

# RADIO LORE FOR NOVICE AND EXPERIENCED FAN

## Entire Radio Frequency Range Divided, First Time in History

### New Arrangement Work of International Radiotelegraph Conference.—World's Services to Operate on Wave Bands Assigned by Representatives of Nations

Washington, D. C., Nov. 26.—From the highest practicable wave length down to the "border of infinity," the whole range of radio frequencies has now been divided, definitely and officially, for the first time in history, for the use of the various international radio services. The agreement upon the allocations of frequency bands from 10 to 60,000 kilocycles (30,000 to 5 metres) is perhaps the most noteworthy accomplishment of the International Radiotelegraph Conference, which met in Washington with delegates attending from 79 nations.

The spectrum has been divided into something like 60 bands, in each of which ship, aircraft, land, broadcasting, amateur and experimental stations will operate according to allotment. The designation of these bands was practically the last item of regulations to be written into the Washington convention of 1927, which will govern all the international uses of radio, after being taken back to the various countries for ratification.

Six weeks or more were spent by the technical committee of the conference and its sub-committees in solving the problem of allocating the long and short waves, the low and high frequencies, to the services to which they were deemed most suited. Many divergent views were represented at the outset among the technical experts from all corners of the world who participated in these deliberations. As finally framed, the allocations represented their unanimous agreement.

Ship and shore stations got primary consideration of necessity in the allocations. But aircraft radio services and radio beacon and direction finding are not ignored. Nor is broadcasting. In the short waves, however, the amateurs find themselves restricted to very narrow bands.

The American broadcasting band is left untouched, while bands among the longer waves are assigned for Europe and other regions where the transmis-

sion of programs is mostly on the long waves. In the band below 1500 kilocycles, or 200 metres, ample provision is also made for broadcasting, particularly with a view toward the development of international exchanges of programs such as the one already projected between the British Broadcasting Company and the National Broadcasting Company of the United States.

Through the whole range of frequencies, any country signatory to the treaty may operate as it pleases as long as it does not allow interference with the assigned international services. Thus, it is anticipated the amateurs will be enabled by assignments from the Federal Radio Commission to carry on communications between themselves in this country 17,000 of the world's 25,000 amateurs are in the United States—though on the low waves, when travel far, there is always the likelihood of interference.

Below 15 metres, the amateurs still have room for their experiments, for these channels are virtually unreserved. However, they are regarded today as the useless realm in radio. Yet so were the wave lengths below 200 metres not many years ago, and their possibilities were then demonstrated by the amateurs. On the "border of infinity," below 5 metres, the allegedly useless channels may yet yield some good results.

Accompanying the table of allocations, the regulations prescribe the limitations regarding possible interference in the following provisions:

1. Any high contracting party may assign any frequency or wave length or any type of emission to any radio station under their jurisdiction on the sole condition that it does not interfere with the service of any other country.

2. However, for stations, which by their nature are known to be capable of causing material international interference, the high contracting parties agree to assign frequencies (wave

lengths) in accordance with the following table:

3. The high contracting parties are agreed to consider the table of distribution of frequency (wave length) bands as a guide giving the limits for various services, with which they will require all new stations to comply, and with which they will make existing stations comply in the shortest time practically possible without reducing the quality of the service they are giving, having due regard to the actual state of their equipment.

4. However, all the broadcasting stations now working on a frequency below 600 kilocycles (or wave length above 500 metres), in principle, must be brought within the frequency band comprised between the limits 160 to 224 kilocycles (1875 to 1340 metres) or comprised between the limits 550 to 1500 kilocycles (545 to 200 metres) within one year after the ratification of this convention.

5. No new radio broadcasting stations shall be authorized to work in the band 160 to 224 kilocycles (1875 to 1340 metres) unless they will cause no inconvenience to existing services, or to the radio broadcasting stations which already use frequencies comprised in this band, or to these stations which by the application of Paragraph 4 above are going to use this band.

6. The power of existing radio broadcasting stations employing frequencies below 300 kilocycles (waves above 1000 metres) may not be increased unless such increase can be caused to existing stations or services.

7. This table does not take into account the type of emission to be used.

Following is the complete schedule of international wave allocations as agreed upon by the International Radiotelegraph Conference and to which practically all of the nations of the world employing radio services will soon adhere:

10 to 100 kilocycles (3000 to 3000 metres)—point to point services.

100 to 110 kilocycles (3000 to 2725 metres)—point to point and mobile services.

110 to 125 kilocycles (2725 to 2400 metres)—mobile.

125 to 150 kilocycles (2400 to 2000 metres)—mobile, maritime service, general public correspondence only.

150 to 160 kilocycles (2000 to 1875 metres)—(a) broadcasting; (b) point to point; (c) mobile. Subject to agreement as follows: All regions where broadcasting stations now exist working below 300 kilocycles (above 1000 metres)—broadcasting at other regions.

(b) point to point; (c) mobile. Regional agreements will respect the rights of one another in this band.

160 to 285 kilocycles (1875 to 1050 metres)—(a) mobile; (b) point to point; (c) broadcasting. Subject to agreement as follows: Europe (a) mobile (aircraft only); (b) point to point (air services only); (c) point to point (NGP) from 250 to 285 kilocycles (1200 to 1050 metres); (a) broadcasting from 194 to 224 kilocycles (1550 to 1340 metres); other regions, (a) mobile, except commercial ships; (b) point to point (aircraft only); (c) point to point (NGP).

285 to 315 kilocycles (1050 to 950 metres)—special (radio beacons).

315 to 350 kilocycles (950 to 850 metres)—mobile (aircraft service only). See Note 1.

350 to 360 kilocycles (850 to 830 metres)—mobile (NGP).

360 to 390 kilocycles (830 to 770 metres)—(a) Special (direction finding); (b) mobile, where it does not interfere with direction finding.

390 to 460 kilocycles (770 to 650 metres)—mobile.

460 to 485 kilocycles (650 to 620 metres)—mobile, except damped and radio telephone waves.

485 to 515 kilocycles (620 to 580 metres)—mobile (distress, calling etc.). See Note 2.

515 to 550 kilocycles (580 to 545 metres)—mobile, open to general public correspondence, except damped and radio telephone waves.

550 to 1300 kilocycles (545 to 230 metres)—broadcasting—See Note 3.

1300 to 1500 kilocycles (230 to 200 metres)—(a) mobile; (b) mobile (on the frequency 1384 kilocycles only, wave length 200 metres).

1500 to 1715 kilocycles (200 to 175 metres)—mobile.

1715 to 2000 kilocycles (175 to 150 metres)—mobile, fixed and amateurs.

2000 to 2250 kilocycles (150 to 133 metres)—mobile and fixed.

2250 to 2750 kilocycles (133 to 109 metres)—mobile.

2750 to 2850 kilocycles (109 to 105 metres)—fixed stations.

2850 to 3500 kilocycles (105 to 85 metres)—mobile and fixed.

3500 to 4000 kilocycles (85 to 75 metres)—mobile, fixed and amateurs.

4000 to 5500 kilocycles (75 to 54 metres)—mobile and fixed.

5500 to 5700 kilocycles (54 to 52 metres)—mobile.

5700 to 6000 kilocycles (52 to 50 metres)—fixed.

6000 to 6150 kilocycles (50 to 48.8 metres)—broadcasting.

6150 to 6675 kilocycles (48.8 to 45 metres)—mobile.

6675 to 7000 kilocycles (45 to 42.8 metres)—fixed.

7000 to 7800 kilocycles (42.8 to 41 metres)—amateurs.

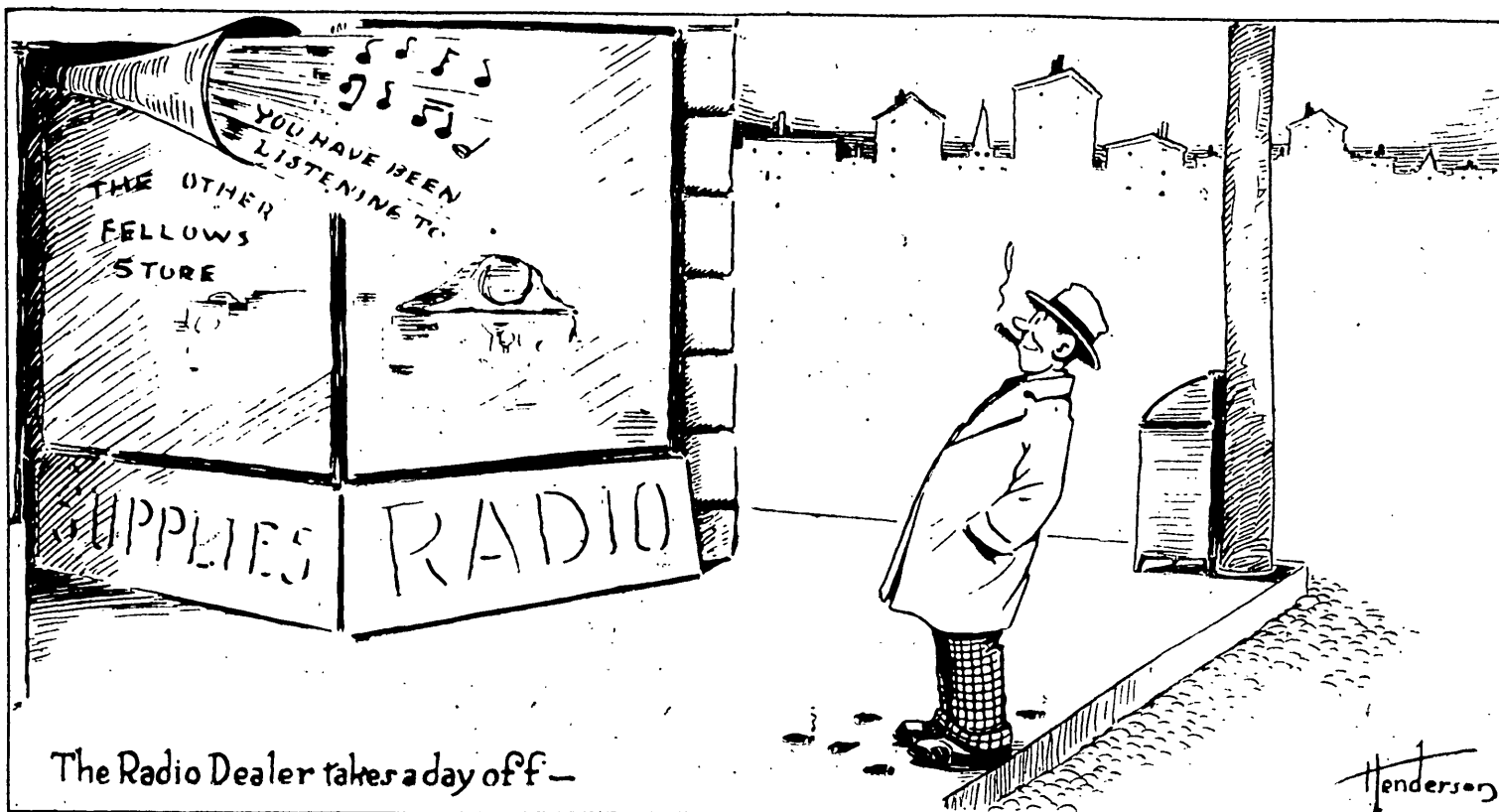
7800 to 8200 kilocycles (41 to 36.6 metres)—fixed.

8200 to 8850 kilocycles (36.6 to 33.1 metres)—mobile, fixed and amateurs.

8850 to 9200 kilocycles (33.1 to 32.7 metres)—mobile and fixed.

9200 to 9500 kilocycles (32.7 to 31.6 metres)—fixed.

## SHORT CIRCUITS



### Weekly Radio Test

1. How many kinds of tubes are used in broadcasting and receiving?
2. Why do the American radio manufacturers aim to make most of their sets for Canadian consumption in Canada itself?
3. If greater distance is wanted, which group of transformers should be considered for replacement: audio or radio?
4. How many radio receiving sets are in use in the world?
5. Why do planes used on the stage sound sharp and sometimes toneless over the radio?

Answers to these questions will be found elsewhere in the Radio Section.

(Copyright, 1927.)

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### HELPFUL HINTS

Light Plug Aerial Efficiency Depends on House Wiring.

The efficiency of an aerial that is plugged into a floor socket depends to a large extent upon the nature of the wiring of the building. An aerial plug is an electrical pick-up device and obviously, if the wiring through the house is run through metal pipes there will be an undesirable shielding effect. This explains why some persons who have tried these condenser plugs have found them ineffective, while others who have tried these condenser plugs have found them quite enthusiastic over the results obtained.

It is not possible to determine the number of stages of amplification in a set by counting the number of variable condensers and the number of transformers between the audio frequency stages. There are in radio what are known as "untuned stages." These require no variable condensers for control.

### Why CeCo Tubes Last Longer

CeCo Tubes are evacuated by an exclusive process developed by our engineers and the exceedingly high vacuum thus obtained is one important reason for the longer life of CeCo Tubes.

Through inspection of materials and parts, critical testing to higher standards assures uniform quality, steady performance, longer life.

There's a CeCo Tube for every radio need.

Ask your Radio Dealer for Complete CeCo Data Sheet

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### DISTRIBUTORS OF CE CO TUBES

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## RADIO PROGRAMS

### WEAN begins broadcasting with the

service from Mathewson Street Methodist Episcopal Church at 11:00 a. m. today. The Columbia chain programs will be on the air at 3:00 p. m. p. m., 9:00 p. m., 9:30 p. m. and 10:00 p. m. At 5:00 p. m. an old-time fiddlers program will be heard and at 6:30 p. m. the Asia Serenaders. Tomorrow at 8:00 p. m. the Mary Boylan trio will be on the air. Tuesday radio callers will be on the air at 9:15 p. m. on Tuesday, Wednesday the usual program will be heard. Thursday at 8:30 p. m. the 118th Engineers band will be broadcast with Jovite LaBonte, leader. Uncle Red will be on the air at 7:05 p. m. on Friday under the auspices of the Providence Safety Council. Saturday the usual program will be heard.

WEAN commences its week of programs at 11:55 a. m. with the Capitol Theatre symphony concert. The Crosby orchestra will be broadcast at 5:30 p. m., the Weymouth Post No. 7, American Legion band at 6:30 p. m., the Capitol Theatre program at 7:30 p. m. and at 9:00 p. m. will be heard a talk on "Our Government" by David Lawrence. The Robert W. Powers orchestra will be broadcast at 9:15 p. m. Tomorrow at 7:30 p. m. Santa Claus will give a talk to the children direct from Happyland. An auction bazaar will be broadcast from the station at 10:00 p. m. on Tuesday. Wednesday and Thursday the customary programs will be on the air. Friday at 7:15 p. m. Grantland Rice will give a talk on "All American Football Team." At 1:05 p. m. on Saturday Al Williams and his orchestra will be on the air.

WLSI starts broadcasting at 10:30 a. m. with the International Bible students' program. At 6:30 p. m. the I. B. S. A. will broadcast Bible questions and answers and at 7:00 p. m. they will give a French lecture. The service from the Church of the Seventh Day Adventist will be heard at 8:00 p. m. The Cinderella orchestra will be on the air at 8:30 p. m. tomorrow, Charles Vespa, director. At 8:00 p. m. on Tuesday will be broadcast a musical program by James King, baritone, Clara King Hargrave, contralto and Mildred Watrous, accompanist. Wednesday and Thursday the usual programs will be heard. Mother Hubbard will be on the air at 8:30 p. m. on Friday. At 1:30 p. m. on Saturday the luncheon of the Foreign Policy Association will be on the air broadcast direct from the Naragansett Hotel ballroom.

WCOT starts its week of programs at 1:30 p. m. with the Watkins group. At 2:00 p. m. Rev. Father Young's Thanksgiving poem will be read as a special request. Tomorrow at 7:30 p. m. Ducky Grinshaw, tenor and McConnelly, pianist will be on the air. At 7:30 p. m. on Tuesday, Madame Rina Ambrosina, coloratura soprano will be broadcast. Wednesday the usual program will be heard. Thursday at 8:30 p. m. will be broadcast a musical program by Ernest Reddy, tenor soloist and Miss Gladys Buck, pianist. Friday and Saturday the usual program will be observed.

### WEAN—SHEPHERD—319.

Today.  
11:00 a. m.—Service from Mathewson Street Methodist Episcopal Church.  
3:00 p. m.—Columbia chain program.  
4:00 p. m.—Columbia chain program.  
5:00 p. m.—Old time fiddlers program.  
6:30 p. m.—Asia Serenaders.  
8:00 p. m.—Columbia chain program.  
9:30 p. m.—Columbia chain program.  
10:00 p. m.—Columbia chain program.

### Monday.

11:55 a. m.—Time signals.  
12:00 p. m.—Asia Serenaders.  
12:30 p. m.—Weather report.  
12:35 p. m.—Continuation of musical program.

### RADIO ILLS PRESCRIPTION—

IF YOUR RADIO IS

1. Noisy
2. Weak
3. Unable to cut thru the locals and bring in distance as a properly constructed radio should

### RADIO JIM

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### gram.

4:00 p. m.—Musical program.  
4:30 p. m.—Weather report.  
6:30 p. m.—Dinner dance.  
6:55 p. m.—Feature.  
7:00 p. m.—Orchestra.  
7:30 p. m.—Correct time.  
7:31 p. m.—Army recruiting realities re-veal.  
8:00 p. m.—Mary Boylan trio.  
8:30 p. m.—"Here's a New Book," by Linus Travers.  
9:00 p. m.—Columbia chain program.  
10:00 p. m.—Columbia chain program.

### Tuesday.

10:00 a. m.—Home service radio chat.  
11:55 a. m.—Time signals.  
12:00 p. m.—Weather report.  
12:30 p. m.—Continuation of musical program.  
4:00 p. m.—Musical program.  
4:30 p. m.—Weather report.  
6:30 p. m.—Dinner dance.  
7:30 p. m.—Correct time.  
7:31 p. m.—Orchestra.  
8:00 p. m.—Columbia chain program.  
9:00 p. m.—Columbia chain program.  
10:00 p. m.—Columbia chain program.

### Wednesday.

10:00 a. m.—Home service radio chat.  
11:55 a. m.—Musical program.  
12:00 p. m.—Weather report, conducted by Alice Bradley.  
11:55 a. m.—Time signals.  
12:00 p. m.—Weather report.  
12:30 p. m.—Continuation of musical program.  
4:00 p. m.—Organ recital.  
4:30 p. m.—Asia Serenaders.  
6:30 p. m.—Dinner dance.  
8:00 p. m.—Kalia Hawaiian troupe.  
8:30 p. m.—118th Engineers band, Jovite LaBonte, leader.

### Friday.

9:15 a. m.—Community sing by the Shepherd.

11:40 a. m.—"American Homemakers" under the direction of Mrs. Ida S. Harrington.

11:55 a. m.—Time signals.

12:00 p. m.—Organ recital.

12:30 p. m.—Weather report.

4:00 p. m.—Musical program.

4:30 p. m.—Weather report.

6:00 p. m.—Jimmy Walsh and his dance orchestra.

7:05 p. m.—"Uncle Red" auspices Providence Safety Council.

7:30 p. m.—Weather report.

8:30 p. m.—Miss Rose Millman and Miss Doreen Rook, two piano recital.

9:00 p. m.—Columbia chain program.

10:00 p. m.—Columbia chain program.

10:30 p. m.—Columbia chain program.

Saturday.

11:55 a. m.—Time signals.

12:00 p. m.—Asia Serenaders.

12:30 p. m.—Weather report.

12:35 p. m.—Continuation of musical program.

4:00 p. m.—Musical program.

4:30 p. m.—Weather report.

6:30 p. m.—Boston dinner dance.

7:00 p. m.—Jacques Renard and his Cocom-Grove orchestra.

8:00 p. m.—Program to be announced.

10:00 p. m.—Dance music.

WJAR—THE OUTLET COMPANY—375.

Today.

11:55 a. m.—Capitol Theatre symphony concert.

5:27 p. m.—Weather report.

5:30 p. m.—Crosby orchestra.

6:30 p. m.—"American Legion Post, No. 79, American Legion band.

7:30 p. m.—These program.

9:00 p. m.—"Our Government," by David Lawrence.

9:15 p. m.—Correct time.

Continued on Page Eight.

### Insist On—

GENUINE

### EVEREADY

Radio Batteries

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The WHITE A-B Socket Power Unit does more than "A" or "B" batteries ever could—renders more efficient service—gives constant, even flow of current—with much less expense and without trouble of any kind, at any time. No battery or trickle charger. Never charged—never discharged. Absolutely noiseless. Develops clear full-toned reception. Relies only upon 110-volt A. C. 60 cycle current for operation. "A" side delivers 6 volt D. C. current at 25 ampere "B" side output 180 volts at 85 Milliamperes—ample for any set up to 9 tubes—a distinctive WHITE development that has won the admiration of the world's foremost radio engineers.

Sooner or later, you will discard batteries. Do it now. Enjoy the advantages and savings of the WHITE A-B. Ask your dealer for a demonstration.

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## and truest Electric Radio

Is a standard radio set equipped with Balkite Electric "AB"

Of course you want an AC electric receiver. For its convenience. Now you can have it, without the uncertainty of untried apparatus, and without sacrificing quality of reception.

Simply by adding Balkite Electric "AB" to your present radio set. Balkite Electric "AB" replaces both "A" and "B" batteries and supplies radio power from the light socket. It contains no battery in any form. It operates only during reception. It makes any receiver an electric set.

This method makes possible the use in electric reception of standard sets and standard type tubes. Both are tried and proved, and give by far the clear-

est and truest reproduction. With this method there is no waiting for tubes to warm up. No difficulty in controlling volume. No noise. No AC hum. No crackling or fading of power. Instead the same high standard of reception to which you are accustomed.

In this method there is nothing experimental, nothing untried. It consists of two of the most dependable products in radio—a standard set and Balkite. And if you should already own a radio set, the cost of equipping it with Balkite is only a fraction of the cost of a new receiver.

By all means go to AC reception. Its convenience is the greatest improvement in radio. But be as critical of any AC receiver as you would of any other. That your AC receiver be a standard set equipped with Balkite Electric "AB." Then it will be as clear and faithful in reproduction as any receiver you can buy.

Two models, \$64.50 and \$74.50.

Ask your dealer. Fansteel Products Co., Inc., North Chicago, Illinois.

## Balkite ELECTRIC AB

{contains no battery}

ALL MODELS OF BALKITE UNITS CAN BE BOUGHT FOR \$1 DOWN AND \$1 A WEEK

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# FLORIDA SEEKING POWER INCREASE

## "Publicity State's Life-Blood," Argue Its Spokesmen

Efforts of United States Senators Enlisted in Campaign to Obtain Radio Party With Other Stations—Stations Serving 1,500,000 Fans

(By the Associated Press.)

Florida wants a place in the broadcasting sun.

With its spokesmen declaring "publicity is the life blood of the peninsula empire of the South," the Florida State Chamber of Commerce and the municipalities of St. Petersburg and Clearwater have enlisted the efforts of United States Senators Duncan U. Fletcher and Park Trammell in a campaign to obtain radio party with other States.

The recent appearance of a delegation before the Federal Radio Commission to appeal for a better channel for Station WFLA at Clearwater was declared to be the opening gun in the fight for greater transmitting power.

Leaders of the delegation, in addition to the two Florida Senators, were Herman Dann of St. Petersburg, President of the State Chamber of Commerce, and J. H. Baskin, Mayor of Clearwater.

