

See Page 10 for New and Important Improvements in Advance Programs; Broadcast Listener's Library; "Dos" and "Dont's" of Home Construction

# Radio Digest

EVERY WEEK

PROGRAMS Illustrated

TEN CENTS

REG. U. S. PAT. OFF. & DOM. OF CANADA

Vol. XII

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SATURDAY, FEBRUARY 21, 1925

No. 7

## LODGE SAYS EYE IS SET

### PREDICTS ENDOWED AERIAL UNIVERSITY

H. V. KALTENBORN SEES BIG EDUCATIONAL FUTURE

Well-Known Editor Believes Broad-Visioned Philanthropist Will Grasp Great Opportunity

BROOKLYN, N. Y.—That the founding of an endowed Radio university in Brooklyn would soon take place was the prediction of H. V. Kaltenborn, associate editor of the Brooklyn Eagle, recently when he addressed the Magazine club of New York.

Mr. Kaltenborn suggested that the proposed Radio university would broadcast college education to the millions who have not had the opportunities offered by a formal education. College professors would be engaged to present their courses in the same fashion as they do now, according to the plan. The students, however, would be able to remain at home. The only expense to them would be the text books. The entire curriculum of the standard college would be covered.

"Before long some broad-visioned Amer- (Continued on page 2)



### SIR OLIVER IN TALK MAKES STATEMENT

Retina Emits Electrons

World-Famous Savant Declares Eye Works on Same Basis as Radio Receiver

LONDON, England.—"The eye was the first Radio receiving set employed by man," declared Sir Oliver Lodge, the world-famous scientist, during his presidential address here to the Radio Society of Great Britain recently. "It is like a receiving instrument for detecting Radio waves of extremely short and definite (Continued on page 2)



### COOLIDGE WOULDN'T OVERDO RADIOCASTS

WASHINGTON, D. C. — Asked what he thought about periodic Radio addresses, President Coolidge recently said that he did not believe it necessary for the president to address the country periodically as the newspapers are doing this very well.

Left, Elizabeth Frances Carlisle, soprano, who has been heard from Station WLW frequently. Above, Doris Kenyon, motion picture star, who gave eastern Radiophans a treat during a recent broadcast from Station WIP. Right, Emma Haig, favorite musical comedy star, who was heard recently through Station WLIT.

NEW "VOICE" AT WGR IS KENNETH FICKETT

BUFFALO, N. Y.—Behold! WGR has a new announcer. The perfect-speaking O. E. Becker is still at the station as chief announcer, but Robert "Bob" Munn, whose baritone voice and ivory-tickling facilities were so well known to WGR fans, has left the study to pursue his musical career more closely.

Bob Munn is succeeded by Kenneth M. Fickett. "Ken" speaks very clearly, although somewhat more rapidly than Mr. Becker. Ken is also inclined sometimes to interpolate things that are not absolutely necessary to the announcing, but none the less pleasing.

Mr. Fickett is young and not hard for the gentler sex to look upon. He is sparkling, not to say effervescent. He is witty, cultured, educated and in his brief span has traveled in China and other Far East points, in South America and Europe. He is blonde and slim and athletic. He likes baseball, soccer football, golf and tennis, as a participant rather than as a spectator. He admits that he is "single, but willing to change."



Kenneth M. Fickett

LODGE SAYS EYE IS SET

(Continued from page 1)

length. Vision is a photo-electric phenomenon.

"I make that rash statement, and say that the burden of proof and especially the burden of disproof, rests upon future experimenters."

Sir Oliver whose subject was "Matter and Radiation," continued: "Radiation is purely a phenomenon of the ether. There is no mechanical connection between ether and matter. The only link between them lies in electricity and magnetism; but neither an electric charge nor a magnetic field generates radiation. There must be both—an electric and a magnetic field superposed at right angles to each other. Then we have radiation, traveling with the velocity of light, at right angles to both.

Vision Rests on Electron Emission

"Atoms when jostled not only emit radiation; they emit electrons. There is something in the retina of the human eye which responds in this way, flinging away electrons at characteristic speed when it feels luminous tremors, and it is to this strange, unaccountable emission that vision is due. Electric tremors do not affect the nerves directly; they stimulate something specially adapted to respond to the vibrations. What stimulates the nerves is the shock of the electrons ejected by the atoms, which strike them with the speed of some thousands of miles a second. This is the theory of vision."

Dealing with the connection between radiation and matter, Sir Oliver said the electric units of which matter is composed consisted of protons and electrons. Whenever they approach each other, falling together, they radiate. It is not known that they ever clash and annihilate each other.

"But we can at least contemplate the process," he proceeded, "and ask what would happen if they did: the answer is clear enough. The two would vanish in a puff of radiation; all that would persist of them would be their energy. That energy would be no longer localized in specks of matter, but would be traveling across space with the speed of light—it would wholly belong to the ether.

Stars Yield Compressed Light

"This it is to which astronomers make appeal for the intense radiation from the stars and especially the unimaginable intense radiation in their interior. It is compressed light. The pressure of light may become enormous, though on earth we have the utmost difficulty to detect it.

"Some special process must be imagined to account for radiation of this violence, enduring without perceptible loss for billions of years. But if units of matter thus clash and destroy each other, matter must be disappearing; there is conservation of energy; there is no conservation of matter. The sun loses 4,000,000 tons of matter every second; that is the rate at which it is radiating ether waves. Of that the earth receives about sixteen pounds a minute. But it makes no difference to the sun; it can go on expending itself at this rate for millions of centuries without apparent change. In time, of course, it must exhaust itself and fade, but that time is not yet.

"There is reciprocity about the process. While matter can turn itself into radiation, radiation turns into matter. I can imagine matter being generated in the far depths of space, which matter can then by gravitation fall together and re-

NEWS NOTES FROM FOREIGN LANDS

Reports from Bombay, India, state that an American station has been heard there. The call letters have not been ascertained.

The British Broadcasting company is soon to make an attempt to relay and broadcast the roar of water rushing over Niagara Falls.

Broadcasting his play in defiance of the Theater Managers' Association of London, Eng., Donald Calthrop reported the booking for the play had increased by 50 per cent.

The first all-American Radio program in Europe was recently broadcast from the "Petit Parisien" station, Paris, under the auspices of the New York Herald and the Chicago Tribune.

Broadcasting officials throughout Great Britain are hunting for a man who makes phonograph records of songs sung by famous singers before the microphone.

produce or keep in maintenance the whole material cosmos. I see no ultimate dissipation of energy in the universe, but energy passing from matter to ether and back again."

SEES RADIO UNIVERSITY

(Continued from page 1)

ican philanthropist will endow our first university of the air," said Mr. Kaltenborn. "Here is a great opportunity for some seer to achieve immortality. The project is so attractive, the possibilities so fascinating that I am sure it will be but a little while before some aerial Harvard will be making educational history.

"Education," the well-known editor continued, "comes more easily through the ear than through the eye. However, Radio requires its own technique. Millions of our countrymen who were deprived of the opportunity of attending a university would eagerly embrace the chance of obtaining a college education on the air."

He sells such pirated music much cheaper than the phonograph company, who have to pay large sums to the artists.

Rudyard Kipling is "mike" shy. Repeated attempts have been made to get him to broadcast, but without success. Recently he spoke at a dinner and, although other speeches were broadcast, he refused to allow his remarks to be transmitted.

Reports of Radiophans all over Great Britain are agreed that twenty minutes is quite enough of a play to broadcast at one time. A lengthy performance makes it difficult to distinguish between the hero, the villain and other characters, is the claim.

Burglars recently broke into Station 2LO, London. They took nothing, however. Officials are of the opinion that the miscreants were only keen Radiophans who wanted to see just what a broadcast studio was like.

Russian Radio, although practically unheard of abroad, has taken big strides during the past year. Many large stations under the control of the Union of Soviet Socialist Republic now broadcast regularly in both Russian and Esperanto.

The announcer at the Petit Parisien station, Paris, has evidently been impressed by the need for more than French. He now makes announcements in French first and later in English. His English, His English sometimes goes slightly astray, causing his British listeners to smile.

An unusual situation has arisen in Spain by the many requests of the listeners to have the various operas, or at least entire acts from them, broadcast direct from the theaters. The empress has objected strenuously to this, claiming that the state will show partiality to some theaters.

The well-known French government broadcaster, PTT, in Paris, recently celebrated their second anniversary on the air.

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Looking Ahead

The Mysteries of Regeneration and the proper use of a "tickler" coil are taken up next week by E. T. Jones as Part IV of the Broadcast Listener's Library. Like other well-known writers, he condemns the use of the whistle or beat-note method of tuning.

Winners of the \$1,000 Prize Contest will be announced in the coming issue. That every entry might have a fair test has necessitated giving each several hours of work with different tubes and aeri-als.

"The Merry Old Chief" and All the Nighthawk Crew will be featured next week in a page article illustrated with many pictures. How many listeners have turned the dials to WDAF in the "wee sma' hours" and listened to Leo Fitzpatrick at his best? Do it if you haven't!

Inductances and How to Wind Them to cover the broadcast range will be the subject of an excellent article by David B. Arnold. Having a four inch tube, some No. 24 double silk covered wire and a .00035 mfd. condenser, how many turns and how long the tube? Mr. Arnold gives the data on three tube diameters, six wire sizes and two types of condensers. You will want to save this.

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# STATION CHITCHATS AND NEWSY BRIEFS

## KGO TO PUT ON "ELIJAH" SATURDAY, FEB. 21

### WGN Has Series of "Evenings with the Composers"—WGBS Broadcasts Opera "Cavalleria Rusticana"

Mendelssohn's masterpiece, the oratorio "Elijah," will be broadcast from KGO, Oakland, Saturday evening, February 21. A brief talk will be given before the oratorio, and some of the important parts of it will be pointed out.

WGN, Chicago, will broadcast Sunday, February 22, "Old English Balladists." This will be followed the next week by "Creole Songs and Composers." These are among a series of lectures now being given entitled "Evenings with the Composers."

Country school children in the State of California are learning the geography of the great rivers of the world by Radio. The talks are broadcast every Monday morning at 9 a. m., Pacific time, from Station KGO, at Oakland, Calif.

The opera "Cavalleria Rusticana" was recently broadcast from Station WGBS, New York city. A full cast of operatic stars participated, accompanied by an orchestra of string and wind instruments.

Arranging parties appropriate to holidays and special occasions seems to be the latest. WQJ, at Chicago, is now transmitting suggestions for various parties, including the food. WCCO, the Gold Medal station at Minneapolis, has formed a girls' club for similar purposes.

Charles Wakefield Cadman's latest choral work, "The Sunset Trail," which had its world premiere only a few months ago, was broadcast from KOA, the new General Electric station at Denver.

The chamber of commerce of the Oranges and Maplewood, N. J., has made arrangements with Station WOR, Newark, to broadcast a series of weekly programs to advertise those sections of New Jersey.

A unique tribute to WSB in the form of a ten-page petition signed individually by listeners of Cumberland, Md., reached the Atlanta Journal station recently, asking for a special broadcast from WSB.

Radiophans listening to "Roxy's gang" on a recent Sunday night were surprised to hear Roxy announcing in a different and dignified style. It was rumored that Roxy had been "gagged" by the A. T. and T. company. Officials of the company, when questioned, refused to make any statement. Fans are in arms.

A large class attended the opening of the Radio correspondence courses of the University of Iowa on February 4. These courses are being broadcast every Wednesday from Station WSUI. A special program is broadcast from this station every Wednesday morning for the classes in the high schools.

John Lund, veteran orchestra leader, who had just started broadcasting a series of high grade orchestral productions from WGR, Buffalo, died recently in the Buffalo City hospital following an infection of the leg which developed into blood poisoning.

Station WGN, Chicago, was heard in Tasman, Nelson, New Zealand, recently by E. H. Scott. On February 4, WQJ, also in Chicago, was heard by Mr. Scott. WQJ uses half the power of WGN.

Being heard in New Zealand on the west and England on the East, KOA at Denver has successfully spanned the Pacific and Atlantic oceans and has established its record long distance for program reception.

CKY, Manitoba, Winnipeg, is now broadcasting special educational lectures at 4:15 p. m., central time, on Tuesday and Thursday afternoons. A number of schools are being equipped with receiving apparatus to take advantage of this service.

Admirers of the Vincent Lopez Hotel Statler (Buffalo, N. Y.) orchestra have probably missed this feature during the dinner hour. The orchestra is now on the air from WGR for a longer period, actually from 11 p. m. to 1 a. m., eastern time, on Mondays, Wednesdays and Fridays.

WGY, the Schenectady station of the General Electric company, joined with WJY, New York city in broadcasting the farewell recital by Marcel Dupre, the famous French organist from the Wanamaker auditorium Thursday evening, February 5.

# Canada Rebroadcasts First U. S. Program

## CKAC Relays WBZ Broadcast of Hockey Game

MONTREAL, Can.—The first rebroadcast in Canada of a transmission from the United States recently took place when the report of the game between the Canadians and the Boston Bruins of the International Hockey league sent out from WBZ, Springfield, Mass., was picked up and distributed through the La Presse station here, CKAC.

The report was announced by the widely known "Frankie" Ryan of Boston, and between periods the game was reviewed in French by Jacques N. Cartier, director of CKAC, who was in Boston for this purpose. The report was picked up at Montreal on a super-heterodyne and carried to CKAC over telephone wires.

While milking the cows after midnight, a fan in Wisconsin reports he listens in to WQJ, Chicago. He has extension wires from his set to the cow stable.

# See Worldwide Chain of 500-Watt Stations

## Western Electric Discloses Foreign Orders for Installations

NEW YORK.—A worldwide chain of broadcasting stations soon will be on the air as the result of operations of the Western Electric company, whose equipment is being used in most of the class B stations in America.

The latest undertakings of the company and its affiliated international branches will add stations in Persia, Japan, Italy, Norway and Switzerland.

The Italian government has recently granted a concession of Radiocasting to a group of companies, one of which is the Western Electric Italiana. A similar concession has been granted by Norway to a group including the Western Electric Norsk Aktieselskap, and equipment for a new station recently opened in Zurich, Switzerland, was supplied by the Bell Telephone Manufacturing company of Antwerp, which is associated with the International Western Electric company.

# MAY SINGHI BREEN EVER POPULAR



Of all the eastern microphone performers May Singhi Breen is perhaps dearest to the hearts of more listeners than any other entertainer. Her effervescent manipulation of the banjo, uke, taropatch and tiple; her excellently balanced group of "girl syncopators," make the program directors of all metropolitan stations vie with one another for Miss Breen's services.

# Lawyers May Sing But Not Talk of Cases Over Radio

CHICAGO.—That lawyers may sing, but may not discuss the merits of lawsuits they may be defending when in front of a Radio microphone, was the recent queer decision made in making jury tests for the Stokes case here.

Charles E. Erbstein, owner of Station WCEE and WTAS, near here, and who is the famous criminal and divorce attorney in the case representing Mrs. W. E. D. Stokes, created a problem when it came to challenging prospective jurors.

Many of these had heard Mr. Erbstein sing and announce. The attorneys for Mr. Stokes maintained that Mr. Erbstein had broadcast his opinions about the affair. This was not found to be the case.

# 1923 Manufactures, \$44,176,298

WASHINGTON.—The bureau of the census of the department of commerce in making public its manufactures census for 1923 states that during that year the volume of Radio apparatus manufactured amounted to \$44,176,298 as compared with \$9,549,649 as the value of Radio apparatus manufactured in 1921. The 1924 figures will be doubly interesting.

# GIRL UKE ARTIST STIRS ETHERDOM

## Aided by "Girl Syncopators," She Even Draws Applause from the White House

NEW YORK.—May Singhi Breen, wizard of the banjo, with her aggregation known as the "Girl Syncopators," are ever popular. This young lady who has leaped to fame via the ukulele and Radio route, has been heard from practically all the stations in and around New York city.

It is because of her versatility in relation to the ukulele that May Singhi Breen has become known to hundreds of thousands throughout the United States. She is a favorite with the broadcasters. Stations WEA, WEBJ, WOR, WHN, WJZ and others have featured May Singhi with her tiple, taropatch, guitar, drum, banjo and piano.

When May Singhi isn't keeping house, she's directing her Girl Syncopators—violin, saxophone, banjo and piano—or teaching the young how to play the uke. Her talent in relation to the composi-

# HOOVER TELLS NEED FOR LICENSING LAW

## TOO MANY STATIONS AND NO WAY TO STOP THEM

### Secretary of Commerce Reviews Situation—Sees No Monopoly—Denies Sales Tax Rumor

WASHINGTON.—That there is an absolute and immediate need for legislation giving the department of commerce the right to assign wave lengths and limit power is the summary of a recent statement issued by Secretary Herbert Hoover.

In it he points out that the present most difficult problem is the distribution of wave lengths among class B stations so as to prevent interference. There are now forty-seven of these available for the 108 500-watt or higher power stations. There is therefore an average of less than one wave length for each two stations. This means that operating time must be divided by the B stations.

In many cases, Secretary Hoover says, the broadcasters are unwilling to do this.

### Department Has no Power

In Chicago and New York, his statement shows, such multiplication of stations has occurred as to lower the value of efficiency of the service of stations in these cities. But neither under the present law nor under the White Radio bill's provisions is there any word of limitation of the number of stations.

Mr. Hoover advises firms contemplating going into broadcasting to clearly understand that there is no assurance that they can be allotted a class B wave length and justice maintained to Radio listeners. The department of commerce cannot give what it hasn't got.

### No Signs of Broadcast Monopoly

The secretary's statement goes on to say that there is no evidence of monopoly in broadcasting, or any sign of it, and that the interconnection of stations has made distinct progress in the last six months.

Mr. Hoover also asks to correct the mistaken impression that his department is in favor of a tax on the sale of Radio material for the provision of a national program. Such proposals were discussed at the recent Radio conference, but were abandoned. At the present moment, he points out, it seems evident from the vast increase in the number of stations that there is no need for a direct or indirect charge upon listeners in order to maintain service.

# RADIO BILL GOES INTO COMMITTEE

## White Bill Is Modified by Howell Rider—Question if It Passes Present Session

WASHINGTON, D. C.—Another Radio bill has been reported to the House committee on merchant marine and fisheries by Representative White of Maine, chairman of the subcommittee on Radio.

The new bill carries a modified form of the Howell bill providing for free ether, which passed the Senate at the first session of the present Congress. The bill also carries two sections in addition which are those suggested by Secretary of Commerce Hoover and already reported in full by Radio Digest. Those in a position to know say that these sections will never be included in the bill even if it should be reported to the House.

Whether or not any action will be taken at the present session of Congress depends upon the unanimity of action of the members of the committee. If the members cannot agree it is a foregone conclusion that the bill cannot be passed at the present session.

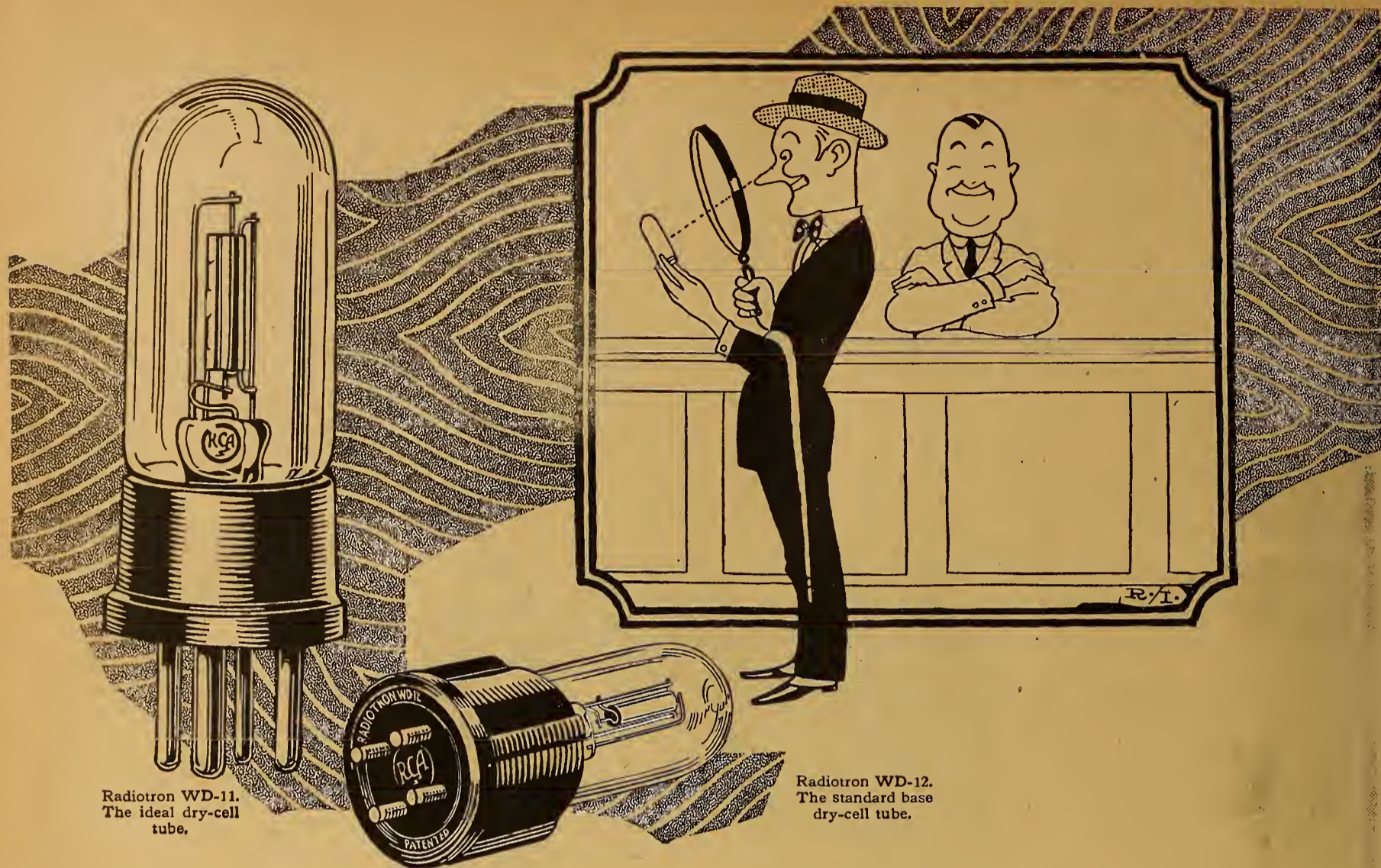
tion of numbers for the ukulele and the adaptation of songs to that instrument has increased sales and brought happiness to many.

What is a taropatch? Ask May Singhi. "It's a form of uke," she says. A uke is the instrument of strings and wood whose strains have haunted the Occident since Hawaii came into her own.

"So's the tiple," Miss Breen continued. Not long ago, Miss Breen received a letter of appreciation from the White House. She played her way into the heart of the nation's chief executive. Not infrequently she receives missives from native Hawaiians praising her ukulele playing and rendition of songs.

But when it comes to making a cake, well, as May Singhi Breen says—cooking and sewing are her best accomplishments. People who listen to her play the uke over the air are curious to taste her cooking and see some of the sewing that she does. Both are good though—no fooling.

A French amateur in Tonkin, China, has reported reception of the Eiffel Tower, using a one tube set.



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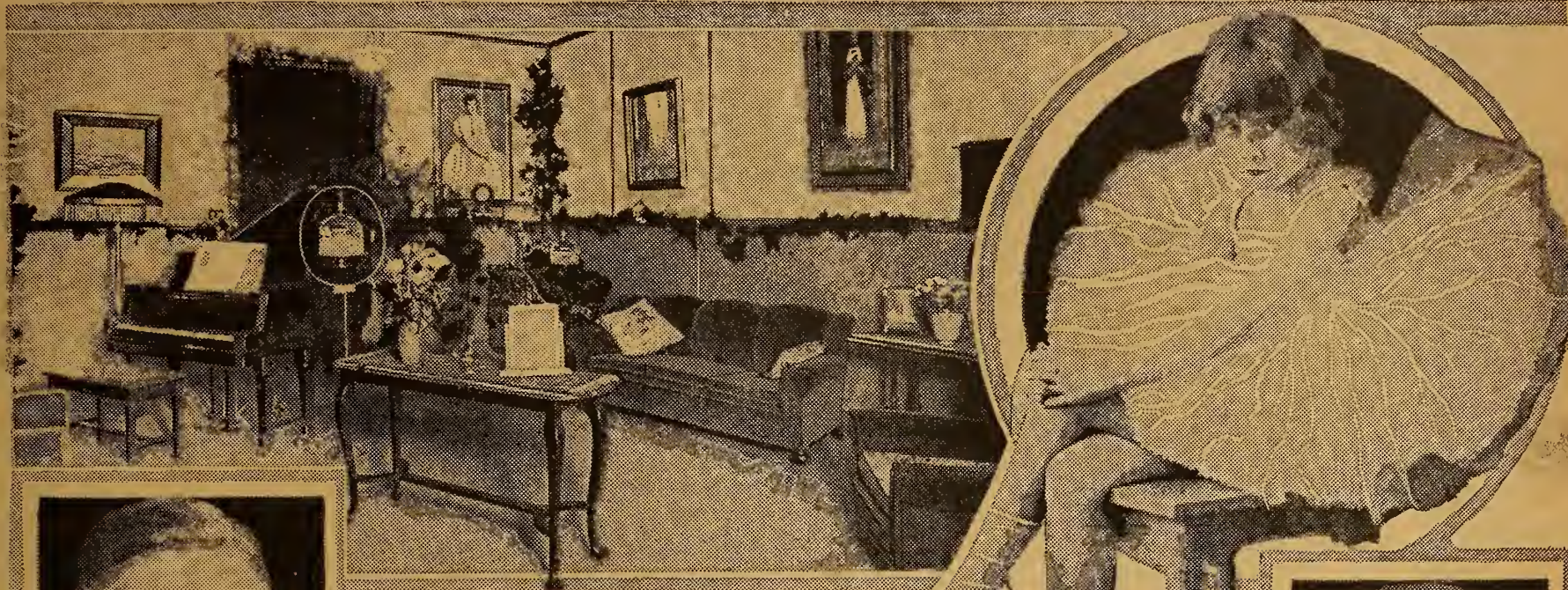


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# KHJ—Home of Kindness, Happiness and Joy



Left, John S. Daggett, KHJ director. He is known throughout the country as Uncle John. Above, KHJ's studio. The absence of heavy drapes makes KHJ distinctive from many other stations. Incidentally, KHJ was one of the first stations to discard the microphone switch, leaving the "mike" open.



To many, the children's hour at KHJ, so different in all its aspects from any other children's hour, is the most delightful part of the station's offerings. Queen Titania and the Sandman, who, by the way, is her father, have appeared at KHJ once a week for over a year with a specially written continuity to act out.

On the day KHJ came into being, John S. Daggett became KHJ's announcer and head. Uncle John, as he is known throughout Radioland and as he is addressed by everyone from janitor to the owner of the Times, is the chief and underlying cause for the tremendous popularity of KHJ.

Uncle John brought to his new position a fine college education and a lifetime of experience as a successful newspaperman. His attitude was, and still is, that of a minister to humanity and with such a serious conception of what a broadcast station should be, KHJ has marched steadily forward.

During the short life of the station, KHJ has been responsible for more innovations than any station on the Pacific coast, and judging from mail received from eastern listeners, this statement can be supplemented to include the whole country.

To one who has traveled about from studio to studio, the one at KHJ will always stand out clear cut. There is something unusual about it the moment you enter. Not so much that certain of the appurtenances are different—it is the undefinable atmosphere of the place. From the moment you enter you feel at ease. You're at home!

This spirit not only goes out on the air but is evident in the everyday dealings in the office of KHJ, where common sense must inevitably have its daily clashing with temperament. While in the office we run into J. Howard Johnson, who, while not officially connected with KHJ, is practically one of the family. He presents a great many of the programs from the station and is a sort of liaison-officer between hard-headed business men who want to present programs, and artists who want to be on those programs.

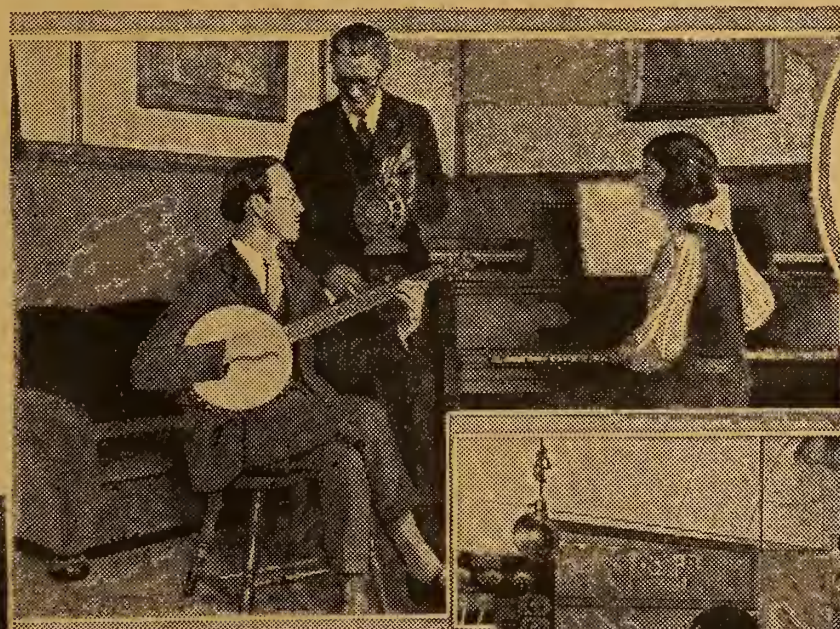
As the programs grew in size and frequency from that 13th day of April, 1922, Uncle John found it impossible to attend to the duties of announcer and director, program arranger and so on, and so we find Edward (Continued on page 7)



Above, Queen Titania of Fairyland. She is the Sandman's helper. Below, Uncle John's right hand man, Edward Murphey. He stands six feet four, and his voice goes all the way down.

THE scene is not an unusual one. It may be laid in a ranch house in the upper corner of Wyoming, in the very shadow of the Three Tetons. In the living room stands a table with the Radio set and speaker sitting mutely. Grouped in a close circle is mother with the children while father is at the set, turning the dials patiently, slowly. At last he nods, takes the phones from his head and plugs in the speaker, tilting back in his chair while all listen eagerly.

The carrier wave breaks. A friendly voice comes into the room. "KHJ, the Times, Loce Anghaylais, California!" Who can ever forget listening the first time to Uncle John pronouncing Los Angeles? Not like "angles" or "angels" but with a broad "a" and long "o" in the Spanish way. The voice of Uncle John continues. It is a sincere voice, with an electric sort of tingle in it, a voice full of kindness, overflowing with happiness and delivering joy to the whole world.



Left, Claire Forbes Crane, famous pianist, who is one of KHJ's star performers. Above, Hatch Graham, banjo; "Uncle John" Daggett and Edyth Petesch, accompanist. Right, operating room with the chief operator sitting at the desk.



J. Howard Johnson, creator of a new profession — professional arranger of programs.



# CROSLEY AGAIN LOWERS PRICES

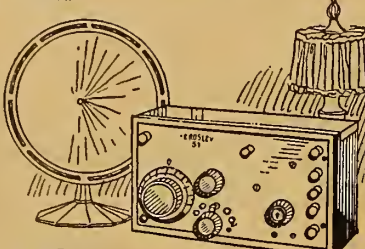
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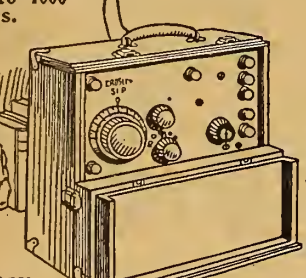
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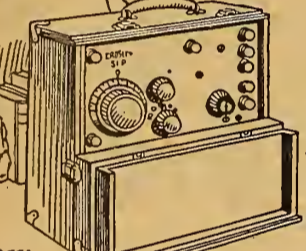


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Now



**CROSLEY "51" Portable**

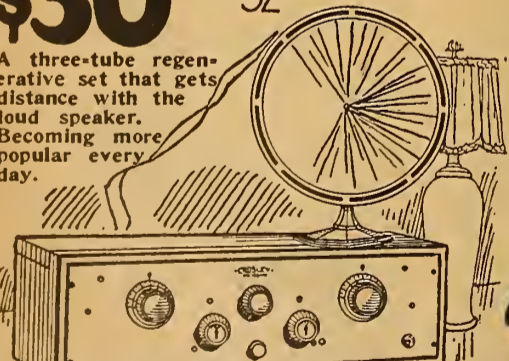
The two-tube utility radio. Let your dealer hook it up in his store.

**\$23.50**



**CROSLEY "52"**

A three-tube regenerative set that gets distance with the loud speaker. Becoming more popular every day.



**CROSLEY "TRIRDYN"**

Now

**CROSLEY "TRIRDYN" Special**

The biggest selling high-grade radio on the market. Distant loud speaker reception under all conditions.

**\$50**

The biggest selling high grade receiver on the market—the Crosley Trirdyn—reduced from \$65 to \$50.

The Trirdyn Special—the beautiful Model with cabinet to house batteries—formerly \$75, now \$60.

The Crosley 51-P, a tremendous seller at \$25, reduced to \$23.50.

We unhesitatingly state that these sets, together with the other Crosley Radios, represent the biggest values ever offered.

### CROSLEY RADIOS JUSTLY POPULAR

Only the less expensive Crosley Radios have exceeded the Trirdyn in sales. This deserved popularity of the entire Crosley line is the result of extraordinary performance at a very low price.

Crosley Radios cost less originally, use fewer tubes and consume much less battery current. At the same time they give results not equalled by receivers costing a great deal more and using two or three additional tubes.

The unique Trirdyn circuit—a combination of Armstrong Regeneration, Radio Frequency Amplification and Reflexed Audio Amplification—has proven beyond a doubt that the features of selectivity, volume and ease of operation can be obtained with three tubes better than heretofore has been possible with five or even six.

Hundreds of voluntary letters have come to us, telling of the unparalleled foreign reception during international test week with Trirdyns and all other Crosley Radios; even the little one-tube Crosley 50 at only \$14.50.

It is this continued remarkable performance that has created such a tremendous demand for Crosley Radios. And it is this great popularity that now allows us to decrease our production costs and pass this large saving along to you.

### NEW CROSLEY MODELS

In order to allow even a greater selection, three new Crosley Radios have been added to our extensive line. Taking its place with the well known Crosley 50 and Crosley 50-P is the leatherette covered, one-tube 50 Portable, a utility set in which the dealer can quickly make the necessary connections and allow you to carry it home complete.

The New Crosley 51 Special, a two-tube receiver similar to the Model 51, is housed in a cabinet large enough to hold the necessary batteries and has a sloping panel.

Similar to the Crosley 52, but with sloping panel and cabinet to house the batteries is the new Crosley 52 Special.

These additional receivers make the Crosley line absolutely complete—A radio for all tastes and every pocket-book. See illustrations for prices.

No matter what appeals to you most in a radio, you will find that point outstanding in a Crosley.

Most good dealers handle Crosley Radios.

You Will Make No Mistake in Buying One.

All Crosley Receivers contain the famous Armstrong Regenerative circuit, and are licensed under the Armstrong U. S. Patent No. 1,113,149.


As is customary prices shown do not include tubes, phones, loud speakers or batteries

Prices West of Rockies add 10 per cent.

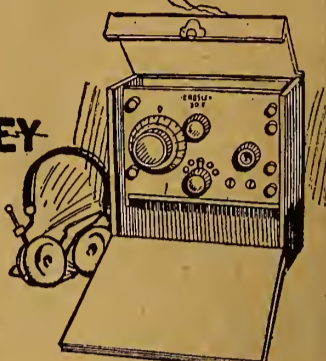
From a small beginning three and a half years ago, Crosley Radio has grown until it now produces more sets than any other concern in the world. The present production—nearly 5000 per day—is probably from two to three times as great as that of any other radio manufacturer.

Crosley owns and operates the new super power WLW Broadcasting Station located at Harrison, Ohio, remotely controlled from studios in one of three large Crosley owned manufacturing plants in Cincinnati.

**3 Tubes do the work of 5**



**In a CROSLEY Trirdyn**



**CROSLEY "50P"**

The new leatherette covered one-tube utility set. Will give the same results as the Crosley 50.

**\$16**



**CROSLEY "51" Special**

Same as 51 in new sloping panelled cabinet which houses all necessary batteries.

**\$23.50**



**CROSLEY "52" Special**

The Crosley 52 in new cabinet to house batteries. Has sloping panel.

**\$35**



**CROSLEY Now "TRIRDYN" Special**

Same as the Trirdyn in beautifully finished large cabinet to hold the batteries.

**\$60**

THE LOUD SPEAKER SHOWN IS THE WONDERFUL NEW CROSLEY LOUD SPEAKER THAT IS TO BE ANNOUNCED IN THE NEAR FUTURE

Write for Complete Catalog

## THE CROSLEY RADIO CORPORATION

Powel Crosley, Jr., President

2493 Sassafras Street

Cincinnati, Ohio

AN EVENING AT HOME WITH THE LISTENER IN (SEE INSTRUCTIONS FOR USE BELOW)

Table with columns: Station and City, Met., Saturday, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday. Lists radio stations and their broadcast times.

Instructions for Use.—All the hours above are given in Central Standard Time. If your city uses Eastern Time, add one hour to each of the periods stated; if your city uses Mountain Time, subtract one hour; if your city uses Pacific Time, subtract two hours. This table includes only the evening Radiocasts, and, on Sunday, the late afternoon program.

STATIONS IN ORDER OF WAVE LENGTHS USED

Table with columns: Meters, Call, Meters, Call, Meters, Call, Meters, Call, Meters, Call, Meters, Call. Lists stations ordered by wavelength.

NEW STATIONS AND CHANGES IN POWER

Station WCBD at Zion, Ill., plan to open their new 5,000-watt super station on Monday, February 23.

WOAI Southern Equipment company and San Antonio Express Evening News station at San Antonio, Texas, has been licensed to increase its power to 5,000 watts.

Another 5,000-watt station will soon be ready to serve the public. It will be located at Pontiac, Mich., and will be owned and operated by the Jewett Radio and Phonograph company.

Station WHT, located on the Wrigley building in Chicago, Ill., has announced plans to go on the air February 22, or a few days later. It is owned by several prominent Chicagoans, one of them being ex-Mayor William H. Thompson.

KFKX, Hastings, and WOC, Davenport, have been authorized to increase their power to 1,500 watts temporarily, with the understanding that they do not interfere with other stations.

The new list of class B wave allocations includes four station calls as yet unknown to many listeners. J. D. Vaughan is owner of WOAN, Lawrenceburg, Tenn., which will operate on 280.2 meters. KFRU is the call of the Etherical studios at Bristow, Oklahoma, now operating on 296.9. Miami Beach gets the call WMBF for its new Fleetwood hotel and is transmitting on 384.4 meters. WDFW is the new call of Dutee W. Flint's station at Cranston, R. I., operating on 440.9.

A new studio is being erected atop the Nicollet hotel for the 5,000-watt super Gold Medal station, WCCO, at Minneapolis, Minn.

Broadcasting on a wave length of 348.6 meters, Station WTIC, Travelers Insurance company, Hartford, Conn., had its formal opening Tuesday evening, February 10.

The new office building of the Liberty bank of Buffalo has announced that the twin towers of the building will be surmounted by Radio masts for a new 500-watt station. To blend with the architecture of the building the masts will be built in the form of the lattice fighting masts of American battleships.

Milwaukee's first 500-watt station is now on the air. The call letters are WHAD and the wave length 275 meters.

KFI's old 500-watt transmitting set is now being erected in Hollywood. The call letters of the new station are KPK. It will operate on 252 meters.

Articles of incorporation for the Hellman's Broadcasting company were filed in Sacramento, Calif., recently. This is the first company of its kind in California. Its station will be in Los Angeles.

KHJ AT LOS ANGELES

(Continued from page 5) Murphey in the corner of the office, with his five feet sixteen inches propped up against the wall. We next have to dive into the heart of the modern newspaper plant below to locate one whom we have long heard about. It is Claire Forbes Crane, the Radio editor of the Los Angeles Times, in whom KHJ boasts a pianist who has been soloist with such organizations as the Boston Symphony orchestra and the Los Angeles Philharmonic orchestra.

When the history of Radio broadcasting has been impartially written, the secret of KHJ's success will not be found in the excellent character of its music nor in its ingenuity to discover or create novelties, but the key of the explanation will be revealed in its willingness to be human, displaying no partiality and extending a hand of welcome to whomsoever enters its portals. Until a broadcasting station adopts such a creed its success will never be fully realized, even though its personnel, its equipment and its financial status be of the best. It is the spirit that rules and KHJ, named by a crippled lad who received his inspiration from the station itself, is the station of kindness, happiness and joy.

Wants Data with Complaints

WASHINGTON.—W. D. Terrell, chief Radio supervisor, has suggested that complaints sent to him by listeners in regard to interference contain more detailed information. He desires to know the type of set used, whether the correspondent has a new set to which he has not yet become accustomed, his location, and similar details.

BEST MUSIC AWAITS RADIOPHAN AT LAST

WORLD-FAMOUS ARTISTS NOW AT MICROPHONE

Excellent Brunswick, Victor and Chickering Recitals Do Much to Improve Broadcast Programs

NEW YORK.—Truly the best in music is to be had by Radiophans today. As the result of two large phonograph companies and one well-known piano manufacturer coming on the air in the past two months, listeners in now have at their command the services of the world's best musicians.

There is the Brunswick music hour, broadcast every Tuesday from Stations WJZ, WGY and WRC. Nine of these have been given already. The next will be on Tuesday, February 24, from 9 to 10 p. m., Eastern time. That recital will mark the fourth of a monthly series of the first national music memory contest. \$5,000 in prizes will be awarded at the end of each month to the Radiophans submitting the best list of names of the selections played and the artists playing. Much interest in better music is being developed as a result.

Victor and Chickering Programs

Then there is the Victor concert hour, given every two weeks from eight stations—WEAF, WCAP, WJAR, WFI, WDBH, WGR, WEEI, WCAE. On January 1, 15 and 29 and February 12 the Victor company has scored hits with listeners with its excellent programs.

The last recital marked the Radio debut of Emilio De Gorgorza, baritone, and Renee Chemet, French violinist, both world famous artists.

The next Victor concert will be given Thursday, February 26, from 9 to 10 p. m., Eastern time.

The last, but not the least attractive, addition to Radio programs of late is the Chickering studio programs broadcast from WOR, Newark. Madame Germaine Schnitzer, the greatest woman pianist in the world, thrilled fans with her playing on Wednesday, February 11. The Chickering artists series has made a place for itself already in the hearts of Radiophans.

WESTINGHOUSE IS HIT BY DE FOREST

Pittsburgh Corporation Must Pay Millions of Dollars to "Father of Radio"

WILMINGTON, Del.—The Radio Corporation of America was enjoined recently in a sweeping decision by Federal Judge Hugh M. Morris, sitting in the district court of Delaware here, from the sale of Radio vacuum tubes manufactured by a subsidiary of the Westinghouse Electric and Manufacturing company that are alleged infringements of the patents of Dr. Lee De Forest, inventor of the vacuum tube, which patents have been assigned to the De Forest Radio company.

Charges of wholesale infringement and an accounting which it was said would involve many millions of dollars were joined in an application for an injunction made in a petition filed by the De Forest Radio company last September against the Radio corporation were upheld in Judge Morris' opinion. The court held that the extension by the Westinghouse interests to its subsidiary corporation, the Westinghouse Lamp company, of license to manufacture the De Forest type of "Audion" or Radio vacuum tube, was an infringement of the De Forest company's patent.

The Radio corporation, under an agreement with the General Electric company, of which it is a subsidiary sales organization, have 40 per cent of their tube requirements manufactured by the Westinghouse Electric and Manufacturing company. These are affected by the decision.

Pathe Film Depicts WSB's Leading Artists in Action

ATLANTA, Ga.—Close-ups of WSB's leading stars in action during a broadcast will be a feature of a current release of the Pathe News film to be seen in theaters throughout the world. Bonnie Barnhart, staff songstress and bedtime story teller; Ernest Rogers, the Atlanta Journal's singing reporter; "Fiddlin' John" Carson, Dixie champion fiddler; Warner's Seven Aces, popular WSB orchestra, and Lambdin Kay, famous director-announcer of the station, are in the picture and face the camera and microphone at the same time. Operator Walter Tison and C. L. Daugherty are also seen manipulating the transmitter. February 5 was the date of the film's first showing.

“ Oh Boy!  
It's easy to Build ”



**FRESHMAN  
MASTERPIECE**



**Five Tube Tuned  
Radio Frequency Set  
when you use the  
GENUINE**

## Complete Knockdown Set

This wonder knockdown set contains every single part necessary to construct the FRESHMAN MASTERPIECE. Here's just what you get:

- 1 Genuine Bakelite Front Panel, completely drilled and engraved.
- 1 Genuine Bakelite Sub-Panel—with sockets, binding posts and grid condenser already in proper place. All mounting holes properly drilled.
- 3 Masterpiece Tuned Radio Frequency Units—perfectly matched and balanced.
- 3 Beautiful Genuine Bakelite 4-inch Dials.
- 1 Freshman Variable Grid Leak and .00025 M. F. Condenser.
- 1 Freshman 5 to 1 Audio Transformer.
- 1 Freshman 3 to 1 Audio Transformer.
- 1 Freshman .002 Fixed Mica Condenser.
- 1 Freshman .006 Fixed Mica Condenser.
- 2 Freshman Single Circuit Jacks.
- 1 Freshman Filament Control Switch.
- 1 Freshman 30-ohm Rheostat.
- 1 Freshman 6-ohm Rheostat.

and all  
for only

**\$39.50**  
Complete

and every bracket, screw, nut, bushing that you will require as well as an ample supply of spaghetti and bus bar. It certainly is

## The Kit the Whole World's Been Waiting For!

A 24-page book of instructions packed with every kit. Seven full-page illustrations and many smaller ones explain every operation step by step. It is written in such simple, everyday language that even the most inexperienced can build a complete set and have it operating in a few hours.

When finished the unit can be used in many ways. You can put it in a cabinet and have a standard radio set, or it can be installed in a phonograph, in a writing desk, in a bookcase and even built right in the wall of your living room.

Every part in the Complete Knockdown Set is exactly the same as the corresponding one in the factory-built FRESHMAN MASTERPIECE. The set you build with this universal unit—provided our instructions are carefully followed—will duplicate every performance of the factory-made set. The same long distance—the same full-toned, true-to-life reception—the same selectivity—the same simplicity of operation will be yours.

*Ask to see it at your dealer's*

Look for our trademark and serial number riveted on the sub-panel. The kit is not guaranteed if number has been removed or tampered with.

**Chas. Freshman Co. Inc.**  
*Radio Receivers and Parts*  
**FRESHMAN BUILDING**  
240-248 WEST 40TH ST.—NEW YORK, N.Y.

Beware of imitations and counterfeits. Insist upon the genuine.



# WASHINGTON PROGRAM SUNDAY AT KHJ

**Saturday, February 21**

Saturday, silent night for: CFAC, CFCA, CFCA, CKY, KFAE, KFOU, KFKU, KFKX, KFMX, KJS, KOB, KSAC, WBAW, WBAV, WCAU, WCBD, WOFW, WEEL, WEMC, WGST, WHA, WHAZ, WHB, WHO, WJY, WKAQ, WMAK, WOAI, WOI, WOO, WORD, WOS, WSUI.

**Eastern Time Stations**

CFCA, Toronto, Can. (356), 8 p. m., vocal instrumental program, Shirley Walker, director.  
 CKAC, Montreal, Can. (425), 7 p. m., kiddies' stories in French and English; 7:30, Windsor hotel concert orchestra, Harry Saiter; 8:30, studio variety program; 10:30, Windsor hotel grill room dance program.  
 CNRO, Ottawa, Can. (435), 7:30 p. m., bedtime story and lullaby, Aunt Agnes; 8, dinner concert, James McIntyre and his Chateau Laurier hotel orchestra; Orpheus male singers; Cliff McAdam, tenor; Hawaiian selections, L. Nani, T. Coulthart; Mrs. Harry Underwood, reader; "What We Owe to the Indians," W. J. Winterberg; H. H. Clarke, bass; James McIntyre and his Chateau Laurier hotel orchestra.  
 KOKA, E. Pittsburgh, Pa. (309.1), 1:30 p. m., concert, Daugherty's orchestra; 6, dinner concert, Westinghouse band, T. J. Vastine, conductor; 7:30, "Wimble, the Wanderer"; 7:45, last minute helps to Bible school teachers, Carman Cover Johnson; 8:30, sports program, PWX Havana, Cuba (400), 8:30 p. m., concert, Mrs. Cardia de Mifuel.  
 WAHG, Richmond Hill, N. Y. (316), 12-2 a. m., special midnight program, Utopia dance orchestra.  
 WBBR, New York, N. Y. (272.3) 8 p. m., instrumental

WOR, Newark, N. J. (405), 6:15-7:30 p. m., Wallie Osborne's Chateau Baltusio orchestra; 8:30-9, Mabelanna Corly, composer-pianist; 9:45-10:15, Mabelanna Corly, composer-pianist.  
 WFG, Atlantic City, N. J. (296), 9 p. m., Chsifonten-Haddon Hall trio; 10, studio program; 11, dance music.  
 WRC, Washington, D. C. (468.5), 6:45 p. m., children's hour, Madge Tucker; 7, dinner music, Hotel Washington-Irving Boernstein orchestra; 8, Bible talk; 8:15, Phyllis Howe Price, soprano; 8:30, "Our Engineer Presidents," Morris Bien; 10:30, dance program, Astor hotel orchestra; 11:15, organ recital, Otto Beck.  
 WREO, Lansing, Mich. (285.9), 10-12 m., Frank Logan and his orchestra.  
 WWJ, Detroit, Mich. (352.7), 12:05 p. m., Jules Klein's Hotel Statler orchestra; 3, Detroit News orchestra; 6, dinner concert; 7, Detroit News orchestra.  
 WTAM, Cleveland, Ohio (339.4), 6 p. m., Guy Lombardo's Royal Canadian orchestra; 9 p. m., WTAM dance orchestra, Ev Jones, director; soloists.

**Central Time Stations**

KFNF, Shenandoah, Ia. (266), 6:30 p. m., Scotch program.  
 KSAC, Manhattan, Kans. (340.7), 12:30 p. m., questions and answers pertaining to Radio; 12:45, lecture on same phase of Radio.  
 KSO, St. Louis, Mo. (545.1), 8 p. m., concert, St. Louis Symphony orchestra, Rudolph Ganz, director.  
 KTHS, Hot Springs, National Park, Ark. (375), 8:30-10 p. m., concert, Ouschita college; 10-11, Meyer Davis-New Arlington hotel orchestra, Jack Renard, director.  
 KYW, Chicago, Ill. (535.4), 7:30 p. m., dinner concert, Congress hotel; 8:35-5, Caroline Encell, soprano; Charlotte Benenshon, soprano; Lillian Joshel, accompanist; Edna Hopkins, violinist; Frances Allen, accompanist; Stephenson and Heather; 9:35-11:30, "Con-

gress Classic;" 12-1, Congress Carnival; 1-2, Night court for the delinquents.  
 WBCN, Chicago, Ill. (266), 6-6:45 p. m., dinner hour, Harold Rule's orchestra; Charlotte Linchoten, singer; 7-8, fireside hour, Geo. R. Cleveland, "The Hobby Club Man," Nate Caldwell; Giese Bros., harmony duo; Jack Heath & Eddie Downs, harmony duo; 8-1 a. m., popular program, Peggy O'Neil & Helen O'Brien, vocal duo; Hickey's Barn Dance trio; Midway Dances Gardens orchestra; Marie Wright, soprano; James Darby, reader; Southtown Harmonizers, Harmony trio; Elizabeth Emmet Malone, soprano; Les Cameron, tenor; Triangle Entertainers; Englewood String orchestra; George Forsyth, tenor; Murphy Sisters, vocal duo; Florence Tenney, mezzo-contralto; Giese Bros., harmony duo; Drexel Male Quartet, vocal group; Jack Parker, tenor; Alvin Fry, tenor; Frank Solly, tenor; Clifton Newton Moore, "Harmonica King."  
 WCAL, Northfield, Minn. (366.9), 9:45 a. m., St. Olaf College chapel services; 12 midnight, WCAL trio, Herbert Hauge, saxophonist; Reuben Benson, banjoist and bass; Luther Noss, pianist.  
 WCCO, Minneapolis-St. Paul, Minn. (416.4), 2:30 p. m., matinee musicale; 8, "Fireside Philosophies," Rev. Roy L. Smith, pastor; 8:30, surprise program; 9:30, dance program, Joe Pevers St. Paul Athletic club orchestra.  
 WOAF, Kansas City, Mo. (365.6), 3:30-4:30 p. m., Star's Radio's orchestra; 6-7, School of the Air: piano tuning-in number on the Duo-Art; address; Tell-Me-a-Story Lady; Trilanon ensemble, Hotel Muehlebach; 8-10, popular program; 11:45-1 a. m., nighthawk frolic; Merry Old Chief, Plantation Players, Hotel Muehlebach.  
 WEBB, Chicago, Ill. (370.2), 7 p. m., Sunday School lesson, Dr. Herbert W. Virgin; Oriole orchestra; Riviera theater; 9, Oriole dance orchestra; Marie Kelly, reader; Eleanor Gilmore, soprano; Pat Barnes,

songs and stories; Langdon Brothers, Hawaiian guitarists; 11, Oriole dance orchestra; Banks Kennedy, songs; Loos Brothers, singers; Marie Kelly, readings; Ned and Chess, popular songs; Langdon Brothers, Hawaiian guitarists; Nick Lucas, songs; Wayne Meyers, stories.  
 WFAA, Dallas, Tex. (475.9), 12:30-1 p. m., musical program, Alex Hughes, pianist; 8:30-9:30, Southern Methodist University Alumni banquet; 11-12, entertainers, Capitol theater.  
 WGN, Chicago, Ill. (270.2), 1:40 p. m., luncheon concert, Drake concert ensemble, Blackstone string quintet; 3, rocking chair time; 5:30, Skeezix time for the children; 6, organ recital, Lyon & Healy; 6:30-7, dinner concert, Drake concert ensemble, Blackstone string quintet; 8-9, classical concert, Metropolitan glee club; 10-11, Don Bestor Drake dance orchestra, Jerry Conley Blackstone dance orchestra.  
 WHAS, Louisville, Ky. (399.8), 4-5 p. m., concert, Louisville Conservatory of Music; Alamo theater organ; readings; 7:30-9, concert, Dix Bluegrass Screenaders, Henry L. Dixon, director.  
 WLS, Chicago, Ill. (344.6), 7, "Lullaby Time," Ford and Glenn's trip to Australia; 7:20, National Barn Dance with Glenn's Cornhuskers, Harmony Girls, Nubs Allen, Walter Peterson, Isham Jones, Ralph Emerson, Ford and Glenn; 11, Senate theater revue.  
 WLW, Cincinnati, Ohio (423), 6 p. m., dinner hour concert, Seilinsky Instrumental quintet; Isafone, E. D. Leonard.  
 WMAQ, Chicago, Ill. (447.5), 2 p. m., Union League club forum; 6, program; 7, LaSalle hotel orchestra; 8:30, Radio program, "Holland," Leroy D. Owen; 9, weekly Balaban & Katz Chicago theater revue.  
 WMC, Memphis, Tenn. (497.2), 12 m., musical program, O. K. Houck Piano company; 8:30, concert, Memphis Plectrum orchestra, R. L. Sharp, director.  
 WOAW, Omaha, Nebr. (526), 6 p. m., dramatic hour,



Zilpha Ruggles Jenkins (left), soprano soloist in the KGO organization which will present Mendelssohn's "Elijah," February 21. The Langdon Brothers (right) are popular guitar artists at WEBB, Chicago. Mrs. John Malloy has entertained often through WOC, Davenport. She will be heard this Wednesday.

music; 8:10, vocal selections; 8:15, Bible questions and answers; 8:45, vocal selections; 8:55, instrumental music.  
 WBZ, Springfield, Mass. (331.1), 6 p. m., Leo Reisman Hotel Lenox ensemble; 7:05, bedtime story for the kiddies; 7:15, sketches from United States Naval history, E. S. R. Brandt; 7:30, concert, Hotel Kimball trio; 8, Harvard vs. Dartmouth hockey game.  
 WCAE, Pittsburgh, Pa. (462), 2:30 p. m., tea-dnsant music, Nixon restaurant; 4:30, Ed. Lally's Rendezvous cabaret orchestra; 6:30, dinner concert, William Penn hotel; 7:30, Uncle Kabbee; 7:45, movie chats; 8:30, jamboree band, members of the Sequilla club.  
 WCX, Detroit, Mich. (516.9), 6 p. m., dinner concert, Book-Cadillac hotel.  
 WEAF, New York, N. Y. (492), 4-5 p. m., Willie Bruno's orchestra; 5-5:15, Katherine Penders, soprano; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:30, Pinewood trio; 7:30-7:50, stories for boys, Fred J. Turner; 7:50-8:35, Bruno Huhn and singers; 8:35-8:55, Mrs. Frank Southard, impersonator; 9-9:30, Waldorf-Astoria concert music; 9:30-9:45, Guy Hunter, blind entertainer; 10-10:20, Alfred Orner, tenor; 10:20-10:40, Herbert Ralph Ward, composer-pianist; 11-12, Vincent Lopez orchestra Hotel Pennsylvania.  
 WFI, Philadelphia, Pa. (395), 1 p. m., Meyer Davis Believe Stratford concert orchestra; 3, Audrey Williams, soprano; Leonard Zopf, zither solos; New Century Club Brass quartet; 4, George Ragas Collegians dance orchestra; 6:30, Meyer Davis Believe Stratford concert orchestra; 7, Sunny Jim; 8, Henry Gurney, tenor.  
 WGBS, New York, N. Y. (316), 2:45-3 p. m., child welfare program; 3-3:20, interview, Major Stanley Washburn; 3:20-3:40, Dr. Stephen Wise; 3:40-4, John Dunbar, tenor; 6-6:30, Uncle Geebee; 6:30-7:30, Cameo Collegians; 9:30-9:45, Ssm Comby, "Inside Movie Chats"; 10:45-11, talk, Frank Sullivan; 11-12, Vincent Rose dance orchestra.  
 WGR, Buffalo, N. Y. (319), 12:30-1 p. m., Hotel Statler concert ensemble; 2:30-4:30, Radio delectors' musical program; 6-7:30, Hallpryd string quartet.  
 WGY, Schenectady, N. Y. (379.5), 9:30 p. m., dance music, Phil Romano's orchestra.  
 WHK, Cleveland, Ohio (273), 12:30 p. m., Dean Smith, pianist, soloist; 6:15 p. m., News Items, music; 6:30 p. m., talk, "The Ohio Legislature Week by Week," by a member; 9 p. m., Carnival club program; McConry's Entertainers, Billie Bugbee, Betty Booth, June Farley, Violet Owens, Bobbie and Dede Fitzpatrick, Ethel Rhode, Dean Smith, pianist; Emerson Gill's Bamboo Garden orchestra.  
 WHN, New York, N. Y. (360), 5-6 p. m., Broadway Melody Boys; 6:30-7:30, violin solos, Olcott Vail; 7:30-7:35, health talk, Dr. Landis; 7:35-8, Hotel Carlton Terrace orchestra; 8:30-9, Strand Roof orchestra; 9:10-9:45, Charlie Johnson's orchestra; 11:15-11:30, Jimmy Clarke and his entertainers; 11:30-12, Roseland dance orchestra.  
 WIP, Philadelphia, Pa. (509.9), 1 p. m., organ recital, Karl Bonawitz; 3, Tom Sneed's Ramblers dance orchestra; 4:15, recital, Yvonne WIP's bedtime stories; 10, novelty, Phantom Dream; 9:15, band concert; 8:15, Harvey Marburgers' dance orchestra; 11, Karl Bonawitz, organist.  
 WJZ, New York, N. Y. (455), 11-11:30 a. m., American Orchestral concert, Aeolian hall; 1-2 p. m., Erdody's Park Lane orchestra; 2:15-2:30, talk, National Republican club; 4:30-5:30, Sherry's tea music; 7-8, Freddie Rich and Hotel Astor dance orchestra; 8-8:15, "Art for Layman," Walter M. Grant; 8:15-8:45, Jenny Lind program, Ida Davenport, soprano; 9-9:15, "Federal Meat Inspection—Aims and Results," Dr. Albert Long; 9:15-9:45, Washington Square players; 9:45-10, popular songs, Sanchez and Milstead; 10-10:30, Great Northern Trio; 10:30-11, Joseph Knecht's Waldorf-Astoria orchestra.  
 WLIT, Philadelphia, Pa. (395), 11:45 a. m., daily almanac; 12:02 p. m., Stanley theater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 2:30, Lillian Foster, soprano; 4:30, Cotton Pickera dance orchestra; 7:30, Arcadia cafe concert orchestra.  
 WNYC, New York, N. Y. (526), 7:30-7:35 p. m., police alarms; 7:35-8:30, Chateau Five; 8:30-8:45, police quartet; 9-9:15, song recital; 9:30-10, instrumental music; 10:10-10:30, "The Future of New York," Morris Debowar.  
 WOO, Philadelphia, Pa. (509.9), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanam's crystal tea room orchestra, Robert E. Golden, director; 4:45, organ recital, Mary E. Vogt.

Davis Studio of Expression; 6:30, to be announced; 6:45, dinner program, Brandels store restaurants; 9, program, Omaha Printing company; 11, Frank W. Hodek and his Nightingales; 11:30, organ music, World theater, Arthur Hays.  
 WOC, Davenport, Ia. (464), 7 p. m., sandman's visit; 7:30, International Sunday school; Rev. M. A. Getzendorf; 9, Louis Connor and his LeClaire hotel orchestra.  
 WOI, Ames, Iowa (270), 12:30 p. m., college chimes; talk on engineering, Dean Marston.  
 WQJ, Chicago, Ill. (447.5), 7:38 p. m., dinner concert, Ralph Williams and his Rainbo Garden orchestra; Agatha Karlen, reader; Henrietta Nolan, violinist; Otis Pike Jester, soprano; Mary Thrash House, pianist; 10-1, Ralph Williams and his Rainbo Skylarks; Jerry Sullivan; Harry Geise; Melodians, Laurie Eddle, Bennie; Alfred Tween, harmonica and guitar soloist; Clarence Theders, tenor; Yukona Cameron; Rick Whalen, Gardener, Harmony Singers; 1-2, Hotsy Totsy hour with the Ginger Man and the Little Skylarks.  
 WSAI, Cincinnati, Ohio (325.6), 8 p. m., chimes; 8:15, Bicycle concert; 8:45, Harriet Gaines, violinist; 9, weekly news review, Allison F. Stanley; 9:15, Bicycle male quartet; 9:30, Edith Hanson, pianist; 9:45, Bicycle mixed quartet; 12, Roger Hill's Danceland orchestra.  
 WSB, Atlanta, Ga. (428.3), 12 m., Oglethorpe university orchestra; 5-6 p. m., songs and bedtime story, Bonnie Barnhardt; 8-9, Durette and Hutchins, steel guitarists; 10:45, Ed and Grace McConnell.  
 WSUI, Iowa City, Iowa (484), 12:30 p. m., "Current Social and Economics Problems," Theodore D. Yoder; 12:45, "Appreciation of Literature," Prof. Frank L. Mott; 1, "The American Constitutional System," Prof. Frank E. Horack.  
 WWJ, Detroit, Mich. (352.7), 8 a. m., setting-up exercises, R. J. Horton; 8:30, tonight's dinner, Woman's Editor; 12:05 p. m., Jules Klein's Hotel Statler orchestra; 3, Detroit News orchestra; 6, dinner concert; 7, Detroit News orchestra.

**Mountain Time Station**

KOA, Denver, Colo. (322.4), 9-12 midnight, dance music, Joe Mann and his Rainbow-Lane orchestra.

**Pacific Time Stations**

KFI, Los Angeles, Calif. (467), 5:30-6 p. m., Examiner's musical half hour; 6:45-7, "Inspirational Psychology," Dr. Clyde Sheldon Shepard; 7-7:45, White's Californians dance orchestra; 7:45-8, The Book Shelf; 8-9, Downing Chamber of Commerce program from Examiner; 9-10, Electa Felt Ferry, contralto; Mary Teltsworth soprano, Georgia Woodruff, soprano, Margaret Johnston, violinist, Elizabeth Liddell Johnston, accompanist; 10-11, Packard Radio club, Ruth and Lilah Carlson, Barney Weber and others.  
 KFOA, Seattle, Wash. (455), 4-5:15 p. m., The Olympic hotel orchestra; recipe; 6-8:15, Rhodes' Department store program; Howe College of Music, 50 piece orchestra, J. B. Howe, director; Mrs. Reid, soprano; J. B. Carmichael, tenor; Miss Jenberg, accompanist; "How Banks Help a Community," C. L. LeSourd; 8:30-10, Times dance program; 10-11, Eddie Harkness and his orchestra.  
 KFSG, Los Angeles, Calif. (279), 10:30-11:30 a. m., sunshine hour; 3:30-4:30 p. m., impromptu Gray Studio program, G. N. Nichols, Roy Reid Brignall and others; 7:30-9:30, auditorium service, special music and sermon on Divine Healing, Aimee Semple McPherson, pastor.  
 KGO, Oakland, Calif. (299.8), 1 p. m., luncheon concert, Pacific States Electric company; 4:50, concert orchestra, Hotel St. Francis, Vinton La Ferrara, conductor; 8, "Elijah," Carl Anderson, director; Zilpha Ruggles Jenkins, soprano; Beatrice L. Sherwood, soprano; Ruth Waterman, contralto; Mabel Walsh, contralto; Gwynn Jones, tenor; Robert E. Sax, tenor; Henry L. Perry, bass; Richard L. Lundgren, bass; "Mendelssohn's Oratorios," Ray C. B. Brown; 10-1, dance music, Henry Halstead's orchestra.  
 KGW, Portland, Ore. (492), 10 p. m., Colburn's Melody Men.  
 KHJ, Los Angeles, Calif. (404), 10-12, a. m., class in Radio broadcasting; 12:30-1:30 p. m., El Monte and his orchestra; 2:30-5, Charlie Weinman's Saturday afternoon frolic; 6:30, Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, Prof. Walter Sylvester Hertzok, little stories, American history; Eleanor Borg, 10-year-old reader; Uncle John; 7:45, Capt. John T. Riley, "Income Tax"; 8-10, program, Radium Ore Reivator company, ar-

**Headliners of the Week**

**S**ATURDAY the Orpheus male singers, well known to Radio-phans, will visit CNRO, Ottawa. You may dine to music with this station, enjoy a classical concert, and finish off the evening dancing.

Washington's birthday will be celebrated Sunday by KHJ, Los Angeles. The Martin Music company, directed by G. J. Howard Johnson, will give the entire program. "Creole Composers" will be the title of the musical talk at WGN this evening.

Monday the air will be filled with good lectures. Dr. H. A. Potter will talk on a vital subject, "Preventive Dentistry" at WHB. KGO listeners will learn how to make maraschino cherries and to appreciate "The Ethics of Social Etiquette."

Samuel Francis, a young Texas tenor who has found fame in New York, will return to KFDM to please the fans who heard him some time ago. Tune in Tuesday, February 24.

The composition of Victor Herbert will be played at KTHS all evening.

Anyone who knows these charming melodies will appreciate this program.

Do you have peculiar dreams which annoy or worry you? Dial for WEMC, Berrien Springs, Wednesday and you will learn the meaning of these queer nightmares. George Fox will talk on "Dreamland Travels."

Songs and stories from all the nations will be the feature of KSAC, Thursday. Prof. P. P. Brainard will direct the music and Dr. H. T. Hill will give some of his entertaining stories. This same evening the WGY players, having played for some time on Broadway, via WJZ, will find their way into the heart of the national capital through WRC.

"Our Neighbor, Mars," is the title of the talk given by A. M. Harding at KFMQ, Friday. Here is an opportunity to learn more about the mysterious canals of this planet. At midnight the University of Tennessee doctors will frolic at WMC, if anyone so dignified as a doctor may frolic.

(Continued on page 10)

# TEXAS TENOR RETURNS TO KFDM

## Saturday, February 21

(Continued from page 9)

ranged by G. Allison Phelps; 10-11, Earl Burnett's Billmore hotel dance orchestra; 11-2 a. m., The Lost Angels of KHJ frolic.

**KNX, Hollywood, Calif. (337),** 10 a. m., Hired Hand's morning message; 10:30, Forbes W. Van Why, Radio technical talk; 11, news of 25 and 50 years ago; 12-1 p. m., Wurlitzer organ recital; 5:45-6:15, Wurlitzer organ studio, Sid Ziff, sports talk; 6:15-7, dinner hour music; 7:30-8, Wurlitzer pipe organ recital; 8-9, feature program; 9-10, program, Western Avenue Opening association; 10-11, Abe Lyman's Cocomo Groves dance orchestra from Ambassador hotel; 11-12, June Pursell, the KXN girl, popular songs.

**KPO, San Francisco, Calif. (429.5),** 1-2 p. m., Rudy Selger's Fairmont hotel orchestra; 2:30-3:30, Navy Jazz band of Mare Island; 3:30-5:30, tea dansant, Gene James' Rose Room Bowl orchestra; 8-10, program, U. S. Army band; 10-12, dance music, Art Weidner's orchestra.

## Sunday, February 22

Sunday, silent night for: CFAC, CKAC, CHNC, KFAC, KFDM, KFBU, KFEX, KFGE, KGO, KJB, KWAV, WCAE, WDAF, WDFW, WJAX, WEMC, WGST, WHA, WHAS, WHAZ, WHO, WJY, WKAQ, WLBI, WLIT, WMAK, WMC, WOI, WOO, WOR, WSAI, WTA, WVI.

### Eastern Time Stations

**CFAC, Toronto, Can. (356),** 7 p. m., services, Timothy Eaton Memorial church, Dr. Trevor H. Davies.

**CKAC, Montreal, Can. (425),** 4:30 p. m., band of Quebec city; talk, Mayor of Quebec.

**KDKA, E. Pittsburgh, Pa. (309.1),** 10:45 a. m., services, Point Breeze Presbyterian church, Rev. Percival H. Barker; 2:30 p. m., concert; 4, Dr. Charles Heinrich, organist; 4:45, vesper services, Shady Side Presbyterian church, Rev. Hugh Thomson Kerr, pastor; 6:30, dinner concert, Pittsburgh Athletic association, director; 7:45, services, Sixth Presbyterian church, Rev. B. F. Farber, pastor.

**WBBR, New York, N. Y. (272.3),** 9:10 p. m., instru-

**WJL, Detroit, Mich. (352.7),** 2 p. m., Detroit News orchestra; 7 p. m., services, St. Paul's Episcopal Cathedral.

### Central Time Stations

**CKY, Winnipeg, Can. (450),** 7 p. m., service, St. Luke's Anglican church.

**KFMX, Northfield, Minn. (336.9),** 7 p. m., College vesper service, Rev. A. E. Knickerbocker.

**KFNF, Shenandoah, Iowa (266),** 10:45 a. m., regular morning worship, First M. E. church; 2 p. m., patriotic concert, Relief Corps and G. A. R.; 3, religious services; 6:30, regular services, Golden Rule circle.

**KSAC, Manhattan, Kans. (340.7),** 8 p. m., piano, special sacred music; 8:10, prayer; 8:15, hymn; 8:20, "Common Folks," Walter Burr.

**KTHS, Hot Springs National Park, Ark. (375),** 11-12:15 p. m., services, Central Avenue Methodist church, Rev. J. J. Stove, D. D., pastor; 8:30-9, De Luxe concert, Meyer Davis' New Arlington hotel orchestra; Jack Renard, director; 10-11:15, Phil Baxter's singing orchestra.

**KYV, Chicago, Ill. (535.4),** 11 a. m., Central church service, Dr. F. F. Shannon, pastor; 4-5 p. m., studio concert; 7, Chicago Sunday Evening club, speaker, Bishop Francis McConnell.

**WBAP, Fort Worth, Tex. (475.9),** 11 a. m., complete services, St. Paul's M. E. church, Rev. C. D. Meade, pastor; Mrs. F. L. Jaccard, organist; 4 p. m., concert, Rialto theater; 11-12, midnight frolics, Ted Miller's Crazy hotel orchestra.

**WBCN, Chicago, Ill. (266),** 10:30-12 a. m., Rev. R. A. White, pastor, from People's Liberal church; 4-5 p. m., Latin & Spanish classical concert; 8-9-10-11, talk, vesper service, Emerald Avenue Presbyterian church, Rev. Richard D. Hughes, pastor; 7-8, classical hour; Wind-rook Park church; 8-10, popular program, Sears-Robuck Y. M. C. A. artists, Washington's Birthday program; Midway Dancing Gardens orchestra; Mrs. Caldie Connel, soprano; R. S. Becktel, pianist; Dor-

terian church of Walnut Hill, Dr. Frederick McMillan; 8:30, Western and Southern orchestra, William Kopp, director; George Muihlbauer, tenor.

**WMC, Memphis, Tenn. (499.7),** 11 a. m., services, First Methodist church, Rev. C. G. Chappelle, pastor.

**WOAI, San Antonio, Tex. (395.4),** 11 a. m., services, First Presbyterian church; 7:30 p. m., services, Central Christian church; 9:30, WOAI entertainers give patriotic program.

**WOAW, Omaha, Nebr. (526),** 9 a. m., chapel service, Gospel tabernacle of the Christian and Missionary alliance, Rev. R. R. Brown; 2:15 p. m., George Washington program, Stanley Jan Letovsky, composer-pianist; 6, Bible study period, Mrs. Carl R. Gray, director; 9, musical chapel service, Benson Methodist Episcopal church.

**WOS, Jefferson City, Mo. (440.9),** 7:30 p. m., religious service, Central Evangelical church, Rev. E. W. Berlekamp, pastor.

**WOC, Davenport, Iowa (483.6),** 8 p. m., church service, Methodist Episcopal church, Rev. J. C. Yenn; 9:30, the Premier Little symphony, Erwin Swindell, conductor.

**WOI, Ames, Iowa (270),** 10:45 a. m., college chimes; 11, chapel services.

**WQJ, Chicago, Ill. (447.5),** 10:30 a. m., sermon and services, Peoples' church, Dr. Preston Bradley; 8-10, Ralph Williams and his Rainbow Garden orchestra; Clyde Keutzer, baritone; Rick, Whalen and Gardener, Harmony Singers.

**WSAI, Cincinnati, Ohio (325.9),** 3 p. m., sermonette; 3:10, sacred chime concert.

**WSB, Atlanta, Ga. (428.3),** 11 a. m., First Presbyterian church service; 3:30 p. m., Christian Science lecture, Lowes Grand theater; 5-6, sacred service, Baptist Tabernacle church choir; 7:30, Wesley Memorial church service.

**WSUI, Iowa City, Iowa (484),** 7 p. m., children's hour, direction of Mrs. Alice McLeod Mills; 9-9:30, familiar hymns, Clarence Woolridge, tenor.

## Monday, February 23

Monday, silent night for: CFCA, CKAC, CKY, KFEX, KFSG, KGW, KJL, KJW, WBCN, WCAU, WDFW, WEAQ, WEBB, WFI, WGN, WHS, WJL, WMAK, WLS, WMAK, WMAQ, WOAI, WQJ, WREO, WSUI, WTV.

### Eastern Time Stations

**CFCA, Toronto, Can. (356),** 5:30-6 p. m., bedtime story, R. C. Seyring, piano accordionist.

**CHNC, Toronto, Can. (350),** 8-10 p. m., CHNC trio, Frank Blachford, violinist; Lionel H. Bilton, cellist; Simeon Joyce, pianist; Gerrard J. Kelly, tenor; Mrs. Genevieve Schreiner, soprano; Mrs. Irene Stevenson, alto; Dwight Wilson, baritone.

**CKAC, Montreal, Can. (425),** 1:45 p. m., Windsor hotel trio; 4:30, 10 lessons.

**KDKA, E. Pittsburgh, Pa. (309.1),** 12:15 p. m., concert, Daugherty's orchestra; 6:15, concert, KDKA Little Symphony orchestra, Victor Saudek, conductor; 7:45, "Overcoming Racial Prejudice," Dr. John Ray Ewers; 8:15, address, University of Pittsburgh studio; 8:30, concert.

**WAG, Richmond Hill, N. Y. (316),** 8-8:15 p. m., Harrison Wickwire, baritone; 8:15-8:30, Viola Scherer, soprano; 8:30-8:45, Mrs. Birkhahn, pianist; 8:45-9, Adelaide DeLoea, alto; 9:10-9:15, Synchronoph string trio; 9:45-10, Viola Scherer, soprano; 10-10:15, Norman Curtis, pianist; 10:15-10:30, Adelaide DeLoea, alto; 10:30-11:30, Criterions Symphonie d'ensemble; 12 a. m., special midnight program.

**WBVA, Columbus, Ohio (294),** 8 p. m., WBVA orchestra, Frances Handbeau, directing.

**WBBR, New York, N. Y. (272.3),** 8 p. m., Herald quartet; 8:15, "The Masterpiece of God's Creation," R. H. Barber; 8:40, Herald quartet.

**WCAE, Pittsburgh, Pa. (462),** 6:30 p. m., dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 7:45, special feature; 8:30, concert, artist-pupils, studios Mme. Lella Wilson-Smith; 9, A. & P. Gypsy string ensemble; 10, music; 11, flight of the mythical dirgible, Press-Kaybee and concert, Blackstone theater orchestra.

**WCX, Detroit, Mich. (516.9),** 4:15 p. m., musical program; 6, dinner concert, Book-Cadillac hotel; 8:30, musical program.

**WEAF, New York, N. Y. (492),** 10:30-12 m., Washington's birthday program, Serenade in Revolution; 3-3:15 p. m., Edith Orlando, soprano; 3:15-3:45, Irene Davis, pianist; 4-5, children's stories; 6-7, dinner music, Waldorf-Astoria hotel; 7-8:30, Strand theater pro-

## Better Advance Programs

**BEGINNING** with this issue the presentation of Radio Digest's advance programs will be made in a new and different manner than heretofore. The change is being made because it is believed to be a distinct improvement that will provide Radiophans with an even more indispensable aid to the popular pastime of listening in. Briefly the change embraces:

- Under each date heading the stations are classified first according to the time standard used at the station, then alphabetically. Thus all eastern time stations, grouped together, will come first. These will be followed by the central, mountain and Pacific time stations, in the order named.
- The two index boxes, "Where to Hear Concerts" and "Where to Hear Talks," are now arranged according to the time standard in use at the stations, following the general arrangement of the stations as just explained.

The new presentation of the advance program material will make it much more valuable locally than heretofore. Eastern fans will find all of their closest stations, programs

and index tables in Eastern time. Listeners in the middle west will find their stations listed in Central time, the kind of time they use. Rocky mountain Radiophans will likewise find their stations and time tables expressed in the kind of time in use in their vicinity, Mountain time. Likewise, on the Pacific coast, listeners will find KHJ, KGO, KPO, KGW and other west coast stations presented in Pacific time.

At this time it might be wise to call attention to the breadth and scope of the advance programs carried by Radio Digest. Practically every station in the country transmitting with 500 watts or more power will be found to have its weekly program given in advance in these columns. The few absent stations are those which have been unable to schedule their artists sufficiently far in advance to make the listing of their programs possible.

The department of commerce states there are 104 of these larger stations. Radio Digest each week gives programs for an average of 100 of these. In no other medium will this material be found so complete. Radio Digest is the "National Broadcast Authority."



**When the Seed House bunch performs at KFNE, Shenandoah, Mrs. Hazel Simmons invariably takes part in these weekly meetings. Although she often sings solos, she also takes part when the whole group sings.**

mental trio; 9:25, Carl Park, violinist; 9:35, "The World's Judgment Day to Last a Thousand Years," Harry Pinnock; 10, Carl Park, violinist; 10:10, instrumental trio.

**WCAE, Pittsburgh, Pa. (462),** 10:45 a. m., services, Rodef Shalom temple; 3 p. m., People's Radio church services; 4, piano recital, Prof. Otto Kaitcis; 6:30, dinner concert, William Penn hotel.

**WCAU, Philadelphia, Pa. (278),** 5:30 p. m., Bible talk, Rev. John L. Stockwell; 6, dinner concert, Meyer Davis' Hotel Pennsylvania orchestra, direction Lon Chassey.

**WCX, Detroit, Mich. (516.9),** 10:30 a. m., services, Central Methodist Episcopal church; 4:15 p. m., musical program.

**WEAF, New York, N. Y. (492),** 8:15-9:20 p. m., Roxy and his Gang, Capitol theater; 9:20-10:15, organ recital, Dr.

**WEAR, Cleveland, Ohio (389.4),** 1 p. m., Phillip Spitalny's Allen theater Symphony orchestra.

**WEEL, Boston, Mass. (475.9),** 3:45-5:30 p. m., men's conference, Bedford branch, Y. M. C. A.; 7:20-9:15, "Roxy and his Gang," New York Capitol theater; 9:15-10:15, organ recital, chapel at Columbia university.

**WFI, Philadelphia, Pa. (395),** 10:20 a. m., services, Arch Street Presbyterian church; 4:30, services, Central Y. M. C. A.; talk, "Vision," Dr. P. Whitehill Wilson.

**WGBS, New York, N. Y. (316),** 3:30-3:45 p. m., program, Plymouth theater.

**WGR, Buffalo, N. Y. (319),** 3-4 p. m., vesper service, Rev. H. A. Reed, Elma, N. Y.; 4-5, John F. Gunderman, Jr., organist; 7:15, Central Presbyterian church service, William Wall Whittdit, organist; Dr. Robert J. MacAlpine, speaker.

**WGY, Schenectady, N. Y. (379.5),** 11 a. m., service, St. Peter's Episcopal church, Rev. Charles C. Harriman, pastor; 3:35 p. m., WGY Symphony orchestra; Ben Franklin, tenor; Edward A. Rice, violinist; Giovanni Trombini, cellist; 5, Dr. Frank Hill Rogers, organist; 7:45, service, First Presbyterian church, address, Prof. Adna W. Risley; 8:45, symphony concert, Waldorf-Astoria orchestra, Joseph Knocht, conductor.

**WHK, Cleveland, Ohio (273),** 10:50 a. m., morning services, Old Stone church, Rev. W. H. Poulkes, pastor; 4:30 p. m., vesper services, Cleveland Federated churches; Rev. E. R. Wright, conductor; current religious topics, hymns, sermon; 7:30 p. m., Epworth-Euclid Memorial church, Rev. Louis Wright, pastor; 9 p. m., Conn. Symphony orchestra, Ralph E. Story, director; solo numbers.

**WHY, New York, N. Y. (360),** 3-4 p. m., program, Queens County Christian Endeavor; 4:30-5, Collegiate dance club; 5-7:30, Roseland dance orchestra; 5:30-6, "Scott Vail and his string trio; 10-10:45, Gem Razer entertainers; 11-11:30, Vanity club revue; 11:30-12, "The Blue Danube," 12-12:30 a. m., Harry Richman and his entertainers; 12:30-1, El Fey club revue.

**WIP, Philadelphia, Pa. (509.9),** 4 p. m., services, Wesleyan Germantown Y. M. C. A.; 7:15, services, Hay Trinity church, Rev. Floyd D. Tomkins, D. D., pastor; 9:30, Ben Stadt's WIP Symphony orchestra; Earl Bonawitz, organist.

**WJZ, New York, N. Y. (455),** 9-10 a. m., children's hour; 11-12, church services; 2:30-3:30 p. m., Radio Bible class, Federation of churches; 3:30-3:50, Edna Walter, pianist; 8-9-8:50, "George Washington," Gen. Oliver B. Brownrigg; 10-10:20, Hampton Institute quartet.

**WLIT, Philadelphia, Pa. (395),** 2:30 p. m., Arcadia cafe concert orchestra, Paul Sarkow, director; 4, talk, "Washington," Dr. James Penniman; 8:30, concert, Friends of Chamber Music from New Century club.

**WNYC, New York, N. Y. (526),** 9-11 p. m., Brooklyn Mark Strand theater program, Edward L. Hyman, director.

**WOO, Philadelphia, Pa. (509.9),** 10:30 a. m., services Bethany temple; 2:30, opening exercises, Bethany temple, Sunday school; 6, organ recital, Irene K. Bayden.

**WREO, Lansing, Mich. (285.5),** 10 a. m., 6:00 m., 10:30 service, Plymouth Congregational church, Dr. Edwin W. H. How, pastor; Roy E. Davis, organist; 7, service, First Baptist church, Dr. Ralph W. Hobbs, pastor; Helen Dodge Stack, choir director; Mrs. Henry C. Chambers, organist.



**Henry Field, the owner of KFNF, Shenandoah has a talented family. Faith Field Lowrey, who is one of the Seed House bunch is also one of Mr. Field's daughters and helps to keep up the standard of these weekly Monday meetings.**

### Mountain Time Stations

**CFAC, Calgary, Can. (430),** 11 a. m., Seven Day Adventists church.

**KOA, Denver, Colo. (322.4),** 11 a. m., service, Trinity Methodist Episcopal church, Rev. Loren M. Edwards, minister; Shad J. Tinsley, organist; Ina Rains, soprano; Lucile Fowler, alto; Frank W. Farmer, tenor; Everett E. Foster, baritone.

### Pacific Time Stations

**KFI, Los Angeles, Calif. (467),** 10-10:45 a. m., L. A. Church Federation service; 11-2:30 p. m., services, Temple Baptist church; 4-5, vesper musical hour, June Evans, soprano; 6:45-7, editorial talk; 7-8, orchestra and specialties of Metropolitan theater; 8-9, instrumental quartet; 9-10, Examining Cinderella Ballroom orchestra of Long Beach; 10-11, Packard Eight orchestra, Bill Hennessy, director.

**KFSG, Los Angeles, Calif. (278),** 10:30-12:30 p. m., complete morning service of Angelus temple with sermon, Almee Temple McPherson, pastor-evangelist; Esther Fricke Green, organist; 3:30-4:30 p. m., afternoon auditorium service and sermon, Temple choir and Silver band; 7-9:45, regular evening services of the temple opening with special musical hour; 10-11, organ recital, Esther Fricke Green.

**KGO, Oakland, Calif. (299.8),** 11 a. m., service, First Presbyterian church, Rev. Frank M. Sisley; 3:30 p. m., KGO Little Symphony orchestra; Arthur S. Garbett, musical interpretative writer; 7:30, service, First Presbyterian church.

**KGW, Portland, Ore. (492),** 10:30 a. m., services, First Presbyterian church, Dr. Harold Leonard Bowman, pastor; 3 p. m., municipal concert; 6, church service, Portland Council of churches; 7, dinner concert, Colburn concert orchestra; Nellie Torgler, pianist.

**KHJ, Los Angeles, Calif. (404),** 10 a. m., Rev. S. H. Hall, vanguard of Nashville, Tenn.; 10:30-12:30 p. m., complete morning services of First Methodist Episcopal church, E. E. Helms, pastor; Arthur Blakeley, organist; 6:30-7, Art Hickman's Billmore hotel concert orchestra, Edward Fitzpatrick, director; 7-7:30, organ recital, First Methodist church, Arthur Blakeley, organist; 8-10, program, Martin Music company, arranged by J. Howard Johnson, presenting a patriotic program in honor of Washington's birthday.

**KJLS, Los Angeles, Calif. (293),** 10:45-12:30 p. m., services, Church of Open Door, Dr. French E. Oliver, pastor; 6-6:45, vesper musical hour with short scriptural talk, Rev. Pike; 7-9:30, complete evening services of the Church of Open Door, musical program and arranged by J. Howard Johnson, presenting a patriotic program in honor of Washington's birthday.

**KNX, Hollywood, Calif. (337),** 5 p. m., Radio Sunset service, Rev. Chas. F. Aker, and Dr. Frank Dyer, from theater of Ambassador hotel; 7-7:45, International Ass'n of Bible students' hour of music; 8-9, Ambassador hotel concert orchestra, Josef Rosenfeld, director; 9-11, program, El Encanto apartments, Maude Felton Boland, soprano; Lucille Bowley, soprano; Laurine Smith, organist; Ivy May Travis, piano; Paul Finstein's KXN string quartet.

**KPO, San Francisco, Calif. (429.5),** 12:12 m., undenominational and nonsectarian church service, Rev. Louis J. Sawyer; 8:30-10, concert, Rudy Selger's Fairmont hotel orchestra.

othy Ferguson, xylophonist; Margaret Conly, reader; Buster Graves & Blanche Robinson, boy soprano and pianist; Florence Eastman, mezzo-soprano; Borden Bros., harmony duo.

**WCAL, Northfield, Minn. (336.9),** 8:30 p. m., sacred program, sermon, Dr. Martin Hegland; Pearl Weeks, pianist; Arvid Ronstad, tenor; Ella Johnson, soprano.

**WCBD, Zion, Ill. (344.6),** 8 p. m., Zion band; Mrs. J. D. Thomas, soprano; Edith Carey, alto; Carey sisters.

**WCCO, Minneapolis-St. Paul, Minn. (416.4),** 10:20 a. m., Plymouth Congregational church, Rev. H. P. Devey; 4:10, House of Hope Presbyterian church, Rev. H. C. Sweeningen; 7:45, Central Lutheran church, Rev. J. A. O. Stub, pastor; 9:15, classical concert.

**WDAF, Kansas City, Mo. (365.6),** 4-5 p. m., classical music, star's studio; 5-5:30, International Sunday school lesson, Dr. Walter L. Wilson; sacred hymns, quartet.

**WEBB, Chicago, Ill. (370.2),** 5-6 p. m., twilight musical; 7-9, selected artists program.

**WEBW, Beloit, Wis. (268),** 4:30-5:30 p. m., vesper services, Beloit college.

**WEMC, Berrien Springs, Mich. (285.5),** 11 a. m., sacred music, Radio Lighthouse choir; Cecil Woods, bass; Tottie Kressin, soprano; 11:40, sermon, Pastor, W. R. French; 8:15, Radio Lighthouse choir, Ernest Hurd, tenor; Martha Hutchinson, soprano; 8:55, sermon, Pastor, John Knox.

**WFAA, Dallas, Tex. (475.9),** 5-6 p. m., vesper service, Westminster Presbyterian church, Dr. T. O. Ferrin, pastor; Daisy Polk, soloist; 6-7, Radio Bible class, Dr. William M. Anderson; 7:30-8:30, service, Central Congregational church, Dr. Thomas H. Harper, pastor; Mrs. Clarence R. Hamilton, organist; 8:30-9:30, Dr. Robert A. Hunt, pastor; 9:30-11, McDowell Sisters.

**WGN, Chicago, Ill. (270.2),** 11 a. m., Uncle Walt reads the comics to the children; 11:45, program, Chicago theater; 2 p. m., organ recital, Lyon & Healy; 3, Tribune music, arts and concert, Craven's club club, George Washington day program; 3:30, program, faculty, artists Chicago Musical college; 9-10, special program, "Creole Composer," Charles H. Gabriel, Jr.; Ethel Wakefield, soprano; Drake concert ensemble.

**WHAS, Louisville, Ky. (399.8),** 9:57 a. m., organ music; 10, services, Calvary Episcopal church, Rev. Dr. Harris Mallenkrodt, pastor; Lawrence Cook, organist, choir director; 4 p. m., organ recital, Georgia Latimer; 4:30, earnest evening song service, Christ church cathedral, Ernest Arthur Simon, organist, choir master; men and boys' choir of sixty voices.

**WHB, Kansas City, Mo. (365.6),** 9:40-11 a. m., morning service, Lincoln Christian church, Dr. Burris A. Jenkins, minister; 8-9:15, morning services, First Church Christ Scientist; 12, piano, musical program.

**WHO, Des Moines, Iowa (526),** 11 a. m., sermon, Charles S. Medbury; 4 p. m., program, direction of Dean Holmes Cooper.

**WLS, Chicago, Ill. (344.6),** 6:30 p. m., Ralph Emerson, organist; 7-7:15, Washington's Birthday musical program.

**WLW, Cincinnati, Ohio (423),** 9:30 a. m., school, editorial staff of Sunday school publications, Methodist Book concern; 11, services, Church of Covenant, Dr. Frank Stevenson; 7:30 p. m., services, First Presby-

(Continued on page 11)

# DOCTORS GIVE WMC FROLIC FRIDAY

## Monday, February 23

(Continued from page 10)

program: 8:15-9:15, concert program; 9:25-10, Riesenfeld's Rialto program; 10:40-11, "Trend of the Times," Dr. Sydney N. Usher.

WOO, Philadelphia, Pa. (509.9), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanamakr crystal tea room orchestra, Robert E. Golden, director; 4:45, organ recital, Mary E. Vogt; 7:30, A. Candelari's Hotel Adelphia concert orchestra; 8, concert from WFAF; 10:30, organ recital, Mary E. Vogt; 10:30, Vincent Rizzo's dance orchestra.

WOR, Newark, N. J. (405), 2:45-3:45 p. m., talk, Y. M. C. A., New York city; 3:45-4, Charm magazines; 6:20-7:30, Dave Harman's Cinderella orchestra; 8-8:30, Perry and Russell, singing orchestra; 8:30-9:30, Al Reid's hour, Bradford theater, Newark, N. J.; 9:30-9:45, "From Pouch Purse to Pocketbook," Dr. Frank H. Vizetally, editor New Standard dictionary; 9:45-10:45, Dr. Spaeth's studio party; 10:45-11:15, Carolinians orchestra.

WRC, Washington, D. C. (468.5), 4 p. m., book reviews, auspices League of American Pen Women; 4:20, talk, National Geographic society; 4:30, tea music, Meyer Davis' New Willard hotel trio; 6, children's hour, Peggy Albion.

WTAM, Cleveland, Ohio (389.4), 6 p. m., Guy Lombardo's Royal Canadians orchestra; 8, Tall Cedars band, Fred Dixon, director; Case school glee club; WTAM symphonic ensemble, Walter Logan, director.

WWJ, Detroit, Mich. (352.7), 12:05 p. m., Jules Klein's Hotel Statler orchestra; 3, Detroit News orchestra; 6, dinner concert; 8:30, Ray Seegar and his string quartet; Eugene Wilson, baritone; Margaret Foy, soprano.

### Central Time Stations

KFKU, Lawrence, Kan. (275), 6:50 p. m., piano tuning-in program; 7, music; 7:15, "Permanent Benefits Derived from Basketball," Dr. F. C. Allen; 7:30, "Raising the Plane of Debate," Prof. B. A. Gilkinson; 7:45, elementary Spanish, lesson VIII.

KFKK, Hastings, Neb. (283.3), 9:30 p. m., program, auspices Stewart college, Prof. Paul E. Reuter, director.

KFNF, Shnandoah, Iowa (266), 6:30 p. m., concert, Henry Field Seed company.

KSAC, Manhattan, Kans. (340.7), 9 a. m., march, music lesson; 9:07, singing exercises; 9:15, inspirational talk; 9:20, callisthenics; 10, "Back Yard Gossip"; 10:10, "All Round the House"; 10:15, "Questions and Answers"; 10:20, today's meals, Amy Kelly; 12:30

Louise, Carl Kraemer, pianists; Harmie Hottle Rasmussen, soprano; Laura Hottle Smith, contralto; the Boston Operatic quartet; 8-9, classical program, direction of Dean Holmes; 11:15-12, L. Carlos Meier, organist.

WLW, Cincinnati, Ohio (423), 8 a. m., physical exercises, Y. M. C. A., Wm. Stradtman, instructor; 12:15 p. m., noonday concert; 6, dinner hour concert, Sellinsky instrumental quintet; 8, chorus of 700 high school children, Gustav Clemens, director in connection with National School Superintendents' convention at Music hall; 8:30, Times Star program; Times Star orchestra, William Kopp, director; soloists: Howard Hafford, tenor; Robert Alter, Vox-Ferro (Hand Saw); Ary Van Leeuwen, flute.

WMAQ, Chicago, Ill. (447.5), 4 p. m., mothers in council, Mrs. Frances M. Ford; 4:30, Chicago High School Teachers' council; 6, Chicago theater organ recital; 6:30, Hotel LaSalle orchestra.

WMC, Memphis, Tenn. (499.7), 12 m., O. K. Houck Piano company; 8:30 p. m., concert, Hotel Gayoso orchestra.

WOAW, Omaha, Nebr. (526), 6 p. m., Arthur Hays, organist, World theater; 6:30, Edwin M. Kahn and his orchestra, pianists; 9, opera program, The Moellers-Herms and artist pupils.

WOC, Davenport, Iowa (483.6), 4 p. m., "Blue Devils" orchestra; 5:45, chimes.

WOI, Ames, Iowa (270), 12:30 p. m., college chimes; 10, program of popular music.

WOS, Jefferson City, Mo. (440.3), 8 p. m., "Why Physical Defects," Dr. Henry W. Curtis; address, R. O. Hardy; piano recital, James Glittenger.

WSAI, Cincinnati, Ohio (325.9), 6 p. m., Cincinnati Enquirer program.

WSB, Atlanta, Ga. (428.3), 5-6 p. m., Vick Myers Melody artists; bedtime story, Bonnie Barnard; 8-9, program, commemorating Frank L. Stanton and George Washington birthdays, Cousin Fred Houser, director; 10:45, Warner's Seven Aces.

WSUI, Iowa City, Iowa (484), 12:30-12:55 p. m., "The Master Singers," Prof. Charles Bunday Wilson; 7:30,

hotel orchestra; 8-9, Theodore J. Irwin, organist; 9-10, "Betts Lighting," H. C. Bernard; 10-11, program, auspices, Edgar Thorp, Marie Ufford; Gene James' Raso Room Bowl orchestra.

## Tuesday, February 24

Tuesday, silent night for: CHNC, KFAE, KFKU, KFKX, KFMY, KFNF, KOA, KOB, KYW, PWX, WBBR, WCOB, WEOA, WEMC, WGST, WHA, WHAZ, WHO, WOC, WOJ, WOO, WORO, WOS.

### Eastern Time Stations

CFAC, Toronto, Can. (356), 8:15 p. m., "The Blue Stockings and Their Friends," Dr. E. J. Pratt.

CKAC, Montreal, Can. (425), 7 p. m., kiddies' stories in French and English; 7:30, Windsor hotel concert ensemble, Harry Salter, director; 8:30, special program; 10:30, Windsor hotel Red Jacket orchestra, Harold Leonard, director.

CNRA, Moncton, Can. (313), 7:30 p. m., program, entertainers of the J. A. Marvin Biscuit company; violin selections, Mrs. R. N. Benly; William Elliott, saxophonist; J. W. Holder, baritone; Lans Retlaw, tenor; A. W. Walkers, baritone; popular dance music, Joe Mazzeo and his Rainbow melody boys.

KOKA, E. Pittsburgh, Pa. (399.1), 12:15 p. m., concert, Scalzo's orchestra; 6:15, dinner concert, Pittsburgh Athletic association orchestra; 7:30, children's period; 8, concert; 9, Brunswick hour of music; 11, concert, Pittsburgh Post studio.

WCAE, Pittsburgh, Pa. (462), 6:30 p. m., dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 7:45, special feature; 8, vocal selections, Edward L. Marsh, tenor; 8:30, Gold Dust twins; 10, Goodrich Silvertown Cord orchestra; 11, late concert.

WCAU, Philadelphia, Pa. (278), 7 p. m., Paul Specht

Gene Hogle; 8:15, Philadelphia police band; 9, talk, Rabbi Feldman; Oscar Langman, violinist; 10:05, "Emo's Weekly Movie Broadcast," Eil M. Orowitz; 10:30, Harvey Marburger's dance orchestra.

WJY, New York, N. Y. (405), 8:15-8:30 p. m., "Indians of the Southwest," Donald Cadzow; 8:30-8:45, Janst Beck, soprano; 10:10-15, Fred F. Hudler, bass-baritone.

WJZ, New York, N. Y. (455), 10:10-20 a. m., Housewives' League menu, Mrs. Julian Heath; 10:20-10:30, Vogue's talks on "Etiquette"; 10:30-10:40, "Art for a Dime," Grace P. Nixon; 10:40-11, "What Does Electricity Cost," Geo. W. Alder; 1-2 p. m., Nathan Abas' Hotel Pennsylvania orchestra; 4-4:30, joint recital, Marie Muller, soprano, Anna Margaret Behrmann, pianist; 4:30-5:30, Bernhard Lsvitov's Hotel Commodore tea orchestra; 7-7:15, "Dogs," Frank Dole; 7:15-8, Joseph Strissoff's Hotel Vanderbilt orchestra; 8-8:10, Wall Street Journal review; 8:10-8:20, N. Y. U. Air college; 9-10, Brunswick hour, music memory contest program.

WKAQ, San Juan, P. R. (340.7), 8-9:30 p. m., "Home in Pasadena," "Mandalay," "San Juan Athletic," "Worried," Euterpe jazz band; "Pedagogical Value of Conference Nowadays," Celedonio Delgado; "Ausencia,"



Robert Ernest Derringer, tenor, (left) sings special requests at WEAQ. He will sing with the Fort Hayes hotel trio, February 25. E. J. Dunstetter is the master organist of the State theater new Wurlitzer organ. He gives weekly recitals at WCOO, the Gold Medal station. Elizabeth Henz as "Mary" in "The Passion Play" given at St. John's Hall, Cincinnati, by members of the St. John's Parish, broadcast by WLW.



"Oh, How I Love My Darling," "La Fiesta de la Raza," "Boll Weevil Blues," Euterpe jazz band.

WLIT, Philadelphia, Pa. (395), 11:45 a. m., daily almanac; 12:02 p. m., Stanley theater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 2:30, Louise Broomell, soprano; Ruth B. Lovell, contralto; Marcella North, pianist; 7:30, Dream Daddy's bedtime stories; 7:50, play review, Arnold Abbott.

WNYC, New York, N. Y. (526), 7:30-7:35 p. m., police alarms; 7:35-7:55, sport talk, Thornton Fisher; 8:30-9:30, concert program; 10:10-10:30, "Louis Pasteur—The Dawn of a New Era in Science," Israel Weinstein, Sc. D.

WOO, Philadelphia, Pa. (509.9), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanamakr crystal tea room orchestra, Robert E. Golden, director; 4:45, organ recital, Mary E. Vogt.

WOR, Newark, N. J. (405), 3-3:15 p. m., Mae Jacobus Fleming, Bamberger's book reviewer; 6:15-6:30, Halsey Miller's orchestra; 6:30-6:45, man in the moon stories; 7-7:15, Halsey Miller's orchestra.

WRC, Washington, O. C. (468.5), 6:45 p. m., children's hour, Peggy Albion; 7, dinner music, Meyer Davis' New Willard hotel orchestra; 8, "Show Shopping," Leonard Hall; 8-10, music; 9, fourth memory contest, Brunswick hour of music; 10, United States Navy band; 11, dance music, Meyer Davis' Le Paradis band.

WTAM, Cleveland, Ohio (389.4), 6 p. m., Guy Lombardo's Royal Canadians orchestra.

WWJ, Detroit, Mich. (352.7), 12:05 p. m., Jules Klein's Hotel Statler orchestra; 3, Detroit News orchestra; 6, dinner concert; 8:30, Detroit News orchestra; Roy Strayer, tenor.

### Central Time Stations

CKY, Winnipeg, Can. (450), 7:30 p. m., university lecture; 8:15, concert, "Toc H"; 9, half-hour program, Capitol theater.

KFOM, Beaumont, Tex. (315.6), 8 p. m., vocal numbers, Samuel Francis; Gladys Harned, violinist; Lena Milam, accompanist; Jewel Harned, pianist.

KFMQ, Fayetteville, Ark. (275), 9 p. m., community chorus, H. E. Shultz, director.

KSAC, Manhattan, Kans. (340.7), 9 a. m., march, music lesson, singing exercises; 9:15, inspirational talk; 9:20, callisthenics; 10, "Back Yard Gossip"; 10:05, "All Round the House"; 10:10, "Questions and Answers"; 10:20, today's meals, Amy Kelly; 12:30 p. m., readings, Osceola Burr; "Test, don't guess, A. J. Schoth; question box; "Landscape with Native Materials," C. E. Sheed; 7:20, "Cultivating Alfalfa," S. C. Salmon; 7:30, basketball game, KSAC vs. KU; 8, "Care of the Machine During the Hatch," L. F. Payne; 8:15, program.

KSD, St. Louis, Mo. (545.1), 6 p. m., concert, Benjamin Eader's orchestra; 9, studio recital, Chester Merton, tenor.

KTHS, Hot Spring National Park, Ark. (375), 8:30-10 p. m., "Victor Herbert Night," Charles L. Fischer's Eastman ensemble.

KYWO, Chicago, Ill. (535.4), 7-7:30 p. m., dinner concert, Congress hotel; 8:20-8:45, American Farm Bureau federation; "The Farm as a Factory," E. M. Railsback; "Monthly Analysis of Farm Markets," H. W. Moorhouse; 8:45-9:30, musical program; 10-11:30, evening at home; 1-2, "Insomnia Club."

WBAP, Fort Worth, Texas (475.9), 12:05-12:30 p. m., popular music, Montgomery Ward and company's "Trail Blazers"; 8:30-8:50, concert, Ina Gilliland, director; 9:30-10:45, musical program, Mrs. J. Edward Cooley.

WBCN, Chicago, Ill. (266), 6-6:30 p. m., juvenile period, Luella Drew Wilson; 7-8, classical hour; program by Englewood evening school; 8-8:30, popular program, Marie White, soprano; Victoria Swanson, pianist; Midway Gardens orchestra; 8:30-9, Walton School of Commerce "Encyclopedia of the Air"; lectures on income tax and accountancy; 9-12, popular program, Axel Christensen, pianist; F. H. McDonald, president of Broadcast Listeners' Ass'n. talk; George Forsyth, boy tenor; Finney Briggs, humorist;

(Continued on page 10)

p. m., "Is Cow Testing Profitable," A. W. Knott; "Sweet Clover Hay and Seed," L. E. Willoughby; 7:20, college bell, quartet; 7:30, "Place of the Hog on the Farm," A. D. Weber; 7:40, college, quartet; 7:50, "Care and Management of Dairy Sire," R. H. Lush; 8, program for state-wide meeting of Crop Improvement association.

KSO, St. Louis, Mo. (545.1), 7 p. m., program, 20th anniversary of Rotary clubs.

KTHS, Hot Springs National Park, Ark. (375), 8:30-9 p. m., concert, Fischer orchestra trio; Burton Fischer, pianist; "Tubby" Veil, tenor; Doug, Johnstone, Indian cornetist; 9-10, concert, Graham male quartet; 10-11, Charles L. Fischer's 11-piece Eastman hotel orchestra.

WBAP, Fort Worth, Texas (475.9), 12:05-12:30 p. m., musical program; 7:30-8:30, dance music, Frenselly Moore's Black and Gold serenaders; 9:30-10:45, popular music, Montgomery Ward and company's "Trail Blazers."

WCAL, Northfield, Minn. (336.9), 9:45 a. m., St. Olaf college chapel service.

WCOB, Zion, Ill. (344.6), 8 p. m., McElroy saxophone quintet; celestial bells; Herman Becker, cellist; E. B. Paxton, baritone; Mrs. E. B. Paxton, reader; Richard Hlire, pianist.

WOOO, Minneapolis-St. Paul, Minn. (416.4), 2 p. m., "My Job," Dr. Ethel Warwick; 2:30, matinee musicale; 4, "The Beauty of the Purple," magazine hour; 5:30, children's hour, Ellen Nye; 8, "Poultry Housing and Care," N. E. Chapman; 8:15, "Good Seed the Farmer's Assurance of Good Crops," C. A. Burnham; 8:30, North Dakota night; 10, the Original Osborn's Nicollet hotel orchestra; Russell Murphy, baritone.

WOAF, Kansas City, Mo. (365.6), 3:30-4:30 p. m., program, Newman and Royal theater; 5-5:30, Boy Scout program; 6-7, school of the air; piano tuning-in number on the Duo-Art; Tell-Me-a-Story; Triamion ensemble, Hotel Muehlebach; 8-11, vocal band Walker A. French, director; Ivanhoe glee club, Edward N. Gill Jr., director; 11:45, nighthawk frolic Merry Old Chief, Plantation plays, Hotel Muehlebach.

WEMC, Berrien Springs, Mich. (285.5), 8:15 p. m., recital, Dr. and Mrs. Birt Summers.

WGN, Chicago, Ill. (270.2), 1:40 p. m., luncheon concert, Drake concert ensemble; Blackstone string quintet; 2:30, artists series, Lyon & Healy; 3, rocking chair time; 5:30, Skeezix time for the children; 6, organ recital, Lyon & Healy; 6:30-7, dinner concert, Drake concert ensemble; Blackstone string quintet.

WEST, Atlanta, Ga. (270), 9-10 p. m., W. C. Ewing, pianist; Benn Hume, tenor; Butch Beard, baritone.

WHA, Madison, Wis. (535.4), 7:30 p. m., basketball game, Purdue at Madison; 8:30, address on food and nutrition, Mrs. Nellie Kedzie Jones.

WHAS, Louisville, Ky. (399.8), 4-5 p. m., Esther Severn, pianist; Amano theater organ; readings; 7, WBH, Kansas City, Mo. (355.6), 2-3 p. m., ladies' hour; Walker A. French, director; 7-8, automobile talk; musical program, men's and ladies' quartet, First Church of the Nazarene; "Preventative Dentistry," Dr. H. A. Potter.

WHO, Des Moines, Iowa (526), 7:30-9 p. m., Mary

### Mountain Time Stations

KOA, Denver, Colo. (322.4), 8 p. m., ten minutes of music, Fred Schmitt's Rialto orchestra; 8:10, studio program, Wilcox studios; "Romantic," KOA orchestra, Lewis H. Chernoff, director; "George Washington," Judge John T. Adams; "Where My Caravan Has Rested," "They Beaming Eyes," "Carmena," quartet; "Shadow Song from the Opera," Louette Milton, soprano; Carol Turman, accompanist; "It Was Not So to Be," "The Two Grenadiers," Everett Foster, baritone; Mrs. Everett Foster, accompanist; vocal duet, from the "Opera Shakespeare, Shakespeare, Lionel Rhodes, Lucile Fowler, contralto; Anton Gray, tenor; Carol Turman, accompanist; "Fra Diavolo Overture," KOA orchestra; "Meet Me by Moonlight Alone," "O, Let Night Speak of Me," Forrest Fishel, tenor; "Woo Thoo Sweet Music," "In the Time of Roses," quartet from the opera Rigoletto, Denver concert quartet; "Ave Maria," Mrs. J. A. Donery, soprano; violin obligato, Lewis H. Chernoff; "The One Day Close," double quartet selection, Denver concert and lyric quartets; "National Fencibles," KOA orchestra.

KOB, State College, N. M. (348.6), 7:30-8:30 p. m., "Safety First," Dr. McBridge; College band.

### Pacific Time Stations

KFAE, Pullman, Wash. (330), 7:30-9 p. m., Harry Isaacs, baritone, singing "Friend of Mine," "Sunrise and Sunset," "Kashmiri Song," "Give a Man a Horse He Can Ride," Beryl Squires, pianist; "Keeping Farm Stock Healthy," Dr. E. E. Wagner; "What Is Worth Seeing in London," Prof. Carl Brewster; "Planning Spring Pageants," Prof. M. L. Dargy; "February Farm Outlook," R. M. Turner; book reviews, Alice Lindsey Webb.

KFI, Los Angeles, Calif. (467), 5:30-6 p. m., Examiner's musical half hour; 7-8, Evening Herald Radio-Lions dance orchestra, Charlie Nelson, tenor; 8-9, program, Owl Drug company; 9-10, program, Walter M. Murphy Motors company; 10-11, Examiner, Ray West and his Alexandria Hotel dance orchestra.

KFOA, Seattle, Wash. (455), 4-5:15 p. m., studio music, talks, recipe; 6:45-8:15, Sherman, Clay & company program; 8:30-10, Times studio program, Ethel Gordon.

KGO, Oakland, Calif. (299.8), 4-5:30 p. m., Henry Halstead's dance orchestra; 5:30-6, Aunt Betty stories, KGO kiddies' club; 8, music, Arion trio; "The Making of Marshmallow Cherries," J. H. Irish; "A Lesson in English," Wilda Wilson Church; "Ethics of Social Etiquette," Edith Stevens Gilles; "Chats About New Books," Joseph Henry Jackson; 10-1 a. m., dance music program, Henry Halstead's orchestra.

KGW, Portland, Ore. (492), 5 p. m., children's program, story, Aunt Nell.

KHJ, Los Angeles, Calif. (404), 12:30-1:30 p. m., Carlyle Stevenson and his Bon Ton dance orchestra.

KLX, Oakland, Calif. (509.9), 6-7 p. m., organ recital; 8-9:30, educational program; 9:30-10, American theater orchestra; 10, "Meeting of the Lake Merritt Ducks."

KNX, Hollywood, Calif. (337), 10 a. m., Hired Hand's morning message; 10:30, Mrs. Kate Brew Vaughn, home economics; 11, news and 25 and 50 years ago; 12-1 p. m., Wurlitzer pipe organ studio; 5, closing markets; 5:45-6:15, Wurlitzer pipe organ studio, Sid Ziff's sports talk; 6:15-7:30, dinner hour music; 8-9, program, Globe Ice Cream company; 9-10, program, Economic Press; 10-11, Silvertown Cord orchestra of B. F. Goodrich Rubber company, Lillian May Challenger, soprano; 11-12, Abe Lyman's Cooacanat Grove dance orchestra from Ambassador hotel.

KPO, San Francisco, Calif. (429.5), 1-2 p. m., Rudy Selger's Fairmont hotel orchestra; 4:30-5:30, Rudy Selger's Fairmont hotel orchestra; 5:30-6:30, children's hour stories, Big Brother; piano duo, Haroku Kanke, Yoshida Kanke; 6:30, "What Is Playing at the Local Theaters," 7-7:30, Rudy Selger's Fairmont

# POPULAR WGY PLAYERS TO BE HEARD

## Index to Talks, Lectures and Addresses

TABULATED below is a time table of the stations giving talks, lectures and addresses next week. These range from the instructive and serious to the humorous and frivolous. The stations listed are divided into the four different kinds of time in use. The hours are given in the kind of time in use at each listed station. By using this table as an index and referring to the complete programs below, full information will be obtained.

### Eastern Time Stations

Saturday, February 21: 7, WEAFF; 7:15, WBBZ; 7:30, WEAFF, WGY; 7:45, KDKA, WGY; 8, WCAE, WJZ; 8:15, WEAFF; 8:30, CNRO; 9:15, WBBZ; 9:30, WGBS, WJZ.

Sunday, February 22: 9:35, WBBR. Monday, February 23: 7:35, WNYC; 8, WEAFF; 8:15, KDKA; 8:20, WBBR; 8:30, KDKA; 8:45, WGR, WJZ; 9:15, CFAC; 10:25, WNYC.

Tuesday, February 24: 7:50, WLIT; 8, WCAU, WIP, WRC; 8:10, WJZ; 8:15, WCAU; 8:30, CKY, WRC; 10, WJY, WJZ, WSAI; 10:15, CFCA.

Wednesday, February 25: 7:30, WCAU, WGY; 7:35, WNYC; 7:45, WGY; 8:15, KDKA, WBAO; 8:30, WNYC; 9:15, CFCA.

Thursday, February 26: 7:30, WEAFF, WGY, WRC; 7:45, WGY; 8, WDFW, WEAFF, WIP; 8:30, WEAFF, WRC; 8:45, WRC; 9:15, WJZ; 10:15, WSAI; 10:15, CFCA.

### Central Time Stations

Saturday, February 21: 6, WDAF, WOAW; 6:30, WOAW; 8, WCCO; 8:30, WMAQ; 9:05, KYW; 9:15, KYW.

Sunday, February 22: 8:20, KSAC. Monday, February 23: 6, WCCO, WDAF; 7:15, KFKU; 7:20, WCC; 7:30, KFKU, WHA; 7:45, KFKU; 8, WCCO, WOS; 8:15, WCCO.

Tuesday, February 24: 6, WDAF, WOAW; 7:30, CKY, KSAC, WCCO; 7:45, WCCO; 8, WMC; 8:20, KYW; 11:05, KYW.

Wednesday, February 25: 6, WCCO, WDAF; 7:30, KSAC; 8, WMAQ, WOS, KYW, WEMC; 9, WMAQ; 9:05, WEMC.

Thursday, February 26: 6, WDAF, WOC; 7:30, CKY, KSAC, WCCO; 7:33, KYW; 7:45, WCCO; 8, KYW, WCCO; 8:15, WCCO; 8:30, WBCN; 8:50, WMAQ; 9:15, KYW.

Friday, February 27: 6, WCCO, WDAF; 7, WBB; 7:15, WOAW; 7:20, WOC; 7:30, CKY, KSAC, WCCO; 8, WMAQ, WOS; 8:30, WMAQ.

### Mountain Time Stations

Monday, February 23: 7:30, KOB. Wednesday, February 25: 7:30, KOB.

Thursday, February 26: 7:30, KOB. Friday, February 27: 6:40, KOB.

### Pacific Time Stations

Saturday, February 21: 6:30, KHJ; 6:45, KFI; 7:45, KFI, KHJ; 8, KNX. Sunday, February 22: 6:45, KFI. Monday, February 23: 8, KGO.

Tuesday, February 24: 6:30, KHJ; 6:45, KFI; 8, KGW. Wednesday, February 25: 6:30, KHJ; 6:45, KFI.

Thursday, February 26: 6:45, KFI, KHJ. Friday, February 27: 6:30, KHJ; 8, KHJ.



Charles H. Gabriel, Jr., is musical director of WGN, Chicago. His Sunday night musical lectures, which he calls "Evenings with the Composers," are very popular. His subject this Sunday, February 22, is "Creole Composers." Will Gunzendorfer (right) is the director of the Cleveland Six orchestra heard every Friday evening at KPO, San Francisco.



Will Gunzendorfer is the director of the Cleveland Six orchestra heard every Friday evening at KPO, San Francisco. He is shown in a suit and tie, looking slightly to the right.

## Tuesday, February 24

(Continued from page 11)

Ann Williams, soprano; Famous Four, harmony singers; Felma Tyler, soprano; Dick Switzer, pianist; Ed Wallace, tenor; Clarence Russell, tenor; Al Phillips, tenor; 12-1:30 a. m., Pirate Ship. WCAL, Northfield, Minn. (336.9), 9:45 a. m., St. Olaf college chapel service. WCCO, Minneapolis-St. Paul, Minn. (416.4), 10:45 a. m., home service. "The Recipe Exchange." Betty Crocker, 2 p. m., "Character Analysis." Joseph Blumenthal: "The Romance of Kings." George F. Gunz; 4, magazine hour, "The Wind Harp." 5:30, children's hour, Gold Medal Lady; 6:30, dinner concert, Original George Osborn's Nicolettel hotel orchestra; Eleanor Pochler, soprano; Eleanor Freeman, pianist; 7:30, Income Tax lecture; 7:45, "China and Its People," C. A. Beuers.

WDAF, Kansas City, Mo. (365.6), 3:30-4:30 p. m., Star's Radio trio; 5-5:30, child talent program; 6-7, School of the Air: piano tuning-in on the Duo-Art; Tell-Me-a-Story Lady; piano lesson, Maudellen Littlefield; Trianon ensemble, Hotel Muehlebach; 11:45-1 a. m., Newman Nightclub; 12-1:30 a. m., Orlole concert orchestra; Dan Russo, violinist; Ted Florito, celeste; musical bits, Riviera theater; 9, Orlole dance orchestra; Dennis Sisters, songs; Deen Remick, pianist; 11, Orlole dance orchestra; Loos Brothers, songs; Nick Lucas, songs; Jack Penwell, songs. WEBW, Beloit, Wis. (268), 8-9 p. m., concert Beloit college.

WGN, Chicago, Ill. (270.2), 1:40 p. m., luncheon concert, Drake concert ensemble, Blackstone string quintet; 2:30, artist series, Lyon & Healy; 3, rocking chair time; 5:30, Skeezix time for the children; 6, organ recital, Lyon & Healy; 6:30-7, dinner concert, Drake concert ensemble, Blackstone string quintet; 8-9, Paderewski program, Merle Maunin, Charles H. Gabriel, Jr.; 10-11, Don Bestor Drake dance orchestra. WHAS, Louisville, Ky. (399.8), 4-5 p. m., Joe von Buest, violinist; Alamo theater organ, readings; 7:30-9, concert, Eddie Ross and his orchestra; stories. WHB, Kansas City, Mo. (365.6), 2-3 p. m., Ladies' hour, Sweeney Radio Trio; 7, Music Masters, Gilbert Jaffey, violinist-director; 8-9, Mrs. Julian Bagby, soprano; Haveland-Wallace orchestra; 9-10:15, Crawford-Ruton band.

WLS, Chicago, Ill. (344.6), Noon: Nubs Allan; 8:30 p. m., Ralph Emerson, Barton organist; 6:50, Senate theater studio artists; 7, Lullaby Time, Ford and Glenn; 7:15, Florence K. White, Grace Wilson, WLS Harmony trio; 7:45, WLS presents Anthony Wons, juvenile adventures; 8, RFD program, Glenn Cornhuskers, Ford and Glenn; 9, Nubs Allan; 9:10, WLS presents Anthony Wons and Shakespeare drama; 9:30, Glenn's Cornhuskers; 9:40, Art Kahn's Senate Synco-paters; 10, LeMoine Harmonica club; 10:30, Isham Jones, orchestra; 10:40, Ford and Glenn time; 11, Carl Vandeville, nite; 12, Ralph Emerson, Ford and Glenn; Foxy Dave.

WLW, Cincinnati, Ohio (423), 8 a. m., physical exercises, Y. M. C. A., Wm. Stradtman, instructor; 11:55, correct time; 12:15 p. m., program, Delta Omicron sorority; Cliff Lang, request program; 4, lecture: Mah Jong, Lucy Blackburn; pupils of William Kyle in recital; 6, dinner hour concert, Selinsky instrumental quintet; Howard Thurston; 7, talk: "Washington, the Beautiful City," C. M. Ritchie; 10, program, auspices of Boathouse Coffee company; 10:40, A. W. Bradford, tenor, Margaret Phillip, alto, Mrs. A. W. Bradford, tenor, accompanist; other features; 11, minute talk: "Our Eyes," Clara E. Laughlin; of Optometrists; 11, Higginbottom's Orchestra De Luxe, Wilson Higginbottom, director and manager.

WMAQ, Chicago, Ill. (447.5), 4 p. m., American Red Cross talk, Dr. H. W. Gentes; 4:30, pupils, Maurice Rosenfeld; 6, Chicago theater organ; 6:25, Hotel LaSalle orchestra; 6:50, "Daddy" 8, Harry Hansen, literary editor; 8:20, travel talk, Clara E. Laughlin; 8:40, weekly talk, Association of Commerce; 8:15, lecture, University of Chicago; 9:15, Grinnell College club. WMC, Memphis, Tenn. (499.7), 12 m., musical program, O. K. Houck Piano company; 8 p. m., lecture, Goodwyn Institute, Hon. William C. Redfield; 11, midnight frolic.

WOAI, San Antonio, Texas (395.4), 8:30 p. m., Schumann program, WOAI trio. WOAW, Omaha, Nebr. (526), 12:30 p. m., horticultural program; 6, advice to lovers, Cynthia Grey; 8:25, dinner program; 9, DeLuxe program; 10:30, Frank W. Hohek, Jr., and his Nightingales.

WOC, Davenport, Ia. (483.6), 6:30 p. m., Sandman's visit, Val McLaughlin; 8, program, juvenile artists; 10, Katherine McLaughlin, soprano; Niles Peterson, tenor; Louis Crowder, pianist; Herbert Silberstein, violinist. WOI, Ames, Iowa (270), 12:30 p. m., college chimes; talk on automobiles, Prof. A. Shane. WOJ, Chicago, Ill. (447.5), 3-4 p. m., "Round the World With..." Josephine Taylor; "Mother Welfare," Dr. B. A. Van Hoesen; 7-8, dinner concert, Ralph Williams and his Italohe Garden orchestra; Milford Burd-

all, baritone; Tony Corcoran, tenor; Margaret Garrity; "Income Tax" talk, Mr. Katz; 10-2 a. m., Ralph Williams and his Italohe garden; Nubs Allan, alto; Ned and Ches; Will Rositzer; Mack sisters.

WSAI, Cincinnati, Ohio (325.9), 7 p. m., Hotel Gibson orchestra, Robert M. Visconti, director; 7:30, chimes; 7:45, children's story, Mrs. Behrens; 8, Hotel Gibeon orchestra; 9, address, University of Cincinnati speaker; 9:10, Edythe Tolken, violinist; Mary Louise Wolczek, pianist. WSB, Atlanta, Ga. (428.3), 12 m., Rev. Andrew Jenkins family; 5-6 p. m., songs and bedtime story, Bonnie Barnhardt; 8-9, Vick Myers Melody artists; 10:45, Griffith Aeolian string quintet. WSUI, Iowa City, Iowa (484), 12:30-12:55 p. m., talk: W. J. Dennis on "South America and the United States."

### Pacific Time Stations

KFI, Los Angeles, Calif. (467), 5-5:30 p. m., Evening Herald, table talk, news; 5:30-6, Examiner's musical half hour; 6:45-7, editorial talk; 7-8, Aeolian residence pipe organ recital, Dan McFarland, organist; 8-9, Examiner program, Women's Press Club of Southern California; 9-10, vocal recital; 10-11, Packerd Ballad hour, Bess Rudill and Rhue Gill. KFOA, Seattle, Wash. (455), 4-5:15 p. m., Olympic hotel orchestra; recital; 8:45-8:15, Rhodes' Department store program; 9-10, Warren Anderson's orchestra; 10:05-11, Eddie Ricker and his orchestra. KFSG, Los Angeles, Calif. (278), 10:30-11:30 a. m., sunshina hour; 3:30-4:30 p. m., afternoon organ recital, Esther Fricke Green, organist; 6:30-7:30, children's hour arranged and presented by Harry James Beardley (Cousin Jim).

KGO, Oakland, Calif. (299.8), 4-5:30 p. m., concert orchestra, Hotel St. Francis, 8, Brunswick Radiola special program; Paul Ash and his Granada theater orchestra; Harry A. James, H. I. Millholland, readers; Alice G. Poyner, violinist; Mrs. G. A. Jones, alto; G. A. Jones, tenor; F. W. Towe, flutist; Martha Fisher, harpist; Joseph McIntyre, pianist; Mildred and Cedric Wright, violinists; Bruce S. Calfee, banjoist; Charles Dring, accompanist; Jack Mahan, tenor; George Madison, bass; Thelma Werli, soprano; Vera Parker, accompanist; 10-1 a. m., dance music, Henry Halstead's orchestra. KGW, Portland, Ore. (492), 12:30 p. m., concert; 5, children's program, story, Uncle Dave; 8, Oregon Agricultural College, Extension Service lecture; 8:30, concert; 10, Mulmultown hotel, Strollers.

KHJ, Los Angeles, Calif. (404), 12:30-1:30 p. m., Major and his Forum Roof orchestra; 2:30-3:30, program, Pacific States Electric company, Immanuel male quartet, Grace Currey, harpist; 6-6:30, Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, stories of American history, Prof. Walter Sylvester Hertzog; weekly visit of the bandman and Queen Titania of Fairyland, Uncle John; 7:45, Mrs. Joe Ballard Fuller, "Better Speech"; 8-10, program, Helman Commercial Trust and Savings bank; 10-11, Earl Burnett's Biltmore hotel dance orchestra.

KIS, Los Angeles, Calif. (293), 8-9:30 p. m., musical program of classical nature, direction Musical Department of Bible institute. KLV, Oakland, Calif. (509.9), 6-7 p. m., sunset matinee, Aunt Elsie. KNX, Hollywood, Calif. (337), 10:30 a. m., Mrs. Kate Brew Vaughn, home economist; 11, news of 25 and 30 years ago; 12-1 p. m., recital from Wuriltzer pipe organ studio; 5:45-6:15, Wuriltzer pipe organ studio, Sid Ziff sports talk; 6:15-7:30, program presented by R. C. "Chiff" Durant; 8-9, program, Elite Catering company; 9-10, program, Paulais, featuring Venetian orchestra; 10-12, movie night on the Coconut Grove in the Ambassador hotel, Abe Lyman's dance orchestra. KPO, San Francisco, Calif. (429.5), 1-2 p. m., Rudy Selger's Fairmont hotel orchestra; 2:30-3:30, Pavo Real orchestra; 4:30-5:30, Rudy Selger's Fairmont hotel orchestra; 5:30-6:30, children's hour stories, Big Brother; 7-7:30, Rudy Selger's Fairmont hotel orchestra; 8-10, Villa Moret night; 10-11, Gene James' Rose Bowl orchestra.

### Mountain Time Stations

CNRR, Regina, Can. (420), 8 p. m., weekly bedtime travel tales; Eljay's Novelty orchestra. KOA, Denver, Colo. (322.4), 12-12:30 p. m., Rialto theater organ recital; 3, matinee for housewives; "The Gondolier's Serenade," Shirley Ligzins, tenor; Mrs. Edith Mathews, accompanist; negro dialect reading, Mrs. Harrison Miller; "Southern Dreams," Charles Duncan, violinist; "Mammy," Shirley Ligzins.

WDAF, Kansas City, Mo. (365.6), 3:30-4:30 p. m., Star's Radio trio; 5-5:30, child talent program; 6-7, School of the Air: piano tuning-in on the Duo-Art; Tell-Me-a-Story Lady; piano lesson, Maudellen Littlefield; Trianon ensemble, Hotel Muehlebach; 11:45-1 a. m., Newman Nightclub; 12-1:30 a. m., Orlole concert orchestra; Dan Russo, violinist; Ted Florito, celeste; musical bits, Riviera theater; 9, Orlole dance orchestra; Dennis Sisters, songs; Deen Remick, pianist; 11, Orlole dance orchestra; Loos Brothers, songs; Nick Lucas, songs; Jack Penwell, songs. WEBW, Beloit, Wis. (268), 8-9 p. m., concert Beloit college.

WGN, Chicago, Ill. (270.2), 1:40 p. m., luncheon concert, Drake concert ensemble, Blackstone string quintet; 2:30, artist series, Lyon & Healy; 3, rocking chair time; 5:30, Skeezix time for the children; 6, organ recital, Lyon & Healy; 6:30-7, dinner concert, Drake concert ensemble, Blackstone string quintet; 8-9, Paderewski program, Merle Maunin, Charles H. Gabriel, Jr.; 10-11, Don Bestor Drake dance orchestra. WHAS, Louisville, Ky. (399.8), 4-5 p. m., Joe von Buest, violinist; Alamo theater organ, readings; 7:30-9, concert, Eddie Ross and his orchestra; stories. WHB, Kansas City, Mo. (365.6), 2-3 p. m., Ladies' hour, Sweeney Radio Trio; 7, Music Masters, Gilbert Jaffey, violinist-director; 8-9, Mrs. Julian Bagby, soprano; Haveland-Wallace orchestra; 9-10:15, Crawford-Ruton band.

WLS, Chicago, Ill. (344.6), Noon: Nubs Allan; 8:30 p. m., Ralph Emerson, Barton organist; 6:50, Senate theater studio artists; 7, Lullaby Time, Ford and Glenn; 7:15, Florence K. White, Grace Wilson, WLS Harmony trio; 7:45, WLS presents Anthony Wons, juvenile adventures; 8, RFD program, Glenn Cornhuskers, Ford and Glenn; 9, Nubs Allan; 9:10, WLS presents Anthony Wons and Shakespeare drama; 9:30, Glenn's Cornhuskers; 9:40, Art Kahn's Senate Synco-paters; 10, LeMoine Harmonica club; 10:30, Isham Jones, orchestra; 10:40, Ford and Glenn time; 11, Carl Vandeville, nite; 12, Ralph Emerson, Ford and Glenn; Foxy Dave.

WLW, Cincinnati, Ohio (423), 8 a. m., physical exercises, Y. M. C. A., Wm. Stradtman, instructor; 11:55, correct time; 12:15 p. m., program, Delta Omicron sorority; Cliff Lang, request program; 4, lecture: Mah Jong, Lucy Blackburn; pupils of William Kyle in recital; 6, dinner hour concert, Selinsky instrumental quintet; Howard Thurston; 7, talk: "Washington, the Beautiful City," C. M. Ritchie; 10, program, auspices of Boathouse Coffee company; 10:40, A. W. Bradford, tenor, Margaret Phillip, alto, Mrs. A. W. Bradford, tenor, accompanist; other features; 11, minute talk: "Our Eyes," Clara E. Laughlin; of Optometrists; 11, Higginbottom's Orchestra De Luxe, Wilson Higginbottom, director and manager. WMAQ, Chicago, Ill. (447.5), 4 p. m., American Red Cross talk, Dr. H. W. Gentes; 4:30, pupils, Maurice Rosenfeld; 6, Chicago theater organ; 6:25, Hotel LaSalle orchestra; 6:50, "Daddy" 8, Harry Hansen, literary editor; 8:20, travel talk, Clara E. Laughlin; 8:40, weekly talk, Association of Commerce; 8:15, lecture, University of Chicago; 9:15, Grinnell College club. WMC, Memphis, Tenn. (499.7), 12 m., musical program, O. K. Houck Piano company; 8 p. m., lecture, Goodwyn Institute, Hon. William C. Redfield; 11, midnight frolic.

CNRM, Montreal, Can. (341), 8:30 p. m., St. Lambert Operatic society, R. H. Dumbrille, musical director. CNRO, Ottawa, Can. (435), 7 p. m., half hour talk for boys and girls. Uncle Dick; 7:45, "Down by the Sea," Lawrence Burpee; 8, James McIntyre and his Chateau Laurier hotel orchestra; concert, Regimental band; denca music, James McIntyre and his Chateau Laurier hotel orchestra. KOKA, E. Pittsburgh, Pa. (309.1), 12:20 p. m., Lenten service, Trinity church; 6:15, dinner concert. Pittsburgh Athletic association orchestra; 7:30, children's period; 8:15, address, University of Pittsburgh studio; 8:30, concert.

PWX, Havana, Cuba (400), 8:30 p. m., concert band, Capt. Jose Molina Torres, leader. WAHG, Richmond Hill, N. Y. (516), 12-1 p. m., talks on cooking and etiquette, the veteran reporter, Brooklyn Daily Eagle; 7:30-11, special program, Brooklyn Daily Eagle studio. WBBR, New York, N. Y. (272.3), 8 p. m., Watchtower orchestra; 8:20, "Earth's Last Funeral Song," L. W. Pelt; 8:40, Watchtower orchestra.

WGAE, Pittsburgh, Pa. (462), 6:30 p. m., dinner concert, William Penn hotel; 7:30, Uncle Raybuck; 7:45, special lecture; 8:30, piano recital, Samuel B. Weller and daughter, pianists; 9, concert, Atwater Kent orchestra. WCAU, Philadelphia, Pa. (278), 6, Meyer Davis Hotel Pennsylvania dinner orchestra, direction Lon Chassy; 8, talk, courtesy Abe Kolosky company; 8:45, "N. B. '85," concert; 9-10, Lady Duz and her Sunny Serenaders; 10:05, The Voice of Paris; 10:15, Radio talk.

WCX, Detroit, Mich. (516.9), 4:15 p. m., musical program; 6, dinner concert, Book-Cadillac hotel; 8:30, musical program. WEAF, New York, N. Y. (492), 12-12:30 p. m., chapel services, Columbia university; 4:05-4:25, Walter Gross, pianist; 4:25-4:40, Agnes Johnson, soprano; 4:40-5, children's stories; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:30, services, United Synagogue of America; 7:30-8:30, U. S. Army band, Washington, D. C.; 8:30-8:40, Nat Lewis, Inc.; 8:40-9, Modena Scoville, pianist; 9-10, Atwater Kent Radio artists; 10-11, "Cavalier Rusticaria," Ritz Grand Opera company; 11-12, Meyer Davis' Lido Venice orchestra.

WEAO, Columbus, Ohio (294), 8 p. m., chimes concert, Prof. A. P. McManigal; 8:15 p. m., Radio talk, A. M. Rose; 8:20 p. m., miscellaneous concert. WEAR, Cleveland, Ohio (389.4), 7 p. m., Hotel Cleveland orchestra; Ivan Frenzel, director. WEEI, Boston, Mass. (475.9), 3 p. m., Frankie Earl's orchestra; 6:30, Big Brother club; 7:15, sport talk, Stanley Woodward; 7:25, Cantor Bernard Woolf; Helen Ring, pianist; 7:45, Harry Einstein, the Bad Boy from the Good Home; 8, Traveler Shoe orchestra; 8:30, M. B. Cohan's Half Hour musical; 9, Gillette Safety Razor dance orchestra; 10, Cantor Woolf's concert; 11, Lloyd G. Del Castillo, organist.

WFI, Philadelphia, Pa. (395), 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3:05, Loretta Kerk, pianist; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddies' pal. WGBS, New York, N. Y. (316), 1:30-2:30 p. m., Armando Vescey and his Ritz-Carlton concert orchestra; 2:45-3, Y. M. C. A. program; 3-3:15, Interview, Cleveland Dodge; 3:15-3:30, Myrtle Wagner White, soprano; 6-6:30, Uncle Geebee. WGR, Buffalo, N. Y. (319), 10:45-11 a. m., Gold Medal home service talk, Betty Crocker; 12:30-1 p. m., Hotel Statler concert ensemble; 2:30-4, Radio Dealers' concert; 4-5, "Better English Week," mixed program, Buffalo State Normal school; 6:30-7:30, dinner music; 8-9, recital, Doris Wetmore and Marjorie Freeman; 9-10, Atwater Kent musical program, jointly with WEAF; 10-11, Jewish Community House musical program; 11-1, supper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gieser, director.

WGY, Schenectady, N. Y. (379.5), 6:30 p. m., program for children; 7, program, Strand theater orchestra. WHK, Cleveland, Ohio (273), 6:15 p. m., news items, music; 6:45, Ethel O. Hawes, bedtime story; 7 p. m., Emerson Gilh's Bamboo Garden orchestra. WHN, New York, N. Y. (360), 6:30-7 p. m., violin solo, Olcott Vail; 7-7:30, Harry Richman and his entertainers; 7:30-7:35, health talk, Dr. Landie. WKAQ, San Juan, P. R. (340.7), 7-9 p. m., concert, Municipal band. WIP, Philadelphia, Pa. (509.9), 1 p. m., Glimbel tea room orchestra; 6:05, W. Irving Oppenheim's Ben Franklin concert orchestra; 7, Uncle Wip's bedtime stories.

WJZ, New York, N. Y. (455), 10-10:20 a. m., Housewives League menu, Mrs. Julian Heath; 10:20-10:30, "The Sleek Baby," Visiting Nurse service; 10:30-10:40, "Fall Planting," Edith Loring Fullerton; 10:40-10:50, "Be Your Own Decorator," Amy Mall Hicks; 10:50-11, fashion talk, Eleanor Gunn; 12-1 p. m., Lenten service, Trinity church; 4-4:15, Anne Koenthal, soprano; 4:15-4:30, Gertrude Tara, pianist;

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4:30-5:30, Hotel Belmont tea music; 7-8, Cafe Boulevard orchestra; 8-8:10, Wall Street Journal review; 8:10-8:20, NYU Air college; 9:10-9:25, "Garden Planning," Peter Henderson and company; 9:25-9:40, Jack Cohen, pianist; 9:40-10, Dethorn and Howard, Hawaiian guitarist; 10-10:20, Marguerite Namarra, soprano; 10:30-11:30, Billy Wynne's Greenwich Village Inn orchestra. WLIT, Philadelphia, Pa. (395), 11:45 a. m., daily almanac; 12:02 p. m., Stanley theater organ recital; Arcadia cafe concert orchestra; 12:30, Lenten services; 2, Arcadia cafe concert orchestra; 2:30, Sylvia Stamm, soprano; 7:30, Dream Daddy's bedtime stories; 8:15, travel talk; Fildisa quartet; Symphony Club concert; 9:30, Cotton Pickers' dance orchestra; 10, Arcadia cafe dance orchestra. WNYC, New York, N. Y. (526), 7:30-7:35 p. m., police thrums; 8:30-9, course in appreciation of music, Dr. Henry T. Plick; 9:40-10, song recital. WOD, Philadelphia, Pa. (509.9), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanmaker crystal tea room orchestra, Robert E. Golden, director; 4:15, organ recital, Mary E. Vogt; 7:30, A. Candelori's ensemble from Hotel Adelphi; 8:15, concert from WEAF; 10:30, Vincent Rizzo's Hotel Sylvania dance orchestra. WOR, Newark, N. J. (405), 6:15-7 p. m., Harry Cox hotel Robert Treat orchestra; 8-8:30, Brooklyn Edison orchestra; 8:45-9:45, Chickering artist; 9:45-10, Parnassus trio. WRC, Washington, D. C. (468.5), 4 p. m., fashion developments of the moment, Eleanor Gunn; 4:10, George F. Rose, pianist; 4:20, tall, Outlook; 4:30, tye music, Meyer Davis' New Willard hotel trio. WTAM, Cleveland, Ohio (389.4), 6 p. m., Guy Lombardo's Royal Canadians orchestra; 8 p. m., concert program, Cleveland Plain Dealer. WWJ, Detroit, Mich. (352.7), 12:05 p. m., Jules Klein's Hotel Statler orchestra; 3, Detroit News orchestra; 6, dinner concert; 8:30, Detroit News orchestra; Templeton Moore, tenor.

### Central Time Stations

CNRR, Regina, Can. (420), 8 p. m., weekly bedtime travel tales; Eljay's Novelty orchestra. KOA, Denver, Colo. (322.4), 12-12:30 p. m., Rialto theater organ recital; 3, matinee for housewives; "The Gondolier's Serenade," Shirley Ligzins, tenor; Mrs. Edith Mathews, accompanist; negro dialect reading, Mrs. Harrison Miller; "Southern Dreams," Charles Duncan, violinist; "Mammy," Shirley Ligzins.

CNRR, Regina, Can. (420), 8 p. m., weekly bedtime travel tales; Eljay's Novelty orchestra. KOA, Denver, Colo. (322.4), 12-12:30 p. m., Rialto theater organ recital; 3, matinee for housewives; "The Gondolier's Serenade," Shirley Ligzins, tenor; Mrs. Edith Mathews, accompanist; negro dialect reading, Mrs. Harrison Miller; "Southern Dreams," Charles Duncan, violinist; "Mammy," Shirley Ligzins.

WBAF, Fort Worth, Tex. (475.9), 12:05-12:30 p. m., musical program; 7:30-8:30, program, musical department; W. T. Grant's store; 9:30-10:45, concert, Jim Wiley's Texas hotel orchestra. WBCN, Chicago, Ill. (268), 8-8:30 p. m., juvenile period, Luella Drew Wilson; 7-8, classical hour, Jubal Male chorus and assisting artists; 8-9, popular program, Amber Furniture company, Jack Parker, tenor; Les Cameron, tenor; Midway Dancing Gardens orchestra; Berger Wedberg, tenor; Florence Tapp, blues singer; 9-10, Englewood Overland company, popular program; Harry Davis, baritone; Southtown Harpists; 8:30-8:45, around the town with KYW; 8:45-9:30, music; 9:45-1, midnight revue; 1-2, "Insomnia Club."

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Allen Balr, director.  
KSAC, Manhattan, Kans. (340.7), 9 a. m., march music lesson, singing exercises; 9:15, inspirational talk; 9:29, callsthenes; 10, "Back Yard Gospel"; 10:05, "All Round the House"; 10:10, "Questions and Answers"; 10:20, "Suggestions for Today's Meals," Amy Kelly; 12:30 p. m., readings, Osceola Burr; "Items to Include in the Nursery Order," W. R. Martin; radio question box; "The Bull is Half Your Herd," R. W. Kiser; 7:20, college ball, music; 7:30, "Can We Afford a State Road System?" I. E. Conrad; 7:40, vocal solo, Harold Plamm; 7:45, "Is Landscape Treatment for Your Home an Investment?" A. H. Holder.

WJZ, New York, N. Y. (455), 10-10:20 a. m., Housewives League menu, Mrs. Julian Heath; 10:20-10:30, "The Sleek Baby," Visiting Nurse service; 10:30-10:40, "Fall Planting," Edith Loring Fullerton; 10:40-10:50, "Be Your Own Decorator," Amy Mall Hicks; 10:50-11, fashion talk, Eleanor Gunn; 12-1 p. m., Lenten service, Trinity church; 4-4:15, Anne Koenthal, soprano; 4:15-4:30, Gertrude Tara, pianist;

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# IN "GOING SOME" THURSDAY AT WRC



John Hammond is the organist of the Piccadilly theater and takes part Sundays and Thursdays in the Piccadilly programs at WGBS, Gimbel Brothers, New York City.

Gardens orchestra; Harry J. Mapp, president, Englewood Overland company, auto talk.  
**WCAE**, Northfield, Minn. (356.9), 7:30 p. m., Hemline-St. Olaf college basketball game.  
**WCCO**, Minneapolis-St. Paul, Minn. (416.4), 10:45 a. m., "The Convenient Tin Can," Betty Crocker; 2 p. m., "Hidden Treasures from the Bible," Ellen Gould; 2:30, metinee musical; 4, studio players, Lawrence Brings, director; 5:30, children's hour, Alphe Stelson; 7, midweek church service, First Evangelical church; Rev. J. G. Heldinger, pastor; 9, program, MacPhail School of Music and Dramatic Art; 10, dance program, Arnold Frank's Casino orchestra; 11:30, Eddie Dunstedter, organist.  
**WDAF**, Kansas City, Mo. (365.6), 3:30-4:30 p. m., Star's radio trio; 6-7, School of the Air; piano tuning-in number on the Duo-Art; address: Tell-Me-a-Story rally, Lionom ensemble, Hotel Muehlebach; 8-9:15, classical music, Star's Radio orchestra, soloists; **WGBH**, Chicago, Ill. (370.2), 7 p. m., Orlole orchestra; Liwly Jones, book talk; musical bits, Riviera theater; H. J. Clement, bass; 9, Orlole dance orchestra; talk, M. S. Szymczek; Langdon Brothers, Hawellen guitarists; Marie Kelly, readings; Frederick Kelly, readings; Frederick Agard, tenor; Bob Cougle, accompanist; 11, Orlole dance orchestra; Edna Solomon, songs; Nubs Allen, songs; Marie Kelly, readings; Nick Lucas, songs; Langdon Brothers, Hawaiian guitarists.  
**WEMC**, Berrien Springs, Mich. (285.5), 8:15 p. m., Mary Rossler, pianist; 8:20, weekly bird talk, Mary Lamson; 8:25, Tom Johnson, baritone; 8:30, "Dreamland Travels," George Fox; 8:40, Tom Johnson, baritone; 8:45, "Dreamland Travels," George Fox; 9, Mrs. H. B. Taylor, soprano; 9:15, "Dreamland Travels," George Fox.  
**WGN**, Chicago, Ill. (270.2), 1:40 p. m., luncheon concert, Drake concert ensemble, Blackstone string quintet; 2:30, artist series, Lyon & Healy; 3, rocking chair time; 5:30, Skeezix time for the children; 6, Drake concert ensemble, Blackstone string quintet; 8-9, Lyon & Healy classical artists; 10-11, Don Bestor Drake dance orchestra; Ned and Ches, WGN's Joy Boys.  
**WHA**, Madison, Wis. (535.4), 9 p. m., "Gondollera," "Chant d'Amour," "Jardius'sous la Pluie," "Fantasia," "Nocturne in F sharp," "Scerzato in B Minor," Frances H. Landon, pianist; "Printemps Sul Commence," "L'Alle'e est sens fin," "Paysage Triste," "Les Yeux," "The Great Awakening," "Deffodil Gold," "The Golden Bird," "Mornings," "To Welcome You," Jane E. Peterson, contralto.  
**WHAS**, Louisville, Ky. (399.8), 4-5 p. m., Mrs. Jay Wagon, vocal solos; Alamo theater; 7:30-9, concert, Kentucky and Indiana Terminal Railroad orchestra; Billy and Jane stories.  
**WHB**, Kansas City, Mo. (365.6), 2-3 p. m., musicel hour, Sweeney Radio trio; 7-8, popular dance music, Pekin Cafe; fifteen minutes for the children, Lullaby Ledy, Ehea Sheldon.  
**WHG**, Des Moines, Ia. (526), 8:30-7:30 p. m., Rees-Hughes orchestra; 7:30-8:30, Leonard Kirkwood, pianist; M. B. Handley, fiddler; Mrs. A. Geh, accompanist; Boston Operatic quartet; 8:30-9:30, Des Moines theater symphonic orchestra, Leon Deshoffer, director; 9:45-11, Bankers Life Radio orchestra.  
**WLS**, Chicago, Ill. (344.6), Noon: Bill Parks; 6:30, Ralph Emerson; 6:50, Senate theater organists; 7, "Lullaby Time," Ford and Glenn; 7:15, WLS Tribe of Love Scouts; 7:40, Agnes Carlson, contralto; 7:50, Bill Parks; 8, RFD program, Ralph Emerson, Ford and Glenn; 9, Glenn's Cornhuskers; 9:10, WLS theater presents Wallace Bruce Ansbury; 9:30, Wlesner Sisters; 10, Senate theater symphony orchestra; 10:30, Isham Jones; 10:40, Ford and Glenn.  
**WLW**, Cincinnati, Ohio (423), 8 a. m., physical exercises, Y. M. Wm. Stradmont, instructor; 12:15 p. m., program, Lu Phi Epsilon sorority; Ahaus Brunswick orchestra; 4, Shut-in program; 6, dinner hour concert, Sellinsky Instrumental quintet; Howard Thurston; 8, The Minor Instrumental trio, Minor Electric company; Columbian quartet of Dayton; Clifford Lane; aesthetic dances, Marlen LaCour; 9, Formica orchestra, Walter Eberger, director; Lyric quartet; Russian songs, Mexin Kestylie, Paul De Miller, accompanist.  
**WMAQ**, Chicago, Ill. (447.5), 1 p. m., speeches, luncheon of the Association of Commerce; 4, beauty talk, Madame Earl; 4:30, musical program, pupils of Cosmopolitan school; 6, Chicago theater organ recital; 6:30, stories for the children, Georgene Faulkner; 8, weekly lecture, Northwestern university; 8:30, Maurice Rosenfeld, pianist; 8:45, Jesse Beers Steak, soprano; 9, WMAQ players.  
**WMC**, Memphis, Tenn. (499.7), 12 m., music, O. K. Houck Piano company.  
**WOC**, Davenport, Iowa (483.6), 6:30 p. m., Sendmen's visit, Vel McLaughlin; 7, "History One Can See from WOC," Dr. A. B. Hender; 9, Erwin Swindell, organist; Mrs. John Mulloy, soprano.  
**WOI**, Ames, Iowa (270), 12:30 p. m., college chimes.  
**WOS**, Jefferson City, Mo. (440.9), 8 p. m., "Feeding Baby Chix," Prof. H. L. Kempster; program of old songs, Mayme Armstrong.  
**WQJ**, Chicago, Ill. (447.5), 3-4 p. m., domestic science course, Helen Herrington Downing; "Little Journeys Through Pocking Town," Martha Logan; 7-8, dinner concert, Ralph Williams and his Rainbo Garden orchestra; Merrle Boyd Mitchell, soprano; James Mitchell, baritone; Rev. Karl Chvorowski, pianist; 10-11, Ralph Williams and his Rainbo Skylarks; Rogers Boys, Larry and Billy; Rick, Whalen end Gardner, Harmony Singers; Clarence Theders, tenor; Alfred Tweed, harmonica and guitar soloist; The Melodians, Leurie, Eddie, Bennie; song writers, George A. Little, Leroy Shoy; Fred A. Jacobson, reader; Zeifer Sisters; 1-2, Hotsy Totsy hour with the Ginger man and the Little Skylarks.  
**WSAI**, Cincinnati, Ohio (325.9), 10 p. m., Russel Dunham, tenor; male quartet; Richard Fluke, baritone; Cliff Lang, pianist; Fenton Pugh, tenor.  
**WSB**, Atlanta, Ga. (428.3), 12 m., entertainment; 5-6 p. m., Georgians orchestra; bedtime story, Bonnie Barnherdt; 10:45, Woman's Division of the Chamber of Commerce.  
**WSUI**, Iowa City, Iowa (484), 9-9:30 a. m., violin solos, Harry F. Larson, talk on A Day on a Hill Reef; Prof. C. Nutting; 12:30-12:55, readings, music; 7:30, "The American Constitutional System," Prof. Frank S. Horack; 7:45, "The Psychology of Learning," Prof. Frederick B. Knight; 8, "Appreciation of Literature," Prof. Frank L. Mott.

**Mountain Time Stations**  
**CNRC**, Calgary, Can. (450), 9 p. m., Jahas orchestra; versatile and dance program, Pleza Haberet.  
**KOA**, Denver, Colo. (322.4), 12-12:30 p. m., Rialto theater organ; 8, ten minutes of music, Fred Schmitt's Rialto orchestra; 8:10, bend concert, El Jebel Temple; "March and Processional," "William Tell Overture," "After the Storm," "E. Jebel Shrine band; contralto solos, "Agnus Dei," "Transformation," Mrs. Lloyd C. Fulerwider; Mrs. Margeret Day Grubb, accompanist; "Czardas," "Valse Lente," "Scene," "Mazurka," "Merch," bend; "Arabian Night," bend; "The Shrine," James C. Burger; "Merch, Jim Burger," bend; "Dedication and Benediction Les Eugene," "Frozen Bill," bend; "Drums and Bugles," El Jebel Drum Corps; "Suite Romantique—A Day in Venice," bend; "Indian War Dance," "L'Etudiantina," bend; "That is the Lass for Me," "That's the Reason Noo I Wear the Kills," Welter Tripp, baritone; Mrs. Walter Tripp, accompanist; "High Patrol—Wes Macgregor," "Idyll," March, "Nobles of the Mystic," band; "Pierrotte," "Serenade," band; march, "Cock-a-Doodle Doo," bend.  
**KOB**, State College, N. M. (348.6), 7:30-8:30 p. m., international code course, lesson 8, Dean R. W. Goddard.

**Pacific Time Stations**  
**KFAE**, Pullman, Wash. (330), 7:30-9 p. m., Treadwell's orchestra playing "Doo Wocke Doo," "All Alone," "Show Me the Way," "Take Me," "Sally"; "Pointers on Deify Farming," Prof. E. V. Ellington; health talk, U. S. Public Health bureau; "Changing Farm Practices by the Printed Word," Lincoln Lounsbury; Radio talk, Dean Carpenter.  
**KFI**, Los Angeles, Calif. (467), 5-5:30 p. m., Evening Herald, table talk, news; 5:30-6, Examiner's musical half hour; 6:45-7:30, Nick Harris, detective stories; 7:30-8, program, Goodwin-Kilger-Meckay company; 8-9, Evening Herald's all-star program; 9-10, Examiner popular song hour; 10-11, Patrick-Mersh dance orchestra, Betty Patrick, soloist.  
**KFOA**, Seattle, Wash. (455), 5-5:15 p. m., Olympic Hotel orchestra; recipe; Hopper-Kelly company studio program; 8:30-10, Plymouth Congregational chorus, soloists, Wallace McMurray, director.  
**KFSG**, Los Angeles, Calif. (278), 10:30-11:30 a. m., sunshine hour program; 2:30-4:30 p. m., auditorium service and sermon on Divine Healing, Almee Temple McPherson, pastor; 6:30-7:30, children's hour, presenting Helen Edwina and Mary Elizabeth Hughes, Mrs. Rose, pianist.  
**KGW**, Portland, Ore. (492), 12:30 p. m., concert; 5, children's program, story, Aunt Nell; 8, concert.

## Index to Popular and Classical Concerts

TABULATED below is a time table of the stations giving classical and popular concerts next week. The concerts are divided into two classes, classical and popular. Stations are likewise divided into the four different standard times in use. The hours are given in the kind of time in use at each listed station. By using this table as an index and referring to the complete programs below, full information will be obtained.

**Popular**

**Eastern Time Stations**  
**Saturday, February 21:** 7:30, KDKA; 8:30, WNYC; 10, WJZ; 10:15, WGBS, WJZ; 10:35, WGBS.  
**Sunday, February 22:** 7:20, WEEI.  
**Monday, February 23:** 7:15, WEAF; 8, WBAV; 8:15, WGR; 8:30, WEAF; 9:25, WNYC; 10, WGR.  
**Tuesday, February 24:** 7:15, WEEI; 7:30, WGY; 8:30, WCAE, WEAF, WEEI, WFI, WNYC; 9, WCAE, WEAF; 9:45, CFAC; 10, WEAF.  
**Wednesday, February 25:** 7:45, WCAE; 8:15, WCR, WLIT; 10, WEEI; 10:30, WEEI.  
**Thursday, February 26:** 8:45, WCAE, WEAF; 8:15, WIP; 8:30, WNYC; 9, WFI; 9:15, WREO; 10, CFCA; 11, WSAI.  
**Friday, February 27:** 7, WWJ; 8, WEAF; 8:30, WEAF, WEEI, WJY; 9, WEAF.  
**Mountain Time Stations**  
**Saturday, February 21:** 7:45, CFAC; 8:30, KFOA.  
**Tuesday, February 24:** 6, KOA; 10, CFAC.  
**Pacific Time Stations**  
**Saturday, February 21:** 8, KGO; 11, KNX.  
**Sunday, February 22:** 8, KHJ, KNX.  
**Monday, February 23:** 8, KFI, KNX; 9, KFI.  
**Tuesday, February 24:** 7, KFI; 8, KHJ, KNX; 9, KNX; 10, KFI, KNX.  
**Wednesday, February 25:** 7:30, KFI; 8, KHJ, KNX.  
**Thursday, February 26:** 8, KFI, KHJ; 9, KFI, KHJ, KNX.  
**Friday, February 27:** 8, KFI; 10, KNX.

**Classical**

**Eastern Time Stations**  
**Saturday, February 21:** 7:30, CKAC, KDKA, WBZ, WLIT; 8, CNRO, WBBR, WEAF, WNYC; 8:15, WBZ, WJZ; 8:25, WEAF; 8:30, CKAC, KDKA, KFI, PWX, WCAE; 8:50, WEAF; 9, WEAF; 9:05, WBZ; 9:45, WBBR, WEAF, WGBS; 10, WBZ; 10:30, WBZ, WEAF; 10:45, WEAF.  
**Sunday, February 22:** 7:30, WGY; 8, WBBR, WJZ; 8:45, WGY; 9, WNYC; 9:10, WBBR; 9:30, WIP, WJZ; 10:05, WBBR.  
**Monday, February 23:** 7:30, WGY; 7:45, WCAE, WNYC; 8, CHNC, WBBR; 8:30, KDKA, WCAE, WCX, WLIT, WEAF; 8:40, WBBR; 8:45, WCAE, WGR, WHAZ, WJZ; 9:15, WREO; 9:25, WLIT; 10, WEAF, WGST; 11, WCAE.  
**Tuesday, February 24:** 7, WEAF, WLW, WRC, WWJ; 7:30, CKAC, WCAU; 7:45, WCAE, WEAF; 8, WBAV, WEEI; 8:10, WRC; 8:15, WIP, WJY; 8:30, KDKA, WCX, WSAI; 9, WEEI, WFI, WGY, WIP, WJZ, WMAK, WRC; 9:15, CKY; 10, WCAE, WRC; 10:10, WSAI; 10:15, WJZ; 11, KDKA, WCAE; 11:15, WGY.  
**Wednesday, February 25:** 7, WEAO, WKAQ; 7:30, WEAF, WOO; 8, WGY; 8:15, WCAU, WEAF; 8:20, WEAF, WEAO; 8:30, KDKA, PWX, WCAE, WCX, WEEI; 8:45, WCAU; 9, WEEI, WJZ; 9:45, CFAC; 10, WEAF, WJZ, WGY.  
**Thursday, February 26:** 7:15, WEEI; 7:30, WRC; 8, KDKA, WEEI, WGST; WGY; 8:15, WJY; 8:30, CHNC, KDKA, WCX; 8:40, WJZ; 9, CKY, WIP; 9:30, CNRM, WJZ; 10, WCAE, WEAF; 11, CFAC, KDKA.  
**Friday, February 27:** 7:15, WJY; 7:45, WEAF; 8, WEEI; 8:30, CNRT, KDKA, WCAU, WCX; 9, CFAC; 9:30, WCAE; 10:03, WOO.  
**Mountain Time Stations**  
**Monday, February 23:** 8, KOA; 8:30, KFOA.  
**Tuesday, February 24:** 8, KOA; 8:30, KFOA.  
**Wednesday, February 25:** 9, CFAC.  
**Thursday, February 26:** 7, CFAC; 8, KOA; 8:30, KFOA.  
**Pacific Time Stations**  
**Saturday, February 21:** 6, KHJ; 6:45, KFOA; 7:30, KNX; 8, KFI; 9, KPQX.  
**Sunday, February 22:** 6:30, KHI; 7, KPFG, KGW, KHJ, KNX; 8, KFI, KNX; 10, KPFG.  
**Monday, February 23:** 6:30, KNX; 6:45, KFOA; 8:30, KFOA; 9, KFOA.  
**Tuesday, February 24:** 6:30, KNX; 6:45, KFOA; 8, KFI, KGO, KHJ; 8:30, KGW; 9, KFI.  
**Wednesday, February 25:** 6, KHJ; 6:45, KFOA; 7, KNX; 8, KGW; 8:30, KFOA; 9, KPQX.  
**Thursday, February 26:** 6, KHJ; 8, KGO, KJS; 9:15, KPFG; 10, KFI, KPFG.  
**Friday, February 27:** 6, KHJ; 6:45, KFI, KFOA; 8, KNX; 9, KFI; 9:15, KPFG; 10, KFI, KPFG.

WHY A HEAVY PLAYERS TO BE HEARD IN "GOING SOME" THURSDAY AT WRC

Index to Talks, Lectures and Addresses

TABULATED below is a time table of the stations giving talks, lectures and addresses next week. These range from the instructive and serious to the humorous and frivolous. The stations listed are divided into the four different kinds of time in use. The hours are given in the kind of time in use at each listed station. By using this table as an index and referring to the complete programs below, full information will be obtained.

Table with columns for Eastern Time Stations, Mountain Time Stations, and Pacific Time Stations. Lists dates from Saturday, February 21 to Friday, February 27, with station call letters and program details.

Tuesday, February 24

(Continued from page 11)

Table with columns for Eastern Time Stations, Mountain Time Stations, and Pacific Time Stations. Lists dates from Saturday, February 21 to Friday, February 27, with station call letters and program details.



Charles H. Goble, Jr., is musical director of WGN, Chicago. His Sunday night musical lectures, which he calls "Evenings with the Composers," are very popular. His subject this Sunday, February 22, is "Creole Composers." Wilt Gunzeneder (right) is the director of the Cleveland Six orchestra heard every Friday evening at KPZ, San Francisco, Calif.

Table with columns for Eastern Time Stations, Mountain Time Stations, and Pacific Time Stations. Lists dates from Saturday, February 21 to Friday, February 27, with station call letters and program details.

DANCING

(Continued from page 12)

Table with columns for Eastern Time Stations, Mountain Time Stations, and Pacific Time Stations. Lists dates from Saturday, February 21 to Friday, February 27, with station call letters and program details.

Mountain Time Stations

Table with columns for Eastern Time Stations, Mountain Time Stations, and Pacific Time Stations. Lists dates from Saturday, February 21 to Friday, February 27, with station call letters and program details.

Pacific Time Stations

Table with columns for Eastern Time Stations, Mountain Time Stations, and Pacific Time Stations. Lists dates from Saturday, February 21 to Friday, February 27, with station call letters and program details.

Central Time Stations

Table with columns for Eastern Time Stations, Mountain Time Stations, and Pacific Time Stations. Lists dates from Saturday, February 21 to Friday, February 27, with station call letters and program details.

Index to Popular and Classical Concerts

TABULATED below is a time table of the stations giving classical and popular concerts next week. The concerts are divided into four classes, classical and popular. Stations are likewise divided into the four different standard times in use. The hours are given in the kind of time in use at each listed station. By using this table as an index and referring to the complete programs below, full information will be obtained.

Table with columns for Eastern Time Stations, Mountain Time Stations, and Pacific Time Stations. Lists dates from Saturday, February 21 to Friday, February 27, with station call letters and program details.

Popular

Table with columns for Eastern Time Stations, Mountain Time Stations, and Pacific Time Stations. Lists dates from Saturday, February 21 to Friday, February 27, with station call letters and program details.

Classical

Table with columns for Eastern Time Stations, Mountain Time Stations, and Pacific Time Stations. Lists dates from Saturday, February 21 to Friday, February 27, with station call letters and program details.

WTAY;  
WBCN,  
9, KYW,  
DAW: 10,  
WEBH,  
20, WQJ;

ons  
5, CFAC;  
KOA; 10,

is  
KGO; 11,  
IJ, KNX.  
FI, KNX:

KFI; 8,  
FI, KNX.  
5: 7:30,

8, KFI,  
KFI; 10,

6, KSD,  
WTAY;  
WFAA,  
H, WEBH,  
WLW;  
WMAQ,  
KTHS,  
9, KSD,  
WLW,

8, WGN,  
WGN,  
WEBH,  
WDAF,  
WEMC;  
CFAC;  
KTHS,  
IC; 11,  
CAY.

8, WGN,  
WTAY;  
WGN; 7,  
H, WQJ;  
WCBH,  
WOW;  
9, WEBH,  
KFKX,  
7; 10:30,

WGN,  
KFNE,  
DAW; 7,  
J; 7:30,  
WGN,  
WFAA;  
AQ; 9:30,

ons  
KOA;  
8, KOA;  
CFAC,  
FAC; 8,

ons  
21: 6, KHJ;  
KNX; 8, KFI; 9,

**Pacific Time Stations**

Billy and Jane stories.  
**WHB, Kansas City, Mo.** (365.6), 2-3 p. m., musical hour, Sweeney Radio trio; 7-8, popular dance music, Pekin Cafe; fifteen minutes for the children, Lullaby Lady, Enea Sheldon.  
**WHO, Des Moines, Ia.** (526), 6:30-7:30 p. m., Reese-Hughes orchestra; 7:30-8:30, Leonard Kirkwood, pianist; M. B. Handley, fiddler; Mrs. A. Geb, accompanist; Boston Operatic quartet; 8:30-9:30, Des Moines theater symphonic orchestra, Leon Dashoff, director; 9:45-11, Bankers Life Radio orchestra.  
**WLS, Chicago, Ill.** (344.6), Noon: Bill Parks; 6:30, Ralph Emerson; 6:50, Senate theater studio artists; 7, "Lullaby Time," Ford and Glenn; 7:15, WLS Tribe of Love Scouts; 7:40, Agnes Karlson, contralto; 7:50, Bill Parks; 8, RFD program, Ralph Emerson, Ford and Glenn; 9, Glenn's Cornhuskers; 9:10, WLS theater presents Wallace Bruce Amsbury; 9:30, Wlesner Sisters; 10, Senate theater symphony orchestra; 10:30, Isham Jones; 10:40, Ford and Glenn.  
**WLW, Cincinnati, Ohio** (423), 8 a. m., physical exercises, Y. M. C. A., Wm. Stradtman, instructor; 12:15 p. m., program, Mu Phi Epsilon sorority; Ahaus Brunswick orchestra; 4, Shut-in program; 6, dinner hour concert, Selinsky Instrumental quintet; Howard Thurston; 8, The Milnor Instrumental trio, Milnor Electric company; Columbian quartet of Dayton; Cliff Ford Lane; aesthetic dances, Marian LaCour; 9, Formica orchestra, Walter Esberger, director; Lyric quar-

**KFAE, Pullman, Wash.** (330), 7:30-9 p. m., Treadwell's orchestra playing "Doo Wocka Doo," "All Alone," "Show Me the Way," "Take Me," "Sally"; "Pointers on Dairy Farming," Prof. E. V. Ellington; health talk, U. S. Public Health bureau; "Changing Farm Practices by the Printed Word," Lincoln Lounsbury; Radio talk, Dean Carpenter.  
**KFI, Los Angeles, Calif.** (467), 5-5:30 p. m., Evening Herald, table talk, news; 5:30-6, Examiner's musical half hour; 6:45-7:30, Niek Harris, detective stories; 7:30-8, program, Goodwin-Klinger-MacKay company; 8-9, Evening Herald's all-star program; 9-10, Examiner popular song hour; 10-11, Patrick-Marsh dance orchestra, Betty Patrick, soloist.  
**KFOA, Seattle, Wash.** (455), 4-5:15 p. m., Olympic Hotel orchestra; recipe; Hopper-Kelly company studio program; 8:30-10, Plymouth Congregational chorus, soloists, Wallace McMurray, director.  
**KFSG, Los Angeles, Calif.** (278), 10:30-11:30 a. m., sunshine hour program; 2:30-4:30 p. m., auditorium service and sermon on Divine Healing, Almee Temple McPherson, pastor; 6:30-7:30, children's hour, presenting Helen Edwina and Mary Elizabeth Hughes, Mrs. Rose, pianist.  
**KGW, Portland, Ore.** (492), 12:30 p. m., concert; 5, children's program, story, Aunt Nell; 8, concert,

**Central Time Stations**

**Saturday, February 21:** 6, WBCN, WGN, WLW; 6:15, WTAY; 6:30, KFNE, WGN, WTAY; 6:45, WOAW; 7, KYW, WEBH, WGY; 7:30, WHAS; 8, KSD, WGN, WMC, WSB; 8:30, KTHS, WFAA; 11, KFQX, WFAA; 11:30, KYW, WOAW.  
**Sunday, February 22:** 6, WORD; 7, KYW, WBCN, WLS; 7:30, WFAA; 8, WCBD, WQJ; 8:30, KTHS; 9, WOAW, WQJ, WSUI; 9:15, WCCO; 9:30, KTHS, WOAI, WOC; 12, KFSG.  
**Monday, February 23:** 6, WGN, WMAQ, WOAW; 6:30, KFNE, WFAA, WGN, WMAQ, WOAW; 7, KFKU; 8, KFDM, WCBD, WHO, WOC, WORD; 8:15, WEMC; 8:30, KTHS, WFAA, WMC; 8:45, WORD; 9, KSD; 9:30, KFKX; 11:15, WHO.

**Sunday, February 22:** 6:30, KHJ; 7, KFSG, KGW, KHJ, KNX; 8, KFI, KNX; 10, KFSG.  
**Monday, February 23:** 6:30, KNX; 6:45, KFOA; 8:30, KFOA; 9, KFOA.  
**Tuesday, February 24:** 6:30, KNX; 6:45, KFOA; 8, KFI, KGO, KHJ; 8:30, KGW; 9, KFI.  
**Wednesday, February 25:** 6, KHJ; 6:45, KFOA; 7, KNX; 8, KGW; 8:30, KFOA; 9, KFQX.  
**Thursday, February 26:** 6, KHJ; 8, KGO, KJS; 9:15, KFSG; 10, KFI, KFSG.  
**Friday, February 27:** 6, KHJ; 6:45, KFI, KFOA; 8, KNX; 9, KFI; 9:15, KFSG; 10, KFI, KFSG.

Wednesday, February 25

(Continued from page 13)

Lucile Cummins; 10, Colburn's Melody Men; Sheffer's Novelty String quartet.  
**KLX, Los Angeles, Calif. (404),** 12:30-1:30 p. m., Coy Barkley and his Palace Ballroom orchestra; 2:30-3:30, program, Pacific States Electric company; 6-6:30, Art Hickman's Biltmore hotel concert orchestra; 6:30-7:30, stories American history, Prof. Walter Sylvester Herzog; Dick Winslow, juvenile reporter; Baby Muriel MacCormac and Mickey McLean, screen juveniles; 8-10, program, Pacific Mutual Life Insurance company; 10-11, Earl Burnett's Biltmore hotel dance orchestra.  
**KLX, Oakland, Calif. (509.9),** 6-7 p. m., organ recital; 8-10, studio program, overture, American theater orchestra; 10-11:30, Sweet's ballroom.  
**KNX, Hollywood, Calif. (337),** 8 a. m., morning prayer; 9, Hired Hand, news; 10, Hired Hand's morning message; 10:30, Mrs. Kate Brew Vaughn, home economics; 11, news, 25 and 50 years ago; 12-1 p. m., Wuritzer pipe organ studio program; 5, closing markets; 5:45-6:15, Wuritzer pipe organ recital; 6:15-7, Hi Moulton and his orchestra; 7-8, Ambassador hotel concert orchestra, Josef Rosenfeld, director; 8-10, feature program; 10-12, Hollywoodland dance orchestra.  
**KPO, San Francisco, Calif. (429.5),** 1-2 p. m., Rudy Selger's Fairmont hotel orchestra; 2:30-3:30, Rudy Selger's Fairmont hotel orchestra; 5:30-6:30, children's hour stories, Big Brother; 6:30, What is Playing at the Local Theaters; 7-7:30, Rudy Selger's Fairmont Hotel orchestra; 8-11, Gene James' Rose Room Bowl orchestra; Harry J. Walters, saxophonist; Jack T. Bishop, harmonica soloist; talk on physical culture, Bernard Drury.

Thursday, February 26

Thursday, silent night for: CHNC, KFAE, KFDM, KFMX, KFOA, KOA, KOB, PWX, WBAV, WCAU, WEAO, WEMC, WHA, WHAZ, WBO, WJY, WLBL, WOO, WOS, WSUI.

Eastern Time Stations

**CKAC, Montreal, Can. (425),** 4:45 p. m., cabaret entertainment; 8:30, Frontenac Breweries.  
**AT9, Fort Bragg, N. C. (435),** 8 p. m., Fifth Field Artillery band playing "Chicago Tribune," "Norma," "May Time," "Madame Sherry"; "The Two Little Bull Fiches," Sergis. Covell and Lafer, clarinetists; excerpts, Beife's opera, "The Bohemian Girl," "June Night," "Fifth Field Artillery March," band.  
**KOKA, East Pittsburgh, Pa. (309.1),** 12:20 p. m., Lenten services, Trinity church; 6:15, concert, KDKA Little Symphony orchestra; 7:30, children's period; 8, farm program, National Stockman and Farmer; 8:30, concert, 11, concert, Pittsburg studio.  
**WBB, New York, N. Y. (272.3),** 9:10 p. m., Richard Franklin, pianist; 9:25, Hawaiian quintet; 9:35, International Sunday school lesson, S. M. Van Sipina; 9:55, Hawaiian quintet; 10:10, piano solos.  
**WCAE, Pittsburgh, Pa. (462),** 6:30 p. m., dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 7:45, special feature; 8, Victor artists; 10, Goodrich Silvertown Cord orchestra.  
**WCAU, Philadelphia, Pa. (278),** 7:30, concert, Snellenberg Symphony orchestra, direction John A. Carroll; 8:15, recital; 8:40, "What We See and Hear in Music," by Maude Hanson Pettit; 9, Paul Specht and his dance orchestra; 10:20, Paul Specht and his dance orchestra.  
**WCA, Detroit, Mich. (516.9),** 4:15 p. m., musical program; 6, dinner concert, Book-Cadillac hotel; 8:30, musical program.  
**WEAF, New York, N. Y. (492),** 6-7 p. m., dinner music, Waldorf-Astoria hotel; 7-7:30, services, Federation of churches; 7:30-7:40, art talk; 7:40-8, Giuseppe Di Benedetto, operatic tenor; 8-8:20, lecture course, Columbia university; 8:30-9, Packard Motor company; 9-10, Victor hour; 10-11, Silvertown Cord orchestra.  
**WEAR, Cleveland, Ohio (389.4),** 8 p. m., studio program.  
**WEEI, Boston, Mass. (475.9),** 2 p. m., "Your Boy and the Movies," Eleanor Baldwin Cass; 2:15, dance orchestra; 6:30, Big Brother club; 7:15, sports talk, William E. Mullins; 7:25, program, Greater Boston Federation of churches; 7:55, Pathe News flashes; 8, New York program; 9, Victor concert; 10, Goodrich Silvertown Cord orchestra.  
**WFI, Philadelphia, Pa. (395),** 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3:05, Housewives' Radio exchange, direction Mabel Swint Ewer; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddies' pal; 8, concert from WEAF.  
**WGBS, New York, N. Y. (316),** 3:15-3:30 p. m., interview, Betty Ross and Rita Weiman; 3:30-3:45, talk, Louise Rice; 4-4:15, Lilian Menckel, soprano; 6-6:30, Uncle George; 7:30-8:30, Armand Veesey's Ritz-Carlton concert orchestra; 8:30-9, "Footlight and Lamp-light," Oliver Saylor; 9:30-11, program, Piccadilly theater; 11-11:30, Macy and Scott; 11:30-1 a. m., Russian Eagle orchestra.  
**WGR, Buffalo, N. Y. (319),** 12:30-1 p. m., Hotel Statler concert ensemble; 1:30-3:30, Radio Dealers' musical program; 6-7:30, dinner music, Hallpyrd String quartet; 8-9, "Variety Hour," jointly with WEAF; 9-10, Victor concert, jointly with WEAF; 10-11, Goodrich Silvertown Cord orchestra, jointly with WEAF.  
**WGY, Schenectady, N. Y. (379.5),** 2 p. m., "Good Taste in Home Decoration," Alice St. John; 2:30, Stephen E. Boisclair, organist; 6:30, dinner concert, Hotel Ten Eyck orchestra; 7:30, "A Few Moments with New Books," L. L. Hopkins; WGY orchestra; 8:15, comedy, "Going Some," WGY players; 11:15, organ recital, Stephen E. Boisclair.  
**WHK, Cleveland, Ohio (273),** 6:15 p. m., news items; Emerson Gills' Bamboo Garden orchestra; 8, program arranged by the Cleveland Press; Al Dister's orchestra Miriam Ward, Welsh contralto; Alex Worth, tenor.  
**WHN, New York, N. Y. (300),** 12:30-1 p. m., Charles Strickland's Palais D'Or orchestra; 6:30-7, violin solos, Oleitt Vall; 7-7:30, Harry Rose and his Silver Slipper Entertainers; 7:30-7:55, health talk, Dr. Landis; 8:30-9, Everglades revue; 9:35-10, O'Meara Gardens ballroom orchestra; 11-11:30, Connie's Inn revue; 11:30-12, Lou Holtz and his Wigwam club entertainers; 12-12:30 a. m., El Fey club revue.  
**WIP, Philadelphia, Pa. (509.9),** 1 p. m., Gimbel tea room orchestra; 6:05, W. Irving Oppenheim's Benjamin Franklin concert orchestra; 7, Uncle Wip's bedtime stories; 8:17, concert by concerta from Eastern Penitentiary; 9:15, income tax talk; 11, Harvey Marburger's vaudeville dance orchestra.  
**WJY, New York, N. Y. (405),** 7:30-7:45 p. m., "Income Taxes," Frank Shevt; 7:45-8, Mischa Goodman, violinist; 8-8:20, "A Digest of Outstanding Magazine Articles for March," Walter P. Gruening; 8:30, "Going Some," comedy by WGY players.  
**WJZ, New York, N. Y. (455),** 10-10:20 a. m., Housewives' League menu, Mrs. Julian Heath; 10:20-10:30, Review of Reviews; 10:30-10:40, "Household Equipment," Ethel R. Peysor; 10:40-10:50, "Bride's Household Linen," Editor of Needle Art; 10:50-11, fashion talk, Eleanor Gunn; 12-1 p. m., Lenten services, Trinity church; 1-2, Nathan Ahas' Hotel Pennsylvania orchestra; 4-4:15, Katherine DeWitt Crocco, soprano; 4:15-4:30, "Highways of Travel," Wirt W. Barnitz; 4:30-5:30, Bernhard Levitov's Hotel Commodore tea orchestra; 7-7:55, Bernhard Levitov's Hotel Commodore orchestra; 7:55-8:15, "News from Nowhere," John B. Kennedy; 9:30, Australian program.  
**WKAQ, San Juan, P. R. (340.7),** 7:30-9 p. m., concert, restaurant, "La Cafetera."  
**WLIT, Philadelphia, Pa. (395),** 11:45 a. m., daily almanac; 12:02 p. m., Stanley theater organ recital; Arcadia cafe concert orchestra; 12:30, Lenten services; 2, Arcadia cafe concert orchestra; 2:30, Caroline Wagner Green, soprano; Elsie Warner, accompanist; 7:30, "Iteam Daddy's bedtime stories."  
**WNYC, New York, N. Y. (526),** 7:35-7:55 p. m., sport talk, Thornton Fisher; 8-8:15, "Timely Topics," Francis P. Dent; 8:30-9, vocal and instrumental program.  
**WOO, Philadelphia, Pa. (509.9),** 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 4:45, organ recital, Mary E. Vogt.  
**WOR, Newark, N. J. (405),** 6:15-7:15 p. m., Tom Hooper's orchestra.  
**WRC, Washington, D. C. (468.5),** 8:45 p. m., children's hour, Peggy Abbott, music, Shorcham Hotel orchestra; 8, talk, aspirants American Automobile association; 8:30, "Going Some," WGY players; WJZ and WGY; 10:30, dance program, Club Deauville orchestra.

**WTAM, Cleveland, Ohio (389.4),** 6 p. m., Guy Lombardo's Royal Canadian orchestra.  
**WWJ, Detroit, Mich. (352.7),** 12:05 p. m., Jules Klöhn's Hotel Statler orchestra; 3, Detroit News orchestra; 6, dinner concert; 8:30, Detroit News orchestra; Mune. Homer Dubard, soprano; Graeme Gillies, bass; Jean Louhead, Theone Hubbard; 10, dance music, Jean Goldkette's Victor Recording orchestra; 11:30, Detroit News orchestra; Wilfred Head, composer-pianist.

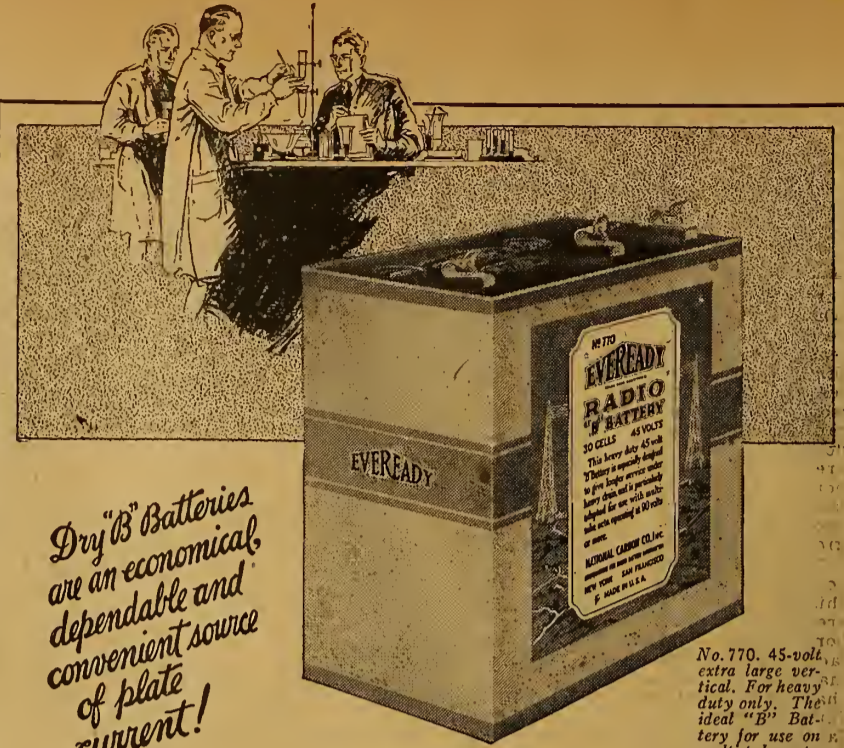
Central Time Stations

**CKY, Winnipeg, Can. (450),** 7:30 p. m., lesson in French diction and conversation, A. C. De Lalonde.  
**KFKU, Lawrence, Kan. (275),** 6:50 p. m., piano tuning-in number; 7, music; 7:15, "Trees for Home, Park and Roadside," Prof. W. C. Stevens; 7:30, "Winning of Metals from Their Ores, Zinc," Prof. Edward D. Kinney; 7:45, educational psychology, lesson VIII, Dean R. A. Schweger.  
**KFKX, Hastings, Nebr. (288.3),** 9:30 p. m., Burton family of Franklin.  
**KFMQ, Fayetteville, Ark. (275),** 7:30 p. m., "Our Neighbor Mars," A. M. Harding; "Relation of Fire-blight to Growing of Apples and Peers in Ozark Region," N. H. Young; "Planning Buildings for Arkansas Farms," D. G. Carter.  
**KFNF, Shenandoah, Iowa (266),** 6:30 p. m., concert, Vincent Young, director.  
**KSAC, Manhattan, Kans. (340.7),** 9 a. m., march, music lesson, singing exercises; 9:15, inspirational talk; 9:20, calisthenics; 10, "Back Yard Gossip"; 10:05, "All Round the House"; 10:10, "Questions and Answers"; 10:20, today's news; Amy Kelly; 12:30 p. m., readings, Osceola Burr; "The Chick's First Feed," J. H. McAdams; question box; "Treat Seed Potatoes," E. A. Stokdyk; 7:20, college bell, music; 7:30, "Improving Your Work Shop"; 7:40, music, Mrs. G. W. Salisbury, director; 7:50, "The Cereal Family," Margaret Albhorn; 8, "All Nationality's Songs and Stories," Dr. H. T. Hill; music, Prof. P. P. Brainard, director.  
**KSO, St. Louis, Mo. (545.1),** 4 p. m., home hour; 7, program, Hay's orchestra; 9, Mabel Hall, soprano; Mrs. H. J. Beckemeyer, contralto; Mrs. Memmie Charles Towey, accompanist; address, Dr. L. D. LeGear.  
**KTHS, Hot Springs National Park, Ark. (375),** 8:30-9 p. m., W. C. Brown, baritone; 9-10, concert, Ches. L. Fisher orchestra.  
**KYW, Chicago, Ill. (535.4),** 7:30 p. m., dinner concert, Congress hotel; 7:35-7:43, farm talks, "Some Stories of Livestock Club Boys in the Corn Belt," Don Smith; "Crop Prospects for this Season," D. C. Waterman; 8-8:20, "Twenty Minutes of Good Reading," Rev. C. J. Perrin; 8:20-9:05, Edna DeLee, soprano; Lewis Meehan, tenor; Thomas W. Carey, baritone; Thomas B. Stephenson; 9:15, "Good Roads"; 10-11:30, evening at home; 1-2, "Insomnia Club."  
**WBAP, Fort Worth, Texas (475.9),** 12:05-12:30 p. m., musical program; 7:30-8:30, program, Mrs. A. M. Helper, director; 9:30-10:45, concert, classical music, Carolyn Bell McFarland.  
**WCAI, Norfolk, Minn. (336.9),** 9 p. m., Sylvania Sundaeh, contralto; Olaf Christianson, baritone; Edith Hanson, pianist.  
**WCBO, Zion, Ill. (344.6),** 8 p. m., mixed quartet; Miriam Hollingshead, Mrs. Hire, Mrs. Huth, flutist, violist, harpist; Daniel Mason, trombonist; Mrs. Sadie Inman, soprano; Mr. and Mrs. Steel, tenor and soprano; Miriam Hollingshead, flutist; Dorothy Sched, pianist; Mrs. Hulda Klammer, reader.  
**WCCO, Minneapolis-St. Paul, Minn. (416.4),** 10:45 a. m., home service, "The Proof of the Pudding," Mrs. Betty Crocker; 2 p. m., "The Popular Concert," Mrs. Agnes Fryberger; 4, magazine hour, "Steel Against Steel," Conrad Bersovick; 5:30, children's hour, Mrs. Charles Lewis Ramsdell; 6:30, National concert, Riley's concert orchestra; 7-8, National program, New York; 10, dance program, Arnold Frank's Casino orchestra.  
**WDAF, Kansas City, Mo. (365.6),** 3:30-4:30 p. m., Star's Radio trio; 6-7, School of the Air; piano tuning-in number on the Duo-Art; address, Tell-Me-a-Story Lady; Trionan ensemble, Hotel Muehlebach; 11:45-1 a. m., night hawk from a Merry Old Chief, Plantation Players, Hotel Muehlebach; Eddie Kuhn's K. C. Athletic club orchestra.  
**WEBH, Chicago, Ill. (370.2),** 7 p. m., Orlole orchestra; Florence Flintfield; musical bits, Riviera theater; 9, Orlole orchestra; Belle Forbes Cutter, soprano; John Stamford, tenor; 11, Orlole dance orchestra; Banks Kennedy, soloist; Harry Davis, singer.  
**WEBW, Beloit, Wis. (268),** 7:30-8:30 p. m., band concert and quartet, Fairbanks, Morse company.  
**WGN, Chicago, Ill. (370.2),** 1:40 p. m., luncheon concert, Drake concert ensemble, Blackstone string quintet; 2:30, artist series, Lyon & Healy; 3, rocking chair time; 5:30, Skeezix time for the children; 6, organ recital, Lyon & Healy; 6:30-7, dinner concert, Drake concert ensemble, Blackstone string quintet; 8-9, Mabel Sharp Herlden, soprano; 10-11, Don Bestor Drake dance orchestra, organist.  
**WGST, Atlanta, Ga. (270),** 7-8 p. m., Mrs. Robert Daniel, contralto; "The Co-operative Plan of Education," E. J. Plath.  
**WHA, Madison, Wis. (535.4),** 7:45 p. m., address, "Apples for Wisconsin Homes," Prof. J. G. Moore.  
**WHAS, Louisville, Ky. (399.8),** 4-5 p. m., Evelyn Black, reader; Alamo theater organ; 7:30-9, mixed concert, J. W. Murrell, director; International Sunday school lesson, talk.  
**WHB, Kansas City, Mo. (365.6),** 2-3 p. m., Mrs. Moore, organist; Sweeney Stringed trio; 7-7:30, dinner music, Music Masters; 8-10, Blevins and Scott quartet; Mrs. H. A. Frey, whistler.  
**WHO, Des Moines, Iowa (526),** 11-12 midnight, Cotillion ballroom orchestra, Gale Fitch, director.  
**WLS, Chicago, Ill. (344.6),** Noon, Nubs Allan; 6:30, Ralph Emral, orchestra; Doherty melody boys; 7, Ford and Glenn, Lullaby Woodshed theater, "Gardenlock"; 7:20, Kankakee Post No. 85, Bugle Corps and quartet.  
**WLW, Cincinnati, Ohio (423),** 8 a. m., physical exercises, Y. M. C. A.; William Stradman, instructor; 12:15 p. m., concert, 4, French lesson, Madams Ida Trimples; piano solos, Adelaide; 6, dinner hour concert, Sellinsky Instrumental quintet; 8, chorus of 700 high school students, Louis E. Aiken and E. J. Wisenall, directors, in connection with National School Superintendents' convention at Music hall; 10, three minute message, United States Civil Service department; 10:03, concert program, Cooper corporation, quartet, orchestra; Doherty melody boys.  
**WMAQ, Chicago, Ill. (447.5),** 4 p. m., household hour, Mrs. Elizabeth O. Hiller, director; 4:30, Illinois Federation of Women's clubs; 6, Chicago theater organ recital; 6:25, Hotel LeSalle orchestra; 6:50, Daddy; 8, Hon. J. C. Bartholf; 8:15, music; 8:35, music; 8:50, lecture, University of Chicago; 9:15, program, Ravenswood Baptist church choir.  
**WMC, Memphis, Tenn. (499.7),** 12 m., musical program, O. K. Houck Piano company; 8:30, Harry O. Nichols, organist.  
**WOAI, San Antonio, Texas (395.4),** 9:30 p. m., Jimmie Joy's Hotel St. Anthony orchestra.  
**WOAW, Omaha, Nebr. (526),** 12:30 p. m., horticultural program; 6, story hour, Grace Somerson; 6:20, Mrs. Henry G. Cox, pianist; 6:45, program, Frank Buckingham, instructor of string instruments; 10:30, Frank Hodek, Jr., and his nightingales.  
**WOC, Davenport, Iowa (483.6),** 6:30 p. m., Sandman's visit, Val McLaughlin; 9, Schuster Sister's California orchestra; 11, Louis Conor and his LeClaire hotel orchestra; songs and novelty numbers, Peter MacArthur.  
**WOL, Ames, Iowa (270),** 12:30 p. m., college chimes; talk on automobiles, Prof. A. Shane; 8:15, musical program.  
**WQI, Chicago, Ill. (447.5),** 3-4 p. m., "Dishes for Cold Days," Josephine Naylor; Light and Glee," George A. Hill; 7-8, dinner concert, Ralph Williams and his Rainbow Garden orchestra; Laverne Hansen, pianist; Otto A. Moore, baritone; Lydia Lochner, contralto; Edith Buckmaster, accompanist; 10-1 a. m., Ralph Williams and his Rainbow skyarks; Lew Butler; Ned and Ches; James J. Whalen, tenor; 1-2 Hotsey Topsy hour.  
**WSB, Atlanta, Ga. (428.3),** 12 m., Dr. Charles A. Sheldon, organist; 5-6 p. m., Vick Myers Melody artists; bedtime story, Bonnie Barnhardt; 8-9, Itiz Harmony Boys; 10:45, Dr. Charles A. Sheldon, organist.  
**WSUI, Iowa City, Iowa (484),** 12:30-12:55, talk; "Mountains, Past and Present," Ben B. Cox.

Mountain Time Stations

**CNRC, Calgary, Can. (450),** 9 p. m., Canadian National Railways symphony orchestra, Frank Anderson, director; Jeanette Honey, soprano; George Boothman, baritone.  
**KOA, Denver, Colo. (322.4),** 12-12:30 p. m., Rialto theater organ; 5, "Forgotten," "Rose in the Bud," "My Laddie," "Nan Johnson, soprano; talk, "The Garden," Mrs. J. H. Hegarty; "By the Waters of Minnetonka," "Even Song," "Souvenir," Mrs. Roger Wolcott, violinist.  
**KOB, State College, N. M. (348.6),** 7:30-8:30 p. m., popular science course, lesson 6, member of engineering faculty; "How the National Forests of the Southwest Are Handled," Frank C. W. Zook.

(Continued on page 18)



Scientists constantly improve battery quality

EVEREADY "B" Batteries today contain more electricity, more service, more satisfaction than ever before.

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 WEEI Boston WFI Phila.  
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# “Dos” and “Don’ts” of Home Construction

## Little Things That Are Important

By W. S. Standiford

**L**ARGE numbers of new Radio enthusiasts are continually joining the ranks of those older ones who, through long experience, have found out what to do in constructing and operating receiving sets so that they will give the least amount of trouble when their outfits are in use. It is an axiom that, the less bother any person has during the working of a machine, the more enjoyment can be obtained from it. This applies with double force to Radio appliances, as they are more or less in their infancy and not perfected to the extent to be expected later on. However, very satisfactory progress is being attained by Radio engineers as well as some of the public.

The youth is rapidly becoming a giant, so great are the advances being made in this line. Most of the troubles encountered by Radio novices during operation of homemade receivers may be traced to their lack of knowledge on this subject; in the majority of instances, experience shows that the reason that home-built equipment fails to work, or operates in an unsatisfactory manner, is because its builder has incorporated some ideas of his own in the apparatus during building and this is the reason that such outfits will not give the excellent results obtained from one correctly built.

### Follow Instructions

When you construct a receiver from printed instructions, always follow to the letter all designs given therein, and you will avoid a lot of worry afterwards. Unless you are an expert in Radio equipment design and know positively that your alterations will make a set having better working quality and efficiency, it is best to adhere strictly to the directions in making and wiring the various instruments in it. This is a very important matter which should be considered seriously by the home builder of Radio appliances.

Some amateurs who are making their first set and know very little about electricity and high frequency electromagnetic waves used in Radio broadcasting, substitute wood for their panels in order to keep the expenses down to a minimum instead of using hard rubber, bakelite or some of the other well-known dielectrics, and then wonder why it is that they have trouble in getting good results in the reception of broadcast programs sent out from different stations.

Even if all other constructional directions were rigidly followed, with the exception of having a wooden panel, the latter would by its electrical leakage make the instrument work badly. A broadcast current has such a high frequency that nothing but the very best materials ought to be used for panels. That's the reason why all manufacturers of Radio outfits equip their product with the highest grade of panels obtainable, as fine signal reception depends, to a large extent, upon good working parts.

### Insulation on Wires

Another mistake made by some Radio enthusiasts is to use soft white or red rubber tubing for insulation over wiring of the receiver. There is a reason why this should not be done, but not from an insulation standpoint, as soft rubber tubing is a good insulator. Due to the action of the electric current, the sulphur contained in the rubber completely oxidizes and corrodes, in time, the joint and wire, with the result that the resistance is increased and trouble occurs. There is only one good kind of tube covering for wires in Radio equipment; that is an excellent grade of moisture-proof varnished cambric tubing, called "spaghettil." Both the yellow and black varieties are fine insulators, but the black kind resists higher voltages.

Another fault in our homemade sets is poor connections. Too great stress cannot be put on the importance of good, well-soldered connections or wire joints. Inspect your work and if you have the slightest doubt about any joint not being neatly and efficiently made, solder it over again. By doing all work well when building your set, you will be able to keep the repairs down to a minimum, as Radio outfits get out of order occasionally like all other machinery. The importance of having a good ground is not well understood by the rank and file of Radio recruits. See that your ground wire is soldered to a water pipe, as a poorly grounded receiving set loses more than 50 per cent of the signal strength (which is very weak at its best) that it would normally receive. It pays to inspect your ground wire connection at intervals to see if everything is intact. Those who have crystal sets will find that, owing to dust and handling, reception will go bad. In the majority of cases, touching the surface of the crystal with the fingers makes trouble. If a crystal has been touched by your fingers while placing it in posi-

tion, wash it in alcohol and handle with clean pliers or a pair of tweezers.

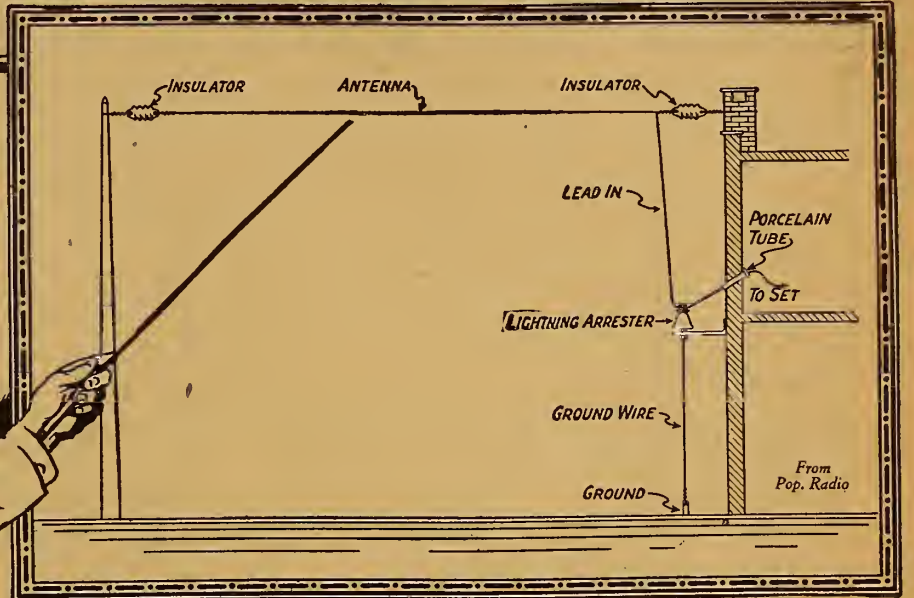
### Use of a Crushed Crystal

Examine the "cat whisker" and see that its point is clean and fairly sharp; don't have it too sharp, however, as the point will burn off rapidly. If you are bothered much by vibration throwing the "cat whisker" off crystal while "listening in" to various broadcast concerts, try the following plan: Solder a small copper tube in an upright position in the cap of your detector (removing the old crystal first), arranging the "cat whisker" wire so that it will occupy the center of the tube. Pulverize a crystal, but not too finely. Put some of it in the tube surrounding the wire; don't pack it in, but let it press gently of its own weight against the

wire's sides, letting the point of the wire also touch the crushed galena. Any vibrations which take place simply shake the wire, but as the latter is always in contact with a number of pieces of the crystal's sensitive spots pressing against its sides, reception will continue.

Some Radio novices, new to the game, who are located more than twenty-five miles from a broadcasting station, purchase or build their first crystal set and blame the instruments as being defective when they receive nothing but code messages. The fact that code can be heard, whenever the outfit is operated, is proof that there is nothing radically wrong with the set. A tube set should be purchased in cases of the above kind. If nothing but a humming sound is heard, but no code

look for a broken wire in the tubing coil and try to pass the current of two dry batteries through its winding. If no current goes through, there is a broken wire. Extreme care should be taken in winding wire on coils to see that they do not get broken. If there is no broken wire, look for poor connections throughout your set. Try another piece of galena, as sometimes a more sensitive piece is all that is needed for good signal reception. If humming occurs on a crystal set located in a city where broadcasting is done, it is caused, in most cases, by the induction from a 60-cycle electric light line. There is no way to get rid of it, although it may be minimized by placing your aerial at a right angle to the line. Violet ray (Continued on page 20)



## The Secret of a Good Aerial Is the Protective Enamel Coating

**R**ADIO AUTHORITIES agree that ordinary bare aerial wire deteriorates rapidly when exposed to atmospheric fumes and moisture. High-frequency currents in the aerial always flow along the surface of the wire, and when this surface becomes corroded, the aerial current encounters great difficulty in reaching the radio set. This means considerable loss of range and volume.

Beldenamel Stranded Aerial Wire is made of bright, clean copper strands, each covered with a protective, baked-enamel coating. Atmospheric exposure, even for years, has no effect on Beldenamel and corrosion cannot take place to reduce signal strength. Follow the advice of acknowledged radio authorities, and replace your aerial with Beldenamel Aerial Wire. Do it now, and hear the difference.

### For Best Results

the aerial and lead-in should be a continuous length of Beldenamel Aerial Wire. Use a 150-foot length furnished in standard Belden carton and avoid all joints.

### Free Booklet



Belden Manufacturing Company  
2310A S. Western Ave., Chicago

I want a real aerial for my set. Please send me your booklet describing Beldenamel Aerial Wire and other Belden Radio Products.

Name.....

Address.....

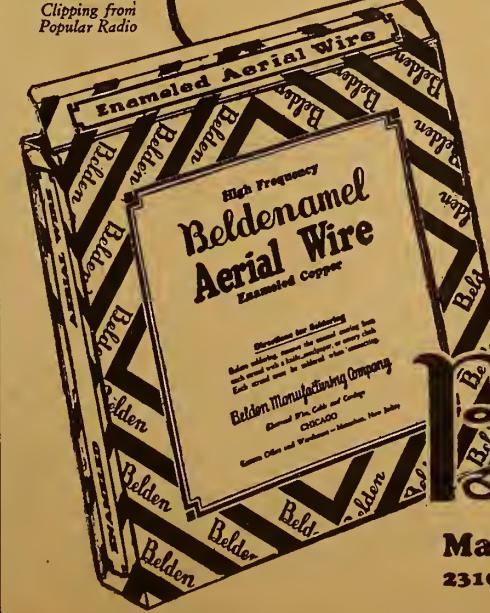
Results will be better anyway. Power lines, in close proximity to an antenna cause a shadowing effect or an absorption effect and sometimes both.

**Corroded Antenna Wire Causes Weak Signals**

If your antenna has been up for a year or more the chances are that the surface of the antenna wire has become corroded due to the action of the weather. Radio frequency currents travel on the surface of the wire and often the weakening signals carried by them is due to this corrosion. This trouble is particularly prevalent in large cities where the atmosphere is contaminated with sulphur fumes and other chemicals from manufacturing plants.

Enamelled wire is excellent for antennas as the enamel protects the surface of the copper from the gases and other corrosive elements in the atmosphere.

Clipping from Popular Radio



# Belden

Manufacturing Company  
2310A S. Western Avenue • Chicago

# Radio Digest

PROGRAMS  
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## No Call Letters, No Reception

Announcers That Don't Announce Lose

**A**GAIN our attention is called to the fact that all announcers do not make known their call letters with enough frequency to satisfy those listening in to their programs. Here is a sample of the protests that have come to us.

"Why is it that certain stations put on dance programs and run a whole string of numbers, three, four or five with no announcement between identifying the sending station? A brief announcement of the station letters would suffice. As it is we switch to some other station where we do not need to guess who is sending. We can get the same stuff from other stations."

The bad feature about Radio is that you do not know if your audience is listening in to your program. The announcer who does not announce is not only at fault but he loses his listener for he tunes in on another station. There is no question but what the inefficient announcer gets the worst of it.

## Don't Scoff at Market Reports

They Mean Much to Many Farmers

**L**ISTENING in on his Radio receiving set installed in his farm home, George J. Wright, of Aberdeen, S. D., heard the best price of hogs for the season quoted, and started seventy of last year's pigs twenty miles to market. He came home with a check for \$1,394.50 in his pocket as a result of the information brought to him out of the ether by the latest essential equipment of the modern South Dakota farm.

Mr. Wright lives down the Missouri river. Instead of trying to truck his hogs to market he drove them up the river on the ice to his nearest shipping point at Mobridge. The hogs averaged nearly \$20 apiece and sold at \$9.80 per hundred. Last fall the price was \$6.20, so he rejoices in an increase of \$3.60 per hundred.

The sale was made on a good market. Mr. Wright says that the reason he was able to do this was because he has a Radio receiving set to keep him posted. He is twenty miles from a post office and finds Radio a great convenience in keeping him in touch with the world. In this instance of a single marketing it meant a great many dollars to him on the price of his hogs.

City listeners impatient for musical programs grow caustic in their remarks about the reading of market reports on the air, but here is an instance of the practical use to which this information is put by the men to whom it means dollars in loss or gain. They are scattered all over the country in isolated farm houses listening in to learn what the day's quotation for their livestock or grain may be.

## Refrigeration by Amplification

Cold Waves Sent Through the Cluttered Air

**A**NOTHER inventor has bobbed up from a secluded place and claims to have control over the bores in sending out Radio waves that will take the place of the ice box and refrigerator in the home. We have wrestled with the problem of sending motion pictures by Radio and have not fully absorbed the technicalities surrounding this mysterious bit of transmission; then comes along this new item which the ether waves can do and it knocks us flat. Just think of it to turn a dial and instead of receiving strains of music the butter will remain hard and the meats fresh and the milk sweet. We just wonder what kind of amplification is used to do this.

This is an age of discoveries, some of which are practical and some otherwise. There is no telling what new attributes Radio may develop, or what discoveries may be made along other lines of more or less practical value. It seems that at this time in the world's history anything may happen, but, even giving, Radio credit for all that is claimed for it, it would seem the part of wisdom to hold onto the photographer and the ice man for the present. Their value is not a speculative one. Radio or no Radio, they are both human necessities.

## RADIO INDI-GEST

### "Kanoofis" Bound for Walla Walla



**AT SEA (via Radio)**—The good ship S. S. Kanoofis is steadily plowing her way through the south Pacific, and will be due at Walla Walla about the middle of next month. Captain Oneoar, master of the schooner, sent the following Radio message:

"After leaving the United States we ran into dirty weather and the entire crew with the exception of the Third Trombone player and Indi himself went down with sea sickness. A number of the crew declared that they had been poisoned by the cook, Radio Jim. When questioned, Jim declared that he had eaten his own grub. This was conclusive proof that it was not poisoned. The crew were convinced and begged his forgiveness.

"A Radio message was received this morning, telling us to be on the lookout for pirates who were operating in the vicinity of where we are at the present time (lat. 49-20 south, long. 110 west). Any of our readers who are listening in, and catching these signals, would do us a favor by reporting same.

"The above photo was broadcast by Radio, and shows the 'Kanoofis' riding the waves in the proper manner. All those on board send their best regards and will send further details on the expedition when something unusual turns up on the sea." 73-CUL, Signed,

CAPT. ONEOAR.

(Do not miss this thrilling story of the Walla Walla expedition. Be sure to order your next week's copy now.—Ed.)

### Radio Gospel

Give ear, Oh, gentle stranger,  
Unto a tale of woe,  
The preachers see a danger  
That lurks in Radio.

It is the country preachers,  
Who in their pulpits perch,  
That constitute the teachers  
Of peril to the church.

They say it spoils attendance  
At church on Sabbath days,  
And creates independence  
Of certain saintly ways.

'Tis sad there is complaining,  
For it is fine to get  
One's spiritual training  
From a good Radio set.

There's one redeeming feature,  
Since there are folks, you know,  
That never hear a preacher  
Except by Radio.

The path of least resistance,  
Aids these folk in their search  
For gospel, from a distance,  
Who will not go to church.

WILSON E. ROGERS.

### That Would Be a Loud Speaker

Dear Indi:—Have you heard this one? A would-be Radiophan approached a dealer and asked to see a Radio set. The dealer says, "here's a nice little set using 199 tubes." "Oh," says the fan, "that is too many, about half of that would be enough."

CARRIE R. WAVE.

### Blame It on "The Lady of the Lake"

Dear Indi:—Sir Walter Scott was a dial twister according to one of his poems, for does not Sir Walter say:

Twist ye, turn ye! even so  
Mingle shades of joy and woe,  
Hope and fear, and peace, and strife,  
In the thread of human life.

STATIC.

### WAHG Should Be in St. Louis

Indi:—Evidently the owners of broadcasting station WAHG intend to become "fellow citizens with the saints." First it was Saint Nicholas or the Radio Santa Claus. Then came Saint Valentine and in the offing there are rumblings of a Saint Patrick limerick contest. Paul in his epistle to the Romans said something about everybody being "called to be saints" and it is very evident the Grebe folks take Paul at his word.

MAC.

### B-E-D Signing Off—Good Night

Dear Indi: When little Jack, who is fond of listening to the children's hour transmitted from one of the large stations, knelt down to say his prayers last night he finished in an unusual way.

At the close of the customary string of petitions he said: "This concludes our program, dear Jesus. Good night and Amen."

A. C. B.

## Preparing for March 4



## Condensed

By DIELECTRIC

With the changes in wave length and in the power of many of our Radiocasting stations, it keeps one on the jump to keep up. The first evening WLW used their increased power, fans sat up and took notice, if we may judge by the number of congratulatory messages received in the studio. Numbers appearing on that program were exceptionally well chosen, yet as always, there is one to stand out preeminent, which in this case was the playing of the "Nut Cracker Suite."

When we sat in at a concert given in the studio of WIP not long ago it was to hear the Stetson chorus. Our hats are off to these singers! Verily, they turn out a welcome sound as well as noted headgear. My dials never changed until they finished their work.

They had an amateur Radio convention in Pittsburgh which was put on the air through Station WCAE. From what was heard it would be guessed that the affair was an entire success. Some of the offerings might not draw a huge crowd, but others undoubtedly did please a large majority of those present and tuned in to this station.

After the popularity of the Silvertown orchestra was assured it seemed the natural sequence for a Goodyear program of some sort to make its appearance, which it has. About as pleasing as any pumber yet heard (exclusive of the great artists) was the violin rendition of "Deep River" by Hugh Wallace, from Station WEAR.

Early in the season there appeared no hope of hearing any of the leading opera companies by Radio. We did have a few of the operatic performances of the San Carlo company presented to us, which were very acceptable. More recently our sets have brought in several operas as sung by the Chicago Civic opera company, foremost of these being that familiar one, "Carmen," with "Our Mary." Many thanks to WNAC.

It has not become habitual, as yet, to turn way down on the dials when hunting for WWJ, but it is usually worthwhile doing so. Did you ever have the Virginia Five entertain you? They are quite adept at plucking harmony from their stringed instruments and were none the less so when heard at this Detroit station.

You never go wrong by tuning in WGY, unless your preferences do not include Radarios. Transmission is uniformly excellent and the artists selected to appear before their mike are first class. Just here it is my intention to hand a few orchids to the WGY orchestra. This organization is a close second to some of the more famous ones in the country and certainly performs with intelligence and unity.

I don't know whether WMBF covers a large part of the country as consistently as it does some sections, if so, then you are always sure of clear transmission, good announcing and attractive programs.

Not so long ago a new station was opened in Beaumont, Texas. I was pleased to hear our old friend at WSB extend Georgia's greetings on their premier performance. More recently KFDM had the services of the Beaumont entertainers and the studio appeared to be swamped with requests for them to play the Missouri Waltz. They played its graceful measures in a captivating style. Other portions of the program were acceptable.

# How to Make the Two Tube Knox Reflex

## Part III—Adjusting and Tuning

By W. H. H. Knox

WITH the receiver assembled and wired as described in Part II, the builder is now ready to adjust this reflex and tune in. The coil L5 should be adjusted to a point about one inch from L2, and condenser C5 should be turned to maximum capacity, that is, with the plates all the way in. The dials on condensers C1 and C4 should be turned together until a station is heard and adjusted for maximum volume. If signals are not heard, the crystal detector should be adjusted to locate a sensitive point and the dials on C1 and C4 revolved together for a station. When a station is located, it will be found that volume and clearness will both be increased by adjustment of the dial on condenser C6. This is the center of the three .0005 variables. 360-meter stations should come in at about 30 or 35 degrees on condenser C1 with the settings of C4 and C6 slightly above or below this point.

Should condenser C1 register lower than 30 degrees on a 360-meter station, decrease the number of turns on coil L2, while if it registers higher than 35, the number of turns on L2 should be increased. The wave length to which a circuit will respond is governed by the capacity and inductance so that if one is too low the other must be increased, while if the capacity is too high the inductance must be decreased. The small condenser C5 acts as an excellent volume control and, if more volume is desired, the plates of C5 should be rotated slightly toward minimum, which will increase the regeneration in the tube T1.

Should the builder hear a faint whistle of steady pitch when tuning or after a station is tuned in, it denotes that coil L5 is too closely coupled to L4 and should therefore be moved slightly away from it. This coupling varies according to the tube used and, as mentioned before, after the proper adjustment of this coupling is once found it will not have to be disturbed. The distance of this coil from L2 will probably be from 3/4 to 2 inches. When tuning in stations within 100 miles, the adjustment of C4 will make but little difference, but when tuning in distant

stations the setting of C4 will be found very important.

### Using a Loop

There will probably be many who will wish to try out this set on a loop aerial instead of through the coils L1, L2 and L5, and the following suggestion is offered for those wishing to try this. A split loop will be necessary. There will of course be two ends of the loop and a center tap. Referring to figure 2, the wire which now leads from the F end of the transformer AT1 to the inner end of L2 should connect to the outer end of the loop antenna. The lead which now goes from the outer end of coil L2 to the negative A circuit should be replaced by a wire from the center tap of the loop to the negative A. Condenser C1 remains connected as shown, the stator plates to the F end of AT1 and the rotor plates to negative A. The inner end of the loop should be connected to the rotor plates of condenser C5. The loop circuit will then be regenerative similar to that shown by Mr. John G. Ryan in his recent series in Radio Digest on the "Simplest Super."

From the writer's experience with reflexes he believes that this is the most efficient reflex circuit today and the tone quality is remarkable. The range is exceptional, due to the presence of L6 and C6, while the selectivity is far greater than that on any other reflex due to regeneration reducing the resistance of the grid circuit of the first tube to its lowest possible minimum.

### Results

Using the first tube only, without the second stage of audio frequency amplification, we have received concerts from KFKX, 1,125 miles, on the head phones, and KGO 350 miles away, several times on the loud speaker. The author is indebted to Mr. W. E. Ingham a local regenerative expert, for the assistance rendered in overcoming the problems presented in designing this set, who has most unwillingly become converted to reflex circuits. The writer will be very glad to help out those readers who may

build this set and run into difficulties and will acknowledge all letters addressed to him at 405, C. C. Chapman building, Los Angeles, Calif. We would also be glad to hear of the results which builders obtained from this set, and since there are many possibilities in variations from the circuit shown, we would also appreciate learning of any improvements that readers are able to work out, using this receiver as a basis or starting point.

While the writer uses the amplifier tubes of the UV-201A and C-301A type, there seems no reason why the dry cell tubes of either the 199, 299 or WD-11 types would not work equally well.

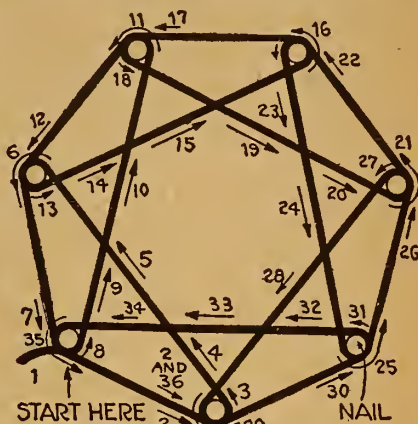
### Coil Winding

Draw a circle on a piece of board the size of the coil you wish to make and divide this circle into an odd number of parts, such as five or seven. Drill holes for wood dowels, nails may be used, on the dividing lines. The dowels or nails must fit just loose enough to be readily pulled out. Use a wire of about number 18 dsc. Start by winding a couple of turns around one dowel to keep the wire from slipping as you wind. Run the wire under three dowels and back over the outside of two. Continue this method of winding until you have the desired number of turns.

When you have finished winding pull the dowels and run a piece of tape—I used ribbon—where the dowels made the opening. Mash the wire down compact and tie. This forms a coil that gives the

same results as the D winding which leaves enough room between turns to cut down the capacity.

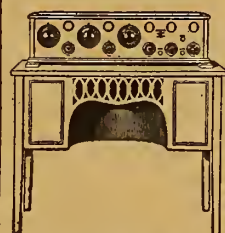
This makes a magnetic circuit with a central inductance in one direction and



an odd number of small inductances of a reversed field. This coil will go a long way toward giving one which will not interact and make for oscillations in the Radio frequency.—Byron D. Albaugh, Malvern, Ark.

Oil poured on the solution in the cells of your rechargeable B batteries will keep it from evaporating.

# Radio Without the Horn



Goodbye to the Old-Fashioned Horn Speaker

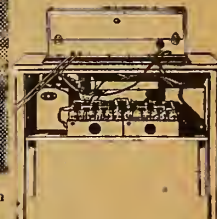
A Vastly Better Reproduction With This New Radio Console!



"Our old horn speaker never gave tones like this! An artistic addition to the living room—everything in its place—It's a joy!"

New Console Has Its Own Perfect Loudspeaker!

Ample Space for All the Rest of Your Outfit!



HERE is something that enables you to enjoy radio in the home without the clutter of unsightly apparatus that plays havoc in the decorative scheme of your living room! The horn speaker is out of date and out of place in radio for the home. This console with its built-in loudspeaker is scientific and sightly.

### A Truly Wonderful Tone

It does a good job of reproducing, for it has a good unit and its sound-box is of resonant wood instead of metal, fibre, or composition.

The appearance of a Windsor loudspeaker console is a delight. Its convenience is a joy. A piece of real living room furniture of pleasing lines and finish—and it accommodates all the miscellany of equipment which hitherto had no place except on table tops, shelves or floor. Ample space on top for any set, with plenty of elbow room in front. Nothing in sight but the console and receiving set. Everything else goes inside—from behind—in spaces cleverly designed to hold the largest batteries and outfit for home use—besides the self-contained loudspeaker—all unseen and protected from dust or disturbance.

### You Need This Console Whatever Your Present Outfit Is

It makes no difference what kind of radio outfit you have—this console was designed for your use. The graceful exterior of this console gives no hint of its inner utility, for it is a simple and effective piece of furniture in every line. But a glance at the interior reveals a most ingenious arrangement of the in-built loudspeaker with space either side and in back. These spaces are ample for the largest A battery, and the largest wet B batteries and the largest charging outfit for home use. It is 38 in. long, 18 in. deep, and 29 in. high. Notice the artistic grill that conceals soundbox, and the provision for "knee room" beneath. Made in mahogany or walnut finish, and the price is only \$40! (West of the Rockies, \$42.50.)

### INVESTIGATE!

Dealers everywhere are now showing the Windsor loudspeaker console, and have them for immediate delivery to your home. If you haven't already seen this remarkable contribution to radio enjoyment and convenience, write us now for the name of a nearby store where you may view it. We will also send you complete information. Remember, this console gives you not alone a reproducing unit and sound box, but an altogether new beauty and utility in the provision for your entire radio outfit. Mail coupon or postal.

If you wish to use your own favorite unit, a deduction will be made for omission of unit.

### Dealers!

The sale of these consoles has already reached extraordinary figures. They are selling in surprising quantities in even smallest stores where there is one in the window or on the floor. It is a convenience and a value not to be duplicated.

Write us for discounts and particulars



Pat. Nov. 18, 1924

\$40

Loudspeaker Included West of the Rockies \$42.50

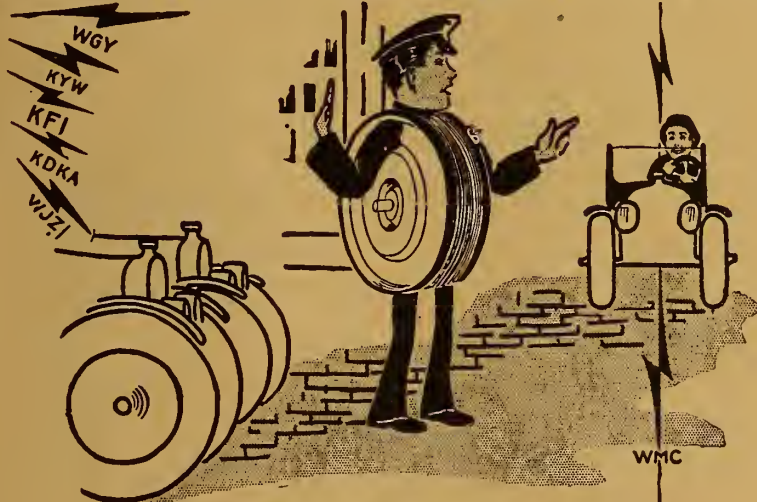
Windsor Loudspeaker Console

WINDSOR FURNITURE COMPANY 19  
1422 Carroll Ave., Chicago.

Please furnish pictures and full details, also name of nearest dealer who has the new Windsor loudspeaker console.

Name.....  
Address.....

If it isn't a FERBEND, it isn't a WAVE TRAP



## The Traffic Cop of the Air

He arranges in orderly fashion the mass and jumble of broadcasting stations that are seeking entrance to your set, and brings 'em in, one at a time, so you can enjoy them! Never reduces, but nearly always increases volume. Add a Ferbend Wave Trap to your set and "police" your reception. Regulate the traffic!

Make every night silent night! Trap out the interference. Why pay \$50.00 to \$200.00 extra for increased selectivity, when for \$8.50 you can get a genuine Ferbend Wave Trap which will absolutely cut out any interfering station, no matter how loud, how close by or how troublesome.

Guaranteed to tune out any interfering station. The Ferbend Wave Trap is designed and manufactured complete by us, after years of careful experimenting. It is not to be confused with imitations, hastily assembled from ordinary parts. The price is \$8.50. Shipment is made parcel post C. O. D., plus a few cents postage. If you prefer, you can send cash in full with order, and we will ship postage prepaid. Clip and mail the COUPON today!

FERBEND ELECTRIC CO.  
17 E. So. Water St., Chicago

FERBEND WaveTrap  
REG. U.S. PAT. OFF.

Always look for this Trade Mark. It is your protection against misleading imitations and those who infringe on the registered name "Wave Trap" and its reputation.

FREE

Valuable Booklet on Interference and how to eliminate it. We will gladly send it FREE. Just fill in, clip and mail coupon below.

FERBEND ELECTRIC CO.,  
17 E. So. Water St., Dept. 5  
Chicago, Ill.

Gentlemen—Please send me:

- WAVE TRAP. Send Postpaid. am enclosing (check, M. O., etc.) for \$8.50.
- WAVE TRAP, 5r and C. O. D. I will pay Postman \$8.50, plus few cents postage, when it arrives.
- FREE BOOKLET on Interference.

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



Thursday, February 26

(Continued from page 14)

Pacific Time Stations

KFI, Los Angeles, Calif. (467), 5-5:30 p. m., Evening Herald, table talk, news; 5:30-6, Examiner's musical half hour; 6:35-7, R. M. C. A. speaker; 7-8, dance orchestra; 8-9, Standard Oil company of California presenting play with music; 9-10, vocal and instrumental program of classical nature; 10-11, Examiner, program, Betty of the Examiner.
KFOA, Seattle, Wash. (455), 4-5:15 p. m., Olympic hotel orchestra; recital.
KGO, Oakland, Calif. (299.8), 4-5:30 p. m., concert orchestra, Hotel St. Francis; 8, "Seven Keys to Balpatate," KGO players; 10-11 a. m., dance music, Henry Halstead's orchestra.
KGW, Portland, Ore. (492), 12:30 p. m., concert; 5, children's program, story, Aunt Nell; 8, lecture, University of Oregon extension division; 10-11, Hoot Owls; 11, news of 25 and 50 years ago; 12-1 p. m., Wurlitzer pipe organ studio recital; 5:45-6:15, music from Wurlitzer studio; 6:15-7:30, dinner hour music, KNX string quartet; 8-9, program, B. H. Dyas company; 9-10, program, Paulais; 10-11, Abe Lyman's Coconut Grove dance orchestra from Ambassador hotel.
KPO, San Francisco, Calif. (429.5), 1-2 p. m., Rudy Selger's Fairmont hotel orchestra; 4:30-5:30, Rudy Selger's Fairmont hotel orchestra; 5:30-6:30, children's hour stories, Big Brother; 7-7:30, Rudy Selger's Fairmont hotel orchestra; 8-9, Theodore J. Irwin, organist; 9-10, program, Mrs. Birmingham, soprano, director; 10-11, Gene James' Rose Room Bowl orchestra.

Friday, February 27

Friday, silent night for: CFCG, CKAC, CHNC, KFKU, KFKX, KFMX, KGO, KJS, KSO, PWX, WBBR, WBZ, WCBO, WOFW, WEOA, WFI, WGST, WHAZ, WIP, WKAQ, WLBL, WOAI, WMAK, WOI, WORO, WSUI.

Eastern Time Stations

CNRA, Moncton, Can. (313), 6:30 p. m., bedtime story, Uncle Alf; 7:30, Mrs. W. F. Wheeler, pianist; Alfred Leger, tenor; Mrs. R. L. Algie, mandolinist; duet, Alfred Leger, Charles Dodge; Tom Kirby, bass; dance music, Joe Mazzeo and his Rainbow Melody boys.
CNRT, Toronto, Can. (250), 6:30 p. m., Luigi Romanelli and his King Edward hotel concert orchestra; 8:30, studio program, Pickwick room of the King Edward hotel; Queen City Novelty instrumental troupe; Albert Bates, saxophonist; Hawaiian guitar solo, Hugh Thomas; tenor banjo duet, Tom Pritchard, Paul Mulliet; 10:30, Luigi Romanelli and his King Edward hotel dance orchestra.
KOKA, E. Pittsburgh, Pa. (309.1), 6:15 p. m., dinner concert; 7:30, children's period; 8:15, address, University of Pittsburgh; 8:30, concert.
WAHG, Richmond Hill, N. Y. (316), 12-1 p. m., special program, Brooklyn Federation of churches; 8-8:15, Cooper Boyd, violinist; 8:15-8:30, Lynvich string trio; 8:30-8:45, Jack Shatter, tenor; 8:45-9, Michael Lambert, cellist; 9:30-9:45, Jack Shatter, tenor; 9:45-10, Lynvich string trio; 10-10:15, Wm. F. Diehl, talk.

Radio and Radio Question Box; 10:15-11:30, dance orchestra.
WBAV, Galumbus, Ohio (294), 8 p. m., Dispatch program, with talent from Otterbein university, Westerville, Ohio, A. H. Spessard in charge.
WCAE, Pittsburgh, Pa. (452), 6:30 p. m., dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 8:30, Crinite brothers, Earl and Joe, dispensers of Hawaiian music; 9, Astor Coffee dance orchestra.
WCX, Detroit, Mich. (516.9), 4:15 p. m., musical program; 6, dinner concert, Book-Cadillac hotel; 8:30, musical program; 10, dance music, Arcadia auditorium.
WEAF, New York, N. Y. (492), 4:10-4:25 p. m., French lesson, Columbia university; 4:25-4:40, Estelle Myers, soprano; 4:40-5, children's stories; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:15, Carl Frederick Hogrelius, baritone; 7:30-7:45, children's stories, G. R. Kinney company; 7:45-8, Jimmie Clark, pianist; 8-8:30, Happiness Candy boys; 9-10, B. Fischer and company's Astor Coffee orchestra; 10, Rudolph Luke string ensemble; 11-12, Lido Venice orchestra.
WEAR, Cleveland, Ohio (389.4), 7 p. m., Edwin Arthur Kraft, organ recital from Cleveland Public auditorium.
WEBL, New York, N. Y. (233), 7-7:30 p. m., Blenheim ensemble; 7:45-8, songs, Sara V. Turits; 8-8:15, H. S. Owen, baritone; 8:15-9, Cliff Crest society orchestra.
WEEI, Boston, Mass. (475.9), 2 p. m., Happy Hawkins and his orchestra; 6:30, Big Brother club; 7, Haverhill, Massachusetts, night; 8, program, courtesy Neapolitan Ice Cream company; 8:30, U. S. Army band; 9:30, Idyllic male quartet.
WGBS, New York, N. Y. (316), 6-6:30 p. m., Uncle Geebee; 6:30-7:30, Larry Funk's dance orchestra.
WGR, Buffalo, N. Y. (319), 10:45-11 a. m., Gold Medal home service talks, Betty Crocker; 12:30-1 p. m., Hotel Statler concert ensemble; 2:30-4:30, Radio Dealers' musical program; 6:30-7:30, dinner music, Buffalo Trust company; 8:30-8:55, address, Donald Hunley, "Auto Touring"; 9-10, Astor Coffee orchestra, jointly with WEAF; 10-11, Larkin string orchestra, Joseph Ball, director; 11-11 a. m., supper-dance music, Vincent Lopez' Hotel Statler dance orchestra, Harold Gleser, director.
WGY, Schenectady, N. Y. (379.5), 2 p. m., health hints, Dr. C. W. Woodall; 7, program, Strand theater orchestra; 7:30, health talk; WGY orchestra; 7:45, "The Dance Plan and European Reconstruction, Dr. George Norman Derry; 8, Bell Record orchestra, xylophone solos, Mary Zoller; old-time favorites, WGY orchestra; 10:30, Edison club quartet, Rice string orchestra; American trio; duet for clarinet and piano, Peter Schmidt, clarinetist; Ollie G. Yetru, pianist; Giovanni Trombini, cellist; Edison club male quartet; American trio; Rice string quartet; Edward A. Rice, violinist.
WJY, New York, N. Y. (405), 9 p. m., Genesee society dinner, Hotel Commodore.
WJZ, New York, N. Y. (455), 10-10:20 a. m., Housewives league menu, Mrs. Julian Heath; 10:20-10:40, "Books," Grace Isabel Colbron; 10:40-10:50, "Arts and Decorations," Mrs. Mary Roberts; 10:50-11, fashion talk, Eleanor Gunn; 1-2 p. m., Henry Vander Zanden's Hot Ambassador trio; 4-4:20, Maddalena Houff, soprano; 7-7:30, Savarin ensemble; 8-8:10, Wall Street Journal review; 8:10-8:20, N. Y. U. Air college; 8:40-9:40, Amherst Yellum club concert, New York alumni; 10:30-11:30, Duke Yellum and his Irene Castle orchestra.
WLIT, Philadelphia, Pa. (395), 11:45 a. m., daily almanac; 12:02 p. m., Stanley theater organ recital; Arcadia cafe concert orchestra; 12:30, Lenten services; 2, Arcadia cafe concert orchestra; 7:30, Dream Daddy's bedtime stories; 8, book review, Arnold Abbott; 8:10, "Fifteen Minutes of Humor," Sam Wingfield; 8:30, Trenton night, songs and instrumental selections; 10, Arcadia cafe dance orchestra; Morning Glory club concert.
WNYC, New York, N. Y. (526), 8-8:15 p. m., resume of meeting of board of estimate, P. J. McGowan; 8:30-9, concert program by vocal and instrumental artists.
WOO, Philadelphia, Pa. (509.9), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 4:45, organ recital, Mary E. Vogt; 7:30, A. Candelieri's ensemble from Hotel Adelphi; 8:30, piano recital, Harriette G. Ridley; 9, WOO orchestra; 10:03, organ recital, Mary E. Vogt; 10:30, Vincent Rizzo's Hotel Sylvania dance orchestra.
WOR, Newark, N. J. (405), 6:15-6:30 p. m., Bluebird orchestra; 6:30-6:45, man in the moon stories; 7-7:15, Bluebird orchestra.

WRC, Washington, D. C. (468.5), 4 p. m., fashion developments of the moment, Eleanor Gunn; 4:10, Eleanor Glynn, pianist; 4:20, "Beauty and Personality," Elsie Pierce; 4:30, tea music, Meyer Davis' New Willard hotel; 6, children's hour, Peggy Albion.
WTAM, Cleveland, Ohio (389.4), 6 p. m., Guy Lombardo's Royal Canadians orchestra.
WWJ, Detroit, Mich. (352.7), 12:05 p. m., Jules Klein's Hotel Statler orchestra; 3, Detroit News orchestra; 6, dinner concert; 8:30, Detroit News orchestra; Anne Campbell, Detroit News poet; Mrs. Claudine Secor, soprano; Norman Butterfield, balitone; the Three Knights of harmony.
WV, Charleston, W. Va. (379.4), 6 p. m., Guy Lombardo's Royal Canadians orchestra.

Central Time Stations

CKY, Winnipeg, Can. (450), 7:30 p. m., university lecture.
KFBM, Beaumont, Texas (315.6), 8 p. m., band concert.
KFMF, Shenandoah, Iowa (266), 6:30 p. m., concert, John T. Hamm, director.
KTHS, Hot Springs National Park, Ark. (375), 8:30-9 p. m., piano specialties, Phil Wall; 9-10, concert, Meyer Davis' New Arlington hotel orchestra, Jack Renard, director.
KYW, Chicago, Ill. (535.4), 7-7:30 p. m., dinner concert, Congress hotel; 8-10, midnight revue; 11-1, midnight revue; 1-2, "Innocent Club."
WBAP, Fort Worth, Texas (475.9), 12:05-12:30 p. m., popular music, Montgomery Ward and company's "Trail Blazers," 4, educational lecture, "Girls' Home Demonstration," Mildred Horton; 7:30-8:30, dinner music, Jim Roney's Texas hotel orchestra; 9:30-10:45, musical program.
WCM, Northfield, Minn. (336.9), 9:45 a. m., St. Olaf college chapel service; 8:30 p. m., "The Peasants," Dr. George Weida Spohn.
WCCO, Minneapolis-St. Paul, Minn. (416.4), 10:45 a. m., "The Story of Corn," Betty Crocker; 2 p. m., "Why Not Be Well," R. H. Coombs; 4, "Separation," Nella Gardner White; 5:30, children's hour, Court of Gold Medal; 6:30, Minneapolis Athletic club orchestra; 7:30, "Business Law," D. S. Ryan.
WOAF, Kansas City, Mo. (365.6), 3:30-4:30 p. m., Star's Radio trio; 6-7, school of the air; piano tuning in number on the Duo-Art; address; Tell-Me-a-Story lady; Trianon ensemble, Hotel Muehlebach; 8-10, popular program; 11:45-1 a. m., nighthawk frolic, Metrol; Old Chief, plantation players, Hotel Muehlebach; Eddie Kuhn's K. C. club orchestra.
WEBB, Chicago, Ill. (370.2), 7 p. m., Oriole concert orchestra; Cambridge sisters, songs; Dean Remick, pianist; 9, Oriole dance orchestra; Rita McPaw, soprano; Jack Penewell, songs; Sandy Meek, tenor; 11, Oriole orchestra; Three Musketeers, songs; Nick Lucas, songs; Jack Penewell, popular songs.
WGN, Chicago, Ill. (470.2), 1:40 p. m., luncheon concert, Drake concert ensemble, Blackstone string quintet; 2:30, artists series, Lyon & Healy; 3, rocking chair time; 5:30, Skeezix time for the children; 6, organ recital, Lyon & Healy; 6:30-7, dinner concert, Drake concert ensemble, Blackstone string quintet; 8-9, classical concert, Dunn Dillard School of music; 10-11, Don Bestor Drake dance orchestra.
WHO, Des Moines, Iowa (526), 7:30-8:30 p. m., program, Dean Raymond Carr, director; 8:30-9, Williamson brothers, mandolin, guitar and banjo artists; J. W. Fletcher, tenor; Helen Birmingham, accompanist.
WLW, Cincinnati, Ohio (423), 8 a. m., physical exercises, Y. M. C. A., William Stradman, instructor; 12:15, Ahaus Brunswick orchestra; William Koch, director.
WMAQ, Chicago, Ill. (447.5), 4:30 p. m., pupils, Bush conservatory; 5, fashion talk, Jan Mowat; 6, organ recital, Chicago theater; 6:30, Hotel LaSalle orchestra; 8, weekly wide-awake club, Mrs. Frances M. Ford; 8:30, musical geography, Mr. and Mrs. Marx E. Oberdorfer; 9:15, musicale.
WMC, Memphis, Tenn. (499.7), 12 m., musical program, O. K. Houck Piano company; 8:30 p. m., Britling's Novelty orchestra, Frank Braaclette, director; 11, midnight frolic, University of Tennessee.
WOAW, Omaha, Nebr. (526), 4 p. m., matinee program; 6, story hour, Doris Claire Secord; 6:20, announced; 6:30, Ray Muzzy's orchestra; 9, American college of music; 10:30, orchestra.
WOC, Gavenport, Iowa (483.6), 5 p. m., June Einfeldt, reader; string trio, Herbert Silberstein, director; 6:30, Sandman's visit, Val McLaughlin; 7, "Rural School Progress," Hermine Schneckloth; 9, old-time numbers, Frank Simmons, one-man band.
WOI, Ames, Iowa (270), 12:30 p. m., college chimes; talk on automobiles, Prof. A. Shane.

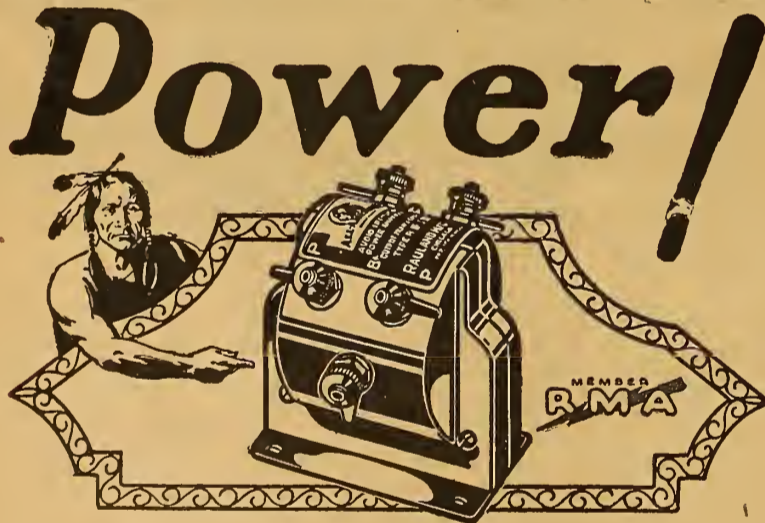
WQJ, Chicago, Ill. (447.5), 3-4 p. m., "The Children's Party," Dorothy McLean Dicken; "One Wonderful Trip on the St. Lawrence from Niagara to the Sea," Mrs. Harry T. Sanger; 7-8, dinner concert, Ralph Williams and his Rainbo sky-larks; Otis Pike Jester, soprano; Mary Thrash House, pianist; 10-11 a. m., Ralph Williams and his Rainbo sky-larks; Rogers boys, Larry and Billy; West brothers; Nubs Allen, contra; Zeigler sisters, Pauline and Sarah; Lawretta Giles, soprano; Nate Caldwell; 1-2, Hotsy Totsy hour.
WSAI, Cincinnati, Ohio (325.9), 8 p. m., chimes; 8:15, Bicycle sextet; 9, weekly news review, Allison F. Stanley; 9:15, Bicycle male quartet; 12, Roger Hill's Dancin' club orchestra.
WSB, Atlanta, Ga. (428.3), 12 m., entertainment; 5-6 p. m., garden talk, William B. Decker; Bonnie Barnhard; 8-9, old time gospel program, Rev. Andrew Jenkins and family; 10:45, "Reminiscence Program," Sergt. George J. Ryan, Soldiers' trio.
WSUI, Iowa City, Iowa (484), talk; "The Handcart Brigade," Miss Ruth A. Gallaher; 7:30, play by play reports of the Iowa-Illinois basketball game.

Mountain Time Stations

CNRE, Edmonton, Can. (517), 7:30 p. m., children's bedtime stories, Children's orchestra, Mrs. A. Hale, director; 8:30, special request program, Alberta College North mandolin, guitar and banjo orchestra, A. Hale, director.
KOA, Denver, Colo. (322.4), 12-12:30 p. m., Balto theater organ; 3, "A Little Prayer for Me," "Slumber Sea," "Someone Worth While," Gord Klein, contra; "Seventeen," "Philosophy," Iris Ruth Pavey, reader; "Consolation," "Impromptu in E Flat Major," Gertrude Kinney; 6:40, Book of Knowledge program; 8, ten minutes of music, Fred Schmitt's Rialto orchestra; 8:10, "Reminiscences," KOA orchestra.

Pacific Time Stations

KFAE, Pullman, Wash. (330), 7:30-9 p. m., Hawaiian songs with ukuleles and guitars, Ted Lumley, Sigurd Johnson, Horace Trimble; vocal and piano solos, Frances Lockwood; "Where Our Weeds Come From," Star's Radio trio; 6-7, school of the air; piano tuning in number on the Duo-Art; address; Tell-Me-a-Story lady; Trianon ensemble, Hotel Muehlebach; 8-10, popular program; 11:45-1 a. m., nighthawk frolic, Metrol; Old Chief, plantation players, Hotel Muehlebach; Eddie Kuhn's K. C. club orchestra.
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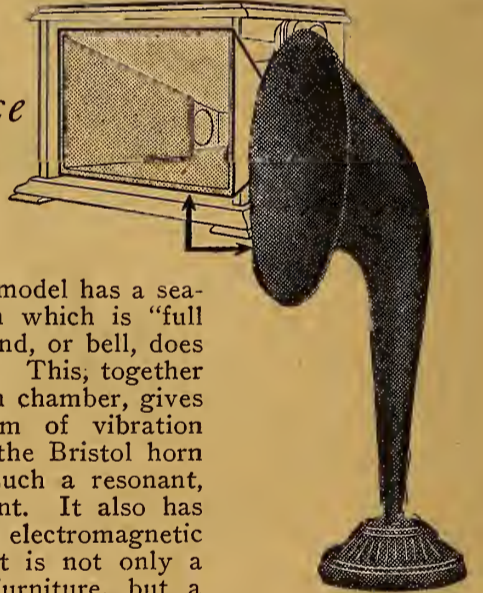
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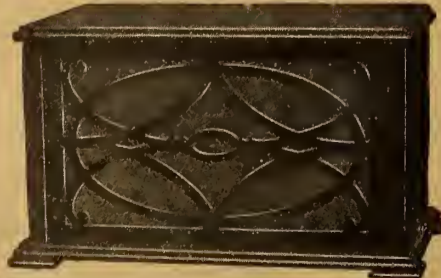
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# Broadcast Listener's Reference Library

## Part III—Antenna and Ground Requirements

By Edward Thomas Jones, A. I. R. E.

A SINGLE wire antenna is best for receiving purposes. The lengths, in most cases is an "unknown quantity" for several reasons: First, the manufacturer knows best what length of antenna to use with his particular type of set; second, the owner of the set may not have the space available to erect the antenna specified by the manufacturer.

In general, I would say that a one wire antenna seventy feet in length is exceptionally good. If you cannot string a wire that long—string two fifty feet long. If not that much, make a four wire antenna thirty feet long—or string several wires in the attic thirty feet long, bringing them to a common connection, or lead-in, to the receiver.

### Short Antenna Gives Best Results

Increased selectivity is obtained with a comparatively short, low antenna. This type of antenna will permit the selecting of stations desired and the weeding out of practically all others. An extremely long antenna increases the volume—but it is not so easy to tune out interfering stations, working on wave lengths slightly shorter or longer than the station you desire to listen to.

There is, of course, a happy medium, and in order to describe the antenna in a better way, your attention is directed to figure 8. A transmitting (broadcasting station) is shown at A. For the sake of simplicity let it be understood that the transmitter is broadcasting on a wave length of 100 meters (where stations broadcast on wave lengths ranging from 220 to 546). The antenna system comprises sixty per cent of the wave length or 60 meters and the remainder is made up in the tuning coil i. e., 40 per cent or 40 meters.

### System Necessary

Now it is not absolutely necessary for us to have the same system installed at our home, that is, our antenna need not represent 60 per cent of the wave length. It is only necessary that we arrive at a total of 100 meters when tuning in to this station in order to pick it up. For example, a receiving set B at New Or-

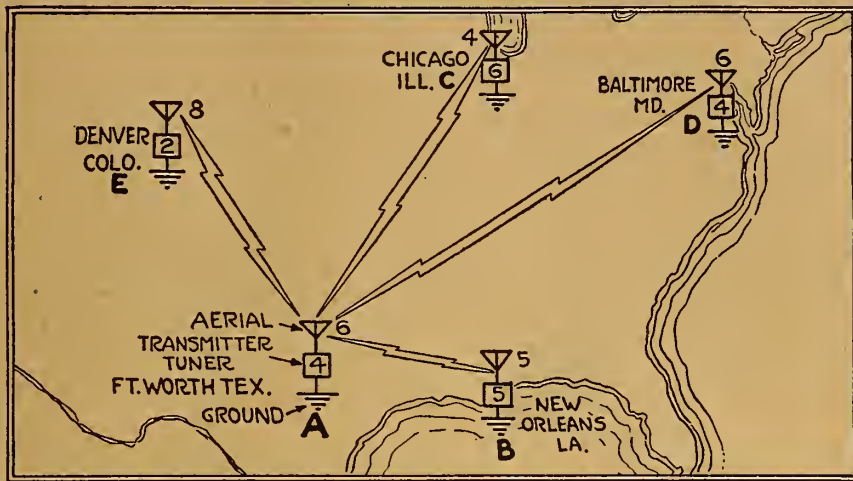


Figure 8.

leans, Louisiana, is using an antenna that accounts for 50 per cent of the wave length. The receiver is then adjusted until the additional 50 per cent is added to the antenna-ground system. In this position the receiver is in resonance with the transmitter at A. At C a party at Chicago, Illinois, is listening to station A. His antenna represents 40 per cent and his receiver had to be tuned to make up for the 60 per cent. The receiver at D has the same constants as the transmitting station. At E, Denver, Colorado, a broadcast listener is listening to station A. He is making use of an extremely long antenna. While he may get more volume, he will experience considerable trouble from interfering stations.

### Dial Settings

If all these stations were using the same type of receiver—station B, would get station A at, let's say, 50 on his dial (antenna tuning). Then station C would have to tune higher, 60, while station D would set his dial at 40 and the party at

Denver would set his dial at 2. This will give you a better understanding as regards the relation between the antenna length and tuning.

Antenna height! Do not let that worry you. From fifteen to thirty feet will be plenty provided, of course, you are not surrounded by steel buildings.

The ground connection is as important as the antenna. The ground lead should always be soldered to the ground (water pipe) connection. Poor ground connections spell disaster, especially if you cannot install a very good antenna system. At times we hear from set owners who experience considerable trouble with noises in their sets. This is sometimes caused by electrolysis (current from trolley car rails leaking to and destroying water mains). In cases of this kind, a counterpoise as it is called, is used. A counterpoise is nothing more than another antenna wire strung near the ground and (if possible) directly under the antenna

wires. This wire is then substituted for the ground and no connection whatever is made to the ground.

It is well, however, to look for noises elsewhere in the set, batteries and tube sockets, before substituting this elaborate counterpoise system.

(Regenerative receivers have always been difficult to tune for the new Radio enthusiast as they do not "log" readily and the "oscillation point" is a constant bugaboo. Mr. Jones takes up the mysteries of regeneration in his next article.—Editor's Note.)

### Use of Two Aerials

As I have been helped by many hints from your paper I thought perhaps your readers would be interested to know of results I have obtained by using two aerials. With the use of two aerials I have had excellent results. One is 98 feet inclusive of lead-in running nearly due east and west. The other is 50 feet including lead-in running north and south, and two feet above the former.

Both lead-ins terminate at one point at set about two inches apart—here I use a double rod single-throw switch.

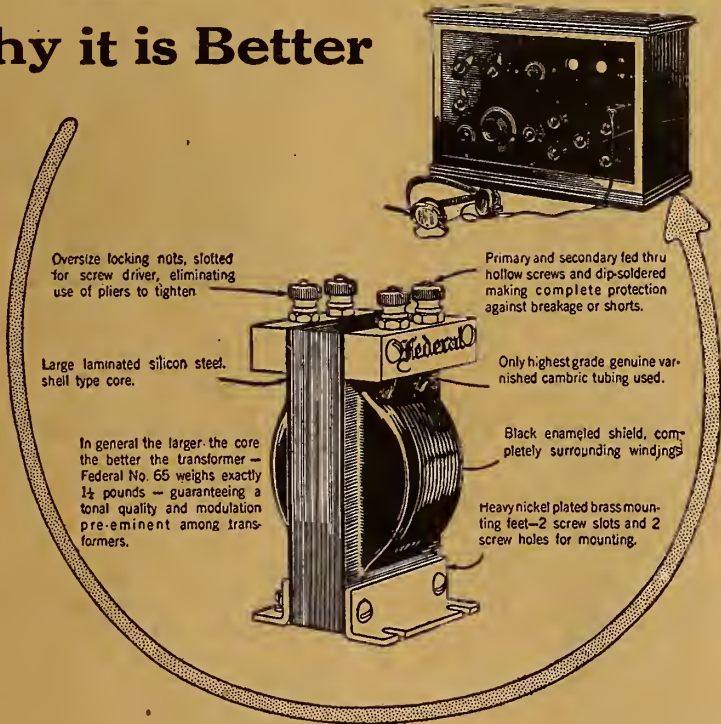
I find that on some stations, mostly the medium and low wave lengths, by using both aerials I obtain at least 25 per cent more volume and also in some of the ones higher up to 509 meters.

No fixed rule seems to work out. Some stations come in better on the short aerial; others better on the long aerial. Other stations come in best when using both aerials connected together. It is necessary to throw the switch in and out to determine the results.—E. C. Leinbaugh, Philadelphia, Pa.

### Fixed Condensers

The fixed condensers in a receiving set should have mica dielectrics for best results. Do not use condensers in which the dielectric is paraffined paper. For the best operation of your set, it is important to use the condenser of the proper capacity for the part of the circuit it is in.

## Why it is Better



Oversize locking nuts, slotted for screw driver, eliminating use of pliers to tighten

Large laminated silicon steel, shell type core.

In general the larger the core the better the transformer—Federal No. 65 weighs exactly 1 1/2 pounds—guaranteeing a tonal quality and modulation pre-eminent among transformers.

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"MASTER of Every Note in the Orchestral Range" is the proven claim of the Federal No. 65 Audio Frequency Transformer! Volume without distortion is the basis for the beauty of Federal Tone.

From its oversize locking nuts to its heavy brass mounting feet the Federal No. 65 Transformer incorporates the

same engineering skill that has made Federal the recognized leader in electrical communication apparatus since 1890.

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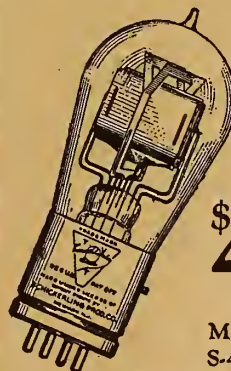
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- Model S-700 Power Tube . . . 7.00
- Model S-2500 Det.-Ampl. . . . 5.00
- 3 vol.—1/10 amp. Miniature Base Model S-600 Det.-Ampl. . . . \$4.00
- 1 1/2 volt—1/4 amp. Standard Base Model S-300 Det.-Ampl. . . . \$4.00

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# SCHICKERLING

## RADIO TUBES

With the Stabilizing Triangular Plates

**HOME CONSTRUCTION**

(Continued from page 15)

machines, which are so popular for curative purposes, also cause a humming sound when they are in operation. They can be detected for the distance of a city block from a Radio set. Doctor's X-ray machines also make a humming sound in the receiver.

**Range of a Crystal Set**

Enthusiasts who have bought or made their first crystal outfit, sooner or later try to operate a loud speaker with it, get disappointed at not being able to obtain good results and naturally think that something is wrong with a set's wiring. This causes them to spend a lot of time looking for the trouble, when as a matter of fact, there are really no additions to a crystal outfit that will give satisfactory service with a loud speaker. Persons about to purchase or construct a crystal receiver, should understand at the outset that they are only suitable for short range reception, say from fifteen to twenty-five miles and do not allow of listening in to long range broadcast concerts. For general, all around, long distance reception, vacuum tube sets are necessary.

In operating homemade tube sets, adjustments occasionally will have to be made to keep them in good working condition. When hissing and crackling sounds are heard in the head telephone, it is not always due to static disturbances as some persons suppose. Faulty or corroded connections frequently caused by the novice using an acid flux paste instead of rosin in soldering wire joints makes a lot of trouble. Defective or run down batteries are accountable for many such noises. In order to find out whether the sounds are made by static or defects in your set, open the aerial cut-out switch and if the sound still continues, look for trouble in the receiving circuit. Hissing and crackling noises are mostly due to defective B batteries. Put a voltmeter across its terminals. Should a drop of 20 per cent or more of its normal reading be shown, discard and replace with a new battery. Mushy, hissing noises indicate a run down storage battery, which is used to light the vacuum tube filaments. Recharge the A battery and these noises will usually disappear.

Defective separators in a storage battery will also cause noises to be heard in the telephones; this mostly occurs in storage cells that have had long usage,

Poor contact in automatic filament control jacks, and soldering flux lodged between their contact blades causes sounds. Clean the blades carefully. Sharp clicks heard when a rotating part of a receiver is moved, show poor sliding contacts; adjustment of the parts will eliminate them.

Loud frying noises may indicate that too high a B battery voltage is being used on the plate of the detector tube. Lower voltages in the plate circuit; also turn down the filament rheostat. Weak signals in homemade sets are frequently due to many amateurs using too small a gauge of wire for connecting the instruments together. For best results, nothing smaller than number 14 gauge should be employed. This size permits the weak electrical currents to flow through a minimum amount of resistance, which is most desirable in Radio work. Amateurs constructing regenerative receivers, should line the back of the panel and inside of cabinet with tin or copper foil. This shielding is desirable as it absorbs any stray electrical waves

which otherwise would find their way to the windings of the receiver and interfere with reception.

**Rejuvenating Dry Cells**

Radiophans using peanut tubes find their dry cell A batteries sometimes have a premature death. This is due to the active material in the cell becoming dried out through the pitch compound on top being loose or broken by jarring, excessive heat or cold, thus allowing the moisture to escape. In such instances break out the sealing compound, punch several deep holes into the black mixture surrounding the carbon rod and thoroughly soak with water to which a little sal-ammoniac or salt has been added. Melt the compound and pour it back, then test out cell and note the difference.—J. J. Langford, Manchester, Illinois.

**Pencil Vernier**

If you have no vernier condenser, the sharpest kind of tuning can be done by resting the rubber end of a long pencil between the edge of the dial and the panel and turning slowly.

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Radio Division  
Chicago, Illinois

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Know dial settings for any station—new or old

**RADEX** lists every station in the United States, Canada, Cuba and Mexico. Cross-indexed five ways—any station referred to instantly by wave-length, dial reading, cities, call letters or frequency. Nothing to write but the dial settings—automatically calibrates your set. RADEX gives you the dial positions for stations you never heard. LARGE, clear type—easily read. Forty pages, and mighty attractive cover. Order yours today—fifty cents postpaid. Stamps accepted.

—Nothing Like It—

Dealers and Salesmen Write Us

**THE RADEX PRESS**  
214 Euclid Arcade Annex Cleveland, Ohio

# Convenient Station Directory File

## Schedule Is Pasted to Paper Roll on Spools

There is a simple little apparatus that the Radio fan may construct in his own home that takes care of the long list of stations as printed in each successive

### WORKSHOP KINKS EARN A DOLLAR—

There are many little kinks worked out at home that would aid your fellow Radio worker if only he knew about them. There are new hook-ups, new ways of making parts and various unique ways of operating sets that are discovered every day. Radio Digest is very much interested in obtaining such material. Send them in with full details, including stamped envelope, so rejected copy may be returned. The work must be entirely original, not copied.

RADIO KINKS DEPARTMENT  
Radio Digest,  
510 North Dearborn St., Chicago

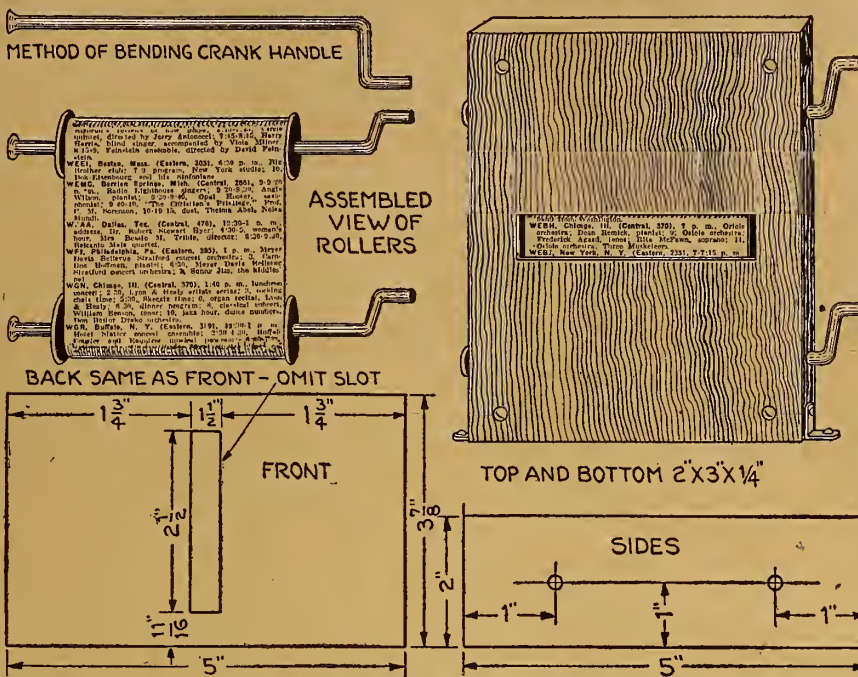
number of Radio Digest. This little apparatus places the station directory right on the Radio table for the operator's instant use and furthermore can be kept up to date.

Here are directions for constructing this little apparatus: Go to some kodak finisher and ask him for two spools on which the film comes wrapped. These should be from 3 to 3 3/4 inches in length and be sure to get a supply of the long red paper strips to fit the size of the spools obtained.

Take these spools and paper to the workshop and make a little box of the following size: If the spools are 3 3/4 inches long the box should be 3 3/4 inches wide, 5 inches high and 2 inches deep. Securely fasten the sides and back together, leaving the front open. Make for the front face a piece the right size from thin wood or composition and cut a slot in the center 1/2 inch wide and 2 1/2 inches long. On each side of the box drill a hole 1 inch from the top and bottom to pass a number 6 wire. This makes two holes in each side piece, each 1 inch from the end and 3 inches apart.

Stretch one of the long strips of red paper out on the work table. Get all the copies of Radio Digest needed to supply a full directory and cut them out, each a column wide. Obtain some paste, flour paste is good, and beginning 6 inches

## FILM SPOOLS USED FOR ROLLERS



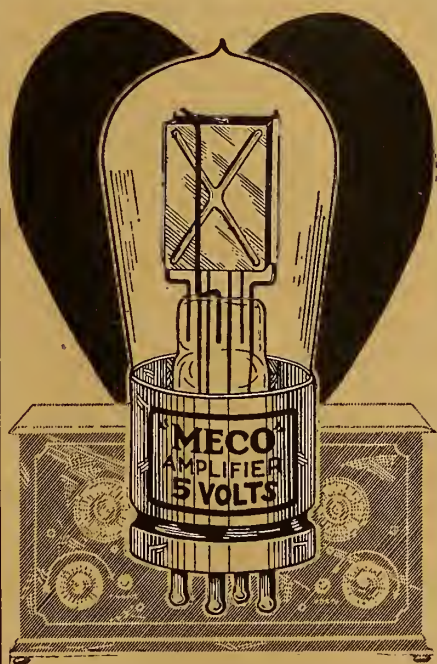
from the end of the strip paste the first column of stations down the center of the red strip and so on down each column in order until the entire list is pasted on it.

Take a piece of number 6 wire and cut 2 pieces 1 inch long and 2 pieces 3 inches long from it. Take the 3-inch pieces and bend them into a crank handle shape as illustrated. Put the empty spools inside the box and insert the 1-inch pieces through the holes on one side into the spool holes, and the crank shaped handles into the other side. The wire should be made to fit into the spools tight so that by turning the handles the spools will turn.

Load the spools with the list on the red paper the same way as loading a kodak.

Put the first stations in order into the top spool and wind the entire roll on it. Then insert the lower end into the bottom end spool and it will be found that when the lower crank is turned it will draw the upper spool backward and wind the list on itself and vice versa.

Fasten the front of the box on with screws, put two angles on the bottom of the box and screw it to the Radio table. Now when a station's call letters or information is desired, turning the handles either one way or the other will bring the information regarding this station before the slot in the front.



### Feel Its Pulse

When noise or faintness spoils your radio entertainment replace worn tubes—The Heart of your Radio—with Meco Tubes.

More and more radiophans are standardizing on Meco Tubes for experience has shown them they obtain greater volume without sacrifice of exceeding clarity as well as longer service with these tubes.

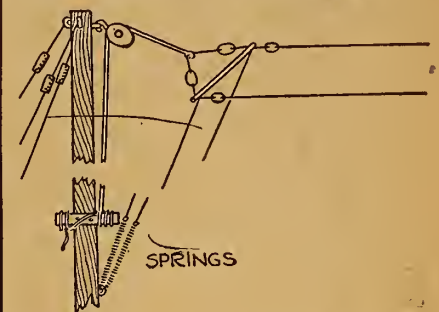
Look for the Meco stamped on the base if you want genuine Meco Tubes. Your dealer has them or will get them for you from recognized radio jobbers.

Metropolitan Electric Co.  
Des Moines, Iowa



## Tension Springs Placed on Double Line Aerial

Having trouble with my aerial breaking on account of the ropes contracting in the rain I devised the support as shown in the illustration. The aerial was the two-line type connected to a bar or yoke at each end. The yoke was drawn up with a rope and pulley, the latter being attached



to the top of the mast. The anchor or tightening means was also connected to the bar or yoke as shown, and springs from ordinary shade rollers were attached to the lower ends of the anchor ropes. The illustration clearly shows the construction.—Charles Moore, Marion, Ohio.

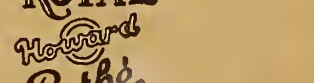
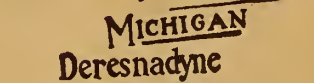
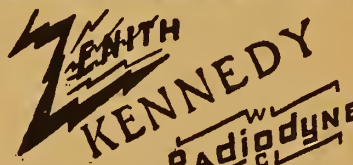
When new stations are installed, Radio Digest always gives all available information concerning them. By obtaining all the copies of this magazine and pasting the station on new pieces of red paper and loading the same as a kodak a complete revised list of stations can always be at hand.—David J. Morris, Wier, Texas.

### Use of Hydrometer

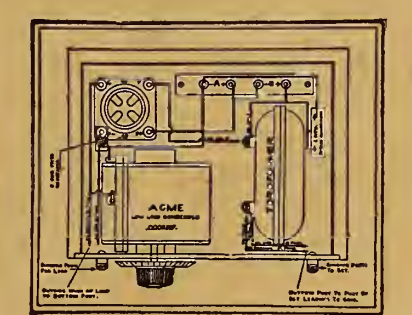
Use a hydrometer for testing out your storage battery. You can get one at almost any Radio supply store. The directions furnished with the hydrometer will tell you how to test the battery.

### SOMETHING WORTH KNOWING!

One reason that leading builders of fine sets use more Thordarsons than all competitive transformers combined is because EVERY Thordarson amplifies evenly over the entire musical scale. Thordarsons run absolutely uniform; always "match up" perfectly. And why shouldn't they? Aren't they made and unconditionally guaranteed by the world's oldest and largest exclusive transformer makers—transformer specialists for 30 years! For the finest amplification to be had at any cost, follow the lead of the leaders—build or replace with Thordarsons. A. F.: 2-1, \$5. 3 1/2-1, \$4. 6-1, \$1.50. Power Amp., pair, \$13. Interstage Power Amp., ea., \$8. All dealers. Thordarson Electric Mfg. Co., Chicago.



Follow their lead  
use  
**THORDARSON**  
Super  
TRANSFORMERS



### Increase the Efficiency of Your Reflex

by adding the Toroformer Attachment ahead of the Circuit.

The diagram above illustrates the Toroformer in use as a stage of tuned Radio frequency amplification.

Attachment furnished complete on Panel for \$22.00  
Or in Kit form for \$18.00

A full size drawing of the separate Toroformer Attachment Unit is available for 25c postpaid.

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(A transformer for Tuned Radio Frequency Amplification)

Overcomes Local Interference  
Gives Greater Distance  
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Vastly improves any Reflex or Radio Frequency set, such as Acme, Murad, De Forest Reflex, Powr, Erla Loop Aerial Sets.

Does not pick up stray or unwanted signals, is unaffected by other parts of the circuit, and has no effect on other instruments.

Toroformer with printed diagrams and hook-ups.  
Price \$5.00

At any First Class Radio Dealer or direct from us postpaid.

DEALERS wanted everywhere

THE SEARS MANUFACTURING CO.  
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Mail this coupon for free folder  
Please send me your free folder on the TOROFORMER.

NAME.....  
ADDRESS.....



## End 50% of your radio troubles with Ekko Clamps

The experience of set manufacturers and service stations shows that 50% of the trouble with radio sets comes from a faulty ground. It is not enough to wrap a piece of wire around a pipe. The contact must be firm and permanent. The Ekko Clamp insures a good ground. The half-moon shape makes it easy to attach anywhere and a turn of the screw fastens it securely. The hardened point bites through paint or rust. The connection is made tightly so corrosion cannot form and ruin it. Sold by radio dealers everywhere.

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THE EKKO COMPANY  
111 West Monroe Street • Chicago, Illinois

# Questions and Answers

## Resistance Coupled Amplification in Hetrodyne

(11375) CCP, Ottawa, Canada.

I do not like the idea of using three stages of audio frequency amplification as designated in the construction of the hetrodyne. Is it possible to use one audio and two resistance coupled amplification instead to avoid distortion?

Can dry cell tubes be used in the circuit?

A.—The accompanying diagram shows a way to use one stage audio and two stages of resistance coupled amplification in the hetrodyne circuit.

Regarding the use of dry cell tubes, they will work all right but you will find that they render no volume to speak of.

## X Wire for Neurodynes

(11710) G5, Salt Lake City, Utah.

I am very much interested in your X wire for neurodynes which appeared in the Radio Digest of December 27, 1924. I have a neurodyne set which I would like to add this X wire to, but I don't believe I get a clear enough idea from the diagram to do this.

Will you please send me a diagram that I can grasp the idea of just what I need to do to add this X wire?

A.—Unless your set has a tendency to oscillate on the lower wave lengths, we would discourage the idea of adding the X wire. Also if your knowledge of Radio is not sufficient to grasp the diagram printed and its use we do not believe you should attempt to alter what is usually a very excellent receiver.

## Interference Throws Tube Into Oscillation

(11707) HKM, Ft. Collins, Colo.

I am able to get all the distance I want

**RADIO LOG BOOKS.** Used with any set. Satisfaction guaranteed. Postpaid 25c. Dealers wanted. Roy Stacy, Rockford, Ill.

**Radio Reception Stamp Album and Log.** 240 stamp size, fancy brochure cover. 50c each. Henry Jorgensen, Minden, Nebr.

**Men to build radio sets in spare time.** Leon Lambert, 501-H Kaufman Bldg., Wichita, Kansas.

**Raulf Radio Consoles.** The ideal radio cabinet, built in genuine mahogany or walnut. Send for descriptive circular. Raulf Manufacturing Company, 564 Vedder St., Chicago, Ill.

**Crystals—Make them yourself** of cheap material, obtainable anywhere. Cost fraction of cent each. Easy to make. Very sensitive. Guaranteed instructions 50c. Fred Skinner, R 1, Box 22, Alton, Ill.

**The Inverse Duplex and Tuned Radio Frequency** booklet containing entirely new material by the man who inverse duplexed the neurodyne, with a foreword by David Grimes. Fifty cents postpaid. John De Q. Briggs, 1716 Randolph Street, St. Paul, Minn.

**It's your money and you can spend it** for tubes or batteries if you want to; but I can show you how to bring distant stations in on a simple crystal set. Same plans increase range of tube sets also. Copyrighted plans \$1.00. Complete parts for long distant crystal sets \$5.00. Leon Lambert, 501 Kaufman Bldg., Wichita, Kansas.

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64 pages, bound in beautiful GENUINE leather cover. Give call, city, wave lengths, etc. Spaces for 4 dial settings, remarks, etc. List by wave lengths of principal stations. List of stations alphabetical by states and cities. Valuable tuning suggestions. List of station owners. Trouble aids. So convenient. Other valuable information. Worth many times the small cost. With beautiful rippled cover 75c; genuine De Luxe leather cover, only \$1.00.

**MONEY REFUNDED if Not Delighted**

Don't send a cent. Pay postman after log arrives. If pay with order we pay postage. You will enjoy this log. Order today—NOW. Postal will do. RADIO PRINTERS Dept. 7412 MENDOTA, ILL.

## Radio Dealers

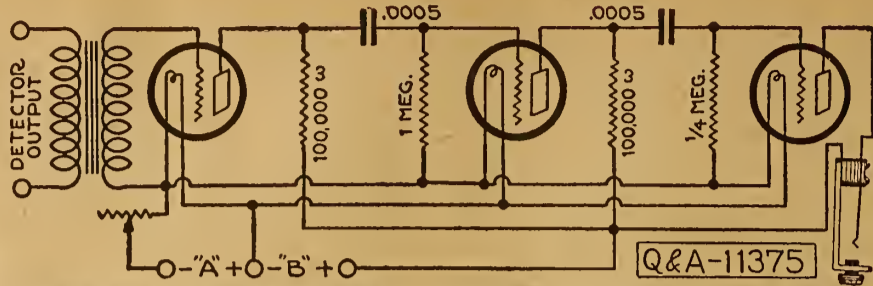
We can make immediate delivery on Federal 141 Style Receivers.

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Burlington, Iowa

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112 Trinity Place New York City



but when a stormy squealer (regenerative) crosses the wave the set blocks and the music stops and the howling begins. By wetting my finger and touching the grid of any intermediate amplifier tube or grid leak of detector the howl stops and music comes in again. (It needs a self starter.) How can I help this?

When I say it needs a self starter I mean just that, because I cannot start it unless I spit on my finger and touch some grid as above, and since Mr. Volstead got busy, I ain't got much spit. A.—We presume that the grid returns

of your intermediate amplifiers are connected to the center tap on a potentiometer and when you are trying to get great range you bring the potentiometer too close to the oscillating point and a strong surge of energy such as would be caused by a nearby squealer throws the tubes into oscillation, and to bring the condition back to normal it is necessary for you to stop oscillation with your finger. If you do not now have a .5 fixed

## PATENTS

Write for my free Guide Books "How to Obtain a Patent" and "Invention and Industry" and "Record of Invention" blank before disclosing inventions. Send model or sketch of your invention for instructions. Promptness assured. No charge for above information. Clarence A. O'Brien, Registered Patent Lawyer, 2007 Security Bank Building, directly across street from Patent Office, Washington, D. C.

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For the Ultradyn Circuit

1 Input Transformer and 3 Intermediate Transformers \$20.00  
Low Loss Tuning and Oscillating Coils, per pair \$ 4.00

Full instructions and Blue Prints furnished with each Kit. Absolutely guaranteed. These transformers are suitable for any Super-Heterodyne circuit. Put up in handsome Kit display box. Special discount to dealers. Prompt delivery. Write for special circular.

**SYEPHER MFG. CO., 1524 Fernwood, Toledo, O.**

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On "Tube Control" tells how to bring in distant stations clear and loud. Just drop a post card to  
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CHICAGO, U. S. A.

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Approved LIGHTNING ARRESTERS  
Complete Protection

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only \$29.50  
FULLY GUARANTEED LONG DISTANCE RADIO  
Users everywhere report Miraco Tuned Radio Frequency sets get programs coast to coast; outperform sets 3 times as costly. Send for proof they are radio's most amazing values. One tube guaranteed, completely assembled long distance outfit, only \$14.35. Three tube (above) \$29.50. Five tube \$75.  
SEND POSTAL TODAY for latest bulletins and special offer. It will interest you.  
MIDWEST RADIO CORP.  
Pioneer Builders of Sets  
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Easy to tune—  
New principle prevents all back lash, gives infinite tuning precision. Fits all standard condenser shafts.  
At your dealers \$3.50  
MYDAR RADIO CO.  
9 N. Campbell St. NEWARK, N. J.

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REGISTERED TRADE MARK  
MICROMETER CONTROLS

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Throw away your "B" Batteries and install a Kellogg Trans-B-former. It gives you "B" Battery current direct from your electric light socket at the trifling cost of one-fifth of a cent per hour. Gives better reception—no interferences. Write for details.

### KELLOGG

SWITCHBOARD & SUPPLY CO.  
**Trans-B-Former**  
1066 W. Adams St., Chicago, Ill.

condenser from the center tap of your potentiometer to the minus filament lead, we suggest putting it in. As a second suggestion you will find that it pays to keep your potentiometer a degree or two farther from the oscillating condition. In experimenting with a super-heterodyne there is nothing one can do except keep the potentiometer farther toward the positive side.

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Will help you increase sales  
Send for FREE catalog giving counts and prices on thousands of classified names of your best prospective customers—National, State and Local—Individuals, Professors, Business Concentrators.  
99% Guaranteed 5¢ each by refund of 5¢ each  
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### FREE

The very latest up-to-date radio wall map 28 by 34 inches. Shows call letters, locations, wave lengths, and kilocycles of all radio broadcasting stations, U. S., Canada, and Mexico, relay divisions and radio districts. Also a scale for measuring distance. This wonderful map postage paid, ABSOLUTELY FREE. Merely send us a list of stores in your city which handle radio apparatus. Be sure and give the street address, and if you know the manager's name, give it also. DO IT TODAY before this offer is withdrawn.

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HEAR WHAT YOU LIKE. Stations are glad to put on numbers at your request. We print special postal "Thank You" cards that get ATTENTION. All the RAGE. THANK YOUR FAVORITE STATIONS AND TALENT. They appreciate applause as musicians on stage do. Use postal "Thank You" cards (require only 1c stamp). Good grade cards—Quality printing. Satisfaction GUARANTEED or money back. Get more pleasure out of your radio.

### Thank You

for the greatest program I ever heard  
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We have an excellent program. Very clear.  
We would appreciate hearing from you.  
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has made a big hit with both set makers and set manufacturers because of its small size, its amazing volume and, most of all, because of its pure undistorted tone. It is half the size of other transformers, but its results are unsurpassed. Absolutely new and scientific design and construction. Ratios 1 to 3, 1 to 4, 1 to 5, \$3.50. Ratio 1 to 10, \$4.50.

SEND FOR BULLETIN No. 94. Read all the exclusive features of this and other Premier Parts. Tells how to get free hook up diagrams, beautifully printed in two colors.

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Grid Leak.....\$1.00  
Grid Leak Mounting.... .30

### BURROUGHS-ROEGLERS





*Prest-O-Lite*

**RADIO CHART**

Voltage of Tubes	No. of Tubes	Type of Tubes (see foot-note)	Total Rated Amperes Drain	Recommended Prest-O-Lite "A" Batteries		Recommended Prest-O-Lite "B" Batteries	
				Order by following Types	Days between Chargeings	Set Manufacturer's Specified Voltage	Order by following Types
5-Volt Tubes <small>C-300 and UV-200 are interchangeable C-301A, DV-2 and UV-201A are interchangeable</small>	1	UV-200	1	69 WHR or 67 WHR	22 16	22½-24	One 24 XRR
	2	UV-201A	½	67 WHR	33		
	2	1 UV-200 1 UV-201A	1¼	611 WHR or 69 WHR	22 17	45-48	One 48 XRR
	3	UV-201A	¾	69 WHR or 67 WHR	29 22		
	3	1 UV-200 2 UV-201A	1½	611 RHR or 69 WHR	21 14	90-96	Two 48 XRR
	4	UV-201A	1	69 WHR or 67 WHR	22 16		
	4	1 UV-200 3 UV-201A	1¾	613 RHR or 611 WHR	22 15	45-48	One 48 XRR One 48 XRR
	4	UV-201A	1¼	611 WHR or 69 WHR	22 17		
	5	1 UV-200 4 UV-201A	2	613 RHR or 611 WHR	19 13	67-72	One 24 LRR One 48 LRR
	6	UV-201A	1½	611 RHR or 69 WHR	21 14		
	8	UV-201A	2	69 KPR or 67 KPR	21 15	90-96	Two 48 LRR
	For sets using current at a rate higher than 2 amperes.			2¼	69 KRL or 67 KPR		
			2½	69 KRL or 69 KPR	19 16		
3-Volt Tubes	1	UV-199 C-299 DV-1 DV-3	.06	One 43 MRR	100	22½-24 45-48	Use same XRR and LRR combinations as above for same voltage.
	2		.12		50		
	3		.18	Two 43 MRR in Parallel	140	45-48 90-96	
	4		.24		33		
	5		.30	One 23 MRR Twin	48	22½-24 45-48	
	6		.36		23		
1.1-Volt Tubes	1	WD-11	¼	Two 23 MRR Twins in Parallel	32	45-48 67-72	Use same XRR and LRR combinations as above for same voltage.
	2	WD-12	½		23		
	3	C-11	¾	Three 23 MRR Twins in Parallel	29	45-48 67-72	
	4	C-12	1		23		
	5	215A	1¼	23	90-96		
	6	215N	1½				

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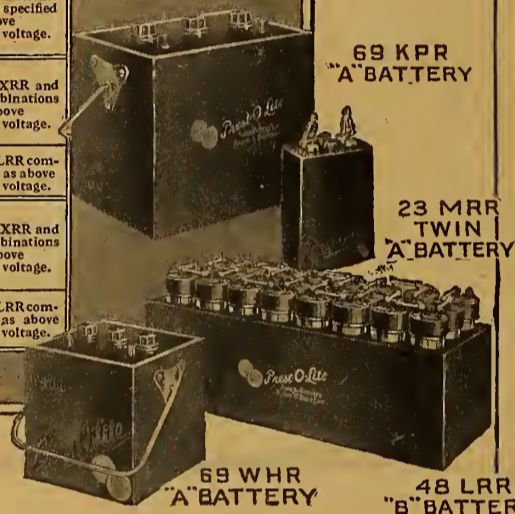


Write today for this free booklet

Whether you have a one-tube set or most advanced multi-tube outfit, you'll find a fund of interesting information in our booklet, "How to fit a storage battery to your set—and how to charge it."

This booklet gives you the complete Prest-O-Lite Radio Chart—technically accurate recommendations covering both "A" and "B" storage batteries for every type of set.

In addition, there is much vitally important data on battery care and upkeep—information that any radio fan will find of real value in keeping his set at its maximum efficiency. Write for your copy right now.



# What size batteries will work best in your set?

SELECTING storage batteries of the right size and capacity is necessary, not only for the best reception, but also to arrange the time between chargeings to suit your convenience.

The Prest-O-Lite Chart now makes this easy. Illustrated above is the master chart showing Prest-O-Lite Radio "A" Storage Batteries for all sets. You will find, in the fifth column, the Prest-O-Lite "A" Battery that fits your set exactly. Two sizes are recommended, but the larger capacity battery will be found more desirable unless facilities for frequent and easy charging are provided. (The days between chargeings are based on an average use of your set of three hours a day.)

Use the "B" Battery combinations that give the plate voltage recommended for your set. These batteries will serve

two to four months without recharging.

You'll prefer Prest-O-Lite Storage Batteries because of their special features designed for better radio reception. Improved separators and plates insure steady, unvarying current and years of life. They're easy to recharge. Hand-somely finished to go well with the finest sets. Prest-O-Lite Batteries offer you truly remarkable savings. Though standard in every respect, they are priced as low as \$4.75 and up.

Let the Prest-O-Lite Chart guarantee you batteries scientifically correct for your set. It is endorsed by the world's largest electro-chemical battery research laboratories. See it at your dealer's—or write for our interesting booklet, "How to fit a storage battery to your set—and how to charge it."

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