Aerial Aids for Christmas Set Buyers—J. E. Owen; New Het-duo-gen Circuit; "X" Wire—Key to Neutrodyne Success; Details of \$1,000.00 Gold Award Set

# Radio Di I I PROGRAMS

Vol. XI

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SATURDAY, DECEMBER 27, 1924

No. 12

# NEW SET-FIND OF YEAR



## PHONE CONNECTION LONDON - NEW YORK

NEW STATION READY FOR SERVICE NEXT YEAR

Will Use 4,000,000 Watts Power for Transoceanic Talking-Toll Charge Approximately \$25

LONDON, Eng.—It is not only possible, but absolutely certain that in a year's time, any man in England can pick up the ordinary telephone in his house and speak to a friend in New York.

This new scientific stride will be a great help to a number of people, particularly business men who are making regular trips to Europe. Many trips will undoubtedly

be saved. This will be possible when the long disance Radio station of the British postoffice at Rugby is completed. Eight giant masts cover an area of 800 acres. Towering 820 feet above the ground, each of the masts is in the form of a tripod and

weighs 200 tons. Use 4,000,000 Watts Power

The power plant will be the greatest of its kind in the world. Over 400, 10,000 watt tubes will be used for this service. They are built of fused copper and glass to permit their cooling by water.

Thanks to Radio, the ordinary telephone subscriber will be able to communicate with any vessel in mid-ocean. This has been tried experimentally with wonderful success on boats crossing the English

The station will be used to communicate with Rocky Point, Long Island, and when it is completed, anyone in England can telephone to anyone in New York at a charge of about \$25 for a ilmited number of minutes.



Left, Louise Jacobsen, pianist who performs for the fans through Station KGW. Center, Dorothy Mackaill, hostess at the recent Radio show held at the Ambassador hotel in San Francisco. Right, Anita Hanisch, twelve-year-old pian-

ist who plays at Grebe station WAHG, and is well liked.

# HET-DUO-GEN TUNES EITHER **COAST EASILY**

Selectivity Is Perfect

C. E. Brush Uses Six Tubes in Decidedly New Hook-Up -Tells How to Build

Meet the Het-duo-gen!

The set that really brings in what you want when you want it has come to light at last. A complete surprise because its development is so different from the lines along which most experimenters were known to be working. Combining the advantages of the heterodyne with regeneration on two tubes, C. E. Brush, of Chicago, has achieved a degree of selectivity that is almost miraculous. The sensitivity seems consistently to equal that of an eight tube super-heterodyne while the volume from three stages of audio frequency amplification is more than enough for dancing. A large loud speaker is required to

Once the circuit is explained and the operation understood, it all seems so simple that one wonders why it hasn't been done before. Cost? The cost to

(Continued on page 2)

# TO FIND \$1000 GOLD AWARD SET!

# ENTHUSIASM ANSWERS CALL FOR BEST ORIGINAL HOOK-UP

Radio Digest Contest, Open to All, Stirs Radiophan Interest—Many Sets Already Entered—Speed Necessary in Submitting Receivers.

With only seven days in which to once. It will not be held longer than send their sets in since the announce- absolutely necessary to make compariment last week of the Radio Digest \$1,000.00 Gold Award Set contest, several score of entries have already made

their appearance at this office!

The surprise of all came when five sets were submitted on the day the day were only accidents when day were only accidents when December 20 issue made its appearance

on the newsstands. Evidently the contest has taken the Radiophans by storm. Everyone seems interested and willing to co-operate with this publication to determine whose receivers contain the most important contribution to the Radio art.

Radio clubs have written for particu-

Newspapers have asked for more in-

formation regarding the award. Telegrams and letters direct to Radio Digest indicates that interest is booming in every section of the country.

Remember Shipping Instructions

Emphasis must be placed on the manner to be used in shipping entries to Radio Digest. Read carefully rules 5 and 6 in the list given on this page.

Careful packing may be the cause of one set winning out over another, because of damage incurred by the poorly

Do not send novelty or freak sets built in miniature houses, dolls, finger rings, tie pins, etc. Read rules 7 to 8.

Remember that you need not know how to write articles in order to enter your set. Ability as an author has no weight in awarding the prizes. Draw a hook-up diagram, send it with a short explanatory letter to the Gold Award Set Editor, pack your set entry carefully and send it separately prepaid, insured, to the Gold Award Set Editor, Radio Digest, 510 N. Dearborn street, Chicago.

Selectivity Big Factor

New ways of obtaining selectivity practically, without the employment of a great many extra tubes, will undoubtedly have an important bearing on the choice of the prize Gold Award sets. .

Broadcasting stations are growing so numerous nowadays that the problem has become that of tuning them out, rather than tuning them in. Of course, selectivity must not be obtained at a sacrifice of other desirable qualities, such as range, quality and volume of reproduction, simplicity of operation, ease of construction, minimum re-radiation, etc.

The first prize Gold Award set is going

to be a GOOD SET.

Everyone will want to make one like it, if early interest in the contest is any indication.

Hurry Along with Entries

Only three more weeks till the contest closes! At the stroke of midnight, January 17, every entry must be in.

Don't delay. Get your idea of the best set in to the Gold Award Set Editor at

#### TWO NEW LARGE STATIONS; RUMOR

Former Chicago Mayor and Commonwealth Edison Plan to Erect Studios

CHICAGO .- And still they come! Two more broadcasting stations are making arrangements to go on the air some time in the near future in this city. One of these will be owned and operated by William Hale Thompson, formerly mayor of Chicago, and the other will be operated by the Commonwealth Edison company, which furnishes the light and power for

The station which Mr. Thompson contemplates erecting will be a 1,000-watt station. The call letters assigned are WHT. This station will go on the air February 22, 1925. It will be located on the tower of the Wrigley building.

The new Commonwealth Edison station may be one of the 5,000-watt stations now being built by manufacturers of broadcasting equipment. At the present time KYW's operating plant is on the roof of the Edison building. This will be moved soon to their new quarters in the Congress hotel.

Some of the most radical Radio improvements have come from Radiophans who did not know what they had done, but recognized the fact that they had

Many important inventions in use today were only accidents when first con-

Perhaps your set contains such an accident?

Perhaps you have thought out some-

thing new in circuits?

Judges to Be Announced Soon Several world-renowned leaders and Radio inventors have been invited to sit as judges in the Gold Award Set contest. Their acceptances are being awaited.

Every precaution is being taken to insure the fair selection of the winners. The contest is on! Who will win the

\$1,000.00? Only those who submit entries will be taking advantage of this great opportunity. It may be the turning point in someone's life. It may make a Radio manufacturer or inventor out of a man or gressing, but still infant, industry.

#### \$1,000 GOLD AWARD SET CONTEST RULES

- 1. This contest opens at once and will close on Saturday, January 17, 1925, at midnight. All sets received up to that time will be entered.
- The thousand dollars in gold will be divided into the following prizes First, \$500.00; Second, \$250.00; Third, \$100.00; Fourth to Ninth inclusive, \$25.00 each. In the event of a tie, the full amount of the prize tied for, will be awarded to each tying contestant.

Contest is open to all Radiophans, whether or not subscribers to Radio Digest Illustrated.

- A neatly drawn hook-up diagram and short description (200 words) of the salient features of the set should be enclosed in separate letter advising set is being shipped. Entrants do not need to be authors or writers.
- Sets must be sent insured prepaid express or insured parcel post. All sets, including winners, will be returned insured collect to entrants.
- Radio Digest is not to be held responsible for breakage or loss in transit. Pack sets carefully. Mark boxes and contents plainly with name and address of sender. Tubes and batteries need not be sent unless matched tubes are essential to operation.
- Freak or novelty sets are not desired. Sets enclosed in or

built around dolls, finger rings, hats, etc., will not be considered.

8. Sets desired are those based on an original circuit or part of circuit that functions better than circuits commonly in use. Originality is one of the prime considerations.

9. Entrants who are not awarded prizes, but whose sets are considered worthy of constructional description in Radio Digest, will be paid at regular manuscript

10. Entrants must guarantee to Radio Digest exclusive publication rights of all descriptions of their sets. The exclusive publication rights will be in force for all sets winning or picked for later description in Radio Digest.

11. Judges not interested in manufacturing will be selected by Radio Digest to make the awards. The award of prizes will be based on: Selectivity, range, volume, quality of reproduction, simplicity of operation, constructional feasibility, economy of construction, minimum re-radiation, universality, practicability.

12. Ship sets and address correspondence to the Gold Award Set Editor, Radio Digest Illustrated. 510 North Dearborn street, Chicago, Ill. All controversies will be decided by the Gold Award Set Editor, whose decision will

be final.

Telegraphic communication by Radio established between Beirut, Syria, and woman who has never considered him or Belgrade, Jugo-Slavia, has recently been herself as even a cog in this rapidly pro- made available for commercial uses through an ordinance issued by the January 17 is the finishing line. Hurry! | French high commissioner for Syria.

# CONTENTS

Radio Digest, Illustrated, Volume XI, Number 12, published Chicago, Illinois, December 27, 1924. Published weekly by Radio Digest Publishing Company, 510 N. Dearborn Street, Chicago, Illinois. Subscription rates, yearly, Five Dollars; Foreign Postage One Dollar additional; single copies Ten Cents. Entered as second class matter at the postoffice at Chicago, Illinois, under the Act of March 3, 1879.

by C. E. Brush 15
Editorial; Indigest; Condensed by Dielectric 16
Demonstrating Radio Principles at Home, Chapter III—Types of Aerial Instal-Questions and Answers
Radiophone Broadcasting Stations. Part I

# Looking Ahead

- The Construction of Het-Duo-Gen Is Begun in Next Issue, and C. E. Brush tells about winding the antenna coupler, oscillator and filter. A baseboard layout is shown which will give builders a picture of what the "insides" look like.
- Fada Neutrodyne Receivers Are to Be Taken Up by the Operating and Trouble Shooting Department. The suggestions given cover four models, Neutroceiver, Neutrola, Neutroceiver Grand and Neutrola Grand. Fada owners will learn much from this article, as will operators of other forms of neutrodynes.
- You, Too, Can Devise New Circuits and calculate the correct inductance and capacities from the article by J. E. Owen in the next issue. Testing and improving are also explained thoroughly.
- A Mechanical Amplifier-Loud Speaker Used in Paris will be discussed next week by Frederic M. Delano. Constants and assembly are given and the true experimenter will find this article the basis for many pleasant hours in a new field of construction.
- Have You Thought of Entering the Radio Digest Gold Award Set Contest? Many are doing so. Perhaps you have the prize winning set but do not recognize it. Don't miss this opportunity. Send it in!

Newsstands Don't Always Have One Left

WHEN YOU WANT

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#### **NEW SET—FIND OF YEAR**

(Continued from page 1)

build is remarkably low, much lower than a "super." The 23-plate variable condenser and three good quality audio frequency transformers are the principal items in the list of parts.

Controls are symmetrically arranged on the panel and het-duo-gen is attractive, as well as being the most efficient ever tested. Two het-duo-gens were tried out to be sure that location had nothing to do with the results.

Goes Through Locals

Located within a mile of two of Chicago's most powerful northside broadcasters, a het-duo-gen went through on a Tuesday evening and brought in WJY, WTAM, WMC, WDAF, WFAA and KGO time after time. Tuning was done entirely on the loud speaker. Could any Radiophan ask more?

Radio Digest did, so operations were moved to Evanston where another outfit was installed on a short antenna. This time the het-duo-gen repeated the performances of the first and added WOAI, KFI and WOR to the list.

The explanation and construction of this surprise set of 1924 is begun by Mr. page 15 of this issue. Begin to build, for there is nothing "tricky" about this set, no "ifs" and "shoulds." The coils are easily assembled at home and no special kit or make of parts are

### Official Opening of KTHS New Years

Distinguished Guests from Throughout Country Attend Gala Affair—Located on New Arlington Hotel

HOT SPRINGS NATIONAL PARK. Ark .- Mr. and Mrs. Radiophan and the whole family, 20,000,000 strong are given a special invitation to attend the grand opening and christening party of the New Arlington hotel station, KTHS, which will start at 9 o'clock New Year's eve and continue until 1 o'clock the morning of

Distinguished guests from all over the United States will be present for the gala occasion, with 1,500 table reservations taxing to capacity the spacious ballrooms. The New Arlington is regarded as one of the most beautiful examples of hotel architecture in the United States and will hold open house in regal style New Year's eve.

A feature de luxe of the New Year's eve Radio feature will be Henry Santrey and his famous Cameo Record orchestra of 11 pieces and a complete caste of vaudeville stars. In addition, the Meyer Davis orchestra of Philadelphia, favorites of the Prince of Wales on his recent American tour, will be on the job with a specially prepared assortment of dance music and specialties. This noted orchestra will be regular KTHS entertainers during the winter.

### HOOVER WITHDRAWS CALL FOR NEW LAW

ASKS HOUSE NOT TO PASS PENDING WHITE BILL

Art Growing Too Fast to Be Bound by Inflexible Law, Is Argument Presented

WASHINGTON, D. C .- Support of the pending White Radio bill in the House of Representatives has been withdrawn by Secretary of Commerce Hoover because he feels that the art of Radio is developing so fast that any bill enacted into law at the present time would be obsolete in the near future.

It is understood that the Congressmen are not so pleased at this withdrawal of

In connection with this changed attitude Secretary Hoover has sent a communication to Representative White of Maine, who introduced the legislation.

Secretary Hoover proposes to amend the present Radio law of 1912 merely by adding a paragraph to the law as fol-

"The wave length of every Radio transmitting station for which a license is now required by law, its power, emitted wave, the character of its apparatus and the time of transmission, shall be fixed by the Secretary of Commerce as in his judgment and discretion he shall deem expedient and may be changed or modified from time to time in his discretion."

Mr. White refused to discuss the letter following its receipt.

#### Colored Lights Atop Towers Guide Flyers

Crosley WLW Station Is Harrison, Ohio, Marker

CINCINNATI.-Night aviation is becoming less dangerous and the recent inauguration of the nocturnal service in the airplane mail division bespeaks well for the confidence of the government officials in the safety of the flyers.

In order that aviators might have an additional guide while flying at night, Powel Crosley, Jr., has had red and green lights placed atop the aerial towers of his new five-kilowatt transmitting station at Harrison, Ohio. The red light is placed on the north tower while the green one is on top of the one to the south, separated by four hundred feet of the aerial wire.

This combination of red and green lights with their location has been brought to the attention of aviators' organizations in order that they might notify their members of the added guides while flying in the vicinity of the new WLW station.

Flood-lighting the towers at night makes them visible for several miles and they present an imposing sight as they rise 200 feet from the top of one of the Brothers deal in sporting goods and one highest knolls in that part of the country of the partners in the firm invented the and serve as a guide to the town of Har- Browning machine gun, used in the world rison, Ohio.

#### BARNYARD PASTIME WILL BE BROADCAST

DELOIT, Wis .- "Clink-clank-ah-h, Si Smith from up Milwaukee way has thrown another ringer." If you happen to be listening in New Year's afternoon on 268 meters, and hear the above or strange kaplunks and arguments galore—don't think that your tubes are on the bum. It'll just be Station WEBW broadcasting a grand old barnyard golf tournament.

## **NEW BODY FORMED** TO BANISH GLOOMS

YE OLD APPLESAUCE CLUB BORN AT STATION KYW

New and Original Contributions Sent in by Fans Read Before Microphone—Open to All

CHICAGO.—Do you happen to know of any "wise cracks," any new and original ones, or any "funny bone ticklers?"

If so, you are eligible for a new club, regardless of financial status, race, age, sex or previous condition of servitude. It's "Ye Old Applesauce Club," conducted by Station KYW. Ransome Sherman is the chief applesaucer.

Contributions should be sent in addressed to Ransome Sherman, Westing-house station KYW, Chicago. And down in the corner of the envelope, care of the Chicago Evening American studio.

If they are new and funny, you promptly become a charter member of "Ye Old Applesauce." Listen in and you will hear your contribution, and your

Three Prizes-but No Third

Mr. Sherman offers a first prize, a second prize, and a fourth prize-first, second and third prize would be common. But, and this is confidential, the prizes aren't real. That's a part of the joke.

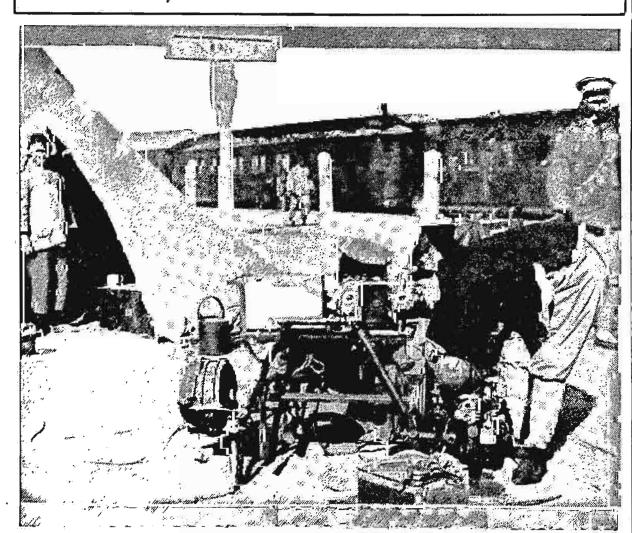
It's a new club, but it is growing by leaps and bounds. There's no clubhouse, nor golf links, but the membership role is astounding. Something like the fellow who owner a ten-mile railroad. He claimed that while it wasn't as long as the New York Central, it was every bit as wide. And so it is with "Ye Old Applesauce Club."

So come on humorists, send them in. One more point. Mr. Sherman suggests that barber shop jokes are now in order. Time was when they were rather raw but in these days, with the members of the alleged weaker sex filling the spaces below the stripped pole, the air has become so refined that the jokes are now ellgible for the ether.

New Station at Ogden, Utah

OGDEN, Utah.-A broadcasting station is being erected here by Browning Brothers company's store. Browning

### CHINESE ARMY NOT OLD FASHIONED



Chinese national troops at the Shanhaikwan front under command of Marshal Wu Pei Fu, who fought against the Manchurian invasion of the Fengtein troops to protect the unity of the country, used this modern portable Radio field set at a railway station near the front at Marshal Wu's headquarters.

#### FIRST GREAT DANE TO GO ON AIR



Mason of Melrose, is the latest memand is three years below the age require- barks and howls awoke the Masons, and nient, he has more than made up for this by doing Big Brother acts.

the Big Brother club in the studio at the idol of all Big Brother members. WEEI with pompous ceremonies directed by Big Brother Emery. The Big Brother the tip of his nose to the tip of his tail act resulted in Pep's being elected as an and weighing 160 pounds. Pep is only honorary member would be worthy of any four years old but enjoys broadcasting.

EP, a great Dane dog owned by Harvey | Big Brother, or, for that matter, of fathers or grandfathers. Pep is responsible probber in the Boston Edison Big Brother ably for saving the lives of Mr. and Mrs. club. Although Pep cannot meet all the Mason and the five little Masons when requirements for membership in the club their home caught fire recently. Pep's Mr. Mason on investigation found the kitchen of his home in flames. Since this Pep was made an honorary member of occurred a few weeks ago, Pep has been

Pep is a big pet, measuring six feet from

#### **NEW ORLEANS PICKS** UP VOICE OF OMAHA



Irene Fleming

Fleming, one of WOAW's most popular soloists, added another achievement to her long list when recently her special Zenith program, broadcast from WOAW, was picked up and amplified for visitors at the New Orleans Radio show by the staff at the Zenith Radio corporation booth. Miss Fleming is

OMAHA. - Irene

an ardent believer in the help music affords demented people, and has devoted several years

to the directorship of music at the State Hospital for Insane at Lincoln, Nebr.

Her charming soprano voice has been heard from practically every Omaha theater and club, besides the many times the WOAW audience has listened with

#### British and American Fans Play Chess Match by Radio

HAVERFORD, Pa .- The first international chess match by amateur Radio was played recently between Haverford college here and Oxford, England, using the college Radiotelegraph station of both universities.

The communication was maintained for five and one-half hours on a wave length of 85 meters, despite a very heavy, grinding static.

The game was begun at 7:15 p. m. Eastern time and was postponed to another day at 12:45 a.m.

#### 'The Mikado" from WEAF Chain

NEW YORK .- Incidental music from 'The Mikado" was broadcast recently from five stations, WEAF, WJAR, WCAP, WEEI and WDBH, when this was given at the Capitol theater here in connection with the film, "The Snob." WEEI and WDBH are new members of the WEAF-Capitol theater chain.

#### WHO Heard in St. Thomas

DES MOINES, Iowa.-Station WHO, located in this city was recently heard at St. Thomas in the Virgin Islands, about 2,700 miles from here. A letter received from a U.S. Navy Radio man who heard them, told of wonderful reception and volume.

One of the mental patients held in a British asylum has complained that he was being polsoned by Radio.

### ||LONG HERALDED KOA TAKES ETHER DEBUT

#### IS GENERAL ELECTRIC CO.'S LAST LINK IN CHAIN

Broadcasts on 323 Meters and Uses 1,500 Watts Power—Thousands Hear Formal Opening

DENVER, Colo.-Another Radio voice has been added to the long list of statlons now in existence. Station KOA, located in this city recently went on the air, broadcasting on 323 meters and using a power rating of 1,500 watts.

The opening of this station marks the completion of the General Electric link of broadcast stations across the country. Station KOA is half way between the Mississippi and the Pacific; Mexico and

Canada, and has been heard by millions of fans since its opening. Hundreds of letters were received before the official opening of the station. The call letters used during the dead of night experiments were 9XA.

"From the foundation to the roof, this station has been designed and built for the sole purpose of broadcasting," declared Martin P. Rice, who is director of broadcasting for the General Electric, and is at the present time located here.

"Use of broadcasting pick-up circuits will permit public events, addresses, concerts and services of many churches to be placed on the air. The station is surrounded by a rich file of talent from which to select music, entertainment and educational features in addition to the KOA staff artists."

For the present, programs will be broadcast three nights a week, the dates will be announced later, in addition to the Sunday features. Harry D. Randall, will have local supervision of the station.

#### "R. F. D." NAME OF NEW **FARMER RADIO GROUP**

#### WLS Organizes Radio Farmers' Democracy Body

CHICAGO.-"R. F. D." is the name of the national Radio farm organization recently launched in Chicago over WLS by the Sears-Roebuck Agricultural founda-

The name was chosen as a result of a contest among the farmers themselves, more than 10,000 suggestions being submitted. The winning name stands for "Radio Farmers' Democracy" and was submitted by Roy Wixon, Spring Valley,

Ill., who wins a Radio set as his reward. Mr. Bill, director of WLS, will manage the new farm Radio club which will meet In the various communities at 8 o'clock Central time every Tuesday night.