The commission is studying the WFLA frequency of 590 kilocycles and an increase in power from 500 to 750 watts for a period of 60 days. This action would nullify the order that WFLA share a channel with Station WDBO at Orlando, Fla. The Clearwater station and a new \$40,000 broadcasting studio at St. Petersburg now are jointly operated. The St. Petersburg studio being assigned the call letters WSON. Both are municipally owned enterprises.

"The tourist business is one of Florida's greatest assets and the marketing of the State's attractions is an invaluable aid in promoting that business," said Mayor Baskin.

"The combined power of Florida broadcasting stations now in operation is 5680 watts. These stations serve a local population of 1,500,000. The power allotted to other sections of the country is considerably in excess of this figure in comparison to population and area, notably the Chicago and California areas.

"WFLA has consistently served the territory surrounding the station with information of value to commerce and navigation; notably the broadcasting of market reports, weather reports, storm warnings and time signals. This station has been used in times of great stress, notably the 1926 hurricane season, when it was the only station in the storm area which could be heard and which transmitted accurate information to the outside world. It is the only station consistently serving the English speaking people of Central America."

Tons of Train Tickets.

More than 1,600,000,000 tickets weighing 725 tons, are issued annually by the London General Omnibus Company. Each night 10 motor-vans bring the ticket boxes of the 9000 conductors from 47 garages. No less than 1,500,000 tickets are distributed daily.

# RADIO PROGRAMS

- Continued from Page Eight.
- Greater New York Federation of Churches.
- 3:00 p. m.—Young People's Conference under the direction of the Greater New York Federation of Churches.
- 4:00 p. m.—Men's Conference from the Bedford Branch Y. M. C. A.
- 5:30 p. m.—Crosley orchestra.
- 6:30 p. m.—Weymouth Post American Legion band.
- 7:20 p. m.—Capital Theatre program.
- 8:00 p. m.—"Our Government," by David Lawrence.
- 9:15 p. m.—Correct time.
- 9:15 p. m.—Alvater Kent hour.
- 10:15 p. m.—Biblical drama.
- WEEI—BOSTON—118.
- 11:00 a. m.—Service from Old South Church.
- 2:00 p. m.—Singer hour of hospitality.
- 4:00 p. m.—Dr. S. Parkes Cadman-Bedford Branch Y. M. C. A.
- 5:30 p. m.—Bulletin from Boston Automobile Club.
- 5:40 p. m.—Five minutes of flying.
- 5:50 p. m.—Radio chat.
- 6:10 p. m.—News dispatches.
- 6:20 p. m.—Newspaper spotlights.
- 6:30 p. m.—Musical program.
- 8:00 p. m.—Concert orchestra.
- 9:00 p. m.—Musical program.
- 9:15 p. m.—Correct time.
- 9:15 p. m.—Alvater Kent hour.
- 10:15 p. m.—"Our Government," by David Lawrence.
- 10:30 p. m.—Cruising the air with Bill Harrison.
- 10:35 p. m.—Radio chat.
- 10:45 p. m.—Singer's broadcast of the Boston Bruins-New York Rangers hockey game.
- WFLA—ST. PETERSBURG—238.
- 2:00 p. m.—International Bible Students' program.
- 3:00 p. m.—Columbia chain program.
- 4:00 p. m.—Concert orchestra.
- 6:00 p. m.—Service from Delaware Baptist Church.
- 6:30 p. m.—Dinner concert.
- 9:00 p. m.—Columbia chain program.
- 9:30 p. m.—American singers.
- 10:30 p. m.—Columbia chain intimate hour.
- WFI—PHILADELPHIA—108.
- 10:20 a. m.—Service from Arch Street Methodist Episcopal Church.
- 4:30 p. m.—Service under the auspices of the Church Federation of Philadelphia.
- 5:30 p. m.—Crosley orchestra.
- 9:15 p. m.—Alvater Kent radio hour.
- 10:15 p. m.—Biblical drama.
- WGBS—NEW YORK—319.
- 8:00 p. m.—Singing ensemble.
- 8:30 p. m.—Dinner to Hon. James J. Walker tendered by members of Priests' Club.
- WGR—BUFFALO—303.
- 10:45 a. m.—Service from Westminster Presbyterian Church.
- 12:00 p. m.—Weather forecast.
- 5:30 p. m.—Crosley orchestra.
- 6:30 p. m.—American Legion band.
- 7:45 p. m.—Service from the Central Presbyterian Church.
- 9:15 p. m.—Alvater Kent hour.
- 10:30 p. m.—Weather forecast.
- WGY—SCHENECTADY—380.
- 10:45 a. m.—Service from First Church of Christ Scientist.
- 3:00 p. m.—Symphony orchestra.
- 4:00 p. m.—Organ recital.
- 5:30 p. m.—Crosley orchestra.
- 6:30 p. m.—Capital Theatre program.
- 7:20 p. m.—Talk, "Our Government," by David Lawrence.
- 9:15 p. m.—Correct time.
- 9:15 p. m.—Alvater Kent hour.
- 10:15 p. m.—Biblical drama.
- WJAM—ROCHESTER—278.
- 10:30 a. m.—Morning church service.
- 3:30 p. m.—Theatre concert.
- 4:00 p. m.—Organ recital.
- 5:00 p. m.—Musical milestones, Mariette Trueblood MacKown.
- 5:30 p. m.—National radio vesper.
- 6:30 p. m.—Fire-side forum.
- 7:00 p. m.—Dinner concert.
- 8:00 p. m.—Studio program.
- 8:15 p. m.—String quartet.
- 9:15 p. m.—Vibrant melodies.
- 9:45 p. m.—Worley singers and Utica jubilee singers.
- 10:00 p. m.—Correct time.
- 10:30 p. m.—Joyce singers and Utica jubilee singers.
- 10:15 p. m.—Weather forecast.
- WHAR—ATLANTIC CITY—278.
- 10:45 a. m.—Service from Chelsea Baptist Church.
- 2:15 p. m.—Recital by trio.
- 2:45 p. m.—Central Methodist Church service.
- WJZ—NEW YORK—434.
- 1:00 p. m.—Feature.
- 2:00 p. m.—Rox and his gang.
- 3:00 p. m.—Jaspe Woodwind ensemble.
- 3:30 p. m.—Devora Nadworney, contralto and string trio.
- 3:55 p. m.—Service from St. George Church.
- 5:30 p. m.—National radio vesper.
- 6:30 p. m.—Feature.
- 7:00 p. m.—Correct time.
- 7:00 p. m.—Organ vesper.
- 7:30 p. m.—Musical literature.
- 8:15 p. m.—Collier's radio hour.
- 9:15 p. m.—Vibrant melodies with cello, harp and flute.
- 9:30 p. m.—Louise Hemming, contralto, with muted trombone.
- 9:45 p. m.—Utica Jubilee Singers.
- 10:00 p. m.—Correct time.
- 10:00 p. m.—Service from First Church of Christ Scientist.
- 10:15 p. m.—Don Amato, the wizard.
- WKBW—BUFFALO—217.
- 9:30 a. m.—Episcopal service from the studio.
- 10:00 p. m.—Public worship, chapel of Churchhill Tabernacle.
- 3:00 p. m.—Sermon by Rev. James T. Haugh.
- 7:00 p. m.—Evangelistic service.
- 10:15 p. m.—Back home gospel melody hour from the studio.
- WMBG—NEW YORK—236.
- 7:00 p. m.—Mary May Mider, pianist.
- 7:10 p. m.—Blanchita Alvarez, piano accompaniment.
- 7:20 p. m.—Mary May Mider, pianist.
- 7:30 p. m.—Blanchita Alvarez, piano accompaniment.
- 7:40 p. m.—Aaron Goldberg, violinist.
- 7:50 p. m.—George Allen, baritone.
- 8:00 p. m.—Frances Friedman, contralto.
- 8:10 p. m.—Emil Schneider, pianist.
- 8:20 p. m.—Lyra Singing Society.
- 8:30 p. m.—Phyllis De Rosa, soprano.
- 8:40 p. m.—Lyric ensemble.
- 8:50 p. m.—German folk songs.
- WOR—NEWARK—122.
- 4:00 p. m.—Musical program.
- 4:30 p. m.—Concert band.
- 7:45 p. m.—Sunday evening musical.
- 8:45 p. m.—Randall Harzaevs, baritone.
- WOO—PHILADELPHIA—308.
- 2:30 p. m.—Sunday school.
- 4:00 p. m.—Organ recital.
- 7:30 p. m.—Services from Bethany Presbyterian Church.
- WPG—ATLANTIC CITY—213.
- 3:15 p. m.—Organ recital.
- 5:15 p. m.—Community vocal and instrumental recital.
- 5:15 p. m.—Twilight concert hour.
- 9:00 p. m.—Concert orchestra.
- 10:10 p. m.—Sunday evening musical.
- WRNY—NEW YORK—300.
- 11:00 a. m.—St. Matthew's Lutheran Church.
- 2:30 p. m.—Chester Hall, tenor.
- 2:45 p. m.—Ralph Rose, violinist.
- 3:00 p. m.—Florence Stern, soprano.
- 3:30 p. m.—Leonard E. Allen, tenor.
- 4:30 p. m.—Monticello players.
- 4:30 p. m.—Salvatore De Cicco, saxophone quartet.
- 5:00 p. m.—Man. Florence Wessell and assisting artists.
- 5:15 p. m.—Emily Roosevelt, soprano.
- 5:30 p. m.—Corinne Erb, contralto.
- 5:35 p. m.—Dorothy Hoyle, violinist.
- 5:45 p. m.—Helen O'Shea, soprano.
- 6:00 p. m.—"Little Journeys Into Great American Industries."
- 6:15 p. m.—Dr. Arthur K. Kuhn, president of American Branch of International Law Association.
- WTAG—WORCESTER—517.
- 4:00 p. m.—Men's conference from Bedford Branch.
- 5:30 p. m.—Crosley's orchestra.
- 6:30 p. m.—Weymouth Band.
- 7:20 p. m.—Capital Theatre program.
- 9:00 p. m.—"Our Government," by David Lawrence.
- 9:15 p. m.—News bulletins.
- WTIC—HARTFORD—335.
- 4:30 p. m.—Howard radio hour.
- 5:30 p. m.—Crosley orchestra.
- 6:30 p. m.—American Legion Band.

densers, their life may frequently be stretched to nine months or perhaps a year.

### ANSWERS TO RADIO TEST

1. This is difficult to say because there are many freak and experimental types. One manufacturer recently displayed 30 tubes ranging all the way from the dry-cell 199 to the 20-kilowatt, water-cooled type which is used in broadcasting.

2. Because it is not possible to obtain a Canadian patent on a set unless 50 per cent. of it is manufactured in the Dominion.

3. Radio. That side of the set attends to the distance.

4. Eighteen million, according to a recent estimate.

5. Because stage pianos are tuned to concert pitch which is more brilliant than the pitch used in the home piano and for broadcasting studios. A piano tuned to the usual pitch would not sound particularly well to a theatre or concert hall audience.

## Vagrant Waves of Interest to Fans

A power amplifier will give increased volume and minimum distortion.

Prohibition of broadcasting exists in Roumania, Bulgaria and China.

Dust accumulates moisture in a set and causes a drain on the batteries.

The receiver will give better results if all the tubes are changed once a year.

Only one broadcasting station is allowed in each city of the United Kingdom. Twenty are operating now.

Sweden limits broadcasting stations to one in each city, requiring licenses from receivers.

Soviet Russia has 750,000 licensed wireless operators.

Cuba has 45 amateur radio broadcasting stations and only two others. The amateurs use broadcast wave lengths and put entertainment on the air.

Russia has instituted a number of public radio receiving stations, through which concerts are heard by the people. Mexico has experimented with the same idea.

## Thomas H. Early COMPANY

283 Thurber Ave.

Mason's Supplies  
Electric Goods  
Auto Supplies  
Sheet Rock  
Window Glass Set  
Storm Door Combinations  
Stove and Furnace Pipe  
Oak and Chestnut Wood  
Dry and well seasoned  
Lowe Bros. high standard  
Paints  
Berry's quality Varnish

LOW PRICES

PROMPT DELIVERY

to any part of the city  
Phone BRoad 0401-0102

Let's Get Started

You say: "Winter is no time to start building a home."

We say: "Winter is the best time to get the preliminaries all arranged so that you may be ready for an early start in the spring."

Come in and talk it over with us. Why not take out a monthly payment BOOK NOW with a home of your own in mind?

Call personally for full particulars.

**OLD COLONY CO-OPERATIVE BANK**

58 WEYBOSSET STREET—OLD COLONY HOUSE

**\$3000 by Saving \$15 a Month**

## MOTHER!

### Look at Child's Tongue if Sick, Cross, Feverish

Look at the tongue, mother! If coated, it is a sure sign that your little one's stomach, liver and bowels need a gentle thorough cleansing at once.

When peevish, cross, listless, pale, doesn't sleep, doesn't eat or act naturally, or is feverish, stomach sour, breath bad; as stomach-ache, sore throat, diarrhoea, full of cold, give a teaspoonful of "California Fig Syrup," and in a few hours all the foul, constipated waste, undigested food and sour bile gently move out of the little bowels without griping, and you have a well, playful child again.

You needn't coax sick children to take this harmless, "fruit" laxative; they love its delicious taste, and it always makes them feel splendid.

Ask your druggist for a bottle of "California Fig Syrup," which has directions for babies, children of all ages and for grown-ups plainly on the bottle. Beware of counterfeits sold here. To be sure you get the genuine, ask to see that it is made by the "California Fig Syrup Company." Refuse any other kind with contempt.



See that it is made by the "California Fig Syrup Company." Refuse any other kind with contempt.

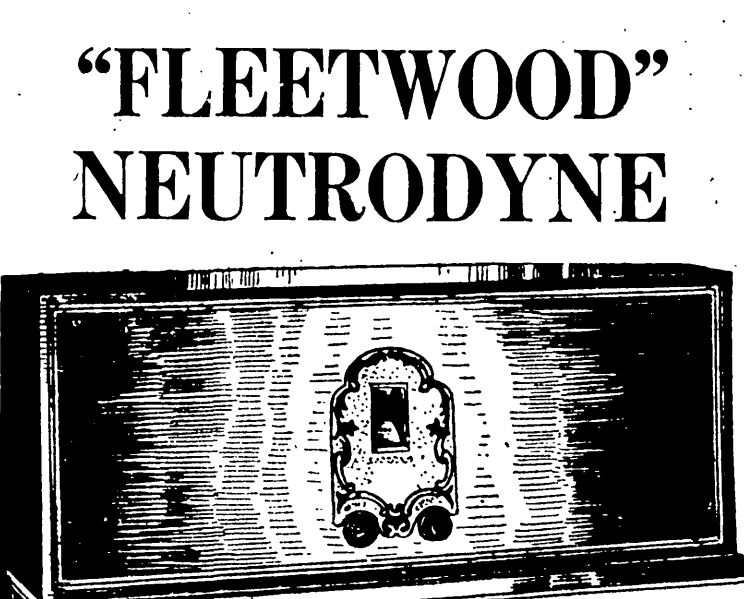
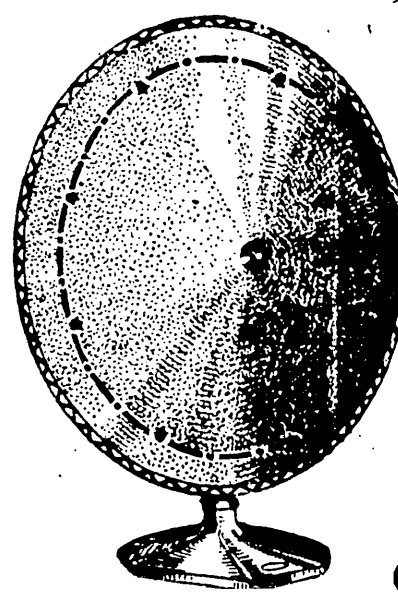
Charge Patrons  
May Buy Now  
and  
Pay in January

# The Outlet Company

## A TIMELY CHRISTMAS SALE

### "Do Not Miss the Wonderful Entertainment Being Broadcast Now"

### The New 7 TUBE—Shielded—Single Dial



**"FLEETWOOD" NEUTRODYNE**

**\$79.50**

Nothing Else to Buy

**COMPLETE**

The Year's Sensation

Licensed under patents of Radio Corporation of America—Hazelton Neutrodyne Corporation—Latour—General Electric—Westinghouse Co.'s.

**\$2 Weekly**

After 1st Payment

This Large Set Measures  
10 inches high  
24 inches long  
11 inches deep

The Cabinet is of highly polished genuine mahogany.

Thousands enjoyed the Thanksgiving holiday broadcasting. Buy this wonderful radio and hear the marvelous programs now on the air. Don't miss any more of the world's greatest and most inexpensive entertainment.

### What The Name "FLEETWOOD" Stands For In The Radio World!

- The name Fleetwood stands for precision and performance.
- It stands for finest radio products. It is a promise of many joys and no worries.
- This set is made in a factory that occupies 90,000 feet of floor space. Here they have been making radio and telephone apparatus for over 30 years. Thousands of the sets made in this factory are giving excellent service throughout the United States.

### 7 Tubes! Shielded! Single Dial! (Illuminated)

—Last year we sold many hundreds of 5 Tube Three Dial Sets. The set we offer this year is not a 5 tube set nor even a 6 tube set, but a powerful 7 tube Shielded, Single Dial Neutrodyne Set, much larger in size, and is as far ahead of the average 6 tube set as the latter is conceded to be ahead of a 5 tube set.

### High Quality Accessories You Get with This Set for Only \$79.50 Complete

- 1 Latest 7-tube Fleetwood Neutrodyne Set
- 1 R. F. I. Large Cone Speaker
- 7 Genuine Cunningham CX301 A Tubes
- 3 45-volt B Batteries
- 1 Westinghouse Large Rubber Cased Storage Battery
- Complete Aerial Equipment
- 1 C Battery

**Our Regular Price for This Outfit Would Be \$145!**

Entire outfit guaranteed by the manufacturers and by the Outlet Company.

## Electrified with PHILCO AB Socket Power

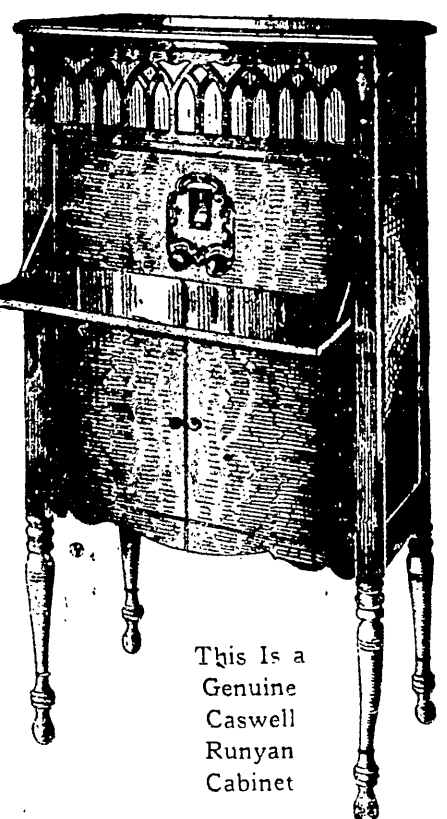
Operates From House Current

**\$129**

COMPLETE

In this highly figured Walnut finish Console Cabinet

If Sold at the Regular Price We Would Have to Charge You \$225 For This Outfit



### Everyone Has Heard of the Philco Socket Power

The switch on the Fleetwood radio set controls everything. It is as easy as turning on your electric light. This Philco Socket Power alone sells at \$59.50.

—When you buy one of these complete outfits at \$129, you are paying only \$49.50 more for the table model set and you receive a \$46 cabinet, a \$59.50 Philco instead of the battery equipment and you receive also a \$4.50 Power Tube instead of the regular CX301A Cunningham Tube.

Here is a superb, high priced outfit brought within your reach. The Outlet Company has made it possible for you to have this Fleetwood Neutrodyne, equipped with Philco Socket Power, in a genuine Caswell Runyan Cabinet with built-in speaker (built to sell for \$46 alone). Caswell Runyan is one of America's finest cabinet plants.

**\$3.50 Weekly**

After 1st Payment

There Are More Philco Socket Powers in Use Than Any Other Single Type of Socket Power — Over 500,000 of Them Were Placed in Use in a Single Year.

This is a Genuine Caswell Runyan Cabinet

**STEWART-WARNER Reproducers**

Bring You Every Note in the Musical Scale—the Full, Rich, Vibrant Bass, as Well as the Middle and Upper Tones!

Turn up the volume! These speakers will "take it!" No matter what make of set you own, attach one of these STEWART-WARNER Reproducers, and acquire a new conception of the real, true beauty of broadcast music.

Hear them at one of our Blue Ribbon Dealer's today. You'll be astonished that Reproducers of such inspiring tone and beauty should sell at such moderate prices!

Stewart-Warner Radio is licensed only for radio amateur, experimental and broadcast reception.

Reproducer, Model 425. Constructed of bronzed metal, with silk mesh grille, front and back. Drum diameter, 11 1/4 inches; complete with cord \$25.00

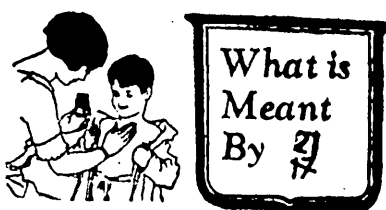
Reproducer, Model 430. Extremely compact. Of bronzed metal, with silk mesh grille. Drum diameter, 9 inches. Complete with cord \$17.50

Stewart-Warner receivers range in price from \$80.00 to \$255.00. There is a model to suit your taste and your purse. Model 525 (illustrated) sells, without accessories, at \$80.00

**Stewart-Warner Radio Distributor**

110 Broadway Providence, R. I. Gaspee 0843





Simply this:—

Not very long ago the yearly use of Vicks for all cold troubles, was 17 million jars. Now it has grown to over 21 million. It means, too, that Vicks not only finds its way back in a home where once it has been tried, but also into new homes.

From 17 to 21—four million more jars used yearly—still further means that users find it does relieve cold troubles—often overnight.

**VICKS**  
VAPORUB  
OVER 17 MILLION JARS USED YEARLY

## WJAR TO RETURN TO OLD CHANNEL

Local Station Put Back to 483.6 Metres Dec. 1

Change Part of Commission's Plan of Clearing 25 Bands to Make Possible DX Listening.—In All 75 Stations Affected.—Some May Be "Martyrs," Belief

WJAR, broadcasting station of the Outlet Company of Providence, will return to its old frequency, 620 kilocycles (483.6 metres), Thursday, December 1, in order to clear 25 channels for better broadcast reception in the 600 to 1000 kilocycle band.

that two other local stations are to undergo a change of frequency Dec. 1, these stations—WGAN of the Shepard Stores and WLSI of the Lincoln Studios, Inc.—have not been apprised of the fact, according to attaches of both studios. Neither station has received orders to change radio until such instructions are forthcoming from the Radio Commission, both will continue to broadcast on present frequencies.

In clearing the 25 channels, the commission has so lined up these stations that no more than two or three are broadcasting on a single frequency at the same time. Where there are two, using the same frequency at the same time, they are practically separated by the width of the continent and great disparity in power—one using high power and the other using extremely low power or enough time separation so the chance of their interfering is minimized.

Whether the task will be accomplished as easily as it is set forth is doubtful. In making the announcement, the commission said that "the stations adversely affected in some instances must be martyrs to the cause of better radio." Until such instructions are forthcoming from the commission, both will continue to broadcast on present frequencies.

However, this new plan is said to represent the commission's interpretation of its responsibility for providing the great listening public of America with its investment of many millions in radio receivers, an opportunity to use and enjoy good reception. So very likely, unless a station can produce a very good reason why it should be moved to its old or a better frequency, the commission will require it to abide by the assignment.

Important stations scattered throughout the entire United States. Over these cleared channels it will thus be possible for rural and remote listeners to pick up stations in all sections of the country. Listeners with a peculiar taste for DX will also find the tracks cleared for them all the way across the continent in the case of several of the Pacific coast stations which have adequate power to deliver signal in the East under good reception conditions.

For example, on 640 kilocycles, when station WRC at Washington shuts down at 10:30 or 11 o'clock, the entire nation can test out its long distance receiving sets on KFI, the 5000-watt broadcaster at Los Angeles, Cal.

Another test for distance hounds will be the 5000-watt pair, WBAP and WOAI, at Fort Worth and San Antonio, Tex., respectively.

San Francisco can be heard for three hours after Newark shuts down on 710 kilocycles. And Portland will come in on WEAF's wave length after the big Long Island transmitter has closed for the night.

KOA, Denver, Col., as a mile-post for cross-continental radio tourists, will be heard when two 500-watt stations in New York city are off. And Porto Rico, which shares Louisville's channel, will prove a long distance Southern test when the Kentucky broadcaster has closed down.

Four cleared channels have been provided for four high-powered New York stations, WEAF, WJZ, WOR and WABC, the last named assignment becoming effective with the Dec. 1 changes, in order to secure for this 5000-watt transmitter a cleared channel across the continent.

Under the new plan, it is hoped, Providence listeners will be enabled to reach out greater distances than ever before. Some of the stations to be shifted, which they will be likely to hear on the cleared channels are:

WGB, Atlanta, Ga., on 630 kilocycles (475.9 metres) and 1000 watts power. KFI, Los Angeles, Cal., on 640 kilocycles (468.5 metres) and 5000 watts power.

WMAQ, Chicago, dividing time with WQJ, Chicago, on 670 kilocycles (447.5 metres) and 1000 watts power.

WJR-WCX, Pontiac, Mich., on 680 kilocycles (440.9 metres) and 5000 watts power.

WLW, Harrison, O., and Cincinnati, O., on 700 kilocycles (428.3 metres) and 5000 and 500 watts power.

WOR, Newark, N. J., on 710 kilocycles (422.3 metres) and 5000 watts power.

WLB, Chicago, dividing time with WGN, Chicago, on 720 kilocycles (416.4 metres) and 15,000 watts power.

WEAR, Cleveland, O., dividing time with WTAM, Cleveland, on 750 kilocycles (399.8 metres) and 1000 watts power.

## "EXPERTS" OFFER TO ABOLISH QRM

Commission, However, Finds Advisors Inexperienced

Critics Have Little Understanding of Broadcast Situation. Although They Offer Scores of "Permanent Solutions" of Interference

(By the Associated Press.) Radio "experts" in all parts of the country bombard the Federal Radio Commission with letters demanding immediate clearance of the air channels and offering "permanent solutions" of the broadcasting problem. Members of the commission assert, however, that these suggestions and criticisms come chiefly from critics who have little understanding of the broadcasting situation.

"The process of clearing channels is one of selective progress not for arbitrary rulings," states the commission. "As the stations improve their programs and mechanical apparatus for good transmission, the roads are being cleared for them and in the interest of the audiences who want the best service. The commission is looking forward to the time when the listener, on any night of good reception, can hear broadcasting stations from the Atlantic to the Pacific without interference on channels cleared, not by arbitrary order, but by the normal process of demonstrated fitness."

"There are, however, many stations which are rendering valuable service within a limited area and which can continue to render such service without excessively high power. The stations will be brought together gradually on frequencies where, although long-distance reception will be difficult, there will be little or no interference within normal service ranges."

"We have always considered every station problem in terms of public service," Orestes H. Caldwell, New York member of the commission, points out.

"Programs being equal, we consider a 5000-watt station more important than a 500-watt station solely in terms of the audiences. The whole history of assigning frequencies has been one of continuous dilemma, the comparison of one set of benefits with another set. For example, the placing of a station in a certain location on the dial may be convenient to a large number of distant listeners and at the same time blanket reception of near-by hearers."

"Power increase may present a similar dilemma. It may improve service to listeners 20 to 100 miles from the station, cause interference two miles away and howls 1000 miles distant. The balancing of one set of disadvantages against another inevitably results in a degree of dissatisfaction."

cycles (468.5 metres) and 5000 watts power.

WMAQ, Chicago, dividing time with WQJ, Chicago, on 670 kilocycles (447.5 metres) and 1000 watts power.

WJR-WCX, Pontiac, Mich., on 680 kilocycles (440.9 metres) and 5000 watts power.

WLW, Harrison, O., and Cincinnati, O., on 700 kilocycles (428.3 metres) and 5000 and 500 watts power.

WOR, Newark, N. J., on 710 kilocycles (422.3 metres) and 5000 watts power.

WLB, Chicago, dividing time with WGN, Chicago, on 720 kilocycles (416.4 metres) and 15,000 watts power.

WEAR, Cleveland, O., dividing time with WTAM, Cleveland, on 750 kilocycles (399.8 metres) and 1000 watts power.

WBBM, Chicago, dividing time with WJBT and WAAP, both of Chicago, on 770 kilocycles (389.4 metres) and 5000 watts power.

WGG, Schenectady, N. Y., on 780 kilocycles (379.5 metres) and 50,000 watts power.

WOC, Davenport, Ia., on 800 kilocycles (375 metres) and 5000 watts power.

WCAI, Cincinnati, O., dividing time with WOS, Jefferson City, Mo., on 830 kilocycles (361.2 metres) and 5000 watts power.

WWJ, Detroit, Mich., on 850 kilocycles (352.7 metres) and 1000 watts power.

WEW, St. Louis, Mo., on 850 kilocycles (352.7 metres) and 1000 watts power (6 a. m. to 6 p. m.).

of the broadcaster and use a wave trap between the lead-in and the receiver. If this does not help, try a vertical antenna. It may be necessary to completely shield the receiver, batteries and all wires leading to the set except the antenna wire, in order to stop the pick-up of energy except where it is desired in the antenna.

Control of Volume. Volume control in the receiver may be effective in many ways, although the simplest is to place a variable resistance across the secondary of the first transformer, or again across the loudspeaker terminals. The former is preferable, since the sooner in the receiving process that the volume is controlled, the better the results. A suitable variable resistance should be one with a wide range of resistance, say from 100 ohms or less to 1,000,000 or more ohms. The device should be noiseless in operation, and capable of holding any adjustment over a long period so as not to introduce changes in the desired volume setting.

# ASPIRIN

The whole world knows Aspirin as an effective antidote for pain. But it's just as important to know that there is only one genuine Bayer Aspirin. The name Bayer is on every tablet, and on the box. If it says Bayer, it's genuine; and if it doesn't, it's not! Headaches are dispelled by Bayer Aspirin. So are colds, and the pain that goes with them; even neuralgia, neuritis, and rheumatism promptly relieved. Get Bayer—at any drugstore—with proven directions.

**Physicians prescribe Bayer Aspirin; it does NOT affect the heart**

Aspirin is the trade mark of Bayer Manufacture of Monocetaceticacidester of Salicylicacid

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## ANDERSON STEEL GARAGES

9'3"x18' Panel \$149  
18'3"x18'8" (clapboard) \$299

Erected Including Foundations

### A BIT OF COMMON SENSE

There are many steel garages on the market today selling at a price much higher than an Anderson. Is it necessary to pay that much? Due to increased production and the big demand for the Anderson Steel Garage, these low prices are made possible.

We ask you to visit our exhibit and see for yourself the superior construction of these buildings, notice the gauge and kind of metal we use, how our gables are made, and the manner in which the building is assembled. Compare it with any other steel garage you have ever seen.

We make your scale drawings and obtain your building permit free of charge.

**PAYMENTS JUST LIKE RENT**  
A Small Deposit Down

**ANDERSON SHEET METAL COMPANY**  
168-170 Carpenter St. Gaspee 0477 Providence, R. I.

## yes! your car needs this Silver Lining

Put a Protectahood under the hood and notice how quickly your engine will start in cold weather. When the heat reaches the proper driving temperature, notice that it stays at that temperature. You don't have to pull the choke for fifteen or twenty minutes while driving. Nor do you have to pull the choke a dozen times to get the engine started.

In cold weather, Protectahood makes starting easier, warms motor quickly; increases driving efficiency; saves gas; prevents oil dilution; acts as a car heater. In all weather, it protects hood finish from heat of motor, and deadens engine noises.

Protectahood is a vital necessity to your car. At Your Car Dealer's

Distributed by  
**Providence Auto Equipment Co., Inc.**  
65-69 Mathewson St., Providence, R. I.  
Phone Gaspee 7474  
"Kellogg recommends it"

### Protectahood

The Silver Lining

## The Truth About Electric Radio Sets

A great deal of confusion exists in the mind of the public today regarding Electric Radio Sets. This has been brought about through indiscriminate statements made by irresponsible dealers and manufacturers. Radio Sets today can be divided into two distinct classes:

### BATTERY SETS AND ELECTRIC SETS

Battery Operated Sets use the 201A type of tube, the filament of which is lighted from a 6-volt storage battery. This type of set can also be run satisfactorily from so-called battery eliminators—that is—a rectifying unit supplying "B" Battery current from the house lighting circuit, and a 6-volt storage battery with a built-in charger, or an "A" Battery eliminator, also connected to the house current.

**ELECTRIC SETS**—in the true sense of the word—are sets that are built to operate with the new A. C. Tubes. The development of the A. C. Tube has made it possible to dispense entirely with the storage battery or "A" Battery supply. With the addition of a rectifying unit to furnish the "B" Battery current this type of set can correctly be called an electric set. In other words—any set that is correctly termed an Electric Set Must use the new A. C. Tubes.

**WE NOW HAVE IN STOCK, READY FOR DEMONSTRATION, THE FOLLOWING ELECTRIC SETS**

**RADIOLA 32**  
This is a custom built set—that is the supreme achievement of the Radio Corp. of America—no outside wires whatever—except one cord leading to the light socket, complete... **\$895**

**RADIOLA 30 A**  
The new eight tube Super-Heterodyne with built-in 100A speaker operating on outside aerial, complete... **\$495**

**RADIOLA 17**  
A six tube set table model, single control, with tubes... **\$157.50**  
Speaker Extra

**KOLSTER 6 K**  
A new Kolster Console operating with A. C. tubes and built-in speaker, complete... **\$277.50**

**KOLSTER 6 J**  
New table model using A. C. tubes, beautifully designed, with tubes... **\$187.50**  
Speaker Extra

**NEW KELLOGG CONSOLE**  
A handsome floor model—burled walnut—with tubes... **\$365**  
Speaker Extra

**FREED-EISEMANN CONSOLE**  
No. C. 4. Built-in speaker using A. C. tubes, complete... **\$272.50**

**FREED-EISEMANN NO. 60**  
Table model—using A. C. tubes... **\$187.50**  
Speaker Extra

**FREED-EISEMANN NO. 57**  
With A. C. tubes, Speaker Extra... **\$167.50**

**NEW ATWATER KENT NO. 36**  
Table model, using A. C. tubes, Speaker Extra... **\$153.50**

**NEW CROSLEY CONSOLE**  
Using A. C. tubes. Built-in Newcom-Hawley speaker. Complete... **\$182.50**  
This set can be bought without cabinet for \$45.00 less

**FOR THE BEST IN BATTERY OR POWER SUPPLY OPERATED SETS WE OFFER**

## GREBE 7-TUBE SYNCHROPHASE



This is the latest masterpiece of A. H. Grebe Co., and the result of years of successful Radio manufacturing. One Dial Control—Super Selectivity—Perfect Tone and Volume—Without Accessories... **\$135**

A demonstration in your home is the only way to realize what perfect radio reception is

CONVENIENT TERMS ARRANGED

**B. & H. Supply Co., Inc.**  
116 MATHEWSON STREET  
Phones Gaspee 5550-1-2-3

## MOTOR WHEELS

for Passenger Cars, Buses and Trucks

WOOD DISC WIRE

Straightening, Parts, Repairs

**CORP BROTHERS** DEXTER 8020 40 Mathewson Street PROVIDENCE R. I.

## LOVEJOY DELCO-REMY HYDRAULICS

### Now Available For

CHRYSLER 52-60-62  
CHEVROLET  
DODGE 4  
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WHIPPET 4-6  
PONTIAC  
STAR 4-6

SET OF FOUR  
**\$25.00**

**W. R. BURNS CO.**  
AUTOMOBILE ELECTRICIANS  
45 BROADWAY PROVIDENCE

## DON'T—Guess About Cold

THIS enemy causes 50 to 75% of all premature motor wear—far too serious a danger to guess about.

At 60° Fahrenheit equip your car with Pines Automatic Winterfront—the only positive means of effectively fighting cold. Nothing to forget—nothing to remember. Winterfront works with scientific exactness.

Models for all cars—priced  
\$22.50 in \$30.00. Special Models for Ford, \$15.00; Chevrolet, \$17.50; Dodge Four, \$20.00.

**PINES AUTOMATIC WINTERFRONT**  
TRADE MARK REG. U.S. PAT. OFF.

The Only Automatic Radiator Shutter on the Market

**Gabriel Snubber and Specialty Co.**  
FACTORY DISTRIBUTOR  
695 BROAD ST. PHONE DEXTER 6820

## AUTO LOANS

While in Your Possession  
No additional security or endorser required. Strictly confidential—no day service.

**AUTO OWNERS LOAN CO.**  
68 Exchange Place  
Providence Gaspee 2405

## Anthracite Coal

Guaranteed best quality Pennsylvania Anthracite Equal to any sold in Providence and at \$1.00 per ton less. White Ash Egg, \$15.25; Chestnut, \$15.50; Stove, \$15.75 per ton; Lehigh Egg, \$16; Chestnut, \$16.25; Stove, \$16.50; Pea, \$13; delivered in your cellar. All carefully screened. Why pay more?

**Bowen Coal Co.**  
86 WEYBOSSET ST.  
Studley Bldg. Gaspee 4378

## GARAGE

Space in modern fire-proof garage. Fox Point, near Merchant & Miners Trans. dock and Point St bridge. Service to trucks a specialty. Will make alterations to suit fleet owners.

PHONE DEXTER 0866 OR DEXTER 5193

## Exide

If You Have Experienced Trouble

With the battery of your car or feel that your battery service has not been satisfactory we invite you to get acquainted with **DEPENDABLE EXIDE BATTERY SERVICE**. Next time you need a battery or service drive in and see us. We can save you money on your battery costs.

## Battery Service Company

236 Street 1 Gaspee 020  
GEORGE N. LIPPHART, Mgr.  
PARKING SPACE AT REAR

### HIGHER AERIAL

Place Tuning Coil Connection Above That of Ground.

A point to remember in constructing a set is that the aerial connection to a tuning coil always should be higher than the ground connection. This is just an evidence of the familiar analogy between electricity and water.

Voltage is electrical pressure. The relationship between aerial and ground is likened to that between high and low points of a water pressure system. There is a flow of electrical energy from the aerial to the ground, and this point must be considered in handling aerial and ground connections in the set.

Obtaining Selectivity.

When it is found impossible to tune out a net by broadcasting station to get others farther away, try running the antenna at right angles to the aerial