enclosing the air space back of the cone. This back enclosure for the high-frequency cone further protects it from the powerful low-frequency waves coming from the low-frequency cone immediately behind.

The acoustic labyrinth, also invented by Mr. Olney, is used in conjunction with the co-axial speaker to give smooth bass reproduction. This sound reproduction system is currently being used on S-C models 585M and 955-PF.

Production Changes



Volume control circuits in RCA models altered in second production. 2 meg. control replaces .25 meg.

HOW FM STATIONS AID LOCAL TRADE

(Continued from page 38)

Milwaukee FM station. This dealer promotion piece will be followed by others of the same sort at regular intervals.

Hartford's FM Station W65H has cooperated with radio dealers in FM promotion in several ways, as described by F. M. Doolittle, general manager.

ANTENNAS IMPORTANT

"We send mimeographed program releases to all radio dealers in Connecticut and, upon request, to their customers or to prospects for FM receivers. Our dealer mailing list at present is about 532. Because of the heavy signals from the local AM stations in Hartford, FM has not developed as rapidly in Hartford itself as in some of the outlying districts where reception is poor. In order to help radio dealers in the sale of FM sets, we have taken four billboards on principal highways in the State at some distance from Hartford. (One of these billboards is shown on page 38.)

"There is a steady sale of FM receivers in Connecticut. This is mostly due to the activities of a few dealers and we regret to say that the average radio dealer still knows little about and is not interested in FM sales. One of the obstacles is, we believe, the need for special antenna installation, and until FM stations are permitted to use enough power to overcome this obstacle, we are afraid that it will hinder FM development. While it is perfectly true that good reception can be obtained with 50-microvolt signal in many localities, there is a tremendous amount of inertia on the part of the public and radio dealers when it comes to installing a special outdoor antenna."

Latest and most elaborate of dealer cooperation programs has been the trade campaign accompanying the opening of the Chicago Tribune FM Station W59C. A mass meeting of 500 radio dealers and distributors of the Chicago area gave the FM story to the trade first.

TO SHOW "NATURALNESS"

Demonstrations of FM sound fidelity included the pounding of nails, sawing of wood, the clank of chains, the sound of a telephone bell, the tinkle of water and ice in a glass. All came thru with astonishing fidelity on FM. And when the radio crew took to frying eggs and bacon

at the studio, listeners could almost smell the aroma in the audience hall!

Then came a demonstration of musical instruments. The differences in the sound of Chinese gong, Hawaiian guitar, banjo with its fluid afterglow, when played on the two receivers, was readily appreciated.

Meanwhile the Chicago Tribune set out to sell FM in a big way to its million readers. Daily articles and display ads appeared extolling FM's merits, but the high point of the campaign was the big 12-page special FM Section of Sunday, September 21, when the FM story was told in large space and colors, with the cooperation of manufacturers, distributors and dealers who ran advertisements featuring FM merchandise.

INSTALLING FM SETS

(Continued from page 42)

Other FM-AM combination antennas may be odd multiples of quarter-wave lengths on each side of the center in order to get the necessary length for use on the BC band. The antenna is then connected to the transmission lines by means of three transformers, each designed to transfer one of either FM, short-wave, or BC signals. On FM the antenna is a true balanced to ground di-pole, while on SW and BC the antenna acts as a Marconi capacity type.

FOLDED ANTENNAS

Many of the 1942 FM-AM combinations are being supplied with built-in FM antennas as well as the conventional AM loops. These FM antennas are "folded" or part of the conventional di-pole bent to fit inside the cabinet. These antennas have some of the same directional properties as the ordinary di-pole and the set may need turning in order to pick-up a particular station. The "folded antenna" usually exhibits the ability to receive both horizontal and vertical polarized waves where both types of radiation are being used. These built-in antennas will work satisfactorily where signal levels are high, but a well positioned outdoor di-pole will probably be required to give satisfactory reception in all parts of the area covered by FM stations. It is important that the "no outside antenna" feature of the set not be over-emphasized unless it is known that a similar set is performing all right on indoor pick-up within a short distance from the prospective owner's home.

ALL THE IMPORTANT SETS FROM 1930 TO 1935 In One Mammoth Rider Manual



2000
PAGES
Only
\$1250

Here is aid for servicemen wanting a complete set of Rider Manuals, who cannot afford the early volumes. The Abridged Volume I to V does not contain all the in-

formation in the original individual volumes I to V — but does cover the most widely distributed sets made between 1930 and 1935.

Individual Volumes I to IV — covering sets issued between 1920 and 1936 — \$7.50 each.
Volumes VII to XII — covering sets issued between 1936 and 1941 — \$10.00 each.

RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS"

Out Nov. 20—Approx. 700 pgs.—\$6.00
800,000 record changers are providing an important source of profit for the wide-awake service shops of the country and creating a need for adequate and ready reference data to speed up trouble shooting and repair.

Rider's "Automatic Record Changers and Recorders" is the answer. Here is valuable information in manual form and with complete text and drawings, it gives everything you need to know about recorder changers and recorders.

Due to limited supplies of materials and substantial increases in costs, we are forced to announce

PRICE INCREASES Dec. 15th

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(Exceptions: Prices of "Abridged Rider Manual Volumes I and V" and "Automatic Record Changers and Recorders" will not be increased at that time.)

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Patent Exchange Between Du Mont and RCA



Allen B. Du Mont announces patent license exchange with Radio Corp. of America.

Patent license agreements between RCA and the Allen B. Du Mont Labs, Inc., Passaic, N. J., have just been consummated, according to an announcement by Mr. Du Mont. This action licenses the Du Mont firm under standard RCA patent agreements, and the New Jersey firm in turn grants RCA a non-exclusive, non-transferable license under all Du Mont patents "covering important advances in cathode-ray oscillography and in television transmission and reception."

National Union Names Sales Engineer

A newcomer to the staff of National Union Radio Corp., Newark, N. J., is William J. Brennan, who joins the firm as sales engineer. A part of his duties is to head an information service to the radio trade on special radio tubes, their use and application. Mr. Brennan has long been active in radio and comes to NU from post-graduate work at Harvard University in communication engineering.

Bornstein for Turner

A new sales representative for The Turner Co., Cedar Rapids, Iowa, is L. M. Bornstein, 333 Manufacturer's Exchange Bldg., Kansas City, Mo. He will cover Iowa, Nebraska, eastern Kansas, Missouri and southeastern Illinois, for Turner microphones, microphone equipment, and the new vibrator.

Replacement Guide

Transformer replacements for over 4,000 receivers are given in Thordarson's new 32-page edition of the Replacement Encyclopedia, No. 352-F. Address Thordarson Electric Mfg. Co., 500 W. Huron St., Chicago, Ill., for copy.

Do you have a TRANSMISSION CABLE PROBLEM?



8216—Coaxial Cable



8217—Coaxial Cable with Insulating Bead



8219—100-Ohm Twisted Pair



8210—E01 Type Transmitting Line Cable



8204—72-Ohm Twisted Pair



8209—Shielded Twisted Pair



8205—Commercial Type Twisted Pair

For Antenna Wires and Kits, Hook-up Wires, Microphone Cables, and all other specialized wires for radio and sound equipment—see Catalog 841.



Here's Your Wire Insurance

Good wires make good connections. It pays to use the right lead-in for every installation.

Whether you require a noise reducing shielded cable—a twisted pair—a coaxial cable—an E01 type—or a standard rubber covered lead-in wire—you'll find the wire you want, built to do the job you want, in the Belden line.

Belden tells what you want to know about your transmission cables, too. Surge impedance, power factor, capacity, DB loss or "Q" value, puncturing voltage, maximum load capacity are given for every number.

Use Belden wire for all your installations. Ask your jobber.

Belden Manufacturing Company
4613 W. Van Buren St.
Chicago, Ill.

Belden WIRE

FOR GOOD CONNECTIONS

IN SERVICE



Here we are again—we replacements for the many manufacturers that used Ken-Rad better tubes for initial equipment last year. Stock us for quick turnover and added profits. For we assure you completely satisfied customers. As one writes: "I know that your tubes will give me full satisfaction as I have been using them in my sets for some time and do not believe that there are better tubes on the market."

KEN-RAD TUBE & LAMP CORPORATION, INC.
Owensboro, Kentucky

Makers of Ken-Rad Radio Tubes and Ken-Rad Electric Lamp Bulbs

KEN-RAD

• **DEPENDABLE** •

Radio Tubes



Unit illustrated actually measures $1\frac{1}{8} \times \frac{1}{2} \times 2\frac{1}{8}$ in.—barely 10% larger than pictured. Other capacity values and voltages are in keeping with such compactness.

ALWAYS a good bet...

● Yes, the Aerovox Type PBS cardboard-case dry electrolytics always rate as top-notch replacements with successful servicemen when it comes to low-cost jobs. The compact dimensions; adjustable metal mounting flanges; polarity - indicating leads; generous voltage ratings; full capacity—these and other features brand them as ideal replacements when pennies count. Note the wide choice of listings . . .

SINGLE SECTION:
25, 50, 100, 250, 450 and 600 v. D.C.W. All popular capacities.

DOUBLE SECTION:
250 and 450 v. D.C.W.
4-4 to 16-16 mfd.

TRIPLE SECTION:
250 and 450 v. D.C.W.
8-8-8 to 8-8-16 mfd.

● **Ask Your Jobber . . .**

He carries a full stock of these fastest-selling constantly-fresh PBS electrolytics. Be sure you have some on hand always, for quick repairs. Ask for latest catalog—or write us direct.



Packing of Radios Sent in the Mail

The following is a recent Post Office Department order regarding the packing of radio receivers sent in the mail:

"The attention of postmasters is called to the necessity of seeing that radios, the table and portable size, are packed in strong containers such as the double-faced corrugated fiberboard carton with at least 2 inches of cushioning material such as crushed paper or excelsior on all sides completely surrounding the radio, the carton to be fastened with strong twine or 3-inch Kraft gummed paper tape covering all seams.

"Many Army camps are being established and no doubt radios will be sent to the soldiers in these camps. Postmasters and receiving clerks at parcel-post windows are cautioned to see that all radios presented for mailing are packed as described, or better packed.

"Better packing would be two containers, each of double-faced corrugated fiberboard, one within the other, the inside container holding the radio to be cushioned with a form or mold of double-faced corrugated fiberboard to form a 2-inch cushion of air on all six sides. In lieu of such forms or molds, crushed paper or excelsior may be used in sufficient quantity to keep the inner container 2 inches from all inner walls of the outside container."

Oct. 1 Prices Guaranteed by Majestic Till Jan. 1

A special statement by E. A. Tracey, general manager and chairman of the board of Majestic Radio & Television Corp., Chicago, reveals that the company is definitely guaranteeing all radio dealers that the Oct. 1 prices on the new Majestic models will not change before Jan. 1. Mr. Tracey reports that his firm has conducted a careful survey of materials and labor, to determine extra costs for the next three months, in an attempt to relieve dealer nervousness about prices, and to let the retailers know exactly what to expect.

The Majestic policy of keeping dealers fully informed on changing conditions, and offering price guarantees, has received wide acclaim among retailers, says Mr. Tracey. Therefore Majestic plans to continue its emergency surveys, and to keep its dealers posted.

Phoenix Flash!

H. George Shefler, manufacturers' representative of Phoenix, Ariz., has just buzzed the offices of RADIO TODAY with what he calls "the biggest news item out of Phoenix for many a moon".

Maybe he's right—anyway here it is: Mr. and Mrs. Shefler announce the birth of a daughter, Linda. In order to contribute something to Linda's future, we will deliberately advertise her father by mentioning that his sales area includes Arizona, New Mexico and El Paso, Tex.

CHIME RECORDINGS



Coming!

New high fidelity recordings of traditional Xmas music. Ready in time for the holiday trade. Ten-inch disks, each with two chime selections.

Dealers, Soundmen, Servicemen, Others—Plan now to handle this extra profit-maker. Sell chime recordings to churches, institutions, schools, stores, homes, community celebrations, etc.

Send name and address for new list of recordings to be ready shortly.



The need for controlled processes and uniform quality in parts has been answered by Triplet in setting up manufacturing facilities that make the company practically self-sustaining in the fabrication of instrument and tester components.

Shown here is a view of one section of the automatic screw machine department in the modern Triplet plant where essential parts—some as minute as the smallest used in watches—are turned out 24 hours a day. More and more, Triplet has turned to wholly automatic fabrication of materials to speed up production and to eliminate any possibility of human error. To assure parts best suited for Triplet needs, company engineers have pioneered in the design and manufacture of countless fabricated materials including switches, bar knobs, resistors, jacks, special adapters, etc.—a complete service intended to give each user the fullest measure of satisfaction.



Victor Red Seals in Huge Sales Promotion

The big sales promotion drive which RCA Victor launched Sept. 26-29 with ads in *Life* and in 93 newspapers, will continue for nine weeks with other ad drives featuring the Victor Red Seal catalog of recordings and artists. Symphonic, vocal and instrumental music each get a 3-week emphasis; the vocal promotion opens Oct. 20. The drive is called the Victor Catalog Concentration Campaign, and will continue with dealer cooperative ads in 122 newspapers in 101 cities. Further space in national magazines includes six leading publications.

In addition, the "Music You Want" program goes on 52 stations six times weekly. An unusual assortment of point-of-sale materials is also ready, including a special center piece for windows designed for use throughout the entire nine weeks.

"Two for the price of one" offers are a feature of the "Concentration".

Presto's New Distributors

A total of 20 new distributors were appointed during September by Presto Recording Corp., 242 W. 55th St., New York City. They will handle Presto glass-base recording discs and aluminum recoating service; many of them on an exclusive basis.

The new jobbers include: Cameradio Co., Pittsburgh, Pa.; Radio Servicemen's Supply Co., Cleveland, Ohio; Radio Specialties Co., Detroit, Mich.; Newark Electric Co., Chicago; Radio Parts Co., Inc., Milwaukee, Wis.; Ross Radio Co., Youngstown, Ohio; Radio Electric Service, Allentown, Pa.; Rochester Radio Supply, Rochester, N. Y.; Dymac, Inc., Buffalo, N. Y.; Vaeth Electric Co., Utica, N. Y.; Wedemeyer Radio Co., Ann Arbor, Mich.; Budd's Music House, Lansing, Mich.; All-State Distributing Co., Omaha, Neb.; Scranton Radio & Television Supply Co., Scranton, Pa.; Wholesale Radio Supply Co., Pontiac, Mich.; Robert A. Sylvester, Hazleton, Pa.; T. F. Cushing, Springfield, Mass.; Burnstein-Applebee Co., Kansas City, Mo. and Auto Equipment Co., Denver, Colo.

Universal Microphone Expansion

Universal Microphone Co., Inglewood, Calif., has increased its production facilities with a new factory annex. It will be used for storage and for production and testing facilities on national defense orders, as well as complete assembly lines for microphone orders designated by the Army Signal Corps.

Alan Ramsay has been appointed factory coordinator on defense orders for the Universal.

Emerson Murals Picture Radio Progress

Visitors to the lobby and showroom of the Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York City, now enjoy a striking series of new murals on the walls there, showing radio's beginnings, progress and history. The three oil paintings constitute a colorful history of the industry, and have attracted much favorable comment.

**Everyone Can Use this Handy
OHMITE Ohm's Law Calculator**

OHMITE OHM'S LAW CALCULATOR
SOLVES ANY OHM'S LAW PROBLEM WITH ONE SETTING OF THE SLIDE

OHMITE'S LAW FORMULAE For Reference Purposes

THIS SIDE UP TO
1000 OHMS

1 FIND VOLTS, AMPERES, WATTS, RESISTANCE ON SCALES ABOVE

WHEN OHMS ARE KNOWN, MOVE SLIDE TO SET OHM VALUE. Then read VOLTS, AMPERES, WATTS, RESISTANCE on scales above. When OHMS ARE NOT KNOWN, SET SLIDE TO SET OHM VALUE. Then read VOLTS, AMPERES, WATTS, RESISTANCE on scales above. Example: With 100 ohms and 100 volts, find 1 ampere. With 100 ohms and 100 amperes, find 10,000 watts. With 100 ohms and 100 watts, find 10 amperes. With 100 ohms and 100 amperes, find 10,000 watts. With 100 ohms and 100 watts, find 10 amperes.

2 FIND STOCK NUMBER OF STANDARD UNITS

All items are in stock for immediate shipment. Move slide to set value required on upper scales. Then read the stock number on the lower scale. Example: To find the stock number of a resistor with a resistance of 100 ohms, set the slide to 100 on the upper scale. The stock number 100 is read on the lower scale. A larger range of stock numbers is available in the range of 10 ohms to 10 megohms. See the Stock Catalog for details.

OHMITE MANUFACTURING COMPANY
CHICAGO, ILLINOIS U.S.A.

Solves any Ohm's Law Problem with One Setting of the Slide

YOU'LL use this remarkable Calculator every day—it's so simple, easy and complete! Does not require any slide rule knowledge. All values are direct reading on the Calculator. Figures amperes, volts, watts, ohms—quickly, accurately.

Scales on two sides cover the

range of resistances from .1 ohm to 10 megohms, also the range of currents, wattages and voltages commonly used in radio and commercial work. A setting of the slide also tells you the stock number of the resistor or rheostat you may need. Size of Calculator only 4 1/8" x 9".

Send for Calculator — Today! At your Jobber or Use Coupon!

There's nothing like it. It was designed for you by Ohmite Engineers—and made available for only 10c to cover cost of handling! Why be without it! Get your Calculator at your Jobber or clip the Coupon and mail it today.

ONLY 10c
to cover handling cost

OHMITE MANUFACTURING CO.
4874 Flournoy St., Chicago, U.S.A.
10c in coin enclosed. Send Ohm's Law Calculator.

Name

Address

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

Radio Today—Oct., '41

Be Right with **OHMITE**

RHEOSTATS • RESISTORS • TAP SWITCHES

AMERICAN RADIO TUBE CO.

Quality at Lowest Prices . . .

Manufacturers of
BALLAST TUBES
RADIO TUBES DIAL LIGHTS
VOLUME CONTROLS
CONDENSERS

Send for Price List . . .

Distributed by
ART RADIO CORP.
115 LIBERTY ST. NEW YORK

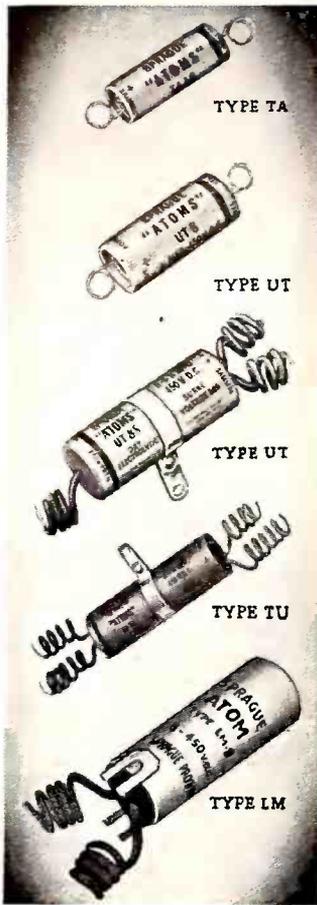
ART RADIO CORP.,
115 Liberty St., N. Y. C.
Gentlemen: As per "ad" in RADIO TODAY please send Price List.

NAME

ADDRESS

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

Please Indicate SERV. MAN DEALER
Serv. Man or Dealer



5 SPRAGUE ATOM TYPES

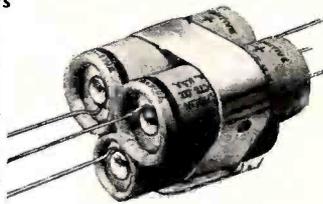
FOR BETTER, SMALLER, MORE ECONOMICAL REPLACEMENTS

Of course you know Sprague *Atoms*—the “blow-up proof” midget dry electrolytic condensers that have literally made larger, old-style condensers obsolete. But did you know there are five different *Atom* types—types that make these popular midgets practically universal for any replacement job whether it be single-section, multi-capacity, lug-mounting, or calls for separate positive and negative leads? Did you know leading manufacturers specify *Atoms* for equipment to be shipped overseas—because *Atoms* are so uniformly dependable under bad atmospheric conditions? And did you know that *Atoms* are so rugged, they’ll even stand up in many jobs where old style large dry and wet electrolytics were formerly specified?

Play safe. Use Sprague *Atoms* in every job.

You Save Three Ways

Make up hard-to-get replacements by strapping individual *Atoms* together with ST Mounting Straps—supplied free! You’ll find the combined *Atoms* actually smaller, often cheaper, and fully as reliable. You save time—money—space.



SPRAGUE CONDENSERS

Sprague Products Company
North Adams, Mass.

"The Representatives" Hold Brisk Meetings

The latest meeting of the Southwestern Chapter of "The Representatives" came off at the Adolphus Hotel, Dallas, Tex., with 13 of the 15 members on hand. The meeting celebrated the chapter's anniversary and these officers were elected: J. Y. Schoonmaker, president; J. Earl Smith, vice-president, and T. C. Ruhling, secretary-treasurer. Retiring president George Anderson got a vote of appreciation. Guest speaker was A. J. Lankford of the OPM's southwestern division.

The first meeting of the newly formed New York chapter of The Reps took place at the Old Oxford restaurant, New York City, where the group elected officers and installed a new member. Those elected were Robert Bruer, president; Martin Camber, vice-president; and Ben Joseph, secretary-treasurer. The new member is Bill Carduner, 296 Broadway, New York City.

National news of "The Representatives" concerns the acceptance of its first female member, Mrs. Dorothy Keller of Council Bluffs, Iowa. She is the wife of Ted Keller of the Keller Co., of that city.

A survey of the national membership of The Reps also reveals that several members have new addresses: Blair-Steinberg Sales Co., 395 Broadway, New York City; Les Logan Co., Gough St., San Francisco, Calif.; S. H. Cohen, 2533 S. Hill St., Los Angeles, Calif.; Bud Fisch, 419 Sherwood Terrace, Ft. Wayne, Ind.; and Milton Shapp, 180 Fern Ave., Collingswood, N. J.

Motorola in Big Vita-Tone Promotion

The big-scale advertising campaign being run in national magazines by Galvin Mfg. Corp., Chicago, makers of Motorola radios, is now featuring humorous characters drawn in Disney style. The 3-dimension Vita-Tone feature is accented with the head saying that "even the experts are excited". Motorola ads appear in *Sat Eve Post*, *Collier's*, *Life*, *Movie-Radio Guide* and *Liberty*.

Motorola is also calling attention to a dramatic non-stop test of its new record changer, the one with the "exclusive, patented roller release", in the Galvin labs. The changer was run for days, until the counting machine totaled over 38,000 records changed. Examination revealed that no record had been cracked or chipped, and that the changer remained in perfect condition.

ACA Expands Factory

A big extension of factory space has been completed by the Amplifier Co. of America, at 17 W. 20th St., New York City. Extra facilities for making electronic equipment, transformers and amplifiers now triple the production room, and greatly increase the capacity to handle the growing demand for ACA products in industry and National Defense.

Boy-My Crystal, Please!

Crystal gazing would be one way of solving the replacement transformer problem, but we have a better method—one that good service engineers everywhere are using—The Thordarson Replacement Transformer Encyclopedia No. 352F. When your transformer replacement job calls for fast, accurate service—call for a "Thordarson 352" not a crystal!

Thordarson engineers originated the Replacement Transformer Encyclopedia to assist you in the proper selection of Power Transformers, Filter Chokes, Audio and Output Transformers.

With the Thordarson complete line of dependable replacement transformers you can service practically all makes of receivers.

Your Thordarson Distributor will gladly give you Replacement Transformer Encyclopedia No. 352-F.

THORDARSON

ELECTRIC MFG. CO.

500 W. Huron St. Chicago, Ill.

TRANSFORMER SPECIALISTS SINCE 1895



Wilcox-Gay and Farnsworth in Washington



Executives shown at big dual dealer showing of Wilcox-Gay and Farnsworth, held by Washington (D.C.) Refrigeration Co. The two lines now have dual distribution with 5 major jobbers; reports are that the idea means extra volume. Left to right, Cliff Malliett, Farnsworth dist. mgr.; M. L. Krewer of Washington Refrig. Co.; and D. E. McGaw, asst. sales manager of Wilcox-Gay.

Crosley in National Defense

"Crosley and the Defense Program" is the title of a new booklet issued by the Crosley Corporation, Cincinnati, Ohio, showing how the Crosley organization with its background of precision manufacturing, now faces its responsibilities in the Defense Program with confidence. The purpose of the booklet, Martin Krautter, advertising manager, explains, is to provide a quick glimpse of the Crosley organization as it stands ready today.

It was in 1921 that the first radio sets with the name Crosley were sold. In that same year Powel Crosley, Jr., obtained his first broadcast license. From those pioneer days, the Crosley radio interests, including WLW, have developed without interruption.

In 1932, the Crosley Shelvador refrigerator was launched with the patented shelves-in-the-door feature, which built Crosley prominence in another huge field of precision manufacturing. Ranges, washers and finally the Crosley Car have since been marketed.

Today, with more than 3,000 stockholders and with a board of directors of distinctive character, Crosley is one of the great names in American industry.

Raytheon Announces Plans to Strengthen Jobber Setup

Shifts in the personnel of Raytheon radio tubes have been announced by the firm's general sales manager, E. S. Riedel, in order to strengthen the company's cooperation with jobbers starting this Fall.

Ralph Haines, who has been directing Raytheon replacement sales in the Middle West, has been shifted to New York, to become manager of Raytheon sales promotion. He will work under A. E. Akeroyd, who was recently promoted to the post of national manager of replacement sales, headquarters at 420 Lexington Ave.

Russell O. Lund, who has been iden-

tified with the radio parts industry for the past 14 years, now becomes manager of tube replacement sales in the Middle West, with headquarters in Chicago.

Admiral Expands Into New Factory

Final arrangements have now been completed by Ross D. Siragusa, president of Continental Radio & Television Corp., for the purchase and construction of a new Admiral factory at 4150 N. Knox Ave., Chicago. The new streamlined plant will be used exclusively for making radio equipment for defense purposes, and the manufacture of radios will continue in the big Admiral plant at 3800 Cortland St. Vice-president J. H. Clippinger will head up the defense work.

The company reports exceptional success for its radio-phono combinations and the demand for these has moved the firm to make repeated increases in its production lines for automatic record changers. Admiral now employs 850, but the total is expected to jump to 1,400 because of the extra defense activity.

General Records Come in Colorful Packs

Now creating interest in the record market is "a new selling idea" started by General Records (division of Consolidated Records Inc.) 1600 Broadway, New York City. The idea is to offer two or three records in a colorful and eye-catching package, thus enabling the retailer to liven up his displays throughout the store, and to sell several records at one time.

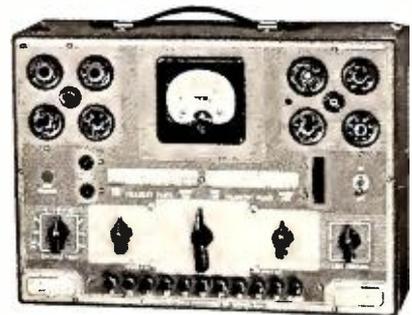
General Records reports good sales success with its first packages, "Naughty But Nice" and "Mood Music for the Home". Brand new packs are "Deep Sea Chanteys" and "Sod Buster Ballads". Statement of the firm is that it still has a few good areas open for distributors.



Soldier with "Walkie-Talkie." Photo by U. S. Army Signal Corps.

Vital Communications!

Modern warfare has shown the necessity for up-to-date radio equipment. Keeping it in perfect working condition is equally important. We are proud that Jackson equipment has been selected by the U. S. Army Signal Corps for this purpose. Also other exacting branches of Radio Communication such as Airway, Police and Broadcasting systems use Jackson instruments. To maintain your reputation in the service field, bank on our reputation with these experts.



DYNAMIC TUBE TESTERS



Famous Jackson Dynamic test method finds "poor" tubes which pass for "good" in ordinary testers.

MULTIMETERS

Universal model 20,000 ohms per volt. Twenty-three ranges with automatic selection—accurate—rapid operation.

FREE! Write today for folder shown and also Catalog of all Jackson equipment.

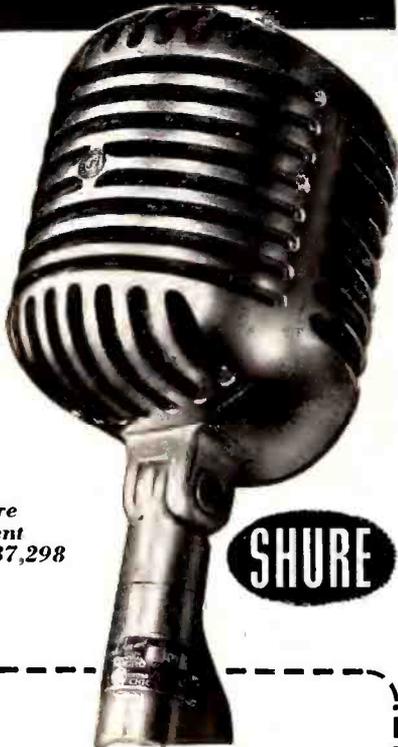
THE JACKSON ELECTRICAL INSTRUMENT CO.

Dayton, Ohio



NEW SHURE
VOICE
UNIDYNE
CARDIOID DYNAMIC
Microphones

**Specially Engineered
for Speech and Singing**



Shure
Patent
2,237,298

SHURE

NOW—a series of voice models in the famous “Unidyne” family! Combines emphasis on voice response with all the advantages of Shure* patented “Uni-phase” cardioid performance and dynamic ruggedness. Dead at rear. Reduces interference from background noise, reflection and reverberation indoors or outdoors. Ideal for Public Address, Communications, Recording & Remote Broadcasting.

Model 55AV—for 35-50 ohm circuits, list price, \$47. Model 55BV—for 200-250 ohm circuits, list price, \$49.50. Model 55CV—high impedance, list price, \$49.50. At Your Jobber.

SHURE BROTHERS
225 W. Huron St., Chicago, Ill.
Please send Bulletin 171T

Name

Address

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

Radio Today, Oct. '41

**Crosley Wins Decision on
Nine Radio Patents**

By the recent action of the Circuit Court of Appeals, Third District, Philadelphia, the Crosley Corp. has been sustained in its efforts to enjoin the Hazeltine Corp., Jersey City, N. J., from prosecuting nine radio patent infringement suits against Crosley in Cincinnati. This decision reversed an earlier one by a District Judge in Delaware.

The Crosley report says that this action follows several other similar ones decided against Hazeltine. These include the victory of General Motors, on the use of the Trube patent for combined magnetic and capacitive coupling, and the decision of the U.S. Supreme Court in favor of Detrola, on the Wheeler reissue patent for automatic volume control.

**High-Frequency Iron
Effects Aluminum Saving**

The aluminum shortage now troubling designers and manufacturers of radio sets is being offset more and more by the use of high-frequency iron. Not only is this substitution essential at this time when aluminum quotas are slashed, but the performance gain scored with iron-core coils and permeability tuners will certainly affect the trend of radio receivers hereafter, points out Henry L. Crowley of West Orange, N. J., a pioneer in American high-frequency iron core production.

Aluminum shields are being eliminated through the use of iron-core coils, plus iron sleeves when necessary. For example, the closed-core type of coil in which the winding is held inside two halves of the iron shell, forms a complete electromagnetic shield. Such i.f. and r.f. transformers are exceedingly compact and highly efficient, which accounts for their use in much of the present military equipment, as well as in auto-radio and portable radio sets.

The heavy aluminum requirements for variable condenser plates are being greatly reduced as this tuning means is replaced with permeability tuning. A high-frequency iron core moving in and out of the coil or solenoid, altering the inductance after the fashion of the old time variometer used for tuning the earlier radio receivers, is providing a satisfactory tuning means. Present permeability tuners have a gang of coils and iron plungers that take the place of the usual gang condenser and coils. The iron plungers are moved back and forth in their respective solenoids by a suitable mechanical means.

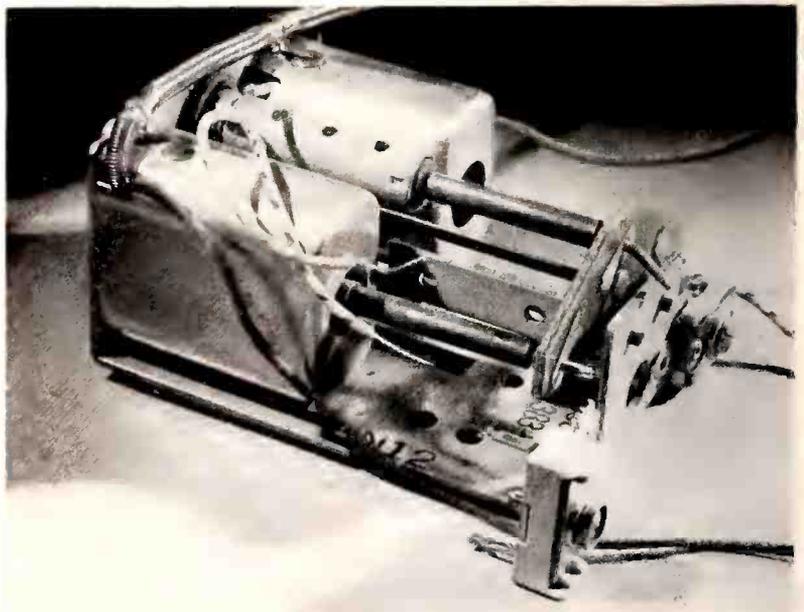
**Victor Dance Caravan
Pushes Records in 4 States**

A huge promotion of popular records, Victor and Bluebird, starts in Cleveland Nov. 5 when the RCA Victor Dance Caravan opens there with the first of eight appearances. The Caravan stars the orchestras of Tommy Dorsey and Shep Fields and looks like a tremendous South American night club.

Dates are also set for Detroit, Toledo, Dayton, Columbus, Cincinnati, Louisville and Indianapolis; in each case the Caravan with its 30,000 sq. ft. of dance floor is expected to attract thousands of popular music fans. Show displays at each event will be used to send fans to local record store.

**Majestic Boosts
Radio Production**

The latest monthly figures on the radio shipments of Majestic Radio & Television Corp., Chicago, show a new peak for the past 12 months. The firm shipped \$200,000 worth of radios in August, and chalked up a profit for that month. Figures on production and shipments for the Sept. 1-19 period show an increase of more than 5 per cent over the entire month of August.



A typical permeability tuner, three coils, two shielded.

GE Accents FM in Big Distributor Shows

With "FM-Phasts" getting a big play, General Electric has completed its distributor showings of 1942 radios in seven key cities. The presentation complemented a series of similar showings in June, when GE accented table models. The newest lines include 19 units—a "pocketbook" portable, eight table models, farm sets, a table automatic combination, two AM-FM consoles, and six automatic combinations (three of the AM-FM type).

GE executives on the programs included receiver sales manager A. A. Brandt, radio advertising manager H. J. Deines, assistant radio and television department manager P. A. Tilley, tube sales manager Howard Bennett, and others.

When the huge GE promotion and advertising program was presented to the jobbers, it came as "the first complete promotional campaign of FM". The program includes a full color movie, an elaborate field demonstration for showing static elimination and high fidelity, animated floor displays, an FM "primer", ads in magazines and newspapers, direct mail pieces, and a special recorded radio show starring swing pianist Hazel Scott and the Golden Gate Quartet. (Complete GE sales helps on FM are listed elsewhere in this issue.)

Special attention is called to the radio show, "Swing to FM", as it presents the story of FM in lively rhythm rather than in tangled technicalities. The magazine ads come late this month and early in November, with color splashes in *Life*, *Sat Eve Post* and *Esquire*.

Stromberg Hikes Local Promotion Efforts, Too

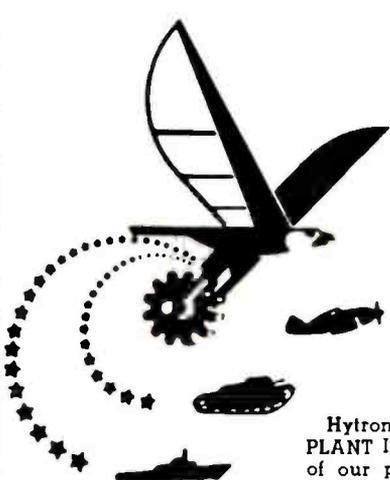
A big promotion program on higher priced sets, sponsored by the Stromberg-Carlson Telephone Mfg. Co. and its franchised dealers in the Rochester, N. Y., area, is now under way. FM is featured in the SC newspaper ads, cooperative ads, a daily radio program on W51R, window displays, home and store demonstrations, and consumer mailings. Opening ads played up the Igor Stravinsky "Autograph Model". All ads reflect the big Stromberg drive in national magazines.

The W51R program is sponsored by the dealers—an elaborate "Treasury of Music" with both live talent and recorded music. Early reports are that the campaign has produced a new peak in FM interest.

Porta-Power in Farm Promotion

To dealers and servicemen in REA areas, General Transformer Corp. is now mailing circulars showing sales advantages of GTC Porta-Power to farmers who want to change battery sets over to high line power. This move is to help jobbers, through whom Porta-Power is sold exclusively.

GTC points out that while new sets are scarce, many dealers are adapting traded-in battery sets with Porta-Power, for re-sale at good profits.



HYTRON

PART OF THE

ARSENAL OF DEMOCRACY

Hytron is authorized to display this official DEFENSE PLANT IDENTIFICATION, signifying that more than 50% of our production is devoted to the needs of defense.

Measured in radio tubes, this figure represents more than a casual devotion to Defense. Important, indeed, are the tasks which Hytron tubes will perform during long, routine hours and in sudden, crucial moments.

To loyal Hytron users—to all who know of the many basic improvements developed here—it will be no surprise to find these better tubes taking key positions in the vast military mosaic of America and Britain. What should be emphasized now is:—Defense is getting

what it needs from Hytron, with no serious effect upon our ability to supply the radio industry, nor any slightest relaxation in quality.

The needs of our regular customers, increasing heavily, have put Hytron capacity to a double test. That additional trial is also being met—in a plant whose flexibility astonishes even ourselves—by a master-combination of men, women and machines that seems ever capable of doing more and more!

HYTRON

RECEIVING
TRANSMITTING
BALLAST
ELECTRONIC

TUBES

HYTRON CORP. . . . SALEM, MASS.

Manufacturers of Radio Tubes Since 1921

**Because these Linear Standard Speakers
are made of the Finest Materials**

. . . Precision = Fidelity . . .

As definite as a Mathematical Formula is the fact that Fine Material plus Precision Workmanship, properly applied, invariably equals FIDELITY. . . The Linear Standard presents the Ultimate in that type of reproduction.

Small wonder that CINAUDA-

GRAPH SPEAKERS are being chosen by the discriminating buyer—are finding their way into more and more installations!

Write now for full description in the Fall Catalog, just out, listing this, and all other models.

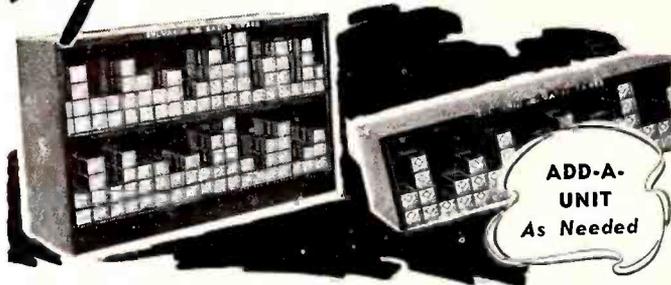
CINAUDAGRAPH SPEAKERS, Inc.

Dept. TY 921 West Van Buren Street Chicago, Ill.




Sylvania

SECTIONAL "STOCK BOY" CABINETS HELP YOU SELL



INTRODUCING the new Sylvania Add-a-Unit "Stock Boy"—custom built for radio tube merchandising. You can—

Add shelf sections as needed.

Dress up your store.

Stock tubes for easy accessibility. Eliminate expensive store layout changes incurred by built-in shelves.

Heavy gauge steel . . . coated with rich olive enamel . . . surface will not crack, peel or chip . . . all joints welded . . . light weight.

Each shelf holds from 70 to 140 (one row deep) tubes or as many as 420 tubes by using the full capacity of the shelf.

Ask your jobber how you can get them.

Sylvania Set-Tested Radio Tubes

HYGRADE SYLVANIA CORPORATION
EMPORIUM, PA.



HAVE YOU NOTICED HOW GENERAL RECORDS KEEPS GROWING?

It's because there's plenty of profit for dealers in this quality line of specialty Albums and *new* package ideas. Watch *your* sales grow, too!

just out! Albums -- **DEEP SEA CHANTEYS**
SOD-BUSTER BALLADS
new! Fast Selling Packages **NAUGHTY but nice**
MOOD MUSIC for the HOME

A few good territories still open for Jobbers.

GENERAL RECORDS CO.
1600 BROADWAY, NEW YORK CITY.

The Nationally Advertised Phonograph Needle

Sell Fidelitone Floating Point Phonograph Needles for greater profit, faster turnover and complete customer satisfaction.

PERMO PRODUCTS CORP.
6415 RAVENSWOOD AVE., CHICAGO, ILL.

Manufacturing  Metallurgists



Parts Jobbers in Big NRPDA Meetings

A mass meeting of parts distributors in Ohio, West Virginia and western Pennsylvania is being held Oct. 12 in Pittsburgh, sponsored by the National Radio Parts Distributors Association.

NRPDA jobbers from these areas had previously met, last month, at the Hotel Ohio in Youngstown, and decided then that this territory was too large for a single NRPDA chapter. For that reason five new chapters were formed, each to be headed up by a director chosen by local jobbers. These chapters are (1) Northwest Pennsylvania (including Erie and St. Marys) with J. V. Duncombe of Erie as director; (2) West Virginia (except Fairmount and Wheeling) with W. H. Taylor of Chemistry Radio, Charleston, as director; (3) Northern Ohio (including Cleveland, Toledo, Akron, Canton, and Youngstown) with Robert Kline of Winteradio, Cleveland, as director; (4) Western Pennsylvania (including Pittsburgh, Johnstown, Fairmont, and Wheeling) with B. E. Cracraft of John Marshall Co., Pittsburgh, as director; and (5) Central and Southern Ohio (including Columbus, Dayton, Cincinnati and the state of Kentucky) with J. C. Nagle of Thompson Radio, Columbus, as director.

At this meeting, the jobbers discussed all angles of National Defense as it affects the radio parts distributor. It was recommended that a special committee of jobbers be appointed to represent NRPDA in Washington and in its dealings with parts manufacturers.

Executive secretary of NRPDA is Arthur Moss, 65 Park Terrace East, New York City.

Pacific Rep Expands Operations

J. J. Perlmuth, manufacturers representative since 1923, has moved to larger quarters at 942 Maple Ave., Los Angeles, where he has enlarged his staff and has added warehouse facilities. Mr. Perlmuth has for the past 7 years been the rep for Raytheon, among others, and now announces that he will also handle the warehousing of Raytheon tubes for the Pacific Coast area.

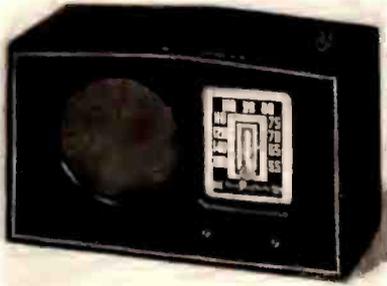
FM Station Allocation

I believe the following comment on FM is constructive and its adoption would result in better FM reception:

The present practice of assigning adjacent channel FM stations in localities as closely spaced as New York, Hartford, and Philadelphia will result in either severe interference for those listeners located part way between these cities or a sacrifice in quality effected by the increased selectivity that must be built into the receiver. It would seem to me a far better practice to assign all stations on one of twenty channels leaving the other nineteen channels of the FM band as guard channels to prevent adjacent channel interference.

L. M. Clement
Director of Engineering
The Crosley Corporation

Leather Trend



An example of a popular radio housed in hand gold tooled leather cabinet, made by the leather covering specialists, Frederick Kugel Co., 1233 Sixth Ave., N.Y.C. Kugel reports wide dealer interest in these cabinets, due to shortages in regular jobs, and because custom sets mean better mark-ups. Set shown is Emerson 336; cases are available for others such as GE 500, RCA 14X, Zenith 5D 611, Philco PT 26, etc.

New Sales Helps Are Ready to Work

As part of an expansion program, a new series of window and counter displays and selling helps on radio tubes are being issued by Raytheon, New York sales office at 420 Lexington Ave., New York City. One display is in handsome portrait style, and shows listener satisfaction, another shows modern service man in action.

A new "Maestro" display is being issued by Emerson Radio & Phonograph Corp., 111 Eighth Ave., New York City, for counters or windows. It has a silhouette of a symphony conductor, with the sales copy, "Hear the Leader . . . New 1942 Emerson with Miracle Tone."

The timely window display released recently by Hygrade Sylvania—the one

with the football theme—is now more timely than ever. The young lady shown in the display is Rosemary La-Planche, the girl named as Miss America at the Atlantic City contest. Sylvania had picked her for the display some time before she won the beauty award.

For effective floor display of Burgess flashlights and batteries is a new display stand, in colors, offered free to dealers by Burgess Battery Co., Freeport, Ill., with an assortment of the merchandise.

A handsome two-color bronze-looking plaque which headlines the words "Fewer but Finer" is now available from RCA Mfg. Co., through its jobbers. It describes the RCA policy on home products, during the period when the company is concentrating on National Defense effort.

A novel counter display piece now comes from Columbia Recording Corp., Bridgeport, Conn., designed to exhibit lists of weekly record releases. Twin pillars hold six months' releases and a Lumarith sheet at the top highlights the newest list.

"Radio Foto Log," the annual listener publication issued by National Union Radio Corp., Newark, N. J., is now ready in a new edition, for distribution by dealers and servicemen. The 28-page booklet has scores of radio artist pictures, station logs, etc., edited by Samuel Kaufman.

Sullivan to Clock Sales

Bernard J. Sullivan, formerly manager of RCA Victor sound division, has been appointed general manager of Clock Sales Co., 109 Dearborn St., Chicago, sole distributors for Bernardian Chimes, Chime-Master, Amplification systems.

All Types of "Record Bars" in Action



This display shows three different types of record merchandisers in actual use by dealers throughout the country. It is now on display at the new showrooms of the "Bar" manufacturer, A. Bitter Construction Corp., 2701 Bridge Plaza North, Long Island City, N. Y.



The product of 20 years of specialization...

CLAROSTAT CONTROLS

★ Complimentary letters by the hundreds have poured in to us from servicemen everywhere, regarding present-day Clarostat controls.

We awaited such confirmation of our engineering progress. You see, rather than announce radical improvements from time to time as we made them, we have quietly slipped in our refinements one by one. The perfected bakelite-support long-life carbon element, virtually immune to moisture and wear; the split-finger contact of special alloy; the right-angle terminal lugs free from soldering troubles—these and other features have been submitted purely on their own merits.

If you haven't used Clarostat controls recently, by all means try them. Make any test you wish. Ask your jobber for latest Service Manual. Or write direct to . . .

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



THE ABC OF FM

(Continued from page 27)

FM receivers, like any other type of set, will perform better if a good outdoor antenna installation is made. Most FM receivers are now equipped with built-in antennas which perform quite satisfactorily when the set is well within the service range of the stations that are to be received. If it is not known definitely that an FM set is operating with a built-in antenna in a location near the customer's home, it should be made clear to the new owner that an outdoor dipole may be necessary. The special combination FM-AM-Shortwave antennas which are available will do much to improve reception on all types of service, and are no more unsightly than conventional outdoor types.

Of course, customers will ask about FM stations which are operating in their locality, and about the distances over which they may expect reception. FM stations are designed to cover a number of square miles surrounding the

station with a program signal strong enough for satisfactory reception in that area. This service area is decided upon by the FCC and varies from about 3000 square miles to 20,000 square miles. These figures correspond to reception limits, from the transmitter, of 30 miles to 80 miles respectively.

A new type of station call letters has been originated for FM which does the two-fold job of telling *where* the station is *on the dial* and where the station is *geographically*. The first letter indicates on which side of the Mississippi river the station is located; W for East, and K for West. The two numbers give the station's frequency. Since all FM stations are within the 42 to 49.9 megacycle band, the "40" is common to all stations. Therefore, only the unit and decimal part of the frequency are given in the call. Thus, "71" means 47.1 megacycles, "99" means 49.9 megacycles. The last letter or letters represent the city where the station is; NY for New York, C for Chicago, etc. See the dial chart on page 26.

New BITTER ALBUM RACK for BETTER DISPLAY BIGGER ALBUM SALES

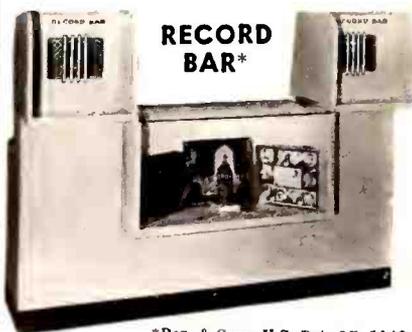
"NO progressive record dealer can afford to do without efficient album storage equipment. For efficiency at low cost, you can't buy better than Bitter," say satisfied store executives.

Bitter Album Rack No. 110

Holds about 250 album sets. Same dimensions as Bitter Standard Record Rack (No. 100)—2' 10½" long, 7' 2" high, 15" deep; same design; same standard finish—walnut finished birch. May be used interchangeably or together to form attractive unit.

Attention Radio Stations

You can't afford to do without Bitter Record Stock Cabinet No. 100 and its big time and space saving features. Holds 500 10", 500 12" records, 75 album sets. Same dimensions as above.



*Reg. & Copy. U.S. Pat. Off. 1940
Record Sellers! Take advantage of the boom in records. Install Record Bar* today. It's compact, it's attractive and above all it assures highest quality reproduction that makes it easier to sell more records.

BIG 1942 CATALOG, FREE!

**A. BITTER
CONSTRUCTION CORP.**
Brewster Bldg., Long Island City, N.Y.

Priorities for Jobbers

(Continued from page 22)

ing on each Control Sheet to the Recapitulation Sheet. Then add the figures and get (a) total sales of radio parts, accessories and related items, public-address equipment and communications equipment; (b) total Defense Supplies sales; (c) total sales of repair and maintenance material. From this the accountant can easily compute the percentage of Defense sales to total sales and enter it on the Recapitulation Sheet.

At the end of each month, after the jobber's accountant has made his recapitulation, he must fill out a report to be forwarded to the Priorities Committee, at Chicago. This information will be filed by the Committee, and supplier's will requisition it from them. On the basis of the jobber's report they will draw up their own computation and apply for a priority rating for that portion of their material which finds its way into Defense Supplies.

The Priorities Committee urges the necessity of uniform and universal jobber cooperation. "This plan," they remind jobbers, "relieves you of the obligation to make a certificate for each of your suppliers every month. This is our fight for you! Your failure to carry your part of the battle will result in the failure of your suppliers to get raw materials to make new equipment. Only through this means can materials be obtained to fill your new orders."

The first monthly figures should be in the hands of the Committee by October 20, 1941.

Coverage in India?

An importer in India, who has already had considerable success with the sale of American radios there, now reports that "we would like to deal in parts, also, on a wholesale basis." It's the National Radio & Electric Corp., Park Road, Bezwada, S. India.

DON'T JUNK YOUR OLD RADIO TUBES

• You can cash them in for valuable merchandise under General Electric's New Radio Tube Merchandise Award Program.

Get the facts! Talk with your nearest G-E Radio Tube distributor or write the General Electric Company, Radio and Television Dept., Bridgeport, Conn.

GENERAL  ELECTRIC

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While every precaution is taken to insure accuracy, we cannot guarantee against the possibility of an occasional change or omission in the preparation of this index.

A Quiz for Record Merchandisers

A record merchandising expert of Buffalo, N. Y., has sent RADIO TODAY a sales quiz on discs—a kind of a check-up on the condition of the record shop as of now. He says that since all dealers sell records at the same prices, the alert retailer will make certain that he has substantial advantages to offer customers, over the other dealers in town. One way to check up, is to see how many of these questions can truthfully be answered "yes."

1. Do you have at least 90 per cent of the selections asked for by your regular customers?

2. Do you have an experienced, intelligent personnel?

3. Do you have proper exploitation of the record department (meaning regular mailings to a "live" list, fresh and effective window trims, budget-full of newspaper space and radio time)?

4. Do you have a store layout convenient to customers and employees alike?

5. Is your record department a credit to the store, at least on a par with the standing of the store in the community?

Philadelphia Dealer Hands Sets to Charity

A highly successful method for handling radio trade-ins has been worked out by Lawrence O'Leary of Tappin's store in Philadelphia, Pa. He gives the sets to the local Salvation Army; they are then repaired and are given to underprivileged people. Although Mr. O'Leary is a hard-boiled merchandiser, he still likes to think that his store has contributed radio pleasure to many people who could not afford to buy sets, and he believes that the plan has reflected much credit to Tappin's.

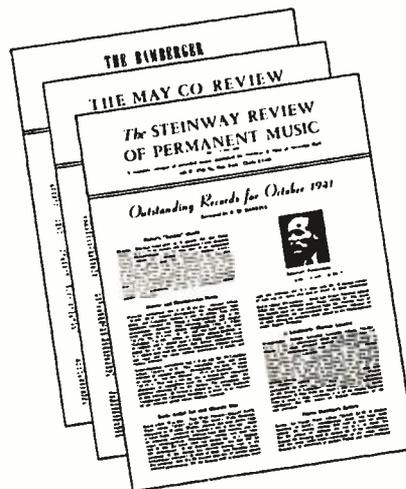
Some 200 old radios have been given to the Army already. Letters from officials of the organization, expressing warm thanks for the radios, are shown on the walls of Tappin's salesroom, and in blow-ups in windows. In this kind of store atmosphere, customers with old sets are inclined not to argue about higher allowances, as they appreciate the work of the Salvation Army and like the charitable attitude of the store.

New Distributions for Emerson

The Emerson Radio & Phonograph Corp., New York City, has appointed two new distributors: McDonald Electric Co., Inc., Miami, Fla. (for Southern Florida), having branches in West Palm Beach and Ft. Lauderdale; and Erskine-Healy, Inc., Rochester, New York.

YOUR OWN RECORD REVIEW

FOR ONLY 1½¢ A COPY
(not an imprint job)



• SOLD ONLY ON AN EXCLUSIVE BASIS OF ONE OUTLET TO A CITY —

• BUILD PRESTIGE AND INCREASE YOUR RECORD SALES WITH YOUR OWN RECORD REVIEW —

Write for sample copy and details NOW while your territory is still open.

FREDERICK KUGEL COMPANY
1233 Sixth Avenue, New York City

NEW "BEST SELLER" IN INTER-COMMUNICATION!



Here's Talk-A-Phone's sensational new DeLuxe Intercom System—a tried and proved Best Seller! Beautifully styled in streamlined effect. Available in three types for every Intercom need: (1) Master Selective—made up of Master station and Sub-stations; (2) Super-Selective—made up of Masters only; (3) Combination Selective—made up of mixed Masters and Sub-stations. Privacy headphone optional; "Silent" feature excludes noise pickup from Sub-stations; persons can answer from as far as 50 feet from units. Operates from 110 volts AC or DC. Built-right, styled-right, priced-right! Write for the profit facts today!



Also—A Complete Phonograph Line!

Talk-A-Phone also builds a complete Phonograph line—Profit-Builders all! Wired and Wireless Players, Player-Amplifiers, Automatic Changer-Players—and America's finest 2-Speed Home Recorder! Take on these profitable Talk-A-Phone lines. Prices, discounts, literature sent on request.

Talk-A-Phone Mfg. Co.
1219K W. VAN BUREN ST.—CHICAGO

FM SERVICE METHODS

(Continued from page 44)

when the set dial and signal generator are adjusted to about 46 mc.

The third method which is recommended by Stromberg-Carlson is a combination of the microammeter method and a visual check of the response curve on an oscilloscope. The procedure is to connect the microammeter in series with limiter grid resistor on the ground end, and connect the vertical input terminals of the 'scope from ground to the junction of the two resistors used in the limiter grid circuit. The IF transformers are aligned first, starting with the stage nearest the limiter. The 4.3 mc. signal is frequency modulated plus and minus 300 kc. The transformers are adjusted for peak deflection on the microammeter and adjusted slightly to give a symmetrical curve on the 'scope.

After the IF stages have been aligned, the frequency modulated signal generator remains connected to the grid of the RF tube, and an un-modulated signal generator is connected to the grid of the first IF tube. When the frequency of the un-modulated generator is about 4.3 mc., a sharp peak will be visible on the response curve. The un-modulated frequency should be adjusted slightly until this peak is in the center of the symmetric response curve. This insures that the frequency of the un-modulated generator, which is to be used to align the discriminator, is the same as the "center" frequency of the modulated generator. The alignment of the discriminator will then be at the "mean" frequency of the IF alignment.

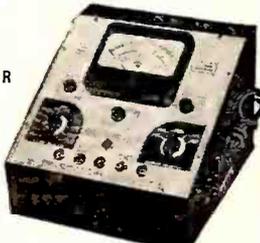
The frequency modulated generator is then disconnected and the discriminator is aligned with the microammeter connected in the diode load circuit as explained in the first method.

Articles in RADIO TODAY on FM service; Servicing FM Sets, May 1940, page 46. Aligning FM Sets, July 1940, page 36.

**EXTRA-
PROFIT
DIVIDENDS
WITH
RCP
TEST
EQUIPMENT**

Make more tests better, faster!

RCP 661 Electronic MULTITESTER only
\$38.95



Make complete checking tests on AM, FM and television receivers under actual operating conditions.
DC vacuum tube voltmeter impedance 160 megohms on high ranges, 16 megohms on low. AC vacuum tube voltmeter input capacity only .00005 mfd. Look at all the useful ranges of this stand-out test instrument value:
DC Volts 0/6/30/50/150/500/1500/6000
AC Volts 0/6/30/50/150/600/1500/6000
Ohms 0/1000/10,000/100,000/1 meg/100 meg/1000 meg
Capacity 0/ .001/.01/.1/1/10/100/1000 mfd.

RCP 313 New TUBE CHECKER **\$37.95**

More than a fine test instrument, this new tube checker is a live merchandiser — a real sales promoter. Push button operated. Has every advantage of famous RCP Model 310, including Dynoptimum test circuit, Rolindex tube chart, spare sockets, jewelled pilot light indicator, power rheostat. Makes short and leakage tests with exceptional speed. Thoroughly modern in design, appearance and operation.

Your Distributor probably handles the complete line of top-quality, low-cost RCP test equipment. If not, send for name of the nearest one who does. Do it NOW!

**RCP
dependable
TEST
instruments**

RADIO CITY
PRODUCTS COMPANY, INC.
88 PARK PLACE • NEW YORK, N. Y.

Dixie "Reps" Eye Jobber Problems

Problems that now confront the radio parts jobber, such as those arising from priorities, new taxes, etc., are being aggressively tackled in current meetings of the Dixie Chapter of "The Representatives" of Radio Parts Manufacturers. Lively discussions of these matters took place at their meeting Oct. 4th in Atlanta, Ga., and the Reps also went to a sectional meeting of NRDPA the next day in the same city.

The latter meeting was addressed by H. E. Osmun of the Parts Priorities Committee (see page 22).

The Dixie group of Reps is headed by H. W. Burwell; the secretary is James Miller, P. O. Box 116, Atlanta.

Plastic Cabinets Get Priority Extension

By a new amendment to a priorities regulation covering "the use of synthetic resins molding powder by manufacturers of molded radio cabinets," the radio makers will enjoy their current preference rating for another month, in respect to these products.

The new amendment was issued by Donald M. Nelson, Director of Priorities, Office of Production Management.

Grimditch Adds New Defense Engineering Duties

Philco's vice-president in charge of engineering, William H. Grimditch, now extends his activities by accepting an appointment to the executive staff of Hazeltine Service Corp., a subsidiary of Hazeltine Corp. He will continue his duties as Philco executive.

The action is taken "to expand, accelerate, and coordinate research and production in the communication fields important to National Defense." Hazeltine Corp. has 46 licensees of radio broadcast receivers and 32 licensees of communication equipment many of whom are already producing large shipments of apparatus for military services.

Mr. Grimditch will work with Defense officials in an effort to coordinate the intensive engineering facilities of the Service Corp. with the speedy production of complex communication apparatus for military use.

Paul Ellison Heads All Sylvania Promotion

Paul S. Ellison, the well known advertising manager and renewal tube sales manager of Hygrade Sylvania Corp., has been appointed director of advertising and sales promotion for the entire company. He will now direct all advertising, sales promotion, market research and general publicity for the entire Sylvania firm, including its activities in fluorescent and incandescent lamps.

Mr. Ellison, who is prominent in many industry activities, joined Sylvania ten years ago, and has been active in radio for five years before that. He was chairman of the Sales Managers Club, eastern group, from 1938 to 1940.

Artophone for CRC

The new distributor for Columbia records in St. Louis and surrounding areas is the Artophone Corp., 814 Walnut St., according to word from Columbia sales manager Paul Southard.

Display in Home Style



Brand new background display by Farnsworth Television & Radio Corp., Ft. Wayne, Ind. It colorfully shows sets as they look at home.

Cable Catalog

A new catalog available on request from General Electric Co., Bridgeport, 59-104B, illustrates and describes Delta-boston asbestos-insulated and glass insulated wires and cables.

F.M. AT ITS BEST!

CROSLEY

LEADS WITH 14 EXCLUSIVE "FIRSTS"



IN this superb massive cabinet of precious woods is the finest musical instrument Crosley has ever built. It has four bands, including F. M. 12 tube* radio-phonograph combination, with the patented Floating Jewel Tone System virtually eliminating needle noise and surface scratch; and that other exclusive Crosley feature—the Master Tone-Control.

There are two Crosley FM Console Models in vertical cabinets without Record-Players.

(*Including rectifier and four double purpose tubes.)

The Best Value You Can Offer is Crosley F. M. With 14 Exclusive Features That Will Make F. M. Sales!

CROSLEY F. M. receivers really give F. M. reception at its best. The weakest signals are received with noise reduction and fidelity does not change for weak or strong signals. The exclusive Crosley band width switching reduces adjacent channel inter-

ference. Even repeat points on the dial are eliminated by the Crosley 13,700 Kilocycle I. F. Every Crosley F. M. set has four band reception. The model above is indicative of the quality in the Crosley line. Write, wire, or phone today for further information.

THE CROSLEY CORPORATION

CINCINNATI, OHIO

POWEL CROSLEY, Jr., President

HOME OF WLW—"THE NATION'S STATION"—70 ON YOUR DIAL



Eyes LIGHT! When they See
Motorola
1942 Home Radios and Automatic Combination

**MORE NATIONAL MAGAZINE
ADVERTISING THAN EVER!
PLUS A GIGANTIC KEY CITY
NEWSPAPER AD CAMPAIGN
Over 200 Million Readers**

We don't care *where* your customers are . . . this year's Motorola Advertising will *tell* and *sell* them often! In Walla Walla, Tuscaloosa or Greater New York . . . wherever the Saturday Evening Post, Collier's, LIFE, Liberty or Movie-Radio Guide are read . . . your customers will see and *read* about Motorola.

This year Motorola's Ads are *bigger* and *better* than ever. They're full columns, half pages and full pages . . . in black and white and in color. They're stoppers! Big, dramatic illustrations that turn "by-passers" *into* buyers.

Motorola HAS Everything

- Finer Automatic Changer
PHONOGRAPH-RADIOS
- WIRELESS Automatic
Record Changers
- HOTTEST PORTABLES
- Supreme CONSOLES
- BIG! TABLE MODELS
- 3-Dimension VITA-TONE

MOTOROLA DEALERS GET MORE HELP

Motorola's new advertising promotion *works for you* . . . in your local newspaper, on road signs, in your store — also floor, counter and window displays. Motorola's plan is complete, comprehensive . . . organized with just one point in view . . . *more sales for you!*

Motorola
AMERICA'S FINEST RADIO
FOR CAR and HOME

GALVIN MFG. CORPORATION • CHICAGO