Applications already have been recfrom 10,000 people.

## **BROADCAST "WHITE** CARGO" FROM STAGE

PORTRAYS LIFE IN AFRICA AMONG THE BLACKS

Station KYW Holds Fans Interest During Entire Show-Theater-Goers Given Unusual Treat



Gladys Frazin

"White Cargo," the vivid play of the tropical jungles, was broadcast by Station KYW from the stage of the Cort theater, Friday night, December 12, at 8:20 p. m.

This play came to Chicago after having been played in New York fifteen months and London ten months. It is the story of Langford, a young English idealist who, fresh from London culture, goes into the African jungles. He will "stay white," he will

not forget that he is a gentleman. Langford arrives at the interior trading post, nattily attired, clean shaven. He looks about him in disgust disgust for his fellow countrymen who have discarded those ideals that he holds

Only One Woman in Cast There is some excellent acting in the piece. Tondeleyo is portrayed by Gladys Frazin, the only woman in the cast. Frederick Roland plays the part of Witzel, a hardened tropical dweller, most frank in his vices. Then there is Conway Wingfield, as the doctor who has degenerated from an able surgeon to a ragged derelict, sent to the coast as a spotter, to watch for signs of leprosy among the natives.

It is a play that is much talked about. It broadcasts well. A microphone was planning during the foggy months of the placed off stage, as well as three along year to broadcast weather reports for the footlights. During the moments of London so that commuting listeners can silence, the action and scenes were de-start for their offices earlier in the mornscribed by the announcer.

#### European Notes

Whether or not broadcasting and commercial Radio should become a governinent monopoly, provided an enthusiastic discussion recently before the French chamber of deputies. French plans call for a super power central broadcaster in Paris, with smaller stations located in the hearts of the various regions. These have not been affirmed.

Copenhagen, Denmark, is broadcasting irregularly now on 750 meters. It is also transmitting regular Sunday, Wednesday and Thursday programs on 471 meters.

The international committee for Radio telephony is planning to convene in Paris from April 16 to 20, 1925. Twenty-seven nations will be represented. Radio amateurs are considering a meeting in Paris at the same time.

Belfast, Ireland, has prohibited the stringing of aerial across streets and other thoroughfares.

Radio-Paris, on 1,780 meters, cannot be heard so easily by Irish and English listeners when Chelmsford, 1,600 meters, is in operation with its 25 kilowatts of power. Chelmsford, 5XX, entirely blankets Radio-Paris.

Scotland is now in the threes of a religious controversy caused by a ban placed on the broadcasting of full religious services by the Glasgow Presbyterian council.

M. Deloy, French 8AB, is heard in the United States clearer and louder than the Eiffel tower. He uses 1,000 watts on 100 meters and 100 watts on 50 meters. Both transmitters have better success in crossing the Atlantic than Eiffel tower. 8AB has also been heard in Transvaal and Australia.

With the inauguration of the Munster, Germany, broadcasting station, Dr. Bredow, secretary of state, said that there were 250,000 private Radio sets in Germany.

The British Broadcasting company is ing when there is a heavy fog.

#### WLS BEGINS MOVIE **BROADCAST STUNT**



Betty Bronson

CHICAGO.-For the first time, movies were broadcast over the air from Station WLS, when they gave a production of Peter Pan. This was a scenario snynopsis of Barrie's popular play, and arrangements were made with the Paramount producers to have Betty Bronson -who plays the leading role — come from New York to do the broadcasting.

The musical score was played on the Barton pipe organ by Ralph Emerson. This was accomplished by using two

microphones, a novel scheme upon which WLS has been experimenting for some

"Now that the broadcasting of motion pictures has proven successful, we will make it a permanent feature of WLS," said Harry Sadler, director of the WLS theater, "all the prominent stars will take part in specially arranged plays on different evenings. This will give the movie fans an opportunity to hear the voices of their favorites, whom they have known only by their faces on the

#### "Pan" Radioed to Author in London by Rebroadcast

LONDON.—Seated in the Savoy hotel here. Sir James Barrie recently listened to the loud speaker reproduce the lines of his own "Peter Pan," spoken in New York by the company now playing at the Knickerbocker theater there.

The program, of which the "Peter Pan" numbers formed a part, was broadcast by KDKA short wave to 2LO here, where it was rebroadcast.

WGBS, New York, WOO, Philadelphia, and KFKX, Hastings, Neb., carried the program for American fans.

250,000 Radio sets are located in Berlin. other stations.

#### Victor Saudek Begins Giving Musical Talks

Demonstrates Various Pieces That Make Up Orchestra

PIITSBURGH, Pa.—One of the most unusual series of addresses ever arranged for the broadcast audience started recently from KDKA, when Victor Saudek. director of the KDKA Little Symphony orchestra, presented the first of a series of educational talks on orchestral instruments.

The talks are unusual in that seldom has the public been given an opportunity to have analyzed and illustrated the various instruments making up an orchestra and having made perfectly clear why such instruments are included in the orchestra. The talks will be a musical education in themselves.

#### StationWOC Expects to Go on Air Soon with New Set

DAVENPORT, Ia, - Station WOC. located in this city, expects to be able to send New Year's greetings to the world by means of their new 5,000-watt set.

Workmen have been busy for some time completing the studio which will be used with the new apparatus. These rooms are located on the roof garden of the administration building.

WEAF Receives Permission to Increase Power Output

NEW YORK.—Based on their desire to assist the department of commerce in determining the effects of increased power, in an endeavor to give the Radio listeners better service if it is possible, WEAF recently requested and received permission to increase their power from 1,000 to 1,500 watts.

Wins Household Contest

NEW YORK .- Clare Y. Genung, of Maplewood, N. J., was awarded the prize of ten dollars for the best letter on "Creating Leisure in the Household," by Station WHN, Loew's State theater here.

Radio Wilson Memorial

WASHINGTON,-Memorial services for Woodrow Wilson held recently in the House of Representatives, were broadcast Forty per cent of Germany's estimated by WRC, WJZ, WEAF, WGY and several

# Why it is Better

THE picture tells the story—seven practical, sensible reasons why Federal sockets should be in your "pet" hookup.

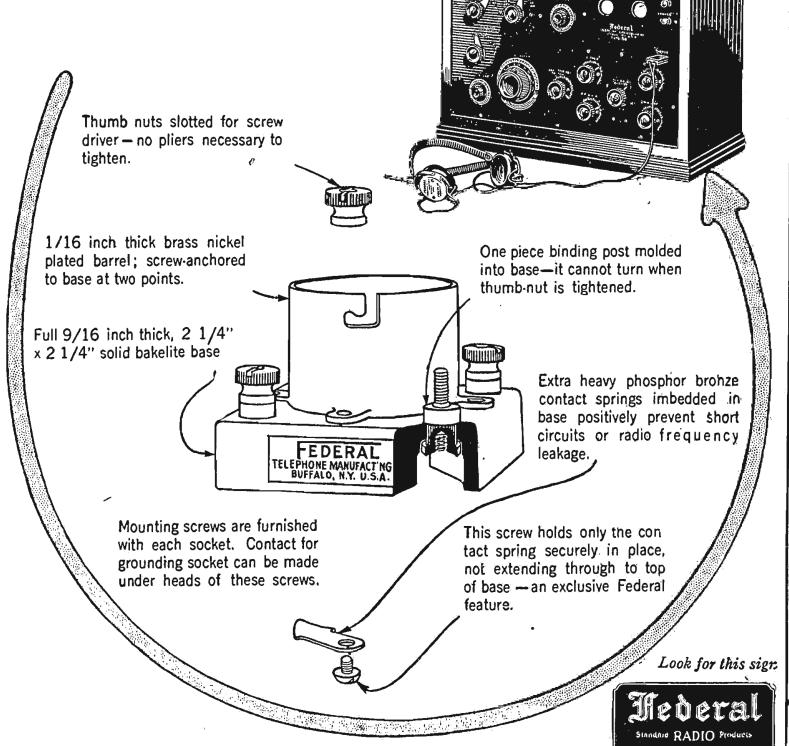
Federal sockets are but another evidence of the care and engineering skill used in designing and making Federal Standard Radio Parts.

There are over 130 standard parts bearing the Federal ironclad performance guarantee their use means—"Balanced Circuits" with better performance.

FEDERAL TELEPHONE & TELEGRAPH COMPANY BUFFALO, N. Y.

Boston New York Philadelphia Pittsburgh Chicago San Francisco Bridgeburg, Canada





# WLW- One of the Queen City's Attractions



By Webb G. Welborne.

Back in "the good old days" before Mr. Volstead handed John Barleycorn the solar-plexus blow under which he crumpled up and took the count, the country frequently heard of "the beer that made Milwaukee famous," while in Cincinnati there was brewed a brand of the same popular beverage, which, it was claimed and proclaimed, "made Milwaukee jealous." And now, in this latter day of foamless home-brew near-substitutes, there has been evolved an institution or industry or something that has "made Cincinnati zealous," for the big city at the South's gateway verily is earnest, with an intense enthusiasm, in its Radio zealousness, typical of the Cincinnati way of doing things.

of doing things.
Whole-heartedly, then, with zest and earnestness,
Crosley's WLW broadcast station automatically has
been popularized to the extent of having attained a

position high up among Queen City ideals; it's a pet among the myriad things of ingenuity, originality, attainment and superiority boasted by loyal and civic-proud Cincinnatians.

Though aided



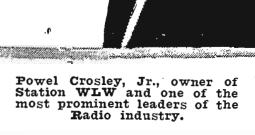
Left, Adelaide Apfel, one of the first pianists to broadcast for Radio audiences. She has been a regular afternoon attraction. Above, Barbara Fones, singer; Dorothy Stolzenbach, pianist and Ruth Morris, violinist. All are from the College of Music and frequently appear on Crosley programs.

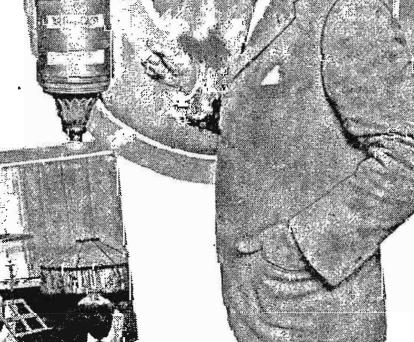
materially by a liberally-responsive public, one individual in the person of Fred Smith, program and studio director, Radio teacher of Spanish and Ido, who knows and tells you all about composers, authors, artists and stars; who has originated more novel and unique entertainment features than, perhaps, any other announcer, largely is responsible for this universal popularity. But, let's halt a minute and consider some of the aids Smith has had, mechanical, physical and otherwise. In the first place he was supplied with one of the best equipped plants known, kept up to the minute by the addition and substitution of modern ideas

and appliances as they developed, which soon is to be supplanted by a new, complete superpower outfit—the last word in Radio ingenuity development.

Added to this has been the co-operation of Dr. Frank Stevenson, pastor of the Church of the Covenant Rev. Frederick N. McMillin, pastor of the Walnut Hills First Presbyterian church, Cincinnati College of Music and Conservatory of Music, Sunday school editorial staff of the Methodist Book Concern, Senator Schultz, nationally wide favorite; Western and Southern, Chubb-Steinberg, Doherty Melody Boys orchestras, Formica band and orchestra and Milnor instrumental trio, contributing a wealth of educational and entertainment features of exceptional merit and which the nation's great invisible audience applauds nightly.

Encompassed with mahogany mounted transparent and art-colored glass walls and partitions in a building designed and erected for the purpose, graceful art displays itself all over and through WLW's twin studios and the commodius auditorium. This latter reflects the handiwork of talented decorators (Continued on page 6)

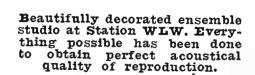




Fred Smith before the microphone giving Ido lesons to the vast Radio audience of Station WLW.

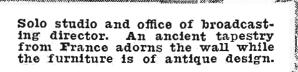


Senator Schultz, (J. E. Klein) who amuses the fans every Thursday night from Station WLW. He is known to thousands.





Antique furniture and gorgeous tapestries give beauty to the WLW auditorium. Temperamental artists find surroundings to their liking.



### BROADCAST SPECIAL PROGRAM FOR FANS

WESTINGHOUSE STATIONS LINKED ON EVENT

Rebroadcast from KDKA to KYW WRC, KFKX and KGO— Called Brunswick Hour

PITTSBURGH, Pa.—On Tuesday, December 9, from 9 to 10 o'clock p. m., was inaugurated the national relay program, furnished by the Brunswick recording stars. The program was broadcast from Station WJZ, New York, was picked up and rebroadcast by stations KDKA, KYW, WGY, WRC, KFKX and KGO. The artists on this program were of the first magnitude and known the world over. It is the purpose to broadcast a similar program each Tuesday evening, thereby giving the Radio public of the country an opportunity to listen in on a rare one hour's entertainment.

Famous Artists on Programs

The first program on Tuesday, December 9, including selections by the Cleveland Symphony orchestra, an organization that gives more than 150 concerts each year. The director, Nikolai Sokoloff, is a musician of international reputation. Vocal selections from Florence Easton enriched the hour, widely known for her operatic work on the continent, in England and in America.

On Tuesday evening, December 16, at 9 o' clock, the second national relay program was given over the Radio-the same broadcasting stations joined in this work.

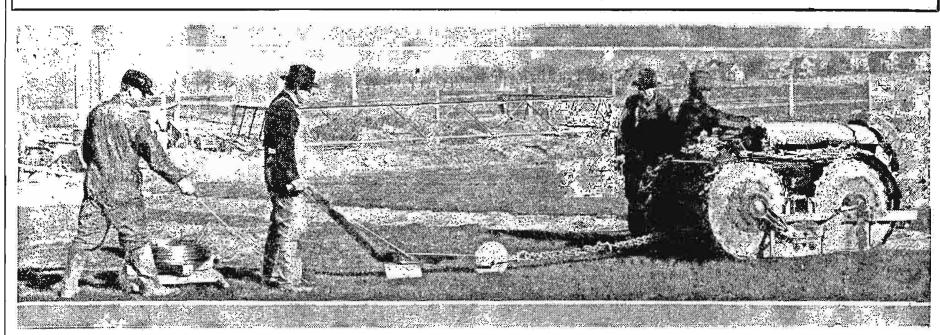
The national relay program, which is to be a regular Tuesday feature, and which will be known as the "Brunswick Hour of Music," is a new departure in Radio activity.

#### Station WHN Opens Larger Studio; Closed for a Time

NEW YORK .- Alterations which necessitated the closing of the WHN studio, and the cancellation of the afternoon programs for a short time, have been com-

The new studio, augmented by a large reception hall for artists and their guests, is the last word in the decorators' art. It is one of the most inviting in the country.

### SINKING SUPER POWER GROUND WIRES AT WCBD



This is the way that Station WCBD, Zion, Illinois, is laying the ground wires for its new super power station. The wire is attached to the heel of the plow and follows in channel made by point. The wire is laid ten inches deep. A thin knife makes an incision, while the lawn remains undisturbed. Nine and one-half miles of wire are required.

#### WLW AT CINCINNATI

(Continued from page 5)

and drapers, who have left scattered throughout groups of textile-back chairs, gorgeous Oriental floor coverings, tapestry hangings, mirrors, chests, couches and other furniture of antique design, amid which are chime clocks, paintings and musical instruments. The studios are separated by a triangular-shaped room containing amplifiers, switches, telephone equipment, etc., for use in remote control

Plans of the Crosley corporation contemplate tremendous possibilities and wonderful achievements in connection with the completion and induction of its new five-kilowatt transmitting station "away out in the country." It required titanic pressure and the influence of some of Cincinnati's financial masters to obtain the site selected for this station, which was found by electrical experts and Radio engineers to offer the greatest resistance to absorbtion of any location hereabouts. It is at a point near Harrison, a quaint, historical town on the Ohio-Indiana state line, eighteen miles removed from the central portion of Cincinnati.

WLW takes the Sunday school, devotional services and two sermons each

people who can not or do not attend these church activities in person. On week days it devotes considerable time in rendering a public service by broadcasting a resume of business conditions, price quotations, weather forecasts and kindred data and information of incalculable value and importance; it teaches languages, recovers lost children and dogs, traces and captures thieves, highwaymen and murderers, locates stolen automobiles and provides a big annual Christmas party for those children of Cincinnati who may have escaped the notice of Santa

And then when WLW signs off its listeners hear the cheeriest "good night" that ever was uttered.

#### WHAA Heard 2,450 Miles

IOWA CITY, Ia.—The University of Iowa station, WHAA, has set a new distance record of 2,450 miles for its pro-i energetic second violinist, for which the grams. Word was received this week that one of the programs was picked up by a Radio operator on a ship 647 miles southwest of Los Angeles, bound for Honolulu.

#### Sabbath to thousands and thousands of Comedy in Symphonies to Be Shown by KGO

Oakland Station Has Interesting Week in Store

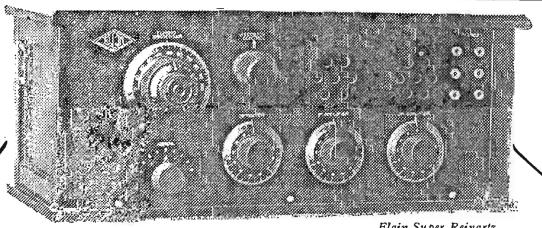
OAKLAND, Calif.—That even a great symphony may have a "comic section" will be demonstrated to Radio listeners Sunday afternoon, December 28, at 3:30 o'clock Pacific time, when the KGO Little Symphony orchestra will play the allegro movement of Beethoven's Pastorale Symphony with an illustrative talk preceding it.

Incidental parts will be played by the orchestra, during the illustrative talk, after the style of Beethoven's village string band, the sleepy basson player, who could only play three tones on his instrument, the willing oboist, and the allegro is said to have been composed by Beethoven originally, will be heard by proxy over the air.

The stage play, "Dulcy," will be presented in audio drama form, January 3.

The Voice of the

Audiophone



Keınarız 2LO Model Tuner

### The Set That Heard London

This astonishing reception was accomplished twice, in two separate cities of the nited States during the trans-Atlantic tests

The Elgin Super-Reinartz, 2LO Model Tuner spans the continent nightly at the hands of thousands of Radiophans. Through this highly efficient circuit amazing reception has been obtained. New York is entertained by KGO and Houston, Texas, listens in on WLAG with surprising regularity.

# Super Reinartz The Ford of Radio

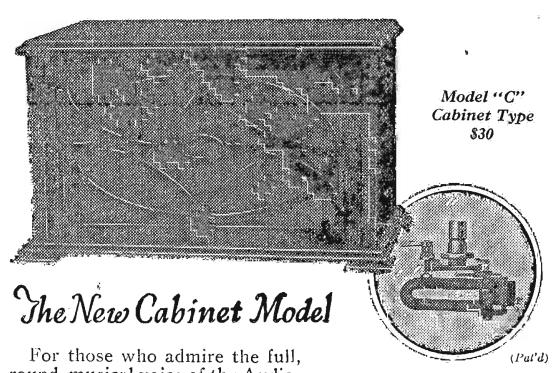
will give you the DX records it has brought to others.

You must learn more about this wonder circuit at once! Mail the coupon TODAY with your name and address and we will send—FREE of charge—the complete working diagram of the Eigin Super-Reinartz, 2LO Model. There are no obligations, of course.

Dealers: Write for Proposition

#### =Free Coupon= Elgin Radio Supply Co. Dept. A, 207 E. Chicago St., ELGIN, ILL. Send at once the working drawings of the ELGIN SUPER-REINARTZ, 2LO MODEL TUNER—The Set That Heard London. I am enclosing stamp to cover postage. Name .....

(PLEASE PRINT IN PENCIL)



round, musical voice of the Audiophone, but prefer a cabinet design, we have brought out this splendid model.

The case is real mahogany. The design is in keeping with the best furnishings. The size,  $17x10x10\frac{1}{4}$ , is just right for the top of your phonograph or your receiving set. The voice of the Audiophone is

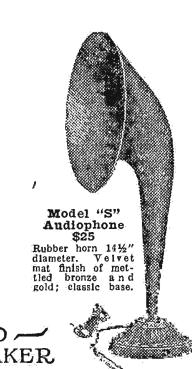
#### Not a "Phone Unit"

It is a highly developed, electro-magnetic tone mechanism which reproduces with natural quality in most powerful tones, yet has a sensitiveness equal to any loud speaker developed.

The Bristol line includes five Audiphones priced from \$12.50 to \$30.00. If not at your dealer's write for Bulletin AY-3022.

The Bristol Co., Waterbury, Conn.

**Bristol** AUDIOPHONE LOUD TO SPEAKER

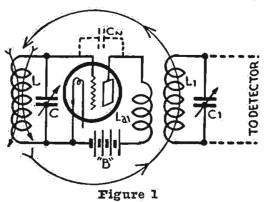


# The "X" Wire: Key to Neutrodyne Success

### Overall Neutralization Necessary

#### By Jacques Fournier

tempts to neutralize 100,000 neutro-dynes would probably run even Ford's sistance and the fact that air-core coils adjust neutrodon on distant station until out of phase. By this is meant that on signals disappear." If only it were that each half cycle or alternation of the cursimple! In most cases, the set squealed rent, the voltage rises to maximum and distorted on certain dial settings, was strength one half cycle behind the weak on some range of wave lengths or



just plain refused to "perc" at all. As a result there are many who condemn what is, when correctly adjusted, an exceptional

First of all, in the process of straightening out the neutrodynes, let us explode one popular belief. The neutrodons are not put there to neutralize tube capacities —that is not primarily. True, there is wish to know why the tap is taken off a slight feedback through the tube, but the coil instead of connecting from grid its effect toward oscillation does not comits effect toward oscillation does not com-pare with that from electro-magnetic would be composed of the condenser Cn coupling between neutroformers. Setting these air-core transformers at the wellknown 54.7 degree angle, while it reduces and the neutrodon. Since L and L-1 are this coupling to the lowest possible minimum, does not eliminate it entirely by

#### Positive Feedback

In figure 1 we have the circuits surrounding the second stage of Radio frequency amplification. Only that portion of the circuit which has influence upon

of energy put into unsuccessful at- The fields of L-1 and L-2 are quite ex- The individual tube neutrodons offset the found this way in coil L-1. Passing energy big plant many days. The directions say several inches in diameter are used. another factor to be reckoned with. No tion of current flow, taken at any given "put a small piece of paper on a filament | Energy passing through a vacuum tube spring in the socket, replace tube and emerges in a state known as 180 degrees current. When the current is rising to a peak on what might be called a plus alternation, the voltage is rising to a negative peak, which peak really belongs with the preceding alternation of the current that was, of course, a negative one. Therefore at any given instant, when signals are passing through, the energy in L will be in phase while that in L-1 will be 180 degrees out of phase.

By connecting a neutrodon from a tap on L-1 to the grid of the tube, advantage is taken of this fact and voltages are made to oppose each other. This neutralizes the magnetic feedback between transformers and the minute feedback through the tube itself. The current rises to similar peaks in two adjoining grid circuits at the same time while in one the voltage is rising to a plus peak in phase and in the other it is rising to a negative peak out of phase. This may seem a little difficult to visualize but a fuller explanation is not essential to the practical application of this article. Many (tube capacity) and the coil L, while the other would be composed of the coil L-1 equal, our neutrodon would have to be so small that it would be difficult of construction and operation. By tapping L-1 at a point about 12 turns from the lower end, a larger capacity can be used, yet the opposing voltages will be equal.

#### Capacity in Wiring

Full understanding of the above is necthe coupling is shown. What is known essary to appreciation of the functions of

THE hours of work and foot-pounds as positive feedback is clearly illustrated. the "X" wire and the third neutrodon. them back in phase and they would be and output of each tube but there is yet between the coil L-0 and coil L-1 (see tive A battery wire. This changes our

tendencies to oscillate between the input back to coil L-0 in this condition would aid undesirable regeneration; the direcmatter how carefully a set is wired and instant, must be reversed. Therefore, the the neutroformers adjusted to their neutrodon X is connected to the end of theoretically correct angle, there will be the primary corresponding to the B lead capacitative coupling between the wiring of the other neutroformers while the P in the grid circuit of the first tube and end of this primary is connected to the that of the third or detector tube; also F end of L-0, the ground and the nega-

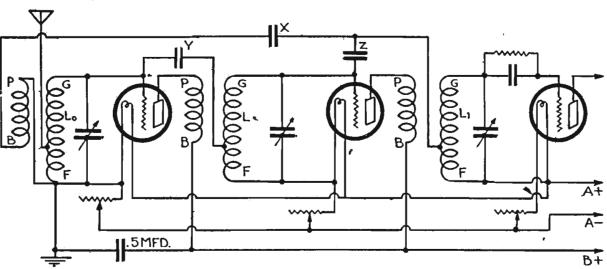


Figure 2

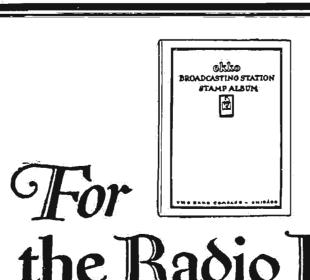
the inputs and outputs of the tubes once neutrodons Y and Z have been adjusted, but the coupling between input and output of the entire amplifier unit will still

Consider now the action of neutrodon X. If this were connected to the grid of the first tube or to the tap on L-0, we would be aiding the regeneration which produces distortion or squeals. Our first tube would throw voltage and current out of phase, in which condition they enter coil L; the second tube would throw

figure 2). None will be effective between | intentional feedback which now has the effect of offsetting coupling between L-0

Applying Overall Neutralization In many outfits it will be found that there is no primary inside the coil L-0 and the experimenter will wonder how to apply this overall neutralization. Five turns of number 20 to 26 dcc. wire should be wound on coil L-0 at the F end, spaced about 1/8-inch and in the same direction as the turns on L-0. This new winding is now connected as shown in

(Continued on page 20)



# the Radio Fan's Christmas

### **Broadcasting Station** The ekko Stamp Album

Here's just the gift for the radio fan -an Ekko Broadcasting Station Stamp Album. Because it affords a convenient, permanent and authentic means of recording the stations received over a set, the Ekko Stamp collecting hobby has swept the radio public.

The Ekko Album contains spaces for a beautifully engraved stamp from each of more than 550 stations. These Ekko stamps prove your reception of a station. With the album are furnished PROOF OF RE-CEPTION CARDS. You state on these cards facts which prove to the station that you have heard their broadcasting. You then send the card, together with ten cents to cover the cost of verification, to the station. In return the station sends you its Ekko stamp as verified evidence of reception. You then paste the stamp in the space provided for it in the album. From the Ekko Album you can tell and prove at a glance what stations you have heard.

The stamps are beautifully engraved in different colors. Each station has its own stamp showing call letters. The album is 9½ x 11 inches, handsomely bound in a two color cover. It contains 96 pages with spaces for stamps of all recognized stations in the U.S. and Canada, arranged alphabetically by states and call letters. Contains also a convenient log and an alphabetical list of official names and other interesting features of call stations. other interesting features of call stations.

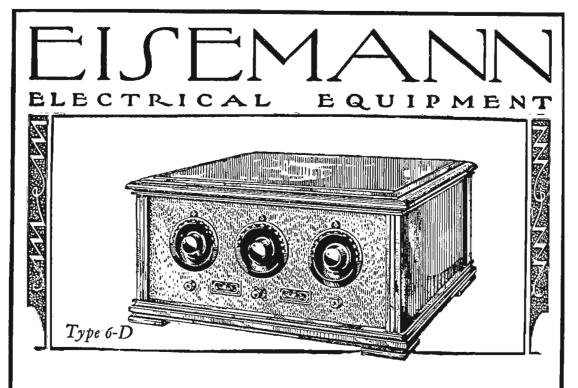
For more information see your dealer today. Then give an Ekko Album to your radio friends, and start yourself this fascinating game of station stamp collecting. If your dealer cannot supply you, sent direct on receipt of price. Money back if not satisfied.

Most of the important broadcasting stations now furnish Ekko stamps on proof of reception.

At leading radio dealers and book stores

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THE EKKO COMPANY, 111 W. Monroe Street, Chicago



# Whistles and Squeals Eliminated

#### **SPECIFICATIONS**

Circuit: Two stages of tuned radio frequency, detector and two stages of audio frequency. Non-oscillating. Tubes: Five.

Batteries: Storage or dry-cells. Cables: Complete set supplied. Wave Lengths: 200 to 600 meters, with uniform efficiency of reception. Panel: Aluminum. Crystal black

Dials: Sunken design. Rheostats: Adequate resistance for all standard base commercial tubes. Condensers: Single bearing, low leak-

age losses. Sockets: Suspended on cushion springs.

Cabinet: Mahogany, with ample space for "B" batteries.

DETROIT

TYPE 6-D is a non-oscillating receiver and does not create a neighborhood disturbance.

Distant stations are "tuned in" easily, quietly and without objectionable tube noises.

Price \$125.00 without accessories

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#### AN EVENING AT HOME WITH THE LISTENER IN

(SEE INSTRUCTIONS FOR USE BELOW)

Station and City	Met.	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
AT9. Fort Bragg. N. C	435	7:00 - 8:55	7:00- 8:00 Silent	Silont	7:00-8:55		7:00- 8:55	Silent
CFAC, Calgary, Alta CFCA, Toronto, Ont	430 400	Sllent Silent	Sllent 6:00- 7:00	9:00-11:00 7:00- 8:00	7:00-8:00		7:00-8:00	
CFCN, Calgary, Alta CHYC, Montreal, Que	440 341	11:00- 1:00   Silent	Silent 8:00- 9:00	Silont Silent	12:30-1:30 Sllent	Silent 7:30-8:30	Silont Silent	Silent Sllent
CKAC, Montreal, Quo CKCD, Vancouver, B. C	425 410	6:30-9:30 10:30-11:30	3:30- 4:30 Silent	Sllent 10:30-11:30	6:30-9:30 10:30-11:30	Silent 10:30-11:30	6:30-9:30 10:30-11:30	Silent 10:30-11:30
CKY, Winnipeg, Man CNRO, Ottawa, Ont	450 435	Silent 6:30-11:30	7:00-8:00 Silent	Silont Silont	7:30-9:15 Silent		7:30-9:15	
CYB, Mexico City, Mex	370 480	8:30- 9:00 Silent	Silent Silent	Silont Silent	8:30 - 9:00 10:00-11:30	Silent	9:00-11:00 Silont	Silent 10:00-11:30
CYL, Mexico City, Mex CYX, Mexico City, Mex KDKA, E. Pittsburgh, Pa	330 326	Silent 5:30- 8:00	Silent 6:30- 7:30	9:00-12:00	Silent	Silent	Silent 5:30-10:00	8:00-10:00
KFAE, Pullman, Wash	330 270	Silent Silent	Silont Silent	9:30-10:30 9:00-10:00		9:30-10:30 Silent	Silent Silent	9:30-10:30 9:00-10:00
KFAU, Boise, Idaho KFDM, Beaumont, Texas.	306	Silent	9:00-10:00	Silent	8:00-11:00	Silent	Silent	8:00-11:00
KFGZ, Berrien Spgs., Mch. KFl. Los Angeles, Calif	286 469	Silent 8:45- 2:00	7:00- 9:15 8:45- 1:00	7:00-9:15 8:45-1:00	Silent 8:45-1:00	7:00- 9:15 8:45- 2.00	Silent 8:45-1:00	7:00-10:00 8:45- 2:00
KFKB, Milford, Kan KFKX, Hastings, Nebr	$\frac{273}{291}$	7:20-11:30 Silent	8:00-10:30 Silent	7:20-11:30 9:30-11:00	7:20-11:30 Sllent	7:20-11:30 Silent	7:20-11:30 9:30-11:00 7:30-8:30	7:20-11:30 Silent
KFMQ, Fayetteville, Ark KFMX, Northfield, Minn.	275 283	Silent Silent	Silent 7:00- 8.00	Silent Silent	9:00-10:00 Sllent	9:00-10:00	Silent	Silent Silent
KFNF, Shenandoah, la KFOA, Seattlo, Wash KFPT, Salt Lake Cy., Utah	266 455	7:30- 9:30 Silent		Silont 10:30-12:00	7:30- 9:30 Silent	7:30-9:30 10:30-12:00	7:30- 9:30 Silent	7:30-9:30 10:30-12:00
KFQX, Seattle, Wash	$\frac{268}{238}$	Silent 7:15- 2:00	Silent	10:00-11:00 9:15- 1:00			Silent Silent	10:00-11:00 9:15- 1:00
KGO, Oakland, Calif KGW, Portland, Ore	312 492	10:00- 3:00 12:00- 2:00	8:00-9:00	10:00-11:00	10:00- 3:00 10:00- 2:00	Silent 10:00- 2:00	10:00- 3:00 Silent	Silent 10:00- 1:30
KHJ. Los Angeles, Callf I	360 395-	10:00-12:00 Silent	9:15-11:30	Silent Silent	10:00-12:00 10:00-11:00	10:00-12:00 Silent	10:00-12:00 10:00-11:00	Silent
KJS. Los Angeles, Calif KLX, Oakland, Calif KNX, Hollywood, Calif	509 337	Sllent 8:00-1:00	Silent 10:00-12:00	10:00-12:00 8:00-1:00	Silent 8:00- 1:00	10:00-12:00 8:00-1:00	Silent 8:00-1:00	10:00-12:00 8:00-1:00
KOB, State College, N. M., KPO, San Francisco, Calif.	360 423	Silent 10:00- 2:00	Silent 10:30-12:00	8:30-9:30 9:00-1:00	Silent 9:00-1:00	8:30-9:30 9:00-12:00	Silent 9:00-1:00	8:30-9:30 Silent
KQV, Pittshurgh, Pa KSAC, Manhattan, Kan	$\begin{array}{c} 275.2 \\ 341 \end{array}$	Sllent Sllent	· Silent Silent	7:00 - 9:00 7:30 - 8:30	Silent 7:30-8:30	7:00- 9:00 7:30- 8:30	Silent 7:30-8:30	7:00- 9:00 7:30- 8:30
KSO, St. Louis, Mo	546 375	8:00- 9:00 8:30-11:30	Sllent 8:30-11:30	7:00-11:55 8:30-11:30	7:00-10:00 8:30-11:30	6:45-11:00 8:30-11:30	Silent 8:30-11:30	8:00-9:00 8:30-11:30
KTW, Seattle, Wash	405 536	Silent 7:00-2:00	9:00-11:30 7:00- 8:00	Silent Silent	Silent 7:00-11:30	Silent	Silent 7:00-11:30	Silent 7:00-2:30
NAA. Radio, Va PWX. Havana, Cuba	435	Silent 7:30-10:00	Silent Silent	5:45- 7:20 Silent			5:45- 7:40 Silent	7:05- 7:40 Silent
WAAW, Omaha, Nebr WABL, Storrs, Conn	286 283	Silent Silent	Silent Silent	7:30- 9:00 6:00- 8:00	Silent Silent	Silent 6:00-8:00	7:30- 9:00 Silent	Silent 6:00- 8:00
WABN, La Crosse, Wis WAHG, Richmond, N. Y	244 316	Silent 11:00-12:00	Silent Silent	8:00-10:00 6:30-1:00	Silent Silent	Silent 6:30-11:00	9:00-11:00 Silent	Silent 6:30-10:15
WBAP, Fort Worth, Tex WBAV, Columbus, O	476 423		11:00-12:00 Silent	7:30-10:45 Silent			7:30-10:45 Silent	7:30-10:45 7:00-8:00
WBBF, Atlanta, Ga WBBG, Mattapoisett, Mass	270 248	Silent Silent	Silent Silent	9:00-10:00 7:00- 9:00	Silent Silent	Silent 7:00-8:00	7:00-8:00 Silent	Silent 6:00-1:00
WBBR, Staten Island, N. Y. WBCN, Chicago, Ill	273 266	7:00- 8:00 6:00- 1:00	8:10- 9:05 4:00-10:00	7:00- 8:00 6:00- 7:00	Silent	7:0u- 8:00	8:10- 9:05 6:00- 1:00	Silent 6:00-1:00
WBT, Charlotte, N. C WBZ, Springfield, Mass	360 337	Silent 6:40- 8:55	5:30-6:30 6:00-9:00	Silent 6:40-11:00	7:30- 8:30 6:40- 8:55	Silent	7:30- 8:30 6:40- 8:55	Silent 6:40-11:00
WCAE, Pittsburgh, Pa	462 360	6:30- 8:30 12:00- 1:00	6:30-8:30 8:30-10:00	6:30-10:30 Silent	6:30-10:30 Silent	6:30-8:30 Silent	6:30-10:30 9:00-10:00	6:30 - 8:30 8:30 - 9:00
WCAP, Washington, D. C WCAU, Philadelphia, Pa	469	Silent Silent	6:20- 9:00 5:00- 6:00		Silent	6:45- 9:00 5:00- 8:00	Silent	6:30-11:00
WCBO. Zion, Ill	345 266	Silent Silent	2:30-6:00 7:00-9:00	8:00-10:30 6:00- 7:00	Silent 7:00- 7:15	Silent Silent	8:00-10:30 6:00-7:00	Silent Silent
WCCO, MinnSt. P., Minn WCX. Detroit, Mich	417 513	6:00- 9:00 Silent	8:00- 9:00 6:15- 7:15	6:00- 9:00 7:30- 9:00	6:00-7:30 10:00-11:00	7:00- 8:00 6:00- 9:00	7:00-10:30 6:00- 9:00	6:00-9:00 6:00-9:00
WDAF, Kansas City, Mo., WDAR, Philadelphia, Pa.,	411 395	11:45- 1:00 6:30- 7:30	4:00- 5:00 Silent	8:00-1:00 6:30-9:00	11:45- 1:00 6:30- 7:30	8:00- 1:00 6:30- 9:00	11:45- 1:00 6:30- 7:30	8:00-1:00 6:30-12:00
WEAF, New York, N. Y	492 294	5:00-11:00 Silent	6:20- 9:15 Silent	5:00-10:00 Silent	5:00-10:00   Silent	5:00-11:00 Silent	5:00-10:00 7:00- 9:00	5:00-10:00 Silent
WEAY, Houston, Texas	360 370	6:15- 7:15 7:30-12:30	Silent 7:00-9:00	6:15- 7:15 Silent	6:15-10:00 7:30-12:30	7:30-10:00 7:30-12:30	6:15- 7:15 7:30-12:30	6:15-10:00 7:30-12:30
WEBJ, New York, N. Y WFF1. Boston, Mass	273 303	Silent Silent	Silent 6:20- 9:00	Silent 6:00- 9:45	6:00-8:00 6:00-11:00	Silent 6:00-11:00	Silent 6:00-11:00	6:00-8:00 6:00-11:00
WFAA, Dallas, Tex	476 273	8:30-12:00 6:00-11:30	6:00-11:00 4:00-6:30	8:30- 9:30 Silent	8:30-12:00 Silent	Silent 6:00-7:00	8:30-12:00 6:00-11:30	8:30- 9:30 Silent
WFI, Philadelphia, Pa WGAQ, Shreveport, La	395 263	Silent 9:00-12:00	6:30- 7:30 Silent	Silent 9:00-12:00	7:00- 8:00 Silent	Silent 8:00- 9:00	7:00-8:30 Silent	Silent Silent
WGBS, New York, N. Y WGI. Medford, Mass	316 360	6:30-12:00 6:30- 9:00	8:30-10:30 7:30- 9:00	5:30- 6:30 Silent	7:00-12:00 6:30- 9:00	6:00- 6:30 6:30-9:00	7:00-12:00 6:30- 9:00	5:45- 6:30 6:30- 9:00
WGN, Chicago, Ill	370 319	6:00-11:00 5:30-6:30	2:30-10:00 3:00- 7:30	Silent 5:30-11:00	6:00-11:00 5:30-6:30	6:00-11:00 5:30-11:00	6:00-11:00 5:30-6:30	6:00-11:00 5:30-11:00
WGY, Schenectady, N. Y. WHA, Madison, Wis	380 360	8:30-9:30 Silent	6:30- 7:45 Silent	6:45- 9:00 7:45- 8:45	6:45- 9:00 Silent	Silent 7:45- 8:45	6:45- 9:00 Silent	6:45-10:30 7:45-8:45
WHAA, Iowa City WHAD, Milwaukee, Wis	484 275	7:30-9:00 Silent	Silent Silent	Silent Silent	8:00-9:00 Silent	9:00- 9:30 7:30- 8:30	Silent Silent	Silent Silent
WHAS, Louisville, Ky WHAZ, Troy, N. Y	400 380	7:30-9:00 Silent	4:00- 5:00 Silent	Silent 8:00-10:00	7:30- 9:00 Silent	7:30-9:00 Silent	7:30- 9:00 Silent	7:30-9:00 Silent
WHB, Kansas City, Mo WHK, Cleveland, Ohio WHN, New York, N. Y	411 283	Silent 5:00-11:00	8:00-10:00 7:00-10:00	7:00- 8:00 5:00- 6:30	8:00-10:00 5:30-6:30	7:00-8:00 5:00-6:30	8:00-10:00 5:00-11:00	7:00-8:00 5:00-11:00
WHO, Des Moines, la	360 526	6:30-11:00 Silent	8:30-11:00 7:30- 9:00	6:30-11:00 7:30-12:00	8:30-11:00 Silent	6:30-11:00 7:30- 9:00	8:30-11:00 Silent	8:30-11:00 7:30- 9:00
WIP, Philadelphia, Pa WJAR, Providence, R. 1.	509 360	7:00-11:00 6:10- 7:10	9:30-12:00 Silent	Silent 7:00-8:00	7:00-11:00 7:00-8:00	Silent 7:00-12:00	7:00-11:00 Silent	Silent 6:30-10:00
WJAS, Pittsburgh, Pa WJAX, Cleveland, O	286 390	Silent Silent 7:15-12:00	Silent Silent Silent	7:30-10:00 Silent 7:15- 8:15	7:30-10:00 6:30- 9:00 7:15- 8:15	7:30-10:00 Silent 7:15- 8:15	6:30 - 9:00 8:00-10:30	6:30-9:00 Silent
WJJO, Mooseheart, Ill WJY, New York, N. Y WJZ, New York, N. Y	278 405	Silent	7:15- 7:45 6:00-10:30	Silent 6:00-10:30	6:45-8:00	Silent	Silent 6:30-9:30	7:15-8:15 6:30-10:30
WKAQ. San Juan, P. R	455 360	6:00-10:30 Silent	Silent	Silent	6:00-10:00 7:00- 8:30	6:00-10:30 6:00- 7:30	6:00-10:30 6:30- 8:00	6:00-10:30 Silent
WKBF, Providence, R. I., WLBL, Stevens Point, Wis.	286 278 345	Silent Silent 8:00-12:00	Silent Silent 6:30-8:00	Silent Silent Silent	8:00- 9:30 8:00- 9:00 6:30-51:00	Silent Silent	Silent Silent	Silent Silent
WLS. Chicago, Ill	423	Silent Silent	7:30- 9:15 Silent		10:00- 1:00 7:00- 9:00	6:30-12:00 7:00-10:00 Silent	6:30- 1:00 10:00-12:00	6:30-11:30 Silent
WMAQ, Chicago, Ill WMC, Memphis, Tenn	273 448 506	6:00-10:00 8:30- 9:30	Silent Silent	Silent 8:30- 9:30	6:00-10:00 8:30-12:00	6:00-10:00 Silent	Silent 6:00-10:00	Silent 6:00-10:00
WMH, Cincinnati, O	309 278	10:00-12:00	Silent 7:30- 9:30	8:00-10:00 6:00-10:00	Silent	8:00-11:00	8:30-9:30 8:00-10:00	8:30-12:00 Silent
WNAC, Boston, Mass WNYC, New York, N. Y WOAI, San Antonio, Texas.	526 385	9:00-10:00 7:30-10:30 Sllent	Silent 9:30-10:30	7:30-10:30 Silent	8:00-10:00 7:30-10:30 8:30-10:30	6:00-10:00 7:30-10:30 Silent	8:00-10:00 7:30-10:30 9:30-10:30	6:00-10:00 7:30-10:30 Silent
WOAW, Omaha, Neb	526 484	6:00-11:00 9:00-10:00	9:00-11:00 7:00-11:00	6:00-11:00 8:00-11:00	6:00-12:00 Silent	Silent 8:00- 9:00	6:00-12:00	6:00-11:00
WOC, Davenport, Ia	360 509	Silent Sllent		10:00-1:00 6:30-10:00	Silent Silent	Silent 6:30-10:00	9:00-10:00 8:00- 9:00 Silent	8:00- 9:00 Silent 6:30-10:00
WOO, Philadelphia, Pa WOR, Newark, N. J WOS, Jefferson City, Mo	405 441	6:15-10:00 Silent	Silent 7:30- 8:30	5:15-10:00 8:00-10:00	5:15-10:00 Silent	5:15-10:00 8:00-10:00	5:15- 6:30 Silent	5:15- 6:30 8:00-10:00
WQJ. Chicago, Ill	440	7:00- 2:00 Silent	8:00-10:00 7:30- 8:30	Silent 7:30-8:30	7:00- 2:00 Silent	7:00-2:00 Silent	7:00- 2:00 Silent	7:00-10:00 Silent
WRBC, Valparalso, Ind WRC, Washington, D. C WREO, Lansing, Mich	469	4:15-10:00	Silent 6:00- 7:00	Silent Silent	4:15-10:00 7:15- 8:15	Silent Silent	4:15-10:00 7:15- 8:15	Silent Silent
WRL, Schenectady, N. Y WRW, Tarrytown, N. Y	360 273	Silent 8:00-9:30	Sllent 7:00- 8:00	Silent 6:00- 9:00	Silent 8:00- 9:30	Silent 8:00-9:30	7:00- 8:30 7:00- 8:00	Silent 8:00-9:30
WSAC, Clemson Coll., S. C WSAI, Cincinnati, O	360	Silent 8:00-10:00	Silent	Silent 10:00-12:00	Silent	7:00- 8:00 Silent	Silent 10:00-12:00	Silent Silent
WSB. Atlanta, Ga	429	8:00-12:00 8:00-11:00	7:30- 9:15 Silent	8:00-12:00 7:00-9:00	8:00-12:00 Silent	10:45-12:00 7:00- 9:00	8:00-12:00 Silent	8:00-12:00 Silent
WTAM, Cleveland, O WTAS, Elgin, Ill	286 283	6:00-12:30 6:00-11:15	6:00-12:30 Silent	6:00-12:30 Silent	6:00-12:30 6:45-11:15	6:00-12:30 6:45-11:15	6:00-1:30 6:45-11:15	6:00-12:30 6:45-11:15
WTAY, Oak Park, Ill	513	6:00- 9:00	Silent	6:00- 7:00	6:00- 7:00	6:00- 7:00	6:00- 7:00	6:00- 7:00
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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

Meter	s Call	Meter	s Call	Meters	Call	Mete	ers Call	Mete	rs Call	Mete	rs Call
238	KFQX	278	WLBL		VGBS	360	woi	410	CKCD	469	KFI
244 248	WABN' WBBG	278 278	WNAC	319 326 F	WGR KDKA	360 360	WRL	411	WDAF WHB	469   469	WCAP WRC
263	WGAQ		KFMX	320 r $330$	CYX	370	WSAC CYB	417	w cco	476	WBAP
266	KFNF	283	WABL	330 I	KFAE	370	WEBH	423	KPO	476	WFAA
266	WECN WCBK	283 283	WHK	337 337	KNX WBZ	370	WGN	423	$egin{array}{c} \mathbf{WBAV} \\ \mathbf{WLW} \end{array}$	480 484	CYL WHAA
$\begin{array}{c} 266 \\ 268 \end{array}$	KFPT	286	KFGZ		CHYC	375 380	'KTHS WGY	423	CKAC	484	WOC
270	KFAU	286	$\mathbf{W}\mathbf{A}\mathbf{A}\mathbf{W}$	341	KSAC	380	WHAZ	429	WSB	492	KGW
270	WBBF KFKB	286	WJAS		WCBD	385	WOAI	430 435	CFAC AT9	492 506	WEAF WMC
$273 \\ 273$	WBBR	286 286	WKBF WTAS	345 360	WLS KJS	390 390	$egin{array}{c} \mathbf{WJAX} \ \mathbf{WTAM} \end{array}$	435	CNRO	509	KLX
273	$\mathbf{webj}$	288.3	WREO	360	KOB	395	KHJ	435	NAA	<b>50</b> 9	WIP
273	WFBH	291	KFKX	360	WBT	395	WDAR	440	CFCN	<b>50</b> 9	WOO
$\begin{array}{c} 273 \\ 273 \end{array}$	WMAK WRW	294	WEAO WEEI		WCAL VEAY	395 400	WFI CFCA	441	wos woj	$\begin{array}{c} 513 \\ 513 \end{array}$	$\mathbf{w}\mathbf{w}\mathbf{J}$
275	KFMQ	306	KFDM	360	WGI	400	PWX	448	WMAQ	526	who
275	WHAD	309	WMH	360	WHA	400	WHAS	450	CKY	526	WNYC
$\begin{array}{c} 275.2 \\ 278 \end{array}$	KQV WCAU	309	WSAI KGO	360   360   7	$f WHN \ WJAR$	405 405	KTW WJY	455 455	KFOA WJZ	$\begin{array}{c} 526 \\ 536 \end{array}$	WOAW
278	WJJD		WAHĞ		VKAQ		work		WCAE		KSD
210	44 9 9 T	. 010	WALLO	*000 V	A ITWA	409	WOR	462	WCAL	,, 40	TC 2T



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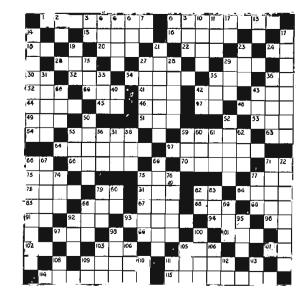
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# JUDGE ACCORDION CONTEST AT KFNF

#### Saturday, December 27

Saturday; silent night for: CHNC, CFAC, KFAE, KFKX, KJS, KDB, WAAW, WBAP, WBBG, WDBY, WEAD, WEBJ, WEEI, WHAA, WHAZ, WHB, WJY, WKAQ, WNJ, W00, W01, W0S, WRBC, WWJ.

CFAC, Calgary, Can. (Mountain, 430), 1 p. m., English football results.

CKAC, Montreal, Can. (Eastern, 425), 7 p. m., kiddles' stories in French and English; 7:30, Rex Batile and his Mount Royal Hotel ensemble; 8:30, Frontenac



p. m., the Star's Radio orchestra; 6-7, school of the air, plano tuning-in number on the Duo-Art; address, speaker to be announced; the Tell-Me-a-Story Lady; music, Hotel Muehlebach Trianon ensemble; 11:45-1 a. m., nighthawk frolic, the "Merry Old Chief" and the Piantation players; Cordsen-Mac's orchestra.

WDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., daily aimanac; 12:02 p. m., Stanlcy theater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 4:30, Cotton Pickers dance orchestra, Wilbur DeParis, director; 7:30, Dream Daddy.

WEAF, New York, N. Y. (Eastern, 492), 4-5 p. m., Bruno Brothers dance orchestra; 6-7, dinner music, WEAF instrumental quartet; 7:30-7:50, boys' stories, Fred J. Turner; 8-8:30, Hohner Harmony hour; 8:30-11, Oratorio society; 11-12, Vlncent Lopez and his Hotel Pennsylvania orchestra.

WFAA, Dallas, Tex. (Central, 476), 12:30-1 p. m., address, Epps. G. Knight; 8:30-9:30, Joseph B. Rucker, bass; Mrs. Joseph B. Rucker, pianist; 11-12, Adolphus hotel orchestra.

hotel orchestra.

WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3, Esther Aienikoff, violinist; 4, Piccadilly Sirons dance orchestra; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddies' pal; 8, "Influenza and its Complications," health talk; 8:15, "The Miniature Lady," R. M. Stults; Florence Haenle, violinist; Helen Rowley, violinist; Irene Hubbard, cellist; 10:15, "Building the New World," J. E. Hartzler.

cellist; 10:15, "Building the New World, J. E. Hartzler.

WGBS, New York, N. Y. (Eastern, 316), 1:30-2:30 p. m., Nat Sander's Hotel Hargrave trio; 6-6:30, Uncle Geebee; 6:30-7:30, Cameo Collegians; 7:30-8:30, Armand Veesey and his Ritz-Carlton orchestra; 9:30-11. "Peter Pan" night, arranged by Sam Cornby, Betty Bronson, star of screen version of Barrie's story; Herbert Brennon, director; Jesse L. Lasky,

producer and Ernest Forrbier, actor, will be present; 11-12, Russian Eagle orchestra.

WGN, Chicago, III. (Central, 370), 1:40 p. m., luncheon concert, Drake Concert ensemble, Blackstone string quintet; 3, rocking chair time, musical program and excerpts from Chicago Tribune and Liberty Magazine; 5:30, Skeezix time for the children, Quinn Ryan; 6, organ recital, Lyon & Healy; 6:30-7, dinner concert; 8-9, classical program; 10-11, jazz dance hour, Don Bestor Blackstone orchestra, Jack Chapman dance orchestra.

Don Bestor Blackstone orchestra, Jack Chapman dance orchestra.

WGR, Buffalo, N. Y. (Eastern, 319), 2:30-4:30 p. m., Buffalo Courler and Enquirer musical program; 6-7:30, Hailpryd string quartet.

WGY, Schenectady, N. Y. (Eastern, 380), 9:30 p. m., dance music, Phij Romano's orchestra.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., Alamo theater orchestra; 7:30-9, Syncopatin' Six, E. E. Cutler, director; twenty minute specialty, Frank Wright, Frank Bessinger.

director; twenty minute specialty, Frank Wright, Frank Bessinger.

WHB, Kansas City, Mo. (Central, 411), 2-3 p. m., ladies' hour program, Sweeney Radio trio.

WHN, New York, N. Y. (Eastern, 360), 6:30-7:30 p. m., Vincent Catanese and his Alamac orchestra; 7:30-8. Hotel Carlton Terrace orchestra; 8:30-9. Strand Roof entertainers; 10-10:15, Jlmmy Flyn, tenor; 10:15-10:30, Fitzpatrick Brothers, songs; 10:30-11, Jlmmy Clark and his entertainers; 11:30-12:30, Connie's Inn with Leroy Smith's orchestra; 11:30-12:30, Roseiand dance orchestra.

WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Karl Bonawitz, organist; 3, Alaha Hiwaiian Glee club, singing "Hilo March," "One, Two, Three, Four," "Napoleon," "Old Piantain," "Tom Boy," "WaiLana or Drosey Waters," "Wili wili wai," "Eiils March," "Kalima," "Maid of Honolulu," "Lalolo," "Machetta," "Moa," "Malie, Hawaii," "Good-bye, Honolulu," "Aloha Oe;" 6:05, Hotel St. James orchestra; 7,

Uncle Wip; 8, "The Romance of Chemistry," Charles H. LaWall; 8:15, H. Ralph Weider, baritone, "Salt Water Ballards," "Hear Me, Ye Winds and Waves;" book reviews, Robert A. Wachsman; Installation of Uncle Wip as member of Holstein-McDaid Post, No. 383, Veterans of Foreign Wars of U. S.; 10:05, Art Coogan and his orchestra; 11:05, Karl Bonawitz, organist.

organist.

WJJD, Mooseheart, III. (Central, 278), 7:15-8:15 p. m.,

Mooseheart theater orchestra; 9-12, dance music, Log

Coogan and his orchestra; 11:05. Karl Bonawitz, organist.

WJD, Mooseheart, III. (Central, 278), 7:15-8:15 p. m., Mooseheart theater orchestra; 9-12, dance music, Log Cabin.

WJZ, New York, N. Y. (Eastern, 455), 1-2 p. m., Erdody's Park Lane hotel orchestra; 4-4:30, David Stokes; 4:30-5:30, Henry Fink and Harold Stern's Ritz orchestra; 7-8, Waldorf Astoria dance orchestra; 8-3:30. Aline Hurrell, soprano, Mabel Bestoff, accompanist; 8:30-10:30, Williams College Musical clubs concert; 10:30-11:30, Hotel Astor dance orchestra.

WLS, Chicago, III. (Central, 345), 7 p. m., "Big", Ford and "Little" Glenn's trip to Turkey; 7:15-12, Saturday nite review, Robinson and Bernard; Ralph Emerson, organist; Isham Jones and his College Inn orchestra; Our Harmony Girls; Our Terrible Turks; Walter Peterson, "The Kentucky Wonder Bean;" Barn dance fiddlers; Ford and Glenn.

WMAQ, Chicago, III. (Central, 447.5), 6:30 p. m., Hotel LaSalle orchestra; 8. Hida Butler Farr, pianist; Douglas Mailock, poet; 8:40, Radio photologue, "Alaska and the Yukon," Herman Wieg; 9, weekly Balaban and Katz Chleago theater revue.

WMC, Memphis, Tenn. (Central, 501), 12 m., musical program, O. K. Houck Plano company; 8, p. m., bed-time story, Unice Percy; 8:30, connect of stringed instruments arranged by Mrs. E. F. Hawke and Mrs. Frank Cavanaugh.

WNYC, New York, N. Y. (Eastern, 526), 6:20-6:30 p. m., Uncle Robert; 6:30-7:30, Sam Wooding's Club Alabam orchestra; 7:30-7:35, police alarms; 7:35-8:30, The Chateau Four; 8:30-9, Willy Helm, concert zither soloist; George Natanson, ukulele soloist; 9-9:30, police quartet; 9:30-10, Frederick E. Bensen's orchestra; 10:30-10:40, police alarms.

WOAW, Omaha, Nebr. (Central, 526), 6:20-6:30 p. m., Central; 9:30-10:40, police alarms.

WOAW, Omaha, Printing company; 11:15, Wowl forlic, Frank Hodelt, Jr. and his Omaha Mightingales.

WOC, Davenport, Ia. (Central, 484), 7:30 p. m., college chimes: Christmas reading, Charles A. Fritz.

WOA, Newark, N. J. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m.

Governor-elect Tom Terrell of Arkansas will make the acquaintance of many of his voters New Years eve and will probably be heard by many people outside of his own state when he talks at KTHS.



accompanist of Hot Springs will be on the program. Ruth Stearns (right) is one of the vocalists who will make it pleasant to tune in for this station.

KTHS dedicates the new station New Years eve. Lois Merritt, planist and

Breweries' studio concert; 10:30, Joseph C. Smith and his Mount Royai Hotel dance orchestra.

KDKA, E. Pittsburgh, Pa. (Eastern, 326), 1:30 p. m., concert, Daugherty's orchestra; 6, dinner concert, Westlinghouse band; 7:30, children's period; 8:30, concert.

KFI, Los Angeles, Calif. (Pacific, 469), 5-5:30 p. m., Evening Herald, table talk, news; 5:30-6, Examiner, musical half hour; 6:45-7, "Inspirational Psychology," Dr. Clyde Sheldon Shepard; 7-7:45, Hollywood Collegians' dance orchestra; 7:45-8, The Book Shelf, Nancy; 8-9, song recital; 9-10, Examiner program, Jane of the Examiner; 10-11, Packard Radio club.

KFNF, Shenandoah, Ia. (Central, 266), 7:30 p. m., accordion contest.

Jane of the Examiner; 10-11, Packard Radio club.

KFNF, Shenandoah, Ia. (Central, 266), 7:30 p. m., accordion contest.

KFOA, Seattle, Wash. (Pacific, 455), 8:30-10 p. m., concert, Seattle Times; 10:05-11, Eddie Harkness' jazz orchestra.

KFQX, Seattle, Wash. (Pacific, 238), 7:15-7:45 p. m., Aunt Vivien's bedtime story; 8-9, Earl Gray and his orchestra; 9-10, concert; 10-12, Earl Gray and his orchestra; 9-10, concert; 10-12, Earl Gray and his Butler hotel orchestra.

KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-11:30 a. m., sunshine hour program; 3:30-4:30 p. m., Impromptu studio program; 7:30-9:30, sermon, Divine Healing, Aimee Semple McPherson, -pastor; Esther Fricke Green, organist.

KGO, Oakland, Calif. (Pacific, 312), 4-5 p. m., concert orchestra, Hotel St. Francis; 8, program, Faculty of the Musical Arts Institue of San Francisco; Redfern Mason, music critic; Arthur Arglewicz, violinist; Willem Dehe, cellist; Charles Hart, planist; Carel van Hulst, baritone; "Music," Redfern Mason; Violet Fenster-Blagg, soprano; 10-1, dance music, Henry Halstead's orchestra.

KGW, Portland, Ore. (Pacific, 492), 10 p. m., dance music, Multnomah Hotel Strollers.

KHJ, Los Angeles, Calif. (Pacific, 395), 12:30-1:30 p. m., Hi Moulton's orchestra; 2:30-3:30, matinee musicaie; 6-6:30, Art Hickman's concert orchestra, Edw. Fltzpatrick, director; 6:30-7:30, Prof. Walter Sylvester Hertzog, storles, American history, Helen Pirle,

m., H. Mollion's orcnestra; 2:30-3:30, mathree musicaie; 6-6:30, Art Hickman's concert orchestra, Edw. Fltzpatrick, director; 6:30-7:30, Prof. Walter Sylvester Hertzog. storles, American history, Heien Pirle, screen juvenile and Uncie John; 7:45, "Care of Body," Dr. Loveii; 8, Y. M. C. A. program; 9, program arranged by J. Howard Johnson; 10-11, Eari Burtnett's Biltmore hotel dance orchestra.

KNX, Hollywood, Calif. (Pacific, 337), 8 a. m., inspirational talk; 9, Town Crier, news; 9:30, technical talk on Radio, F. W. Van Why; 6-7, dinner hour music; 7-7:30, D. B. Carpenter's half hour; 8-10, feature program; 10-11, Abe Lyman's Cocoanut Grove orchestra from Ambassador hotel.

KPO, San Francisco, Calif. (Pacific, 423), 1-2 p. m., Rudy Seiger's Fairmont Hotel orchestra; 3:30-5:30, tea dansant, E. Max Bradfield's Versatile band; 8-12, Art Weldner's orchestra.

KSD, St. Louis, Mo. (Central, 546), 8 p. m., concert, St. Louis Symphony orchestra, Rudolph Ganz, conductor.

KTHS, Hot Springs, Ark. (Central, 375), 8:30-10 p. m., concert, Meyer Davis orchestra; 10-30-11:30, dance

program.

KYW, Chicago, III. (Central, 536), 11:35 a. m., table talk, Mrs. Anna J. Peterson; 6:35-7 p. m., children's bedtime story, Uncle Bob; 7-7:30, dinner concert, Congress hotel; 8-8:58, Adele Brandt, contraito; Lewis Meehan, tenor; 9:05, Youth's Companion; 9:35-11:30, "Congress Classic;" 12-2, "Congress Carnival," Coonsanders Original Nighthawks.

PWX. Hanaya Cuba (Fasters 400) 8:30 p. m. companion;

Sanders Original Nighthawks.

PWX, Hanava, Cuba. (Eastern, 400), 8:30 p. m., concert, Academy of Prof. Juan Gonzalez.

WBAV, Columbus, Ohio (Eastern, 423), 9 p. m., dance orchestra, Spring Lakes pavillon.

WBBR, New York, N. Y. (Eastern, 273), 8 p. m., M. Carment, clarinctist; 8:10, I'red Twaroschk, tenor; 8:20, Bible questions and answers, Judge Rutherford; 8:40, M. Carment, clarinetist; 8:50, Fred Twaroschk, tenor.

/BZ, Springfield, Mass. (Eastern, 337), 6-7 p. in., concert; 7:10, kiddles' bedtline stories; 7:15-7:30, lecture, address; 8:30-10:30, concert; 11:30-12, Leo Reisman and his Hotel Brunswick orchestra.

WCAL, Pittsburgh, Pa. (Eastern, 462), 2:30 p. m., tea-dansant, Nixon restaurant; 4:30, Ed. Lally's Rendezvous Cabaret orchestra; 6:30, dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 7:45, special feature; 8:30, concert, Maiate Post No. 12, Veterans of Foreign Wars. WCAL, Northfield, Minn. (Central, 360), 12 midnight,

musicate.

WCCO, Minneapolis-St. Paul, Minn. (Central, 417), 10:45 a. m., home servico Christmas candles, Betty Crocker; 7-8 p. m., eilent hour firesido philosophies, Itev. Roy L. Smith; 8:30, Reinmut trio, Florence Reinmuth, planist; Isabei Olson, violinist; Bessle Brown, cellist; Mrs. Irving Fossen, contralto; Eicanor Freemantel, accompanist; 10, danco program, Minneapolis Allietic club orchestra, C. Eddy Fortler, leader; The Minnesota Four, Henry Loeyde, tenor; Frank Marino, tenor; Raymond Labelle, barltone; Robort Bruco, bass; Mrs. Lila Sperling Toyne, accompanist.

WCX, Detroit, Mich. (Eastern, 513), 6 p. m., dinnor convert, Book-Cadillac hotel; 7, musical program.

WDAE, Kansas City, Mo. (Contral, 411), 3:30-1:30 musicaie.

#### Headliners of the Week

DETER PAN, that delightful sprite of childhood, will visit WGBS, New York, Saturday night, in the guise of Betty Bronson who is perhaps the most perfect little Peter Pan ever seen. Herbert Brenon and Jesse Lasky will also be on the program. Saturday night is also the famous night for accordion players. KFNF will superintend an accordion contest. One of the contestants may be seen on page 12.

Sunday night Beatrice Fenner, a talented blind planist and composer, will broadcast via KNX, Hollywood, a program of her own compositions to Madame Galli-Curci at Minneapolis. When Madame Galli-Curci toured the Pacific coast last year she met the young composer and became interested in her work.

'The 120th Engineers' band will awaken with stirring music the whole southwest Monday at KOB, State College. The Sphinx players, a curious name for a Radio theatrical group, will give this same evening the musical comedy "The Isle of Azuwere," at WGY, Schenectady. This comedy will make merry fun of old and new traditions.

Tuesday the famous Dugout Studio

of AT9, Fort Bragg, will give a program of dance music by the Field Artillery Jazz orchestra. The next war will probably be a competition between the famous dance orchestras of the world.

Wednesday night even the ether will watch the old year out and the new year in. Anyone who tuned in last year for the Nighthawk anniversary will dial again this year for WDAF. J. Howard Johnson's Radio Passing Revue of 1924 will help the old year out easily at KHJ.

New Years day all the new Radio sets received for Christmas will have plenty of opportunity to go fishing in the outer air for stations. Although many of the studios are planning dance programs for New Year's day parties, many others are scheduling concert numbers.

South Charleston, Ohio, will make a Radio name for itself Friday night with a community concert at WBAV, Columbus.

Dr. George Weida Spohn's book talks at WCAL are popular with the Radio book lovers. This Friday he will talk about Mark Twain's Autobiography.

10-2, Raiph Williams and his Rainbo Skylarks; Jerry Sullivan; Brock Sisters; Peggy McClure, the Melodians, Laurie, Eddie, Bennie; Sandy Meek, Scotch tenor; Lindsey Coons, baritone; Lew Butler, "The Giant of Radio; Bernard and Robinson, "The Dixio

WRC, Washington, D. C. (Eastern, 469), 7 p. m., children's hour, Peggy Albion; 7:15, dinner music, Irving Boernstein's Hotel Washington orchestra; 8:15, Bible talk; 8:30, Minnie Volkman, soprano; Ralph Bissonettc, pianist; 10:30, Hotel Astor orchestra; 11:15, Otto F. Beek organist Beck, organist.

WSB, Atlanta, Ga. (Central, 429), 12 m., entertainment; 5-6 p. m. bedtime story Bonnic Barnhardt; 8-9, Ed and Grace McConnell; 10:45, Journal Hired help inhibited.

Ed and Grace McConnell; 19:45, Journal Elicu nein jubilee.
WTAS, Elgin, III. (Central, 286), 6 p. m., Terrace Garden dance program, Fred Hamm and his orchestra; 9:30, Kinball studio hour; Lee Sims, planist; 10:30, Terrace Garden supper dance program; 11:30, Maxine Brown, Jay Gould.
WWJ, Detrolt, Mich. (Eastern, 513), 3 p. m., The Detrolt News orchestra.

#### Sunday, December 28

Sunday, silent night for; CHNC, CKAC, KFAE, KFKX, KFNF, KFOA, KFQX, KOB, PWX, WAAW, WBBG, WCAE, WDAF, WDBY, WEAO, WEBJ, WFI, WGBS, WHAZ, WIP, WJJD, WKAQ, WNJ, WNYC, WOI, WOR, WTAY, WWJ.

(Continued on page 10)

# SOUTH CHARLESTON ARTISTS AT WBAV

#### Sunday, December 28

(Continued from page 9)

CFAC, Calgary, Can. (Mountain, 430), 7:15 p. m., First Baptlst church, Rev. Dr. H. H. Bingham. CKAC, Montreal, Can. (Eastern, 425), 4:30 p. m., studio

CKAC, Montreal, Can. (Eastern, 425), 4:30 p. m., studio concert.

KDKA, E. Pittsburgh, Pa. (Eastern, 326), 11 a. m., services, Point Breeze Presbyterian church, Rev. Percival H. Barker; 2:30 p. m., concert; 4. Dr. Charles Heinroth, organist; 4:45, vesper services, Shadyside Presbyterian church, Rev. Hugh Thomson Kerr; 6:30, dinner concert, Scalzo's orchestra; 7:45, services, First Baptist church, Rev. Carl Wallace Petty.

KFGZ, Berrien Springs, Mich. (Central, 286), 10:15-10:30 a. m., gospel hyms, Radio choir; 10:30-10:10, anthems, Radio choir; 10:40-10:50, religious reading, Prof. H. L. Pearson; 10:50-11:20, Mrs. A. Fellows, soprano; 7 p. m., bedtime stary; 8:15-8:35, program, Radio Lighthouse choir; 8:35-8:50, Ernest Hurd, tenor; Mrs. H. B. Taylor, soprano; 3:50-9:20, studio chapel service, Mrs. Mable C. Butterfield, soprano.

KFJ, Los Angeles, Calif. (Pacific, 469), 10-10:45 a. m., L. A. Church Federation service; 4-5 p. m., vesper service, Davls Music college; 6:45-7, musical appreciation talk: 7-8, stage acts. specialties and orchestra of Metropolitan thenter; 8-8:30, one-act play, Grace Gildden Cranc; 8:30-9, instrumental trio; 9-10, Examiner, dance orchestra; 10-11, Packurd Slx orchestra, Starr Russell, blues singer.

KFNF, Shenandoah, Ia. (Central, 266), 3 p. m., religious services, M. E. Church of Coin, Rev. Lawton, pastor; 6:30, regular sacred song service.

KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-12:30 p. n., complete morning services of Angelus temple, 7-9:45, evening service with special music, Sliver band and cholr; 10-11, organ recital, Esther Fricke Green, organist.

KGO, Dakland, Calif. (Pacific, 312), 11 a. m., service, Taylor, Packurd Start Russeries of Angelus temple; 7-9:45, evening service with special music, Sliver band and cholr; 10-11, organ recital, Esther Fricke Green, organist.

Fricke Green, organist.

KGO, Dakland, Calif. (Pacific, 312), 11 a. m., service,
First Unitarian church, C. S. S. Dutton, minister,

Leona Fay, vioyoung linist - composer will make the new Chi-cago Station WBCN popular Miss Fay is featuring her own compositions and is scheduled this week for December 30.



3:30 p. m., KGO Little Symphony orchestra, Carl Rhodehamel, director; 8, services, First Unitarian

Kindenamer, director, 8, services, First Unitarian church.

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

ist.

KHJ, Los Angeles, Calif. (Pacific, 395), 10 a. m., Dr. Mayer Winkler, Rabbi of Congregation Sinai; 10:30-12:30 p. m., complete services of First Methodist Episcopal church, Arthur Blakely, organist; 6:30-7, Art Hickman's concert orchestra, Edw. Fitzpatrick, director; 7-7:30, organ recital, Arthur Blakely, organist; 8-10, program, Hellman Commercial Trust and Savings bank.

KIS Los Angeles Calif. (Pacific, 360), 10:30-12:30 p.

Savings bank.

KJS, Los Angeles, Calif. (Pacific, 360), 10:30-12:30 p. m., religious services, Church of Open Door, Dr. French E. Oliver, pastor; 6-7, vesper services, sacred and classical vocal selections, short talk; 8-9:30, evening services, organ numbers, soprano and baritone, sermon, Dr. French E. Oliver.

KNX, Hollywood, Calif. (Pacific, 337), 7-7:30 p. m., vesper service; 8-9, Ambassador Hotel concert orchestra, Jos. Rosenfeld, director; 9-10, Beatrice Fenner. blind pianist and composer, broadcasting program to Madam Galli-Curci in Vinneapolis

blind pianist and composer, broadcasting program to Madam Galli-Curci in Minneapolis.

KPD, San Francisco, Calii. (Pacific, 423), 11-12 m., undenominational and non-sectarian church scrvices, Dr. H. H. Bell, City Tabernacle quartet, F. O. Gerky, director; 8:30-10, concert, Rudy Selger's Fairmont hotel orrhestra.

KYW, Chicago, III. (Central, 536), 11 a. m., Central church service, Dr. Frederick F. Shannon; 2:30 p. m., studio chapel; 7. Chicago Sunday Evening elub; address, Bishop Edwin H. Hughes.

WBAV. Columbus, Dhio (Eastern, 423), 2:30 p. m., reiiglous service at studio, Columbus Councii of churches.

religious service at studio, Columnus Council of churches.

WBBR, New York, N. Y. (Eastern, 273), 9:10 p. m., Watchtower string quartet, George Twaroschk, Carl Park, Martin Hartman, Roger Knight; 9:20, vocal duets, Thyra Lundberg, Fred Twaroschk; 9:25, "Messengers of Peace," ludge Rutherford; 10, Fred Twaroschk, tenor; Watchtower string quartet.

WBZ, Springfield, Mass. (Eastern, 337), 10:45 a. m., services; 8:30-10 p. m., concert.

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

WCAL, Northfield, Minn. (Central, 360), 8:30 p. m.,

6:30, dinner concert. William Penn hotel.

WCAL, Northfield, Minn. (Central, 360), 8:30 p. m., sacred program: sermon, Rev. C. E. Nordherg; John Gaardsmoe, baritone; Thonny Genevieve Felland, pianist; Paul Odegard, saxophonlst.

WCAU, Philadelphia, Pa. (Eastern, 278), 5:30 p. m., Blhle talk; 6, Meyer Davis Hotel Pennsylvania concert orchestra, Louls Baer, director.

WCBD, Zion, Ill. (Central, 345), 8 p. m., mlxed quartet; Mrs. S. D. Inman, soprano; Chester S. Bagg, barltone; Mr. and Mrs. R. M. Steel, tenor and soprano; celestial heli solo, John MeHaffey; Alexander DcPcw, flutist; Bessie Wiedman, planist; Mary Sweeney, soprano; Mrs. Hester Robinson, reader.

WCCO, Minneapolis-St, Paul, Minn. (Central, 417).

WCCO, Minneapolis-St, Paul, Minn. (Central, 417), 10:20 a. m., Plymouth Congregational church, Rev. H. P. Dewey; 4:10, House of Hope Presbyterian church, Rev. H. C. Swearingen, pastor; 7:20, Hennepin Avenue Methodist church, Rev. Luclus H. Bughee, pastor; 9:15, classical program, Mrs. William G. Towie, soprano; Louise Lupien Jenkins, accompanist.

WCX, Detroit, Mich. (Eastern, 513), 6 p. m., di concert, Book-Cadlllac hotel; 7:15, church services. WDAF, Kansas City, Mo. (Central, 411), 4-5 p. m., classical program, the Star's Radio orchestra; 5-5:45, International Sunday school lesson, Dr. Walter L. Wilson.

WDAR, Philadelphia, Pa. (Eastern, 395), 2:30 p. m., Areadla cafe concert orchestra, director, Ferl Sarkozi; 8, concert, Three Arts club.

Reducert, Three Arts club.

WDBY, Chicago, III. (Central, 258), 3:30 p. m., George S. Schuler, director; Carmen Smith, soprano; Francis Frederickson, Caroline Cedar, Violet Flodin, Raiph Briggs, barltone; Carl Blackmore, planist.

WEAF, New York, N. Y. (Eastern, 492), 7:20-9:15 p. m., Roxy and his Gang, Capitol theater; 9:15-10:30, Wilson dinner, Hotel Astor.

WEEI, Boston, Mass. (Eastern, 303), 3:45-5:30, men's conference, Redford branch, Y. M. C. A.: 7:20-9:15, Revy and his Gang, Capitol theater.

WFAA, Dallas, Tex. (Central, 476), 6-7 p. m. Radlo Rible class, Dr. William M. Anderson; 7:30-8:30, Westminster Presbyterian church, Dr. T. D. Perrin,

pastor; Daisy Polk 8:30-9:30, E. W. Pfaffonberger, larltone; Johnnye Davis, pianist; 9:30-11, Lee's Fox Trotters.

WFI, Philadelphia, Pa. (Eastern, 395), 10:30 a. in., services, Arch Street Methodist Episcopal church; 4:30, chapel services from studio.

WGBS, New York, N. Y. (Eastern, 316), 2:30-4:30 p. m., mathnee musicale, Pleadilly theater.

WGN, Chicago, III. (Central, 370), 11 a. m., Uncle Walt reads comics to the children; 11:45, Chicago theater symphony orchestra; 2:30 p. m., organ recital, Lyon & Healy; 3, Tribune master artist concert, St. Timothy's male choir; 3:45, Chicago Musical college, Contral theater; 9:10, ''An Evening with the Great Composers,'' Drake Concert ensemble, Charles H. Gabriel, Jr.

WGREAU, Montreal, Can. (Eastern, 350), 8:30 p. m., Frank Blachford, violinist; Dr. Harvey Robb, soprano.

CKAC, Montreal, Can. (Eastern, 425), 1:45 p. m., Mount Royal hotel concert orchestha; 4:30, 110 lessons, KDKA, E. Pittsburgh, Pa. (Eastern, 326), 7 a. m., morning exercises, O. Shannon; 12:15, Daugherty's orchestra; 6:15, concert, KDKA Little Symphony orchestra; 6:15, conductor; 7:30, children's period; 8:15, program, University of Pittsburgh; 8:30, concert.

KFAE, Pullman, Wash. (Pacific, 330), 7:30 p. in., Mrs. Laverna Kimbrough, contralite; 'The Farm Outlook for the New Year,'' R. N. Miller; 'Important Points in Poultry Raising,'' Prof. J. S. Carver; Miriam Zimmerman, pianist. liaritone; Johnnye Davis, planist; 9:30-11, Lee's Fox Trotters.

WFI, Philadelphia, Pa. (Eastern, 395), 10:30 a. in., services, Arch Street Methodist Episcopal church; 4:30, chapel services from studio.

WGBS, New York, N. Y. (Eastern, 316), 2:30-4:30 p. m., matinee musicale, Picadilly theater.

WGN, Chicago, III. (Central, 370), 11 a. m., Uncle Walt reads comics to the children; 11:45, Chicago theater symphony orchestra; 2:30 p. m., organ recital, Lyon & Healy: 3. Tribune master artist concert. St. theater symphony orchestra; 2:30 p. m., organ recital, Lyon & Healy; 3, Tribune master artist concert, St. Timothy's male choir; 3:45, Chicago Musical college, Contral theater; 9:10, 'An Evening with the Great Composers,' Drake Concert ensemble, Charles H. Gubrlel. Ir.

WGR, Buffalo, N. Y. (Eastern, 319), 3-4 p. m., vesper service; 4-5, John F. Gunderman, Jr., organist, 7:15, Central Presbyterian church service. William Wall Whiddit, organist and Dr. Robert J. MacAipine, speaker.

Central Pressylerian Church service. William Wail Whildlit, organist and Dr. Robert J. MacAlpine, speaker.

WGY, Schenectady, N. Y. (Eastern, 380), 10:30 a. m., St. Peter's Episcopal church; 3:30 p. m., WGY Sympliony; Marcia James, soprano; 5, Dr. Frank Sill Rogers, organist; 7:30, service. First Baptist church; 9, Symphony orchestra, WJZ, New York.

WHAA, lowa City, la. (Central, 360), 9-9:30 p. m., familiar hymns. Celeste Fuhrman, soprano.

WHAS, Louisville, Ky. (Central, 400), 9:57 a. m., organ music; 10, Calvary Episcopal church, Rev. Dr. Harris Mallinckrodt, pastor; Lawrence Cook, organist; 4 p. m., George Latimer, organist; 4:30, choral evening service, Christ Church cathedral, Rev. Richard L. McCready; Ernest Arthur Simon, organist; men's and boys' choir of sixty volces.

WHB, Kansas City, Mo. (Central, 411), 9:45-11 a. m., services, Linvood Boulevard Christian church, Dr. Burris Jenkins, pastor; 8-9:15 p. m., services; Sixth Church of Christ Science; 12 m., popular musical program.

program.

WHN, New York, N. Y. (Eastern, 360), 3-4 p. m., Queens County Christian Endeavor program; 5-5:30, Roseland dance orchestra; 5:30-6, Olcott Vail and his string trio; 10-10:07, Evening Bulletin current news; 10:07-10:45, Gem Razor entertainers; 11:30-12, Al Wohlman and his Club Madrid orchestra with Lee Kent; 12-12:30 a. m., Harry Richman and his entertainers with Eddie Elkins and his orchestra.

WHD, Des Moines, Ia. (Central, 526), 11 a. m., church service, University Church of Christ, Dr. C. S. Medbury.

WIP. Philadelphia Pa (Fastern 500), 10:45 a. m.

WIP, Philadelphia, Pa. (Eastern, 509), 10:45 a. m., services, Holy Trinity chapel; 4 p. m., "Sunday Talk" meeting; "A War Correspondent's Word of the Times," Dr. William C. Ellis.

Talk" meeting: 'A War Correspondent's Word of the Times," Dr. William C. Ellis.

WJJD, Mooseheart, III. (Central, 278), 7:45-8:40 p. m., Roman Catholic services; 8:40-9:40, Albert F. Brown, organist; 9:40-11. Protestant services.

WJY, New York, N. Y. (Eastern, 405), 8:15-10 p. m., Bernhard Levitow's Hotel Commodorc concert orchestra; 10-10:15, 'Reminiscences of a Reporter," William H. Crawford.

WJZ, New York, N. Y. (Eastern, 455), 9-10 a. m., children's hour; 11-12, West End Presbyterian church; 2:30-3:30 p. m., Radio Bible class, auspices of Greater New York Federation of churches; 3:30-4, Practical Religion," Rev. Dr. Harry E. Fosdick; 4-5, vesper services; 7-8, Nathan Abas' Hotel Pennsylvania orchestra; 8-8:45, special numbers; 8:45-9:45, Waldorf-Astoria Sunday evening concert.

WLW, Cincinnati, Dhio (Central, 423), 9:30 a. m., school, Editorial Staff of Sunday School Publications of the Methodist Book concern; 11, services, Church of the Covenant, Dr. Frank Stevenson, minister; 7:30 p. m., services, First Presbyterian church, Dr. Frederick McMillan, minister; 8:30 Western and Southern orchestra, William Kopp, director; Dan Beddoe, tenor. WLS, Chicago, III. (Central, 345), 6:30-7 p. m., Ralph Emerson, organist; 7-8, Redecmer's Lutheran church choir.

WMC, Memphis, Tenn. (Central, 501), 11 a. m., serv-

WMC, Memphis, Tenn. (Central, 501), 11 a. m., services, First Methodist church, Rev. C. G. Chappell,

pastor.

WOAW. Omaha, Nebr. (Central, 526), 9 a. m., Radio chapel service, conducted by Rev. R. R. Brown, pastor of the Omaha Gospel Tabernacle and minister of the Sunday morning world Radio congregation; 2:15 p. m., matinee program; 6, Bible study period, personal direction of Mrs. Carl R. Gray; 9, Musical chapel service, Lowe Avenue Presbyterian church.

ice, Lowe Avenue Presbyterian church.

WOC, Davenport, ia. (Central, 484), 8 p. m., church service, Presbyterian church, Rev. S. A. Morning; 9:30, musical program, The Palmer School Radio orchestra, Erwin Swindell, conductor.

WOO. Philadelphia, Pa. (Eastern, 509), 10:30 a. m., services, Bethany temple; 2:30, Sunday school services, Bethany temple; 6:05, organ recital of sacred music, Clarence K. Bawden; 7:30, services, Bethany temple.

WOR, Newark, N. J. (Eastern, 405), 7-7:30 a. m., WOR morning gym class; 2:30-3:30 p. m., program, direction of Williamstown college; 3:30-3:45, talk, Y. M. C. A.; 3:45-4, talk, Charm Magazine: 6:15-7, Dave Harmon's Cinderella orchestra; 7:15-7:30, "Half Hours with the Violin Masters," Wienmawski, composer; lecture recital, Albert Vertchamp, illustrated by Rudolph Fuchs, violinist; 8:30-9:30, program,

Laverna Kimbrough, contraito; "The Farm Outlook for the New Year," R. N. Miller; "Important Points in Poultry Raising," Prof. J. S. Carver; Miriam Zimmerman, pianist.

KFI, Los Angeles, Calif. (Pacific, 469), 5-5:30 p. m., Evening Herald, table talk, news, 5:30-6, Examiner, musical half hour; 8-9, Evening Herald, Radiolians dance orchestra, Geo. Herbert Happ, baritone; 9-10, Examiner, classical night; 10-11, dance orchestra.

KFGZ, Berrien Springs, Mich. (Central, 286), 7 p. m., Tp. m., Mrs. Margaret Wolfe, planist; 8:30-8:45, nature talk, "Michigan's Winter Birds," Mary Lamson; 8:45-9, Mrs. S. A. Smith, soprano; 9-9:15, Italian folk songs, Mr. and Mrs. Andrew Aragona; 9:15-9:20, Marguerite Bordeau, reader.

KFIX, Hastings, Nehr. (Central, 291), 9:30-11 p. m., program, auspices W. M. Dutton & Sons Co.

KFOA, Seattle, Wash. (Pacific, 455), 6-8 p. m., Post-Intelligencer concert; 6:45-8:15, musical program; 8:30-10, musical program, Seattle Post-Intelligencer.

KFOX, Seattle, Wash. (Pacific, 238), 7:15-7:45 p. m., Aunt Vivien's bedtime story; 8-9, Earl Gray and his orchestra; 9-10, concert hour; 10-11, Earl Gray and his Butler Hotel orchestra.

KGO, Oakland, Calif. (Pacific, 312), 11:30 a, m., luncheon concert; 3, studio musical program; 4-5:30, Henry Halstead's dance orchestra; 5:30-6, Aunt Betty storles, KGO kiddles' klub; 8, educational program, Arion trio; "Agricultural Fairs," W. J. Norton; "A Lesson in English," Wilda Wilson church; "Esperanto," E. M. Rosher, "Chats about New Books," Joseph Henry Jackson; 10-1, Henry Halstead's orchestra.

KGW, Portland, Ore. (Pacific, 492), 5 p. m., children's program, story by Aunt Nell; 8, concert, Oregonian concert orchestra; 10, dance musie, George Olsen's Mcfropolitan orchestra; Shefler's string orchestra.

KHJ, Los Angeles, Calif. (Pacific, 337), 8 a. m., morning prayer; 9, Town Crier, news; 10:30, Mrs. Kate Brew Vaughn, home economics: 11, care of domestic pets, Dr. Richard M. Scott; 8-9, program, Security bank; 9-10, program sponsored, L. A. Horse show association;

11-12, Ane Lyman's Coccanut Grove dance orchestra from Ambassador hotel.

KPO, San Francisco, Calif. Pacific, 423), 1-2 p. m., Rudy Seiger's Fairmont hotel orchestra; 4:30-5:30, Rudy Seiger's Fairmont hotel orchestra; 5:30-6:30, children's hour stories, Big brother; 7-7:30, Rudy Seiger's Fairmont hotel orchestra; 8-9, Theodore J. Irwin, organist; 9-10, "Better Lighting," H. C. Barnard; Mischa Lhevinne, pianist; Frank Mueller, tenor; Edward Lachamn, bass; 10-11, E. Max Bradfield's Versatile band.

KSAC, Manhattan, Kan. (Central, 341), 12:30 p. m., Gertrude Doud Tetrick, reader; lecture, vegetables in storage; "Veterinary Services," J. H. Burt; 7:20, Radio College quartet; "The Place of Beef Cattle on the Farm," B. M. Anderson; Radio College quartet; "Study of Other Breeds of Dairy Cattle," H. W. Cave.

"Study of Other Breeds of Dairy Cattle," H. W. Cave.

KSD, St. Louis, Mo. (Central, 546), 7 p. m., music and specialties, Missouri theater; 9, music, Grand Central theater.

KYW. Chicago, III. (Central, 536), 11:35 a. m., table talk, Mrs. Anna J.: Peterson; 6:35-7 p. m., children's bedtime story, Uncle Bob.

WAAM, Newark, N. J. (Eastern, 263), 11-11:30 a. m., Rev. Edmund Hames and John A. Scott, piano-cornet and violin; 11:30-12, Fisher-Beer Musical program; 6:15-7:15 p. m., dinner hour music, Blue Bird ornet and violin; 11:30-12, Fisher-Beer Musical program; 6:15-7:15 p. m., dinner hour music, Blue Bird orchestra; 8-8:15, The Ledger Lady; 8:15-8:30, Victor Wilbur, tenor; 8:30-9, Sweet Marie and Buttercups, piano and violin; 9-9:15, talk, George Dorcmus; 9:15-9:30, Alice Rinchi, violin; 9:30-10, Hiawatha dance orchestra; 10-11, special surprise program.

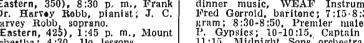
WAAW, Omaha, Nebr. (Central, 286), 7:30-9 p. ln.; Happy Home orchestra.

WBBG, Mattapoisett, Mass. (Eastern, 248), 7-9 p. ln., Biltmore orchestra.

WBBG, Mattapoisett, Mass. (Eastern, 248), 7-9 p. m., Biltmore orchestra.

WBBR, New York, N. Y. (Eastern, 273), 8 p. m., violin duets, George Twaroschk, Carl ,Park; 8:10, Fred Franz, tenor; 8:20, "The Year of Jubilce," W. E. Amburgh; 8:40, Fred Franz, tenor; 8:50, violin duets. WBZ, Springfield, Mass. (Eastern, 337), 6-7 p. m., concert; 7:10, kiddies' bedtime stories; 7:15-7:30, lecture, address; 7:30-8, University Extension course; 8-10:30, concert; 11:30-12, McEnelly's Singing orchestra playing dance music.

WCAE, Pittsburg Pa, (Eastern, 462), 6:30 p. m., dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 7:45, address; 8:30, negro spirituals, Famous Four Roses; 10:30, mythical dirigible, Press-Kaybee and orchestra concert.



dinner music, WEAF Instrumental quartet; 7-7;15, Fred Gorrold, baritone; 7:15-8:30, Strand theater program; 8:30-8:50, Premier male quartet; 9-10, A and P. Gypsics; 10-10:15, Captain Gordon Smith; 10:15-11:15, Midnight Sons orchestra.

WEEI, Boston, Mass. (Eastern, 303), 6:30 p. m., Dok-Eisenbourg and his Sinfonians; 7, Boston Edison btg prother club; 7:45, musicale; 8:45, Buddy's Bostonians; 9:30, Mendelssohn singers; 10:30, Dok-Eisenbourg and his Sinfonians.

tonians; 9:30, Mendelssohn singers; 10:30, Dok-Eisenbourg and his Sinfonians.

WFAA, Dallas, Tex. (Central, 476), 12:30-1 p. m.,

What Is Light?" Dr. J. D. Boon; 8:30-9:30, Alita club, a brass band.

WFI, Philadelphia, Pa. (Eastern, 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. (Eastern, 316), 3-3:15 p. m.,

Daniel Frohman, intervlew; 3:30-4:30, Hazel Doe, pianist; 3:40-4, Mrs. Owen Kildare, personality talks; 6-6:30, Uncle Geebee; 6:30-7:30, Talalaeff Russian dance orchestra. dance orchestra.

6-6:30, Uncle Geebee; 6:30-7:30, Talalaeff Russian dance orchestra.

WGN, Chicago, III. (Central, 370), 1:40 p. m., luncheon concert; 2:30, Lyon & Healy artist series; 3, rocking chair time; 5:30, Skeczlx time; 6, organ recitat, Lyon & Healy; 6:30, dinner concert.

WGR, Buffalo, N. Y. (Eastern, 319), 2:30-4:30 p. m., Buffalo Courler and Enquirer musical program; 6:30-7:30 p. m., dinner music, Vincent Lopez Hotel Statler orchestra, Harold Gieser, director; 8:15-8:45, recital, Mrs. Aberdina Wall and Howard H. Carsons; 9-11, Washburn-Crosby's "Gold Medal" entertainers; 11-11:15, Addy Britt and Dick Finch, Camco record artists; 11:30, supper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gieser, director, WGY, Schenectady, N. Y. (Eastern, 380), 2 p. m., "Home Life and Education for Citizenship," Granville B. Jeffers; 7:15, New York Farm bureau talks; 7:45, program, Christmas carols, St. Mary's Poilsh Catholic church, Stanislaus Koslnski, director.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., sclections, Alamo Theater orchestra, Harry S. Currie, conductor; readings, selected Courier-Journal, Louisville Times.

WHAZ, Troy, N. Y. (Eastern, 380), 9 p. m., holiday

WHAZ, Troy, N. Y. (Eastern, 380), 9 p. m., hollday

WHB, Kansas City, Mo. (Central, 411), 2-3 p. m.,



Margarita Parkinson of Vineland, N. J., is a regular feature of Sta-tion WDAR, Philadelphia. Listen in Wednesday, December 31, at 4:30 p. m., and enjoy her excellent rendition of famous violin selections.

ladies' hour program, Sweeney Radlo trio; 7-8, address, member of the faculty of the Sweeney school; Jessie Mae Kirk, pianist; Kathryn Kirk cellist and saxo-

phonist.
WHN, New York, N. Y. (Eastern, 360), 6:30-7:10 p. m.,
Vincent Catanese and his Alamac orchestra; 7:10-7:30,
fashion chats, Mme. Belle; 7:30-8, Hotel Carlton
Terrace orchestra; 8-8:05, "Storage Batteries," H. B.
Shontz; 8:50-9:20, Littmann's Employees orchestra;
9:30-9:37, Evening Bulletin current news; 9:37-10:07,
Dan Gregory and his Crystal Palace orchestra; 10:0711:07, Jack Shack orchestra; 12-12:30 a. m., Lou
Gold and his orchestra from the Vigwam club.
WHO. Des Moines, Iowa (Central, 526), 7:30-9 p. m.

WHO, Des Moines, Iowa (Central, 526), 7:30-9 p. m., Hibbard Cleveland, bass; Myrtle Williams, soprano; Helen Birmingham, accompanist; classical program,

Helen Birmingham, accompanist; classical program, Dean Holmes Cowper, director; 11:15-12. L. Carlos Meter. organist.

WIP, Philadelphia, Pa (Eastern, 509), 1 p. m. Gimbel tea room orchestra, Ray Steen, director; 3, "A Bible for the Scientist," S. S. Calhoun; 6:05, Hotel St. James orchestra; 7, Uncle Wip.

WJJD Mooseheart, III. (Central, 278), 3:30-4:30 p. m., music, Mooscheart children; 6:30-7:15, Albert F. Brown, organist; 7:15-8:15, Mooscheart Novelty orchestra; talk, Ben Oswalt, athletic coach; 11:30-12:30, request program, Albert F. Brown, organist.

WJZ, New York, N. Y. (Eastern, 455), 10-10:20 a. m., housewives feague menu. Mrs. Julian Heath: 1-2

VIZ, New York, N. Y. (Eastern, 455), 10-10:20 a.m., housewives feague menu, Mrs. Julian Heath; 1-2 p. m., Hotel Ambassador trio: 4-4:30, Warren D. Scoffeld, baritone; 9-9:15, Field and Stream talk; 9:15-10, Piedmont trio: 10-10:30, "The Texans," Milstead & Sanchez

Milstead & Sanchez.

WLW, Cincinnati, Ohio (Central, 423), 8 p. m., Alvin Roehr's Music Makers; Crosley Theatrical review; 8:30, Knights of Columbus Glec club; 8:45, Cooper Tire and Battery corporation, featuring music of the eighteenth century; radario, "Monsieur Beaucaire," Monsieur Beaucaire, Jean Segal; Lady Mary, Ethel Goldsmith; Duke Winterset, Henry B. Flarsheim.

WMAQ, Chicago, III. (Central, 447.5), 4 p. m., mothers in council, Mrs. Frances M. Ford; 4:30, talk on English, Mrs. J. Elllott Jenkins; 6, (thicago theater organ recital; 6:30, Hotel Lasalle orchestra.

WMC, Memphis, Tenn. (Central, 501), 12 m., musical program, O. K. Houck Plano company; 8, p. m., bedtime story, Uncle Jerry; 8:30, concert, Hotel Gayoso orchestra.

time story, Uncle Jerry; 8:30, concert, Hotel Gayoso orchestra.

WNYC, New York, N. Y. (Eastern, 526), 7-7:30 p. m., Harry Ash's Royal orchestra; 7:30-7:35, police alarms; 7:35-7:45, health talks; 7:45-9, Royal orchestra; 8-8:15, Colonel James Churchward; 8:30-10, a Rlesenfeld program from stage and studio of the Rialto theater; 10:30-10:40, police alarms.

WOAW, Omaha Nebr. (Central, 526), 6 p. in., Davis Studio of Expression dramatic hour; 6:45, dinner program, Sammy Heiman's orchestra of Brandels Store restaurants; 9, Buckingham School of Music; 10:45, Studio, Cecii W. Berryman, pianist.

WOC, Davenport, Ia. (Central, 434), 7:20 p. m., 'Blood Pressure and High Blood Pressure,' James N. Fith; 8, Casey Jones' orchestra; Mrs. J. Alison, A. J. Maxwell, entertainers; 10, Katherine Rankin, planist; Nat Ozmon, Peter MacArthur, novelty entertainers; Jane Scott, James Wood, entertainers.

WOO, Philadelphia, Pa. (Eastern, 509), 11 a, m., organ recital, Mary E. Vogt; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 5:15, organ recital, Mary E. Vogt; 7:30, A. Candelorl and his Hotel Adelphia concert orchestra; 8:30, Harriette G. Ridley, planist; 9, WOO orchestra, Robert E. Golden, director; 10:03, organ recital, Mary E. Vogt; 10:30, Vincent Rizzo and his Hotel Sylvania dance orchestra.

WDS, Jefferson City, Mo. (Central, 440.9), 8 p. m.,

10:30, Vincent Rizzo and his Hotel Sylvania dance orchestra.
WDS, Jefferson City, Mo. (Central, 440.9), 8 p. m., Harry M. Snodgrass, "King of the Ivorios."
WQJ, Chicago, III. (Central, 448), 11-12 m., "Furnishing Your Home," Marcia Meadows; "Parliamentary Law," Mrs. Leona A. Krag; "Music," Mrs. Louis Yager; 3-4 p. m., "The Cabbage and his Family Relations," Helen Harrington Downing; book review,

Rev. Fred Harrison.

RBC, Valparaiso, Ind. (Central, 278), 7:30 p. m., rousic. (RC, Washington, D. C. (Eastern, 469), 4 p. m., book reviews, auspices of the League of American Pen Women; 4:20, piano recital; 4:30, ten music, Meyer Dayls' New Willard hotel trio; 6, children's hour,

Peggy Albion.

WWJ, Detroit, Mich. (Eastern, 513), 3 p. m., The Detroit News orchestra; 8:30, The Detroit News orchestra; F. Eugene Wilson, baritone; Margaret Foy.

(Continued on page 11)



Here is the Eveready Mixed Quartet heard every Tuesday evening through WEAF consisting of Wilfred Glenn, bass; Rose Bryant, contralto; Beulah Young, soprano; Charles Harrison, tenor; and Tom Griselle, pianist.

Branford theater; 9:30-9:45, Dr. Sigmund Spaeth, pianist and lecturer; 11-11:15, Perry and Russell, two-

Branford theater; 9:30-9:45, Dr. Sigmund Spaeth, pianist and lecturer; f1-11:15, Perry and Russell, twoman singing orchestra.

WOS, Jefferson City, Mo. (Central, 440.9), 7:30 p. m., church services, Central Evangelical church, Rev. E. W. Burlekamp, pastor.

WQJ, Chicago, III. (Central, 448), 10:30 a. m., sermon, Dr. Preston Bradley; 8-10, Ralph Williams and hls Ralnbo Garden orchestra; Marla Dnaprova, Russlan soprano; Lancaster Smith, hass; Mrs. Lancaster Smith, accompanist; Maxine Mordy, violinist; Maridean Borresen, barltone; Fern Denicke, accompanist; Carl G. Linner, planist; Brock Slsters.

WRBC, Valparaiso, Ind. (Central, 278), 7:30 p. m., confirmation, Immanuel Lutheran church.

WTAS, Elgin, III. (Central, 286), 2-5 p. m., Villa Olivia Star Sunday concert; 6, Fred Ham and hls Terrace Garden orchestra; 9:30, Kimball studio hour; Lee Sims, planist; 10:30, Terrace Garden supper dance program; 11:30, Jay Gould, Maxine Brown, Jimny Eggert, Jack Little, Paul Small, Lew Butler, locy Stoole, Lindsey Coons, Betty Holmes, Bahc June.

WWJ, Detroit, Mich. (Eastern, 513), 2 p. m. The Detroit News orchestra; 7:30, services, St. Paul's Episcopal cathedral.

Monday, December 29

Monday, silent night for: CKAC, KFNF, KFSG, KHJ, KJS, KYW, WBAV, WCAL, WDBY, WEAO, WEBJ, WGN, WHAA, WHAS, WJY, WKAQ, WLS, WMAQ, WNJ, WQJ, WRC, WTAY.

WCAU, Philadelphia, Pa. (Eastern, 278), 6 p. m., Meyer Davis Hotel Pennsylvania dance orchestra, Louis Baer, director; 7:30, recital; 8, fashlon and health

talks.

WCBD, Zion, III. (Central, 345), 8 p. m., male quartet;
Dorothy Bull, soprano; Rulph Bull, tenor; E. B.
Paxton, baritone; Hermann Becker, cellist; Edna
Huston Paxton, reader; Athol Heath, planist.

Huston Paxton, reader; Athôl Heath, planist, WCCD, Minneapolis-St. Paul, Minn. (Central, 417), 10:45 a. m., home service, Betty Crocker; 2 p. m., women's hour, 'My Job," Frances Kelly; 2:15, business talk, member of St. Paul Business and Professional Women's association; 2:30, matinee musicale; 4, magazine hour, excepts, 'Autobiography Mark Twain;' 5:30, children's hour; 6, sport talk; 8, lecture; 8:30, concert; 10, Arnold Frank's Casino orchestra

WCX, Detroit, Mich. (Eastern, 513), 4:15 p. m., musle, 6, dinner concert, Book-Cadlllac hotel; 7, muslcai program.

WDAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., the Star's string trio; 5-5:30, weekly Boy Scout program; 6-7, school of the alr, piano tuning-in number on the Duo-Art; address, C. H. Cheney, seventh number on the Duo-Art; address, C. H. Cheney, seventh of a series of talks on banking; the Tell-Me-a-Story Lady; music, Hotel Muchlbach trianon ensemble; 8-9:15, "Around the Town with WDAF;" 11:45-1 a. m., nighthawk frolle, the "Merry Old Chief" and the l'lantatlon players.

WDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., daily almanae: 12:02 p. m., Stanley theater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 4:30, Marcella North, planist; 7:30, Dream Daddy; 10:03, Arcadia cafe dance orchestra; vaudeville features from Fay's theater.

WEAF, New York, N. Y. (Eastern, 492), 6-7 p. m.,

# PETER PAN AT WGBS SATURDAY

#### Tuesday, December 30

(Continued from page 10)

Tuesday, silent night for. CHNC, KFAE, KFGZ, KFKX, KOB, PWX, WBBG, WBBR, WCAL, WCAU, WCBD, WDBY, WEAO, WHAZ, WHO, WOC, WOO, WOI, WOS, WRBC.

AT9, Fort Bragg. N. C. (Eastern, 435), 8 p. m., dance muslc, Fifth Field Artillery Jazz orchestra.

CKAC, Montreal, Can. (Eastern, 425), 7 p. m., Mount Royal hotel ensemble; 7:30, studio entertainment; 10:30, dance program.

CNRR, Regina, Can. (Mountain, 420), 8 p. m., bedtlme travel tale; Radio entertainers.

KDKA, E. Pittsburgh, Pa. (Eastern, 326), 12:15 p. m., concert, Scalzo's orchestra; 6:15, dlnner concert; 7:30,

instrumental program, Grace Campagno, composer; 1011 E. Max Bradfield's Vcrsatile band.

KSAC, Manhattan, Kan. (Central, 341), 12:30 p. m.,
Gertrude Doud Tetrick, reader; "Winter Application
of Manure," E. B. Wells; "Animal Diseases Communicable to Man," R. R. Dykstra; 7:20, Radio
College quartet; "Phoducing Pure Seed Wheat," H. R.
Summer; Itadio College quartet; 7:45, "Vegetables and
Vitamlnes," Martha Pltman.

KSD, St. Louis, Mo. (Central, 546), 4 p. m., home
economics program; 6, concert, Benjamin Rader's orchestra; 9, program.

KYW, Chicago, Ili. (Central, 536), 11:35 a. m., table
talk, Mrs. Anna J. Peterson; 6:35-7 p. m., children's
bedtime story, Uncle Bob; 7-7:30, dlnner concert,
Congress hotel; 7:30-7:45, around the town with KYW;
8-8:20, Angle Montgomery, contralto; Kathryn Orr,
accompanist; George Horne, baritone; Sallie Menkes,
accompanist; Ned Santry, tenor; 8:20-8:45, speeches,
auspices American Farm Bureau federation; 8:45-9:30,
musical program; 10-11:30, evening at home.

WAAM, Newark, N. J. (Eastern, 263), 11-11:15 a. m.,
Ada Bessie Swam, Radio Cooking School class; 11:30-

WDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., daily almanac; 12:02 p. m., Stanley theater organ recital; Arcadla cafe concert orchestra; 2, Arcadla cafe concert orchestra; 7:30, Dream Daddy; 7:50, "Both Sides of the Footlights," Arnold Abbott.

WEAF, New York, N. Y. (Eastern, 492), 11:10-11:30 a. m., Board of education; 11:45-12 m., motlon picture forecast, Adele Woodard; 12:30-12:45 p. m., Arthur Stone, bilnd planist; 4:30-5, women's program; 6-7, WEAF Instrumental quartet; 7-8, University Eight orchestra; 8-8:15, Bank of America; 8:15-8:30, John F. Hill; 8:30-9, Gold Dust Twins; 9-10, National Carbon company—Eveready hour; 10-11, Goodrich Silvertown Cord orchestra, Joseph Knecht, director.

WEBJ, New York, N. Y. (Eastern, 273), 7-7:15 p. m., Blybrun's reviews of photoplays; 7:15-7:45, Bert Roborn's orchestra; 7:45-8, Masonic quartet; 8-8:15, Jean Moresco, tenor; 8:15-9, Feirsteln ensemble.

WEEI, Boston, Mass. (Eastern, 303), 6:30 p. m., Dok-Eisenbourgh and his Sinfonians; 7, Boston Edison Big Brother club; 7:30, Somerford Mandolin quintet, Myttle M. Sattuck, leader; 8:15, Baxter trlo; 9, program, New York studio, Everyeady hour; 10, program, New York studio, Goodrich Silvertown Cord orchestra.

WFAA, Dallas, Texas (Central, 476), 12:30-1 p. m.,

Miytle M. Sattuck, leader; 8:15, Baxter trlo; 9, program, New York studio, Everyeady hour; 10, program, New York studio, Goodrich Silvertown Cord orchestra.

WFAA, Dallas, Texas (Central, 476), 12:30-1 p. m., Charles E. Osborne; 8:30-9:30, Mrs. H. H. White, Hugo Okla., singing with artists of two states accompanying; 11-12, Dwight Brown, organist.

WF1, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3:05, "Short Chats on Recent Novels," Ethel Kooker; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddles' pal; 8, Hebrew music; 9, Eveready hour from WEAF; 10, Goodrich Silvertown orchestra from WEAF.

WGBS, New York, N. Y. (Eastern, 316), 3-3:20 p. m., Janet Beecher, Olive Wyndham of "The Steam Roller," in an interview; 3:20-3:30, Leila Neland, spirituals; 3:30-3:40, vocational talk, Chas. Smlth; 3:40-4, plano lessons, Alfred S. Robyn; 6-6:30, Uncle Geebee; 6:20-6:30, Nettie Ellen Brady, story telling; 6:30-7:30, Larry Funk's ovehestra; 8-8:30, MacFadden period; 9:30-9:45, newspaper feature; 10:30-11, Richard B. Gilbert, Tarapatch; 11-12, Vincent Rose orchestra.

WGN, Chicago, Hi. (Centrai, 370), 1:40 p. m., luncheon concert, Drake Concert ensemble, Blackstone String quintet; 3, rocking chair time, Chlcago Tribune and Liberty Magazine; 5:30, Skeezlx time for the children, Quin Ryan; 6, organ recital, Lyon & Healy; 6:30-7, dinner concert; 8-9, program, Chicago Association of Credit Men; 10-11, dance numbers, Don Bestor Drake orchestra.

WGR, Buffalo, N. Y. (Eastern, 3i9), 2:30-4:30 p. m., Buffalo Courier and Enquirer musical program; 6-7:30, Hallpryd string quartet; 9-10, "Eveready Hour" jointly with WEAF; 10-11, Goodrich "Silvertown Cord" orchestra jointly with WEAF, WGY, Schenectady, N. Y. (Eastern, 380), 2 p. m., "Hoppe Dressmaking," Mrs. Arthur Crocker: 6:30, dinner music, Hotel Ten Eyck trio; 7:45, drama talk; 8, "The Isle of Asuwere," musical comedy, The Sphinx players; 11:20, Stephen E. Bolsclair, organist.

WLS. Chicago, III. (Central, 345), 12 m., Nick Lucas and his guitar; 6:30 p. m., Ralph Emerson, organist; 7, lullaby time; 7:15, Grace Wilson, contralto; 7:30, Isham Jones and his orchestra; 7:45, Adele Blower Waskow, contralto; 8-9, "What the Farm Bureau Member Gets for His Money," George A. Fox; Fiorence K. White, soprano; 9-10, Hollingsworth, Kruger and Hollingsworth; 10, Isham Jones; 10:15, Irving Epstein, violinist; 10:30, Isham Jones and his orchestra; 10:40, Ford and Glenn; 11, "Evolution of Sunshine and Rain Storms," popular song writers; 12, midnight revue, Ralph Emerson, organist; Isham Jones and his orchestra; Ford and Glenn.

WLW. Cincinnati, Ohio (Central, 423), 12:15 p. m., Woody Meyers' orchestra; concert, Dealta Omicron sorority; 4, Mah Jongg lecture, Lucy Blackburn; 10, Keefer-Kocker orchestra: Ohio Rubber quartet, Instrumental trio; Goldie Weiland, soprano.

WMAQ. Chicago, III. (Central, 447.5), 12 m., weekly programs, ausplees of the Illinois Manufacturers' association; 4 p. m., American Red Cross home nursing talk, Estelle Weitman; 4, program. Gunn School of Musie; 5, "The Lullaby Lady," Mrs, Gene Davenport; 6, Chlcago theater organ; 6:30, Hotel LaSalle orchestra; 8, Dally News book review, Harry Hanseu; 8:20, travel talk, Clara E. Laughlin; 8:40, Association of Commerce weekly talk; 8:50, lecture, University of Chlcago; 9:15, Leo Sowerby program, concerto Leo Sowerby, Joseph Brinkman.

WMC, Memphis, Tenn. (Central, 501), 12 m., musical program, O. K. Houck Piano company; 8 p. m., bedtime story, Uncle Joe; 8:30, classical program, arranged by Dr. George L. Powers; 11, midnight frolic.

WNJ, Newark, N. 1, (Eastern, 233), 10:30-12:30 a. m., Frank Daily and hls Meadow Brook dance orchestra.

program, O. A. Houck Plano company; 8 p. m., bedtime story, Uncle Joe; 8:30, classical program, arranged by Dr. George L. Powers; 11, midnight frolic.

WNJ, Newark, N. 1, (Eastern, 233), 10:30-12:30 a. m., Frank Daily and his Meadow Brook dance orchestra.

WNYC, New York, N. Y. (Eastern, 526), 7:30-7:35 p. m., police alarms; 7:35-7:45, sports analysls, Thornton Fisher; 8:30-9, studio program; 9-10, Brooklyn Mark Strand program, Edward L. Hyman, direct from theater; 10:30-11, Brooklyn Mark Strand program.

WOAW, Omaha, Nebr. (Centrai, 526), 6 p. m., "Advice to Lovelorn" period, conducted by Cynthia Grey of the Omaha Daily News; 6:25, dinner program, transmitted from WOAW's remote control studio in the May Seed & Nursery company building, Shenandoah, Iowa; 9, program, courtesy of Phi Beta Pi Medical fraternity presented in conjunction with their National Convention in Omaha; 10:30, Wowl frolic by Frank Hodek, Jr., and his Omaha Nightingales.

WOO, Philadelphia, Pa. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 5:15, organ recital, Mary E. Vogt; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 5:15, organ recital, Mary E. Vogt.

WOR, Newark, N. J. (Eastern, 405), 7-7:30 a. m., WOR morning gym class; 2:30-2:45 p. m., Arline Felker, soprano; 3:15-3:30, Arline Felker; 6:15-6:30, "Music While You Dine," Halsey Miller's orchestra; 6:30-6:45, man-in-the-moon stories, Wm. F. B. McNeary and Josephine Lawrence of the Newark Sunday Call; 7-7:15, Halsey Miller's orchestra; 7:15-7:30, resume of the day's sports, Jolly Bill Stelnke.

WQJ, Chicago, Iii. (Centrai, 448), 11-12 m., talk, Mrs. Jessie M. DeBoth; "The New Year and Its Resolutions," Rev. Jesse E. Torson; "The American Flag." Mrs. Harry D. Hammer; 3-4 p. m., "New Year's Resolutions," Cora Beeman; "Seasoning to Taste," Mrs. Helen Ruggles; "Who Went to Jall?" Walter

Earl Burtnett is the leader of Earl Burtnett's Los Angeles Biltmore Hotel dance orchestra heard at KHJ every night. Besides discipling his orchestra Mr. Burtnett is the author of many of the popular songs heard all over the country.



Anne Campbell is the Detroit News poet and will read her poetry this week at WWJ, Detroit, Friday, January 2.

children's period; 8, program, Trec of Life congregatiou; 8:30, program, Edmont Hains Evangelistic party; 11, concert, Pittsburgh Post studio.

KFI, Los Angeles, Calif. (Pacific, 469), 5-5:30 p. m., Evening Herald, table talk, news; 5:30-6, Examiner musical half-hour; 6:45-8, Aeolian residence pipe organ recital, Dan McFarland, organist; 8-9, Koetter's instrumental trio; 9-10, Examiner, program by Women's Press club; 10-11, Packard ballad hour.

KFNF, Shenandoah, Iowa (Central, 266), 7:30 p. m., concert from Neliawka, May Schilletemeter, director.

KFOA, Seattle, Wash. (Pacific, 455), 12:30-1:30 p. m., Kiwanis cinb luncheon program; 6-6:30, concert, Seattle Post-Intelligencer; 6:45-8:15, program; 8:30-10, musical: 10:05-11, Eddie Harkness' Jazz orchestra.

KFQX, Seattle, Wash. (Pacific, 238), 7:15-7:45 p. m., Aunt Vivien's bedtime story; 3-9, Earl Gray and his orchestra; 9-10, concert hour; 10-11, Earl Gray and his Butler hotel orchestra.

KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-11:30 a. m., sunshino hour; 3:30-4:30 p. m., organ recital, Esther Frieke Green, organist; 6:30-7:30, children's hour, presenting Harry James Beardsley (Cousin Jim.)

KGO, Oakland, Calif. (Pacific, 312), 1 p. m., luncheon concert Pacific States Electric company: 4-5:30, con-

KGO, Oakland, Calif. (Pacific, 312), 1 p. m., luncheon concert, Pacific States Electric company; 4-5:30, concert orchestra, Hotel St. Francis; 8, program, church music, Grace Cathedral choir, Wheeler Beckett, director; 10-1 a. m., dance music, Henry Halstead's orchestra.

KGW, Portland, Ore. (Pacific, 492), 5 p. m., children's program, story, Uncle Dave; 8, agricultural lecture, Oregon Agricultural College Extension service; "Operating the Furnace," George W. Kahle; "Interpretation of Market Reports," C. J. Hurd; 8:30, concert, Ethel Read: 10 dance music. Multiomath hotel Rand; 10, dance music, Multnomah hotel

strollers.

KHJ, Los Angeles, Calif. (Pacific, 395), 12:30 p. m., Tommy Tlibbets and his Rendevouz Ballroom orchestra; 6-6:30, Art Hickman's concert orchestra, Edw. Fitzpatrick, director; 6:30-7:30, Prol. Waiter Sylvester Hertzog, stories American history, weekly visit of Queen Titania and the Sandman of Fairyland; 7:30, "Samoa," Bertran E. Sandham; 8-10, program presented, Broadway Department store; 10-11, Earl Burtnett's Biltmore hotel dance orchestra.

KJS, Los Angeles, Calif. (Pacific, 360), 8-9:30 p. m., apecial yocal and instrumental program with organ numbers.

KNX, Hollywood, Calif. (Pacific, 337), 8 a. m., morning prayer; 9-10, program of State Board of education; 10:30, Mrs. Kate Brew Vaughn home economics; 6-7:30, dinner hour music; 8-9, Paulais Venetian orchestra; 9-10, feature program, 10-11, Abo Lyman's

Cocoanut Grove dance orchestra.

KPO, San Francisco, Calif. (Pacific, 423), 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 storlen, Big Brother; 7-7:30, Rudy
Selger's Fairmont hotel orchestra; 8-10, vocal and

The MacDowell Sisters (above), called the "Sweethearts of the Air," are favorites at both WFAA, Dallas and WBAP, Fort Worth. They specialize in Hawaiian airs.

lecture, address; 8:30-10:30, concert; 11:30-12, organ concert.

WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m., dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 7:46, special feature; 8:30, concert; 9, concert, National Carbon company's Evercady entertainers; 10, concert, Goodrich Silvertown Cord orchestra.

WCCO, Minneapolis-St. Paul, Minn. (Central, 417), 10:45 a. m., home service, 'Quickbreads,' Betty Crocker; 2 p. m., League of Women voters; 2:30, popular concert, Agnes Fryberger; 4, magazine hour, reading "Tho Magpie," "The Cop and the Anthem;" 5:30, children's hour; 6:15, feed talk; 6:30, dinner concert, Biley's concert orchestra; Mrs. Roberta Holderman, inezzo; Eleanor Freemantal, accompanist.

WCX, Detroit, Mich. (Eastern, 513), 4:15 p. m., music; 6, dinner concert, Book-Cadillac hotel; 7, musical program; 10, The Red Apple club, orchestra.

WDAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., the Star's string trio; 5-5:30, weekly child-talent program, Mrs. Virginia Tisdale Stroud, director; 6-7, school of the alr, plane tuning-in number on the Dio-Art; twelfth of a series of Radio plane lessons, Maudellen Littlefield; the Tell-Me-a-Story Lady; music, Hotel Muchlebach Trianon ensemble; 11:45-1 a. m., nighthawk froile, the "Merry Old Chief" and the Plantation players; Cordsen-Mac's orchostra.

l1:45, latest news of amateur world; 11:45-12, Fisher Beer Musleal program; 3-3:45 p. m., Radio tea party, ausplees of the Home Economics department; 6:15-7:15, dinner music, Jack Prezle's orhestra; 8-8:15, Ledger Lady Radlo Cupid; 8:15-8:30, Lilliau Spltzer, planlst; 8:30-8:45, Narclsse-de-Chine, soprano; 8:45-9:15, Jack Nelson's orchestra, dance program; 9:30-9:45, Narclsse-de-Chine; 9:35-10:15, Marlnello girl and Marinello twins, musical novelty; 10:15-11, Flint Kid, song-writer and entertainer.

WBAV, Columbus, Ohio (Eastern, 423), 8 p. m., WBAV orchestra, Frances Handibeau, director.

WBZ, Springfield, Mass. (Eastern, 337), 6-7 p. m., concert; 7:10, klddles' bedtime stories; 7:15-7:30, lecture, address; 8:30-10:30, concert; 11:30-12, organ concert. mades hour program, Sweeney Radio (110; 8-3, special program).

WHN, New York, N. Y. (Eastern, 360), 2:15-3:15 p. m., overture and vaudeville, State theater; 6:30-7, Strand Roof entertalners; 7-7:10, "Personal Chats of the Stage and Screen." E. S. Colling, movie critle; 7:10-7:30, WHN employment broadcasting; 9:30-9:37, Evening Bulletln current news; 9:37-10, Bertram J. Goodman's orchestra; 10-10:30, Loew's Vandeville Headliners; 10:30-11, The New Rockwell Terrace revue; 11-11:30, Club Rose revue.

WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Karl Bonawltz, organist; 3, recital, students Sternberg School of music; 6:04, Harvey Marburger and his vandeville orchestra; 7, Uncle Wip's bedtime stories; 8:15, recital, Eugenc Tkacz, violinist; Georgo Tomoski, pianlst; Philadelphia Police band; 10:30, "Emo's Weekly Movie Broadcast," 11, Harvey Marburger and his vaudeville orchestra.

Weekly Movie Broadcast," 11, Harvey Marburger and his vaudeville orchestra.

WJJD, Mooscheart, Ill. (Central, 278), 3:30-4:40 p. m., nusic, Mooscheart children, Mooscheart assembly; 6:30-7:15, Albert F. Brown, organist; 7:15-8:15, Mooscheart Concert band; talk, M. P. Adams.

WJY, New York, N. Y. (Eastern, 405), 7:30-9 p. m., Christmas carol concert, John Wanamaker's Cadet choir, 200 mixed voices, J. T. Noe, director; 9-9:30, "Political Situation in Washington Tonight," Frederick William Wile, from WRC, Washington; 9:30-10, Darl Bethman, baritone; 10-11, "Italy and Holy Year," Wirt W. Barnitz.

WJZ, New York, N. Y. (Eastern, 455), 7-7:30 p. m., "Irish Setters." Frank Dolo; 8:30-9:15, Estey organ, recital; 9:15-10:15, U. S. Navy night, Navy Yard band, WKAQ, San Juan, P. R. (Intercolonial, 360), 9-10:30 p. m., Euterpe Jazz band.

p. m., Euterpe Jazz band.



McPeek; 7-8, dinner concert, Ralph Williams and his Rainbo Garden orchestra; Albert M. Tilton, Jr., tenor; Marle Watson Tilton, accompanist; Dorothy David Dillow, soprano; 10-2 a. m., Ralph Williams and his Rainbo Skylarks; Harry Gelse; Nubs Allen, contraito; Will Rossiter; Bernard and Robinson, "The Dixie Stars"

Stars."

WRC, Washington, D. C. (Eastern, 469), 7 p. m., children's hour, Peggy Albion; 7:15, dinner music. New Willard Meyer Davis orchestra; 8:15, "Show Shopping," Leonard Hall; 9, "The Political Situation in Washington Tonight," Frederic William Wile; 9:20, Irving Boernstein's Wardman Park hotel quartet: 10:15, Meyer Davis' Lo Paradis orchestra.

WWJ, Dotroit, Mich. (Eastern, 513), 3 p. Detroit News orchestra; 8:30, The Detroit chestra; Barbara Case, soprano; S. J. Sho

(Continued on page 12)

Bill Sharp is only one of the many accordion soloists who will be a part of the accord-

ion contest Saturday,

December 27, at KFNF, Shenandoah.

Tune in and be one of

the judges.

# RADIO PROGRAMS ASSIST OLD Y

#### Where to Hear Concerts

Central Standard Time

THESE are the stations for music lovers to dial, and you can hear, providing you dial correctly and read the programs carefully, everything from jazz to opera.

Saturday, December 27: 6, CKAC, WCX, WGN, WGR; 6:15, WRC; 6:30, WGN; 6:35, WNYC; 6:45, WTAY; 7, WGN; 6:35, WNYC; 6:45, WTAY; 7, KYW, WDAR, WJZ, WLS, WOR, WQJ; 7:15, WFI, WIP, WLS; 7:30, CKAC, KDKA, KFI, KFNF, PWX, WBZ, WHAS, WJZ, WNYC, WOR; 8, KHJ, KNX, KPO, KYW, WBBR, WMAQ, WNYC; 8:15, WOR; 8:30, KTHS, WCCO, WFAA, WGBS, WMC; 8:40, WBBR; 9, KNX, WGBS, WHN, WMAQ, WOAW, WTAY; 9:05, WOR; 9:15, WHN; 9:30, WGBS, WOR, WTAS; 9:35, KYW; 10, KFI, KFSG, KNX, WQJ; 10:05, WIP; 10:30, KFOA; 11, KFI, KFQX, KHJ; 11:15, WRC; 11:30, WTAS; 12, WCAL.

Sunday, December 28: 6, WJZ; 6:20, WEAF, WEEI; 6:30, KFNF, WLS; 7, KYW, WDAR, WJZ, WLS; 7:15, WJY; 7:30, WBZ, WFAA, WGY; 7:45, WJZ; 8, WCBD, WGY, WHAA, WQJ; 8:10, WBBR; 8:15, KFGZ; 8:30, KHJ, WCAL; 8:35, KFGZ; 9, KFI, KFSG, KGW, KHJ, WBBR, WGN, WHAA, WOAW; 9:07, WHN; 9:15, WCCO; 9:30, WEEI, WFAA, WOC, WTAS; 10, KFI, KHJ, KJS, KNX; 10:30, KFI, KPO; 11, KNX; 11:30, WTAS; 12, KFSG, WHB.

Monday, December 29: 6, WCX, Monday, December 29: 6, WCX, WEAF, WGN, WGR, WMAQ, WOAW; 6:15, WEAF; 6:30, WCAU, WGN, WJJD, WOO; 6:45, WGY; 7, KFGZ, KSD, WBBR, WBZ, WOR; 7:15, KDKA, WAAM, WGR; 7:30, KDKA, KFI, WCAE, WEAF, WHO, WNYC, WOR, WRBC; 7:40, WBBR; 8, KFOA, WCBD, WGR, WHAZ, WHO, WOC, WOS; 8:15, WAAM, WJZ; 8:30, CHNC, KOB, WCCO, WEEI, WFAA, WMC, WOR, WOS; 8:45, KFGZ, KSD, WAAM, WJZ; 9:30, KFAE, KFKX, WCAE; 10, KGW, KNX, KPO, WGR, WOC; 10:30, KFOA; 11, KFI, KFQX, KNX; 11:30, WJJD; 12, KNX.

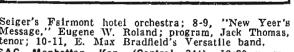
Tuesday, December 30: 6, KGO, Tuesday, December 30: 6, KGO, KSD, WCX, WGN, WMAQ; 6:15, WRC; 6:25, WOAW; 6:30, WCCO, WEEI, WGN, WJY; 6:45, WCAE, WEBJ, WTAY; 7, KDKA, KYW, WFI, WGY, WQJ; 7:15, WAAM, WEBJ, WEEI, WJP, WJJD; 7:30, KDKA, KFI, KFNF, WAAM, WBZ, WCAE, WEAF, WHAS, WJZ, WNYC; 8, KFOA, KHJ, KNX, KYW, WCAE, WEAF, WEEI, WFI, WGN, WGR, WHAA, WHB, WNYC; 8:15, WJZ;

8:20, WRC; 8:30, KFOA, WAAM, WFAA, WJX, WMC; 8:45, KFI, KFOA, KYW, WAAM; 9, CNRR, KSD, WCAE, WEEI, WHN, WOAW; 9:15, WAAM, WMAQ; 9:30, WHN, WNYC; 10, KDKA, KFI, KGO, KHJ, KJS, KPO, KYW, WQJ; 10:20, WGY; 10:30, KGW, WBZ; 11, KFI, KFQX, KNX, WFAA; 11:15, WHO; 12, KFI.

Wednesday, December 31: 6, KGO, Wednesday, December 31: 6, KGO, WCX, WGN, WMAQ; 6:30, WEAF, WEEI, WGN, WJJD, WOO; 6:45, KSD, WCAE, WHN, WTAY; 7, KYW, WCAU, WEEI, WHB, WQJ; 7:15, KDKA, WAAM, WIP; 7:20, WEAF, WGR; 7:30, KDKA, WFI, KFNF, PWX, WAAM, WBZ, WCAE, WHAS; 8, KFOA, KHJ, KNX, KYW, WAAM, WCBD, WDAF, WGN, WGY, WOC, WOR; 8:15, KFGZ; 8:30, WMAQ; 8:45, KFI, KFOA, WNYC; 9, KNX, KSD, WCCO, WMAQ, WTAY; 9:03, WDAR, WOO; 9:15, WAAM; 9:30, KFAE, KFI, WAAM, WCAE; 9:35, WNYC; 9:45, KYW; 10, KDKA, KFI, KGO, KHJ, WEEI, WQJ; 10:15, WJZ; 10:30, KFOA, WOC; 11, KFQX, KNX; 11:55, WGY.

Thursday, January 1: 6, KGO, Thursday, January 1: 6, KGO, WCCO, WCX, WRC; 6:30, WEAF, WEEI, WGN; 6:45, WTAY; 7, WEAO, WGY, WQJ; 7:15, WRC; 7:20, WBBR, WOC; 7:25, WEAO; 7:30, KDKA, KFNF, WCAE, WHAS, WWJ; 7:40, WBBR; 8, KFOA, WCBD, WHB; 8:20, KYW, WRC; 8:30, WFAA, WMC; 8:45, KFOA; 9, WCAL; 9:10, WHN; 9:30, KFSG; 10, KDKA, KFI, KGO, KHJ, KJS, KPO, KYW, WGBS, WQJ; 10:03, WLW; 10:30, KFOA, WLW; 11, KPI; 11:15, KFSG; 12, KFI, KFSG.

Friday, January 2: 6, KGO, WCX, WGN, WMAQ, WOR; 6:30, WCAU, WGN; 6:45, WTAY; 7, KYW, WBAV, WDAR WEAF, WEBJ, WEEI, WGY, WHB, WQJ; 7:15, KDKA, WAAM, WEBJ, WJJD; 7:30, KDKA, KFI, KFNF, WCAE, WEAF, WGR, WHAS, WHO, WNYC; 7:45, WEBJ; 8, KHJ, KSD, WCAE, WEEI, WGN; 8:15, WAAM; 8:30, KNX, KOB, WFAA, WJZ; 8:45, KFI, WAAM; 9, KFGZ, KYW, WAAM, WBZ, WDAR, WEAF, WGR; 9:10, WHN; 9:15, WMAQ; 9:30, KFAE, WGR, WGR; 9:45, KFGZ; 10, KHJ, KNX, WHN, WQJ; 11, KFQX, KYW; 11:30, WJJD; 12, KFI, KFSG, KNX. Friday, January 2: 6, KGO, WCX,



Seiger's Fsirmont hotel orchestra; 8-9, "New Yeer's Message," Eugene W. Roland; program, Jack Thomas, tenor; 10-11, E. Max Bradfield's Versatlle band.

KSAC, Manhattan, Kan. (Cantral, 341), 12:30 p. m., Gertrude Doud Tetrick, reader; "Poultry House Conveniences," D. J. Taylor; "The Treatment of Animal Diseases," J. F. Bullard; 7:20, Radio College quartet; "Lighting in the Home," R. G. Kloeffer; Radio College gustet: 7:45 "Things That Help in Cold College quartet; 7:45, Weether, R. F. Flagg. "Things That Help in Cold

KSD, St. Louis, Mo. (Central, 546), 6:45 p. m., Abergh's concert ensemble, Arne Arnesen, violinist; 9, program; 12, midnight frolic, Missouri theater.

(YW Chlcago, III. (Central, 536), 11:35 a. m., teble talk, Mrs. Anna J. Peterson; 6:35-7 p. m., children's bedtime story, Uncle Boh; 7-7:30, dinner concert, Congrese hotel; 8-9, Alice Sarno, soprano; Natalina Virgamini, mezzo soprano; Sallie Menkes, pianist; Art Linick, KYW's comedisn; 9:45-2:30 a. m., midnight revue, Coon-Sandere Original nighthawks.

PWX, Havana, Cuba (Eastern, 400), 8:30 p. m., concert, Municipal hand, Modesto Fraga, band leader.

WAAM, Newark, N. J. (Eastern, 263), 11-11:30 a. m., cornet, piano and vocal numbers, Rev. Edmund Haimes, John A. Scott; 11:45-12, Fisher Beer, musical program; John A. Scott; 11:45-12, Fisher Beer, musical program; 6:15-7:15 p. m., Irv Brodley's Melody boys; 8-8:15, Ledger Lady Radio Cupid; 8:15-8:30. Novelty entertainers; 8:30-8:45, Jimmy La Felle; 8:45-9, The Milk kid; 9-9:15. Threo Precious Jewels; 9:15-9:30, The Milk kid; 9:30-9:45, dance music; 10:15-10:30, Liba Brown, soprano; 10:30-11, Edwin G. Riny, baritone. WBZ, Springfield, Mass. (Eastern, 337), 6-7 p. m., concert; 7:10, kiddles' bedtime stories; 7:15-7:30, lecture, address; 8:30-10:30, concert; 11-12, Leo F. Reisman and his Hotel Brunswick orchestra.

WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m., dinner concert, William Penn hotel; 7:30. Uncle Kaybee; 7:45, special feature; concert, Philharmonic orchestra; 10:30-2 a. m., concert, Nixon restaurant.

WCAU, Philadelphia, Pa. (Eastern, 278), 6 p. m., Meyer Davie Hotel Pennsylvanla dance orchestra; 7:30, talk; 8, Beyer Icc Cream company's half-hour of song; 8:20. Inshing talk

8; Beyer 8:30, fashion talk.

8:30, lashlon talk.

WCBD, Zion, III. (Contral, 345), 8 p. m., Zion whiterohed cholr; address, Wilhur Glenn Vollva; violin
duete, Richard Hire, Sydney Stewart; J. D. Thomas,
baritone; Mrs. J. D. Thomas, soprano; Edith Carcy,
contralto; Richard F. Hirc, pianist; euphonlum solos,
Wiliam C. Dunn; Paul Stewart, cornetist; Louise
Burgess, reader.

Burgess, reader.

WCCO, Minneapolis-St. Paul, Minn. (Central, 417), 10:45 a. m., home service, Betty Crocker; 2 p. m., women'e hour; 2:30, matinee musicalo; 4. magazine hour, 'Three Wise Men;' 5:30, Alpha Stalson; 6, sport talk; 6:30, weekly review flour, feed and flax markete, Henry Bellows; 7, midweek service, Park Avenue Congregational church, Rev. William Dudley, pastor; 9, concert, surpriso program; Minneapolis Athletic club orchestra, C. Eddy Fortier, leader; 11:45, watch meeting, Rev. J. W. Holland

WCX. Detroit Mich. (Eastern, 513), 4:15 p. m., music.

WCX, Detroit, Mich. (Eastern, 513), 4:15 p. m., music, 6, dinner concert, Book-Caditiae hotel; 7, muelcai

WDAF Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., the Star'e string trio; 6-7, echool of the air, plano tuning-in number on the Duo-Art; addrees, speaker auspicee Health Conscrvation association; address, speaker auspices Meat Council of Greater Kansas City; the Teli-Me-a-Story Lady; mueic, Hotel Muchicbach Trianon consemble; special New Year'e eve frolic.

WDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., dally alinanac; 12:02 p. m., Stanley theater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 7:30, Dream Daddy's bedtimo



stories; 8, Dr. Earl Reiguel, talk; "Conversation Corner," Arnold Abbott; 10:93, Areadia cafe concert orchestra.

WDBY, Chicago, Ill. (Central, 258), 7 p. m., Bible lesson, Rev. J. C. O'Hair.

WEAF, New York, N. Y. (Eastern, 492), 11-12 m., young mother's program; 6-7 p. m., dinner music, WEAF Instrumental quartet; 7-7:30, services, United Synagogue of America; 7:30-8, Felian Garzia, pianist; 8:20-10, N. Y. Philharmonic orchestra concert; 10-11, Oratoria society of Christian Science institute; 11-12, Meyer Davis Lido Venice orchestra.

WEEI, Boston, Mass. (Eastern, 303), 6:30 p. m., Dok-Eisenbourg and his Sinfonians; 7, Boston Edlson Blg Brother club; 7:30, Helen Tracy, pianist; 8, Philharmonic concert, Philharmonic Society orchestre; 11, Fenway theater midnight organ recitai, Lloyd G. Del Castillo.

WFAA, Dallas, Texas (Central, 476), 12:30-1 p. m.,

WFAA, Dallas, Texas (Central, 476), 12:30-1 p. m.,

music, representative of a Dallas theater.

WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer
Davis Bellevue Stratford concert orchestra; 3:15,
Loretta Kerk, pianist; 6:30, Meyer Davis Bellevue
Stratford concert orchestra; 7, Sunny Jim, the kiddies'

Stratford eoncert orchestra; 7, Sunny Jim, the kiddies' pal.

WGBS, New York, N. Y. (Eastern, 316), 3-3:20 p. m., interview with Anna Fitzu; 3:20-3:30, Belle Bart, astrologist; 3:40-4, Dr. Meredith Campbell, physician; 6-6:30, Uncle Geebce; 7-7:30, Norman Anthony and George Mitchell, humorists.

WGN, Chicago, Ill. (Central, 370), 1:40 p. m., luncheon concert, Drake Concert ensemble, Blackstone String quintet; 3, rocking chair time, Chicago Tribune and Liberty Magazine; 5:30, Skeezix time for the children, Quin Ryan; 6, organ recitai, Lyon & Healy; 6:30-7, dinner concert; 8-9, Lyon & Healy special artists; 10-11, Drake hotel orchestra.

WGR, Buffalo, N. Y. (Eastern, 319), 2:30-4:30 p. m., Buffalo Courler and Enquirer musical program; 6:30-7:30, dinner music. Vincent Lopez Hotel Statler dance orchestra, Harold Gieser, director; 8:20-10, Philharmonic concert, jointly with WEAF; 11, supper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gleser, director.

WGY, Schencetady, N. Y. (Eastern, 380), 9 p. m., community watch-night service, Churches of Schencetady, at First Methodist church; Antonin Honicky, violinist; Mrs. Carolyn Mann, organist; male quartet, John Lloyd, William A. Scott, tenors; Paimer Laughlin, baritone; John Rexford, bass; congregational singing, C. W. Howgate, director; soprano and tenor duet, Mrs. Charlotte B. Gilbert, John Lloyd; "Now Year's Messeage" Walter H. Maln. 11:55-12:30 a. m., Trinity C. W. Howgate, director; soprano and tenor duet, Mrs. Charlotte B. Gilbert, John Lloyd; 'Now Year's Message,' Walter H. Main; 11:55-12:30 a. m., Trinity chlmes from New York, WJZ.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., se-

letions, Alamo theeter orchestra; 7:30-9, Alemo thea-

ter orchestra.

WHB, Kansas City, Mo. (Central, 411), 2-3 p. m., Iadies' hour progrem, Sweeney Radio trio; 7-8 program, plano pupils of Gertrude Concanon; voice pupils of Herman Springer; violin pupils of Harry Kaufmann.

WHN, New York, N. Y. (Eastern, 360), 5-5:30 p. m., Johnny DeDroit and his Balconades orchestra; 6:30-7.

Vincent Catanese, and his Alamac orchestra; 7-7:30 Vincent Catanese and his Alsmac orchestra; 7-7:30, Herry Richman and his entertainers with Eddie Elkins and his orchestra; 7:45-7:55, Cantor Noah Levine, eongs; 7:55-8, "Cepital Punishment among the Jewe," Moses Hoenig; 9:30-9:37. Evening Bulletin current news; 9:37-10:07, Roso-Danceland orchestra; 10:07-11:07, Clover Gardens dance orchestra; 12-12:30 a. m.,

news; 337-107, Ross-Dancetand circlestra; 12-12:30 a. m., Strand Roof entertainers.
WHO, Des Moines, Iowa (Central, 526), 7:30-9 p. m., dance program, Bankers' Life Radio orchestra. Wm. L. Marsh, director; Mrs. Louis F. Bond, soprano.
WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Gimbei tea room orchestra, Ray Steen, director; 3, Walton concert quartet; 6:05. Art Coogan and hie Club Msdrid orchestra; 7, Uncle Wip.
WJJD, Mooseheart, III. (Central, 278), 3:30-4:30 p. m., music, Mooseheart children; 6:30-7:15, Albert F. Brown, organist; 7:15-8:15, Philharmonic orchestra; junior band.
WJZ, New York, N. Y. (Eastern, 455), 10:30-11:30 a. m., "Music for Children," Mrs. Harriet Ayer Seymour; 11:15-12:15, p. m., New Year's watch eervice and chimes of Trinity church.
WKAQ, San Juan, P. R. (Intercolonial, 360), 8-9:30 p.

WKAQ, San Juan, P. R. (Intercolonia), 360), 8-9:30 p. m., Municipal hand, Jesus Figueroa, director.

m., Municipal hand, Jesus Figueroa, director.

WLS, Chicago, III. (Central, 345). 12 m., Nubs Allen:
6:30, Rulph Emerson, organist; 7. Iuliaby time; 7:15,
WLS theater, Wallace Bruce Amsbary in "Theme
Eternal," "On the Middle Division;" 7:40-8, Graco
Wilson, contralto; Ford and Glenn.

WLW, Cincinnati, Ohio (Central, 423), 12:15 p. m.,
dance program, Brunswick Shop orchestra; program,
Phi Epsilon sorority; 4, concert for the shut-ins,
Duning Benevolent and musical service; Lillian Aldrich Thayer Settlement schools and other firstitutions;

rich Thayer Settlement schools and other firstitutions; 8, Chubb-Steinberg orchestra; Oliver Plunkett, tenor; 8:55, concert entertsinment, Formica band and orchestra, Walter Esberger, director; Marle Lindsey, violinist.

wMAQ, Chicago, III. (Central, 447.5), 1 p. m., speeches, weekly luncheon of the Association of Commerce; 4, beauty talk, Mme. Grace Earl; 4:30, program, Cosmopolitan School of Music; 6, Chicago theater organ recital; 6:30, stories for the children, Georgene, Faulk-

recital; 6:30. stories for the children, Georgene Faulknor; 8, weekly lecture, Northwestern univorsity; 8:30,
music; 9, muelc.
WMC, Memphis, Tenn. (Central, 501), 12 m., musical
program, from O. K. Houck Plano company.
WNJ, Newark, N. J. (Eastern, 233), 10:30-12:30 a. m.,
Frank Dally and his Meadow Brook dance orchestra.
WNYC, New York, N. Y. (Eastern, 526), 7:30-7:40
p. m., polico alarms; 8:30-9:45, "Appreciation of
Muelc," Dr. Henry T. Fleck; 9:45-10, studio program; 10:30-10:35, police alarms; 10:35-12, New
Year's Eve program.
WOC, Davenport, Ia. (Central, 484), 8 p. m., organ

WOC, Davenport, la. (Central, 484), 8 p. m., organ

recital, B. J. Palmer residence, Erwin Swindell, organist; Howard A. Carroll, tenor; 10:30, special New Year's Eve Rudio party; Lonis Connor and his Leclaire Winter Garden orchestra.

Winter Garden orchestra.

W00, Philadelphia, Pa. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 5:15, organ recitel, Mary E. Vogt; 7:30, A. Candelori and his Adelphia hotel ensemble; violin solos, A. Candelori; 9, WOO orchestra, Robert E. Golden, director; 10:03, organ recital, Harriette G. Ridley; 10:30, Vincent Rizzo and his Hotel Sylvania dance orchestra.

W0R, Newark, N. J. (Eastern, 405), 7-7:30 a. m., WOR morning gym class; 6:15-7:15 p. m., Harry Cox' Robert Treat orchestra; 7:15-7:30, resume of day's sports, Jolly Bill Steinke; 8-8:15, Gene Ingraham's Great Netch Inn orchestra; 9-9:15, Standard Booking oompany presents a program; 9:30-9:45, Armstrong, Literery Digest Radiolog.

W0S, Jefferson City, Mo. (Central, 440.9), 8 p. m.,

Wjjd 9:30,

8, Wae Kpo

Weel Kigs

Wda

8:37 Wex

Cks( Wip

Khj, Kfos

31: | Waa

10, Wgc Wod Kfo: Ksd Knx

8, Wbt

WOS, Jefferson City, Mo. (Central, 440.9), 8 p. m., "If Your Farm Could Talk," D. C. Woods; 8:15, "Physical Education and the Formation of Habits," Dr. Henry S. Curtis; 8:30, "Fiddlin" program, Henry Taylor.

Henry Taylor.

WQJ, Chicago. III. (Centrai, 448), 11-12 m., talk, Mrs. Wilbur E. Fribley; "Exercises and Diet in Constipation," P. A. Leonherdt; "Holidey Desserts and Surprises." J. E. Davis; 3-4 p. m., "Planning for 1925," Helen Harrington Downing; "Counting Your Calories," Martha Logan; 7-8, dinner concert, Ralph Williams and his Reinho Gerden orhestra; 10-2 a. m., "A Huppy and Prosperous New Yeer."

WRRC Valuation Ind (Central 279), 7:20 p. m. WRBC, Valparaiso, Ind. (Central, 278), 7:30 p. m. Sylvester Communion service.

Sylvester Communion service.

WRC, Washington, D. C. (Eastern, 469), 3 p. m., Christmas service and chimes, Trinity church; 4, fashion developments of the moment, Elesnor Gunn; 4:10, George F. Ross, planist; 4:20, talk, Outlook; 4:30, tea music, Meyer Davie' New Willard hotel trio; 6, children's hour, Peggy Albion.

WWJ, Detroit, Mich. (Eastern, 513), 3:00 p. m., The Detroit News orchestra; 8, dance music. Jean Goldkette's orchestra and a epecial New Year's Eve pro-

#### Thurday, January 1

Thursday, silent night for: CHNC, CKAC, KFAE, KFGZ, KFQX, KGW, KOB, KSD, PWX, WAAM, WBAV, WBBG, WBZ, WCAU, WEBJ, WHAZ, WHO, WJJD, WJZ, WNJ, WOO, WOI, WOS.

KDKA, E. Pittsburgh, Pa. (Eastern, 326), 7:30 p. m., children's period; 8:30 concert; 11, concert, Pittsburgh Poet studio.

KFI, Los Angeles, Calif. (Pacific, 469), 8-9 p. ni., special New Year's program; 9-10, Examiner, dance orchestra; 10-11, instrumental and vocal music.

KFNF, Shenandoah, la. (Contral, 266), 7:30 p. m. concert, Brooke, Nebr.

KFOA. Seattle, Wash. (Pacific, 455), 6-6:30 p. m., concert, Seattle Post-Intelligencer; 6:45-8:15, program; 8:30-10, musical program; 10:05-11, Eddie Harkness' Jazz orchestra.

KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-11:30 a. m., sunshine hour; 3:30-4:30 p. m., organ recital, Roy Reid Brignail, organiet; 7:30-9:15, program, Butte Music company; 9:15-10, Temple choir and Silver band; 10-11, organ recital, Esthor Fricke Green.

(GO, Oakland, Callf. (Pacific, 312), 11:30-1 p. m., luncheon concert; 4-5:30, concert orchestra, Hotel St. Francis 8, Bernade Solls, planist; Frank Miller, baritone; Jenette Genter, violatst; Bacatollen string quartet; Virginia Treadwell, Contraito; Fern Backman, violinist; address, "New Year's Resolutions," C. S. S. Dutton; Grace Becker, cellist; Selma Mayer, so-

### Wednesday, December 31

(Continued from page 11)

Wednesday, silent night for: CHNC, CKAC, KFKX, KGD, KJS, WBAV, WCAL, WDBY, WEAD, WEBJ, WFAA, WHAZ, WJY, WMC, WDAW, WRC,

KDKA, E. Pittsburgh, Pa. (Eastern, 326), 7 a. m., morning exercises, O. Shannon; 8, morning exercises, O. Shannon; 12:15 p. m., concert. Daugherty'e orchestra; 6:15, dinner concert, Pittsburgh Athletic acsociation; 7:30, children's period; 8:15, program, University of Pittsburgh; 8:30, concert; 11, watch night services.

sociation; 7:30, children's period; 8:15, program, University of Pittsburgh; 8:30, concert; 11, watch night services.

KFAE, Pullman, Wash. (Pacific, 330), 7:30 p. m., George Krause, tenor; "Sweet Clover for Washington," Leonard Hegnauer; "Pointere on Dairy Farming," Prof. E. V. Ellington; book chat, Alic L. Webb.

KFGZ, Berrien Springs, Mich. (Central, 286), 7 p. m., hedtime story; 8:15-9:15, program, Berrien Springs Exchange club, Fred Green.

KFI, Los Angeles, Calif, (Pacific, 469), 5-5:30 p. m., Evening Herald, table talk, news; 5:30-6, Examiner musical half-hour; 6:45-7:50, detective stories, Nick Harris; 7:30-8, vocal recital; 8-9, program, Ruth Rogers, planist; 9-10, Examiner, literary program; 10-11, Don'e Melody makers.

KFNF, Shenandoah, lowa, (Central, 266), 7:30 p. m. special New Year's program, Brock Nebr.

KFOA. Seattle, Wash. (Pacific, 455), 12:30-1:30 p. m., Rotary club luncheon program; 6-6:30, concert. Seattle Post-Intelligencer: 6:45-8:15, musical program; 8:30-10, Seattle Times studio concert.

KFQX, Seattle, Wash. (Pacific, 238), 7:15-7:45 p. m., Aunt Vivien's hedtlme etory: 8-9, Earl Gray and his orchestra; 9-10, concert hour; 10-11, Earl Gray and his Butler hotel orchestra.

KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-11:30 a. m., sunshine hour; 2:30-4:30 p. m., auditorium service, Aimee Semple McPherson, pastor; 6:30-7:30, children's hour, Mrs. Edward Hughes of Eagle Rock, KGO, Oakland, Calif. (Pacific, 312), 11:30-1 p. m.

service, Almee Semple Michaerson, pastor; 6.307.30, children's hour, Mrs. Edward Hughes of Eagle Rock. KGO, Oakland, Calif. (Pacific, 312), 11:30-1 p. m., luncheon concert, Pacific States Electrical company; 3, musical program, Cora L. Williams institute; 4.5:30 concert orchestra, Hotel St. Francis; 10-1, pecial New Year's eve dance, Henry Halstead's orchestra.

recial New Year's eve dance, Henry Halstead's orchestra.

KGW, Portland, Ore, (Pacific, 492), 12:30 p. m., concert. Bill Darhy's orchestra; 5, children's program, story, Aunt Nell; 8, Colburn concert orchestra; 10, dance musle, Multnomah botel strollers.

KHJ, Los Angeles, Calif. (Pacific, 395), 12:30 p. m., Ahe Perluss and his Rose room orchestra; 2:30-3:30, Edward Murphy, reader; 6-6:30, Art Hickman's concert orchestra, Edw. Fitzpatrick, director: 6:30-7:30, stories American history. Prof. Waiter Sylvester Hertzog; 8-9. program, Pacific Mutual Life Insurance company; 9-1 a. m., J. Howard Johnson's "Radio Paesing Revue of 1924," with 50 artists.

KNX, Hollywood, Calif. (Pacific, 337), 8 a. m., morning prayer: 9, Town crier, news; 10:30, talk for women, Mrs. Kate Brew Vaughn; 6-7, dinner hour program; 7-8, Ambassador hotel concert orchestra, Josef Rosenfeld, director; 8-10, vaudevilie program, Carson-Baruch Baking company; 10-12, Hoilywoodland danco

KOB. State College, N. M. (Mountain, 360), 7:30-8:30

KOB. State College, N. M. (white and the college of the college of

# R OUT, WELCOME NEW YEAR IN



prano; 10-1, dance music. Henry Halstead's orchestra. KGW, Portland, Ore. (Pacific, 492), 12:30 p. m., concert, Civic Musle club; 5, children's program. KHJ, Los Angeles, Calif. (Pacific, 395), 8 p. m., special New Year's program, Mullen and Bluett with Philharmonic Cello quartet, Claire Forbes Crane, concert pianlst; 10-11, Earl Burtnett's Biltmore hotel dance, orchestra.

dance orchestra.

KJS, Los Angeles, Calif. (Pacific, 360), 8-9:30 p. m., special New Year program.

KNX, Hollywood, Calif. (Pacific, 337), open house at KNX all day, impromptu as visitors drop in; 10-11 p. m., Ahe Lyman's Cocoanut Grove dance orchestra, New Year's party.

KPO, San Francisco, Calif. (Pacific, 423), 1-2 p. m., Rudy Seiger's Fairmont Hotel orchestra; 4:30-5:30, Rudy Seiger's Fairmont Hotel orchestra; 5:30-6:30, abilitran's hour stories Rig Brother: 7-7:30, Rudy

Rudy Selger's Fairmont Hotel orchestra; 5:30-6:30, children's hour storles, Big Brother; 7-7:30, Rudy Selger's Fairmont Hotel orchestra; 8-9, Theodore J. Irwin, organist; 9-10, program, Annae K. Blotcky, Director; 10-11, E. Max Bradfield's Versatile band. KYW, Chicago, III. (Central, 536), 2:35-4:30 p. m., New Year's day frolic; 8-8:20, twenty minutes of good reading, Rev. C. J. Pernin; 8:20-9:20, musical program; 10-2:30 a. m., evening at home program. WBBR, New York, N. Y. (Eastern, 273), 8 p. m., Watchtower orchestra; 8:20, orlental music, Touffe Moubaid, Elizabeth Awad; 8:30, tenor duets, Fred Franz, Fred Twaroschk; 8:40, orlental music; 8:55, tenor solos, Fred Franz, Fred Twaroschk; 9:10, "The Dawn of a New Day," Judge Rutherford; 9:50, Watchtower orchestra.

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9:30, Kfi,

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Kfl. 11:45, Khj;

tower orchestra. WBZ, Springfield, Mass. (Eastern, 337), 6-7 p. m., concert; 7:10, kiddles' bedtime storles; 7:15-7:30, lecture, address; 8:30-10:30, concert.

WCAE, Pittsburgh, Pa. (Eastern, 462), 9:30 a.m., religious service; 3 p. m., special New Year's concert; 8:30, dinner concert, William Penn hotel; 8:30, New Year's concert.

WCAL, Northfield, Minn. (Central, 360), 9 p. m., New

Year's program.

WCBD, Zion, III. (Central, 345), 8 p. m., Fred Faassen, organist; Grace Windle, contralto; Ralph Reed, baritone; Geraid Mason, cornetist; Mrs. Cassie Bedore, reader; Beulah Myhre, pianist; G. R. Sparrow, tenor; Mrs. G. R. Sparrow, contralto.

WCCO, Minneapolis-St. Paul, Minn. (Central, 417), 4 p. m., magazine hour, "Happy New Year;" 5:30, children's hour; 8, dinner concert, Minneapolie Athletic club, C. Eddy Fortier, leader; 7:30, New Year's message to business women, Mame Stevens.

WCX. Oetroit, Mich. (Eastern, 513), 4:15 p. m., music; 6, dinner concert, Book-Cadillac hotel; 7, music; 6, dinner concert, Book-Cadillac hