

PROGRAMS  
NEWSBoard Praises Congress  
in Second Annual ReportRadio's "Public Interest" Yardstick Declared Good by  
Commission.—Ether Problems to Increase, Rather  
Than Decrease, in Future, Body Believes

After using it as a sort of yardstick by which to measure almost everything coming before it, the Federal Radio Commission, in its second annual report, declares itself convinced that Congress acted wisely in providing for its standard that of "public interest, convenience, or necessity," and it is endeavoring to apply this standard to each new set of problems in a manner consistent with the best interest of the entire public, both present and future.

Looking into the future of radio the commission sees more problems than in the past.

"The likelihood is," the commission reports, "that as the art progresses, radio problems will increase rather than decrease. The possibilities of the high-frequency spectrum are almost without limit. The future of such matters as radiotelevision, picture and facsimile transmission and relay broadcasting can only be matters for speculation. How soon and to what extent the frequency spectrum above 20,000 kilocycles will be developed for practical use is also a matter of guesswork. To what extent future advances will make possible an increasing number of channels and the accommodation of a larger number of stations is unknown."

Amateur Recognized

"The commission feels that the amateur has sufficiently demonstrated his usefulness, both in furthering the progress of the science of radio and in furnishing service in times of emergency."

Radio Questions  
and Answers

Radio Editor, Sunday Journal: I recently purchased a dynamic loud-speaker that is operated from the 110-volt supply socket. I have to turn on a separate switch every time I use it. Isn't there some better way to do it?

Providence. P. C. C.

Yes. If you are unable to have the power supply wires of the loud-speaker connected to the 110-volt circuit inside your set so it will be switched on automatically, another plan may be adopted. Insert a "cord switch" in the flexible wire leading from your set to the lighting socket. You can then always leave the set in the "on" position and turn it off and on by means of the cord switch. The flexible cord between the speaker and the set, so that turning on the cord switch will turn on both set and speaker.—Ed.

Radio Editor, Sunday Journal: I used to send my battery out to be charged, but finally bought a trickle charger, one ampere rate. A friend says it will damage the set to have the charger running while I am receiving. I have been doing this, however, and the set seems to operate all right. There is a slight humming sound, however.

Rumford. R. B. H.

(You will not damage your set in the least. The "hum" is usually fairly strong when the charger is operated while you receive, but if this doesn't bother the quality of reception, there is no reason why you should not do this at all times.—Ed.)

Radio Editor, Sunday Journal: Will you kindly explain what it means when a transformer is said to have a 3 to 1 ratio or a 5 to 1 ratio? Which ratio should be used?

Providence. N. C. K.

(A 3 to 1 transformer has three times as many turns of wire on the secondary coil as on the primary coil. This is not an indication of how the transformer will work, as the number of turns on the coils could be greatly varied, so long as the ratio was the same, and still have a 3 to 1 ratio. In general, the larger the number of turns the more effectively will a transformer amplify all the tones. However, other factors count greatly, too, such as the type of iron used in the core, location of coils, etc. In general, a higher ratio transformer is used in the first stage than in the second, as more amplification can be handled in the first stage without distortion. In some special circuits, these conditions are changed, however.—Ed.)

Radio Editor, Sunday Journal: I am anxious to build a fairly sensitive set from a kit of parts. I have been considering a set with two stages of radio frequency, using 201A tubes, or a set with one stage, using a screen-grid tube. I want economical operation, as I have to use a storage battery and am a long way from a charging station.

New Shoreham. L. D. L.

(I would advise the circuit using the screen-grid tube, as this tube is about as sensitive as two of the other type and more saving on battery current.—Ed.)

Radio Editor, Sunday Journal: My set has lately developed a howl that starts up after it has been operating for a while. Sometimes it will run all right all evening. At other times, I cannot seem to do anything with it. If I shut off the set and turn it on again later, it will work all right for a while. Then the howl starts. I enclose a circular describing my set.

Providence. M. E. S.

(Unfortunately the loud-speaker is built into the set so that you cannot improve matters by moving it away. Such a course usually stops the trouble you describe. Your only recourse, presumably, is to get another detector tube, perhaps two others, and try to find one that will work quietly. The detector socket, if not mounted on rubber springs, could be so equipped, so as to eliminate the howling. Also, you might try a rubber cap for the detector tube, as sold at radio stores. The trouble is caused by air vibrations between the speaker and the detector tube.—Ed.)

## Today's Programs in Brief

For the convenience of radio fans the following hourly schedule of broadcasting today is given in brief form. Figures following station denote wave length. The hours are based on Eastern Standard time.

## LOCAL STATIONS

10:00—Conference, WLSE, 248.  
11:00—Church, WEAN, 545.  
11:15—Organ, WEAF, 545.  
11:30—Music, WEAN, 545.  
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# PROVIDENCE GETS NEARLY \$100,000 WORTH OF SPARTON RADIOS

Huge Carload Just Arrived in Providence, Friday, from the  
Sparks-Withington Company of Jackson, Michigan

*"Home of the Famous New SPARTON EQUASONNE"*

This big shipment will take care of only part of the hundreds of back orders now on file with Providence dealers.  
The immense Sparton plants are running night and day to catch up with the enormous public demand for this wonderful new radio instrument

**The SPARTON EQUASONNE**  
RADIO'S RICHEST VOICE

**PRICED FROM \$147 to \$875.00**

EVERY SPARTON IS COMPLETE WITH TUBES AND ACCESSORIES. NOTHING ELSE TO BUY

RHODE ISLAND AND  
BRISTOL CO. DISTRIBUTORS

**FRANKLIN AUTO SUPPLY CO**

CORNER BROAD  
AND STEWART STS.

## Special Notice

For 14 years we have served the public direction all Automotive and Radio Products, but now owing to the rigid contract with the Sparks-Withington Co. as distributors, we can only sell Sparton Radio to high grade dealers whose standing is approved by the Sparks-Withington Co. However, we stand back of every Sparton dealer just as the Sparks-Withington Co. stands back of us. Every Sparton set, regardless of where it is bought, is guaranteed for one year. All Sparton Tubes are guaranteed for 90 days.

FRANKLIN AUTO SUPPLY CO.

Those who have not yet  
heard the amazing new  
Sparton tone purity

**GET  
IN TOUCH  
WITH YOUR  
DEALER  
TODAY**

And you will find the  
answer to this world-wide  
demand

*"Let your own ear  
be the judge"*

**CALL  
PAWTUCKET  
7114**

FOR A

**Demonstration  
OF THE NEW  
SPARTON  
EQUASONNE**

**UNIVERSAL  
AUTO SUPPLY  
COMPANY**

69 Exchange Street  
CORNER HIGH ST.  
Pawtucket, R. I.

Say:  
Merry  
Christmas

With a

**SPARTON  
Equasonne**



From Dad to the whole family. Not only a fine radio but hundreds of evenings' entertainment by the finest artists in the country.

Place your order now for Christmas delivery. Eagle Park Radio offers you terms, will take your old radio and give one year free service on all Sparton Radios.

OPEN EVENINGS

**EAGLE PARK RADIO**

479 DOUGLAS AVE.  
TELEPHONE DEXTER 7417

*The* **SPARTON  
EQUASONNE**

Triumphantly new! Tonal purity and magnificence that is thrilling... inspiring... rich beyond compare. Still more amazing is complete mastery of the lower end of the dial; enormously increased range; complete elimination of the "AC hum" and extremely selective. By all means HEAR the new SPARTON EQUASONNE radio for it is truly revolutionary.

Time payments may be arranged

**FRANKLIN RADIO & ELEC. CO.**

523 Elmwood Ave. Br. 0171  
Providence, R. I.

**Announcing  
The Opening of—  
PEWSEY'S RADIO SHOP**

1548 BROAD STREET

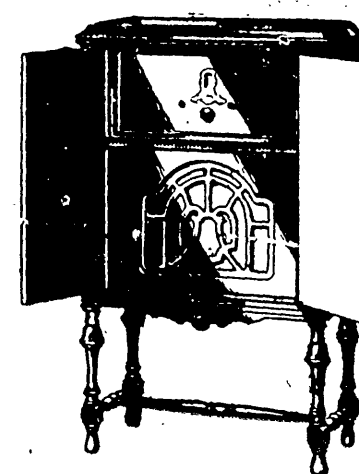
featuring

*The* **SPARTON  
EQUASONNE**

"RADIO'S RICHEST VOICE"

OPEN CONSOLE—MODEL 79-A  
PRICES COMPLETE WITH TUBES

**\$229.50**



AN EQUASONNE set with every one of the patented features found in the Senior Console. The EQUASONNE built-in speaker is made especially for this model and is balanced perfectly to the instrument. A marvelous set at a very reasonable price.

Visit Our New Radio Store and See This and Other Sparton Models.

Prices Range From

**\$199.50 to \$875**

CONVENIENT CREDIT TERMS

YOUR PRESENT SET TAKEN IN TRADE

We Will Be Glad to Demonstrate Any Sparton  
Set in Your Home Without Obligation

**PEWSEY'S RADIO SHOP**

1548 BROAD ST.

TEL. BROAD 8130-W

**INTRODUCING TO PAWTUCKET  
and CENTRAL FALLS**

*A Richer . . . . Finer . . . . Still More Amazing  
Musical Instrument*

*The* **SPARTON  
EQUASONNE**

NOT just another radio but a new musical instrument . . . new in conception . . . new in principle . . . new in fundamentals that are revolutionary . . . and magnificently new in power, range and richness of musical expression. In the Equasonne Sparton presents a new radio development of a genuinely sensational nature that will sharply affect the whole radio industry. Come to our newly equipped Radio Shop and hear this marvelous instrument, or we will be pleased to demonstrate in your home.

LIBERAL TERMS IF DESIRED

**COUTU'S PHARMACY**

872 BROAD ST.

CENTRAL FALLS, R. I.

TEL. PAWTUCKET 7865

**We Will Be Pleased  
To Demonstrate**

*The Amazing Performance  
Of The New*

**Sparton  
Equasonne**

*"The Pathfinder of the Air"*

IN YOUR HOME AT YOUR CONVENIENCE  
YOUR PRESENT SET TAKEN IN TRADE

OPEN EVENINGS

**DURFEE'S RADIO SHOP**

H. M. DURFEE, PROPRIETOR

1207 BROAD ST.

Formerly the Bungalow Telephone Broad 3411



# Radio Compass Proves Vital Aid to Navigator

**Ships and Aircraft Given Exact Positions by Shore Stations Equipped with Direction-Finders. Loop Aerial Has Important Part in Work.**

BY BRINARD FOOTE.

One of the most interesting and now one of the most essential branches of radio utility is found in the radio compass methods by which ships, airplanes, dirigibles, etc., may find their locations. In this work the old and familiar loop aerial is used. The loop, you will recall, is used with extra-sensitive receiving sets like the superheterodyne and has its special value in its ability to receive best from certain directions.

In practice, the loop used at a compass station is quite large and very rigidly constructed. It is usually housed in a special room built for it right over the radio apparatus room. The shaft on which it rotates extends down into the radio room and usually through a hole in the table on which the apparatus is placed. There is a large wheel or handles by which the radio operator can turn the loop and there is a circular scale usually marked with 360 degrees marked off on it, on the table.

When a ship desires a position report it sends long "dashes" or buzzes for several minutes and then it usually sends three compass stations located along the coast that operate together. Each one will listen in to the ship and obtain its direction as follows:

**Loop Slowly Turned**

The loop is slowly turned until the ship's signal just "fades" out and can't be heard. The degree at which this occurs is noted. Moving the loop a bit further along the operator comes to a point at which the signal just barely begins to "come in" again. He notes this figure, too. By adding together these numbers and dividing by two, he has a true bearing, or the direction in which the ship lies from his particular station.

The same process is going on at the other two stations, of course, and as soon as the three have finished their work, the results are telephoned or telegraphed to the coastal communicating station and radioed out to the ship. The captain can then draw a line from each station, according to the bearing given him, and, if all the bearings have been accurate, the three lines will cross at a certain point and accurately locate the ship on the map. Where the bearings are not accurate, the three lines will not cross exactly, but even so, the intersections will form a small triangle and will usually place the ship fairly accurately.

Think of the great value of that service to ships in time of fog or storm! As the direction-finding work is of especial value when ships get near shore and in case of inaccurate work might run aground, the bulk of the service is given to ships near the shore. Their radio signals are therefore loud, and accurate bearings can be secured. The writer at one time used to spend his summers as a ship radio operator and can recall very well one occasion when the ship was passing Nantucket and when radio bearings were the only means the captain had to guide him through the channel. In that case, bearings were secured about every half-hour.

**Airplane Service Aided.**

The use of the radio service for direction-finding is gradually being extended to airplanes and has been employed for dirigibles for some time. The difficulty in the case of the airplane is successful operation of the receiving set in spite of the deafening roar of the motor. A visual indicator has been developed, however, and a special system of radio compass direction worked out, particularly for planes carrying the mails.

In war-time, great use was made on both sides of the radio compass device. The Allies, it seems, had the advantage in this particular instance because the Germans used extensively the spark type of transmitting sets. These are very easy to get bearings on. The writer was a member of the Radio Division of the Intelligence Section and was engaged mostly in radio compass work. The French had developed a standard method for the work and at first the

Americans used French apparatus exclusively.

The French "Goniometric" station, as it was termed, consisted of a small "shack" of wooden sections that bolted together. There was also a high framework and above the shack a large loop was erected, being turned from within. The difficulty experienced with it during any appreciable wind was so great as to make the bearings inaccurate, and the Americans, assisted greatly by Maj. Armstrong, the inventor of the regenerative circuit, devised a smaller and lighter loop that could be held more steadily.

**Three Mobile Stations**  
At any rate, the enemy stations and planes giving artillery signals could be quite accurately located, and the movements of the various headquarters followed very well. The Americans also used three mobile compass stations, one of which the writer operated, and these were very successfully employed for the purpose, being quickly moved from place to place as the position of the front changed.

Nowadays the radio compass has come into very wide use and many of the larger ships are actually equipped with compass stations themselves. With these they are able to take "bearings" on the various shore radio stations. By taking bearings on a number of known shore stations, the captain can locate himself in still another way and is independent of the compass stations ashore.

The radio compass receiving set usually calls for an extra amount of sensitivity because the loop aerial does not pick up as much energy as the ordinary overhead wire.

Anyone who has a loop receiving set and equips the loop with a circular scale from zero to 360 degrees can easily have quite a bit of fun trying map locations for himself—getting bearings on the different broadcasting stations. In the daylight the results will be quite accurate, but he may find some-times, especially at night, that the bearings will not be correct in direction. This is because surrounding buildings, etc., reflect and diverge the radio waves. The plane of the loop should lie true east and west and the location of the pointer on the scale and the zero mark of the scale (also the 360 mark) should be toward true north.

Ted Husing, the Columbia Broadcast-



Arguing against certain phases of diplomatic intercommunication. Representative LaGuardia of New York maintains that the day of the diplomat and of the envoy plenipotentiary is past.

The laws and precedents as to the customs and powers of Ambassadors were made in the days of sailing ships and stage coaches, when it took weeks and months to get a communication from one country to another and a reply back, but today all the negotiations are conducted right from the home.

"The radio cable, railroads, airplanes and steamships have made an Ambassador only a messenger boy in spats."

There was no effort on the part of William R. Davies of Chicago, brother of the Vice President, to qualify as an expert when he testified in Washington recently in behalf of Station WGN.

"All I know about radio," the Chicago financier said, "is that I turn a little knob and somebody begins talking to me."

Will the radio audience rise also?

Handel's "Messiah," the most popular of all oratorios, which will be widely broadcast during the Christmas holidays, was actually composed in only 24 days.

The custom of the audience rising during the performance of the "Hallelujah Chorus" dates back to its first performance in London; when the part "For the Lord God Omnipotent Reigneth" began, so great was the impression that the entire audience, with the King, who was present, rose to their feet and remained standing until the end of the chorus.

There are fewer insane patients in Alaska than at any time since the Klondike gold rush. Insanity was generally described as caused by the long winters and isolation from human society. Miners, trappers and reindeer herders were its victims.

But, according to the San Francisco Chronicle, radio and airplanes have reduced this malady. Practically all the distant camps have radios to tell of events around the world and to diffuse entertainment. Almost daily, airplanes may be seen in every section of the territory, bringing letters, newspapers and supplies to the most isolated settlements.

Ted Husing, the Columbia Broadcast-

at a rate of 10,000 words an hour, Variety tells us.

Newspaper stenographers, taking down Husing's play-by-play accounts of football games, credit him with 180 words a minute. It beats average court reporting and the stenographers complain it is too fast for their own transcribing.

The Musical Saw: "That announcer thinks quite a bit of himself, doesn't he?"

The Ukulele: "Rather! He won't announce for a station unless it has an exclusive wave."—Radio News.

Use Accurate Voltmeter.

In testing the condition of B batteries, it is important that you use an accurate voltmeter—not a cheap watchcase affair—and that you test the batteries while they are under actual load. The practice of testing batteries while at rest leads to faulty conclusions, since any battery recuperates momentarily while at rest, so that a false reading is obtained.

Delay May Be Slow.

Some radio owners have failed to consider the breaking down of a bypass condenser or an audio transformer, just because they feel that such trouble should develop suddenly. Bear in mind that the breakdown of such units may be quite gradual, with a correspondingly gradual reduction in set efficiency very closely paralleling the breakdown of a tube or the lowering of efficiency in batteries.

Battery Intelligence.

If you are using a trickle charger for your storage battery, it is a wise thing to have your battery charged by a storage service station every three months at least. Most trickle chargers do not keep a battery fully charged, with the result that sulphate forms on the plates, unless an occasional full charge is given the battery.

INDEXING. Terms are the "headlines" in every Classified Ad.

## Vagrant Waves of Interest to Fans

The average person cannot hear tones above five or six thousand cycles.

The electric iron is the ideal tool for soldering and should be employed whenever possible.

A horn speaker must be seven feet or longer to give the depth of tone of the usual cone speaker.

It is impossible to operate the A-C or socket-power receiver in a house that is not provided with electricity.

A worn-out battery connected with a new battery will shorten the life of the new battery.

It is advisable to replace tubes throughout when the ones in use have been in service for more than a year.

The buzz in a Balsa wood speaker is due to a split. This condition can be remedied by the application of a special cement which joins the separated sections of the wood.

When soldering on nickel-plated terminals be sure that the surface is cleaned with a file so that the brass or copper beneath shows through. It is impossible to solder wire on nickel.

A C battery minimizes the drain

**DR. JAMES C. COLTON**

is confining his practice to

**Dentistry for Children**

Ages 4 to 16 inclusive

**189 Mathewson Street**

Telephone Gaspee 2105

on the B batteries and improves tonal quality. The C battery voltage depends upon the amount of B voltage. Ninety volts B calls for 4½ volts C.

Television transmission in color has been accomplished in England.

Camel caravans crossing the Sahara are to carry portable transmitting sets.

It takes a radio wave only one-seventh of a second to travel entirely around the world.

Fully 800 receiving sets are now op-

erated among the 4000 prisoners in the Ohio State Penitentiary.

Radio sets are to be installed in the demonstration schools at the four

main training centres in Scotland.

A League of Nations wireless station is planned in Geneva, Switzerland, to be used by the members of the League for communicating with one another.



**"Old Fogey" Says:**

**Silent Glow Oil Burners**

**Make Dandy Christmas Presents, Too**

They make mothers even more fond of their children; they make wives love their husbands more and they make mothers-in-law truly appreciative.

So—why not buy one, and, since the recipients are beyond the Santa Claus stage, bring 'em over and let 'em see one burning.

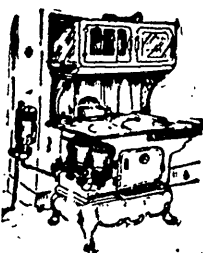
**We'll Be Looking For You!**

**R. I. Welding Co.**

Distributors

**25-31 BATH STREET**

P. S. Complete line of Oil Burners on display at our showroom, Valley and Ayrault streets, at Davis Park. Also Silent Glow at 80 Arthur Ave., Providence, and 19½ Union street, Attleboro, Mass.



**Breakfast Nook Sets**

**O'Driscoll Bros.**

42 GANO ST. GASPEE 2588

**Manufacturing Floor Space**

for rent in splendid location in city of Pawtucket. Will furnish areas to suit. Rental 28c and 29c per square foot, including heating and watchman service. Building located corner Fountain, Middle and Blackstone streets. See your own broker, or apply to Box 788, Pawtucket, R. I.

**CHARACTERIZED BY VISITING ENGINEERS AS ONE OF THE FINEST EQUIPPED RADIO DEPARTMENTS in NEW ENGLAND**

**WITH A DISPLAY OF RADIOS SECOND TO NONE**

**And Your Own Terms Within Reason WHY NOT BUY YOUR NEW RADIO AT**

**M. STEINER & SONS**

495 WASHINGTON STREET

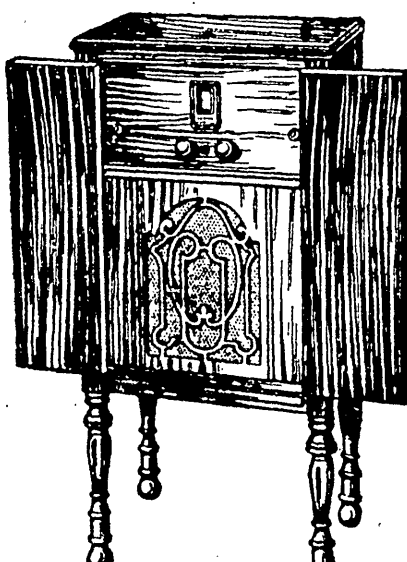
**All-American Mohawk Corporation**

**LYRIC RADIO**



**All-American Mohawk Corporation LYRIC Radio has gained and will retain leadership:**

- in the exquisite beauty of finish
- in the stately designs
- in the purity of every tone
- in the positive and magic-like control
- in the amazingly fine degree of selectivity
- in fulness of volume
- in extreme excellence of every detail of construction
- in efficiency of every phase of operation.



Model 65

A handsome console finely finished in rich walnut with overlay on front doors. Enclosed cone speaker. Contains a one dial six tube set. For operation on 110 volt A. C. 60 Cycle Current. Less tubes, \$137.50

Model 60

An attractive Walnut Veneer Table Model; hand rubbed piano finish. Illuminated one dial six tube, non-oscillating receiver and self-contained power unit. For 110 volt A. C. operation. Less speaker or tubes, \$92.50

*And, of course, Super Dynamics!*

**No Finer Christmas Gift**

**G**IMCRACKS are fine for youngsters—anything that twists, squeals or buzzes, brings shouts of glee from the kiddies—momentary amusement—that is all that is expected.

But when it comes to selection of a radio for Christmas—that is a different matter. Radio is no longer a novelty. It has graduated from the toy class—and Lyric Radio stands right at the head

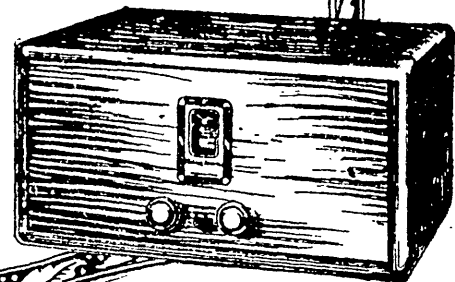
of the class—supreme in all that is desirable in modern Radio. With perfection of performance, Lyric Radio gives positive assurance of permanency . . . of continuously satisfactory service—the utmost of Radio entertainment in "Radio's Realistic Close Up." The ideal Christmas Gift. Come in and witness a demonstration. You'll be convinced that Lyric presents the greatest worth in actual value of the Radio Age.

**Waite Auto Supply Co.**

560 Westminster St. Gaspee 7821

DISTRIBUTORS

See Your Nearest MOHAWK Dealer



**LOANS**



**If You Need Money Come to Us—Family Loans \$10 to \$300**

**\$100 LOAN** payable \$5 monthly, plus lawful interest.

**\$200 LOAN** payable \$10 monthly, plus lawful interest.

**\$300 LOAN** payable \$15 monthly, plus lawful interest.

Cost fixed by law. Every repayment reduces the cost. All loans in strict privacy.

CALL, WRITE OR PHONE

**Personal Finance Co.**

PHONE GASPEE 5-8-7-3

Room 413, Union Trust Bldg., 170 Westminster Street.

**American Loan Company**

PHONE GASPEE 6-8-0-9

Room 203 Lauderdale Bldg., 111 Westminster Street.

**Beneficial Loans**

PHONE GASPEE 7-4-1-0

Room 201 Woolworth Bldg., 187 Westminster Street.

Open 8:30 to 5—Saturday 8:30 to 1.

LICENSED BY THE STATE.

**For the one, or ones, you love best—**

*an Empire installed*

**ZENITH ELECTRIC RADIO**

**For Christmas**

Whether you pay \$150 or \$250 for a Zenith electric radio, you are guaranteed an uncompromising standard of quality. Electric sets (A. C. or D. C.) exclusively using

**AUTOMATIC TUNING in many models, several with DYNAMIC POWER SPEAKER**

Model 34-P:

all-electric receiver. 9 tubes including rectifier tube. Built in Dynamic Speaker of humanized tone in Low Boy Console of figured walnut veneer. Less Tubes.

**\$250**

**When It Concerns Those Who Are Dearest, Only the Best Will Do!**

A radio, more than almost any other gift can be a constant reminder of the thoughtfulness and generosity of the giver.

You should leave nothing undone to make sure your Zenith will continue to deliver lasting satisfaction!

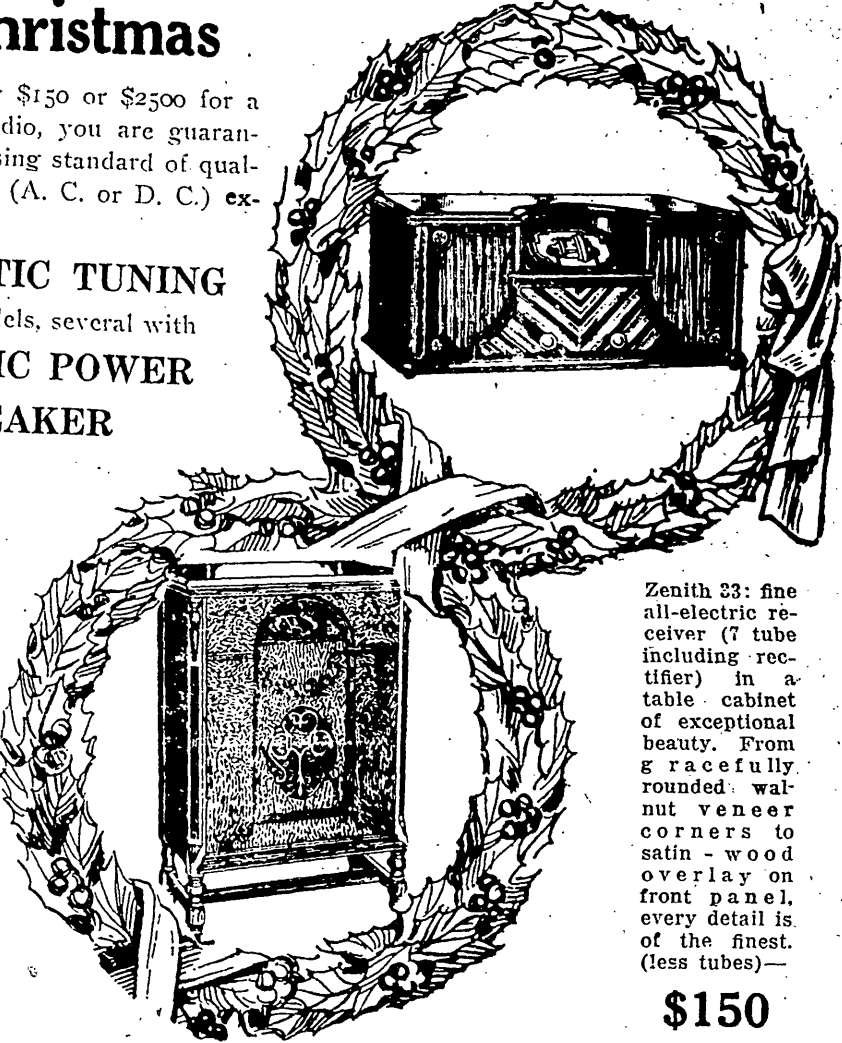
No radio is better than its installation. If it pays to invest in a Zenith, certainly it pays to get an Empire installed Zenith.

**1 YEAR TO PAY if you wish**

**YOUR OLD RADIO accepted as part payment**

**Empire Radio Co.**  
MADE IN U.S.A. LARGEST EXCLUSIVE RADIO STORE

23-25 Empire Street



Zenith 33: fine all-electric receiver (7 tubes including rectifier) in a table cabinet of exceptional beauty. From gracefully rounded walnut veneer corners to satin wood overlay on front panel, every detail is of the finest. (less tubes)—

**\$150**



## RADIO PROGRAMS

Continued from Page Eleven.

2:00 p. m.—Down melody lane.  
4:00 p. m.—Back to melody.  
4:30 p. m.—Same as WJZ.  
5:00 p. m.—Same as WJZ.  
5:30 p. m.—Same as WJZ.  
6:00 p. m.—Firestorm forum.  
7:00 p. m.—Correct time.  
7:30 p. m.—Clark travelogue.  
8:00 p. m.—Same as WJZ.  
8:15 p. m.—Same as WJZ.  
9:15 p. m.—School hour.  
9:45 p. m.—Same as WJZ.

WHAP—NEW YORK—231.  
8:00 p. m.—Sacred music.  
8:15 p. m.—Christian Science reading from the writings of Mary Baker Eddy.  
9:40 p. m.—Christian Science reading from the writings of Augustus E. Steison, C. S. D.

WHN—NEW YORK—297.  
10:00 a. m.—American children's hour.  
12:30 p. m.—Oreen's recital.  
1:30 p. m.—Studio program.  
10:30 p. m.—"Home Sweet Home" hour.  
11:00 p. m.—Organ recital.  
11:30 p. m.—Everglades Orchestra.

WICC—BRIDGEPORT—210.  
8:30 a. m.—The voice that serves.  
8:35 a. m.—Radiogram morning news.  
9:00 a. m.—Sunday's breakfast music.  
9:45 a. m.—Mother's club music.  
10:30 a. m.—Park Street Congregational Church.  
10:30 p. m.—Music from foreign lands.  
2:00 p. m.—International Bible Students' program.  
3:00 p. m.—Al Bablon, Billy Cooper and Art Winstandley.  
3:30 p. m.—National Council of Catholic Clergy.  
4:00 p. m.—Orchestra.  
8:00 p. m.—Elder School of Music.  
9:00 p. m.—Correct time.

WIP—PHILADELPHIA—492.  
10:45 a. m.—Service from Holy Trinity Church.  
10:00 p. m.—Symphony orchestra.

WJZ—NEW YORK—305.  
8:00 a. m.—Children's hour.  
1:00 p. m.—National string orchestra.  
1:30 p. m.—White House dinner music.  
2:00 p. m.—Roxsy symphony concert.  
3:00 p. m.—Young People's conference.  
4:00 p. m.—The Continentals.  
5:00 p. m.—South Sea Islanders.  
5:30 p. m.—Summary of programs.  
6:00 p. m.—Dr. Harry Emerson Fosdick.  
6:30 p. m.—Wittall Anglo-Persians.  
7:00 p. m.—Correct time.  
7:30 p. m.—Fragments of fancy.  
7:45 p. m.—The Practically of the Airplane in the Far North, by Capt. Donald MacMillan.  
8:00 p. m.—Enna Jettick melodies.  
8:15 p. m.—Collier's radio hour.  
8:15 p. m.—Utica jubilee singers.  
8:45 p. m.—El Tango Romantico.  
9:00 p. m.—Correct time.  
9:30 p. m.—Announcement of an award to be made for good dictation on the radio.

WKBY—BUFFALO—204.  
9:30 a. m.—Morning prayer.  
10:45 a. m.—Tabernacle service.  
1:00 p. m.—Organ recital.  
3:00 p. m.—Columbia broadcasting system.  
6:15 p. m.—Dinner music.  
7:00 p. m.—Evangelistic service.  
10:15 p. m.—Back home melody hour.

WLWL—NEW YORK—273.  
3:15 p. m.—Columbus Council, K. of C. forum.  
8:00 p. m.—Service from Paulist Fathers' Church.

WOR—NEWARK—422.  
3:30 p. m.—Schubert's Causiana.  
3:00 p. m.—Philharmonic symphony orchestra.  
4:45 p. m.—Raymond Hunter, baritone.  
5:00 p. m.—Sunday forum.  
8:00 p. m.—St. Peter's Church carillon.  
8:30 p. m.—Great Cathedral, Nantes.  
8:30 p. m.—Concert orchestra.  
8:30 p. m.—Choir invisible.  
9:30 p. m.—Market and Halsey street playhouse.  
10:30 p. m.—Pipe dreams.

WFG—ATLANTIC CITY—273.  
4:30 p. m.—Community vocal and instrumental recital.  
8:15 p. m.—Religious service.  
7:00 p. m.—Sunday concert.  
8:15 p. m.—News flashes and weather report.  
9:25 p. m.—Concert orchestra.  
10:00 p. m.—Correct time.  
10:00 p. m.—Sunday evening musical.  
10:00 p. m.—Schubert Club vocal ensemble.

WQAO—NEW YORK—297.  
12:00 a. m.—Calvary morning service.  
12:00 p. m.—Inspiration hour.  
7:30 p. m.—Calvary evening service.

WTAG—WORCESTER—37.  
2:30 p. m.—Same as WJAR.  
2:00 p. m.—Same as WJAR.  
4:00 p. m.—Same as WJAR.  
4:00 p. m.—Same as WJAR.  
6:00 p. m.—Same as WJAR.  
7:30 p. m.—Studio program by trio.  
7:00 p. m.—Same as WJAR.  
8:00 p. m.—Same as WJAR.  
9:00 p. m.—Same as WJAR.  
9:00 p. m.—Correct time.  
9:15 p. m.—"Christmas Cheer" stores program, symphony orchestra.  
9:45 p. m.—News bulletin.

WVTC—HARTFORD—300.  
1:30 p. m.—Same as WJAR.  
2:00 p. m.—Same as WJAR.  
2:30 p. m.—Same as WJAR.  
3:00 p. m.—Same as WJAR.  
4:00 p. m.—Same as WJAR.  
4:00 p. m.—Same as WJAR.  
6:00 p. m.—Same as WJAR.  
6:30 p. m.—Same as WJAR.  
7:00 p. m.—Same as WJAR.  
7:30 p. m.—Same as WJAR.  
8:00 p. m.—Same as WJAR.  
8:15 p. m.—International Mercantile Marine program.

## The Dial's Diary

By the Trouble-Shooter

Occasionally I drop in to see someone who has purchased a set from me just as a matter of maintaining contact. Frequently I can offer a suggestion or make a small change that works wonders in the final product. That's how I happen to run into radio sets who are having trouble without knowing it.

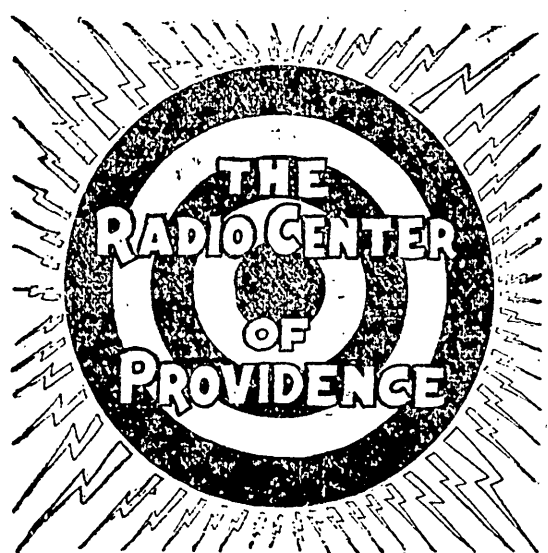
The other evening I found a customer sitting in front of a loud-speaker that was emitting what I would consider rather poor reception. It did not seem possible that the owner could have been satisfied with what his equipment was giving him, but there he was, enjoying every minute of it.

For a time I was puzzled. Then suddenly the truth came to me. He had not noticed the way his reception deteriorated for the simple reason that he was what we know as a "radio bug." Every evening he spent at least a couple of hours with the set. That is why he had not noticed what was happening to his receiver. The deterioration was so gradual he was not at all aware of it.

The other type of radio user—the person who listens in when there are his features on the air—is more likely to note anything that does not seem to be just right about his set. Its stages of deterioration come in more pronounced breaks, with the result that he orders an investigation and finds out what's wrong.

I have found the poorest reception in those homes where the entire family is radio-enthused. This may surprise the extensive radio user, but it is a fact. Such users become a little bit self-satisfied. They do not listen to other people's sets and, since most people own radios of their own there is not so much chance of the outsider telling them what they are missing.

If I were an every night radio fan I would make it a point to have an outsider listen in and criticize. It would mean a lot and would help me keep my set up to date by pointing out the things that I would be sure to overlook.



# LET IT BE A RADIO THIS CHRISTMAS



ITS joy will continue for years after the event has been forgotten. Having decided on buying a radio, the next question is—WHICH IS THE BEST STORE?

Don't go to the store that asks two prices and shows a limited variety, so that real choice is out of question. Don't go to the shop that handles inferior sets.

If you want the best assortment to select from, if you desire a set that will embody all the newest improvements—if you prefer to have an installation that is scientific and accurate and that will give you the best results—THEN COME TO US, and we'll serve you so that you'll be well pleased.

Radio Provides Entertainment the year round—it is not used for a short time and then laid aside. A Radio Set must be properly installed and balanced in your home to give satisfaction. This cannot be done properly during the Christmas Rush of the last few days.

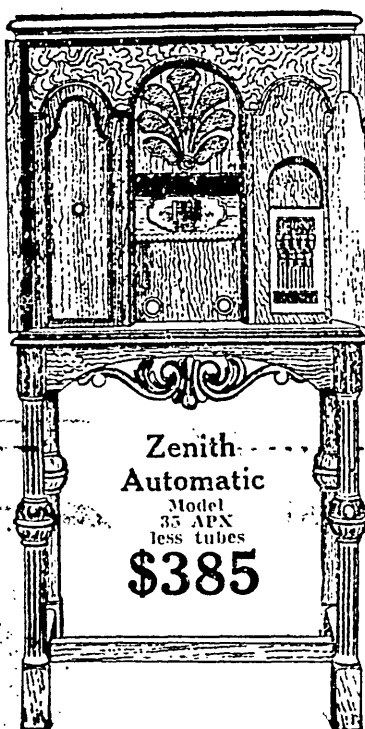
Make Your Appointment Now for Demonstrations, have your selection of sets brought to your home for approval—and then properly balanced and installed.

Avoid Unknown Sets and Obsolete Models. There are no "miracle sets" or bargains. You get just what you pay for and no more.

## For The BEST in RADIO We Offer—



Famous For—Long Distance Reception  
Famous For—Ultra Selectivity  
Famous For—Tone Quality



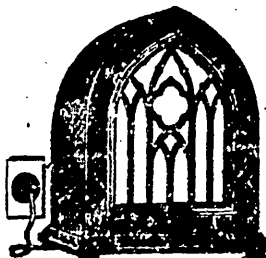
Zenith Automatic Model 35 APX  
\$385

B. & H. offers Automatic Radio in time for Christmas! The new Dynamic Zenith is quality radio — economical radio when purchased from B. & H. This set with dynamic speaker and automatic tuning. Come to B. & H. now and arrange for a free trial of Zenith in your own home. Zenith Radio is priced at

\$150 and more

## Now! Make Your Radio Brand New—With Peerless

MAGNETIC and DYNAMIC REPRODUCERS



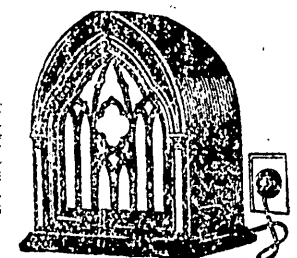
MODEL 17-AR-60  
This Speaker Improves Any Set

\$65



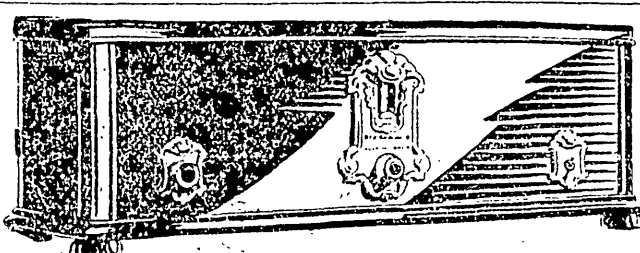
MODEL 7-A  
A Fine Magnetic Speaker

\$30



MODEL 19-AR-60

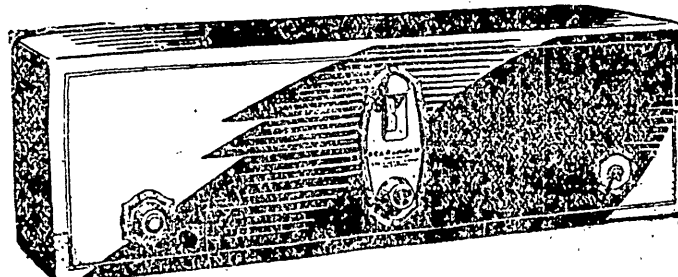
\$75



RADIOLA 60

THE Radiola Super-Heterodyne—finest achievement of the radio art—is the broadcast receiver that the engineers in RCA, General Electric and Westinghouse Research Laboratories use in their own homes.....

\$147

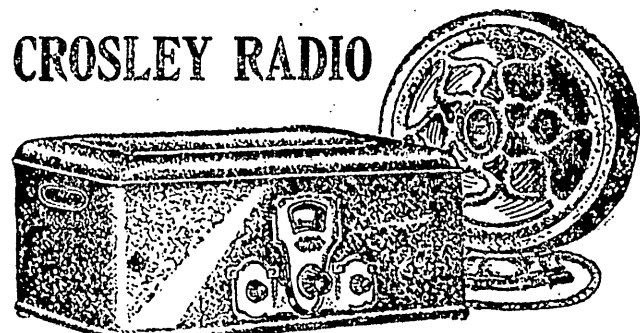


RADIOLA 18

One of radio's greatest values! The famous All Electric Radiola 18 is a finer instrument at a lower price—that's the story in a nutshell. Formerly selling at a list price of \$115. NOW.....

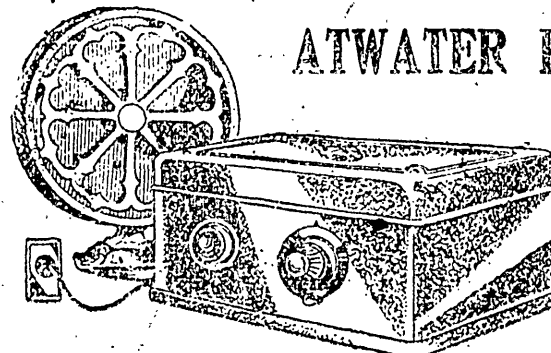
\$95

Terms Arranged To Suit Your Convenience



CROSLY RADIO  
This remarkable 6 Tube Gembox is entirely contained in an attractive metal cabinet and equipped with an illuminated dial. Price—less tubes.....

\$65



ATWATER KENT

Model 40 All Electric

This famous 6-tube model has few equals when it comes to performance. Contained in metal cabinet. Less tubes.....

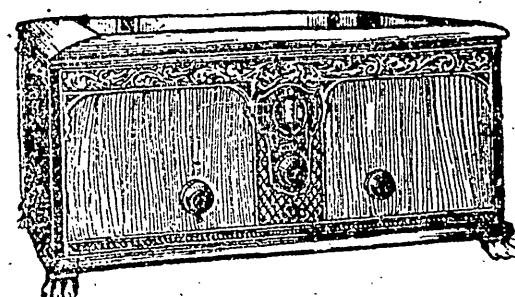
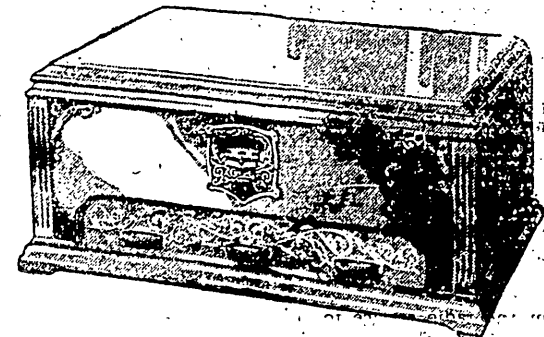
\$77



Complete with Tubes and Grebe Speaker

\$247.50

CONSOLE MODELS PRICED HIGHER



FAMOUS Kolster 20 \$187.50

COMPLETE WITH TUBES AND KOLSTER SPEAKER

One turn of the single dial and the entertainment of the air comes to you—distinctly and clearly. The Kolster is particularly successful in picking up distant stations. Come in and hear this wonderful radio.

Other Kolster Models from \$285 to \$450

MODEL 71—7 TUBE

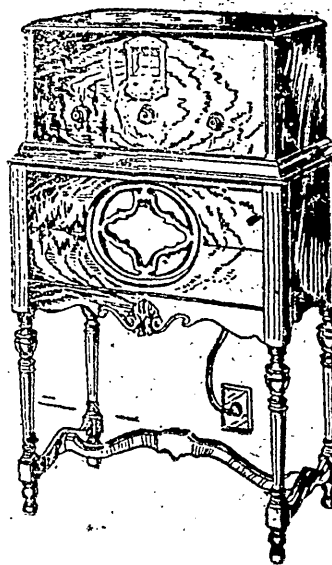
## MAJESTIC

WITH BUILT-IN DYNAMIC SPEAKER

HERE is the radio ideal—the MAJESTIC. For clear tone—selectivity—dependability—it excels them all. As for tone, the DYNAMIC speaker puts the MAJESTIC in a class by itself. Its soft, life-like tone is a revelation to radio lovers. Everything comes in perfectly from this loud speaker. As for selectivity, the MAJESTIC at no time receives 2 stations at the same time. And for dependability, just place the plug in light socket and the power is always there. What more could you ask for in a radio?

\$160.00

COMPLETE



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entire family may enjoy its simple  
on, its unmatched ease of selecting  
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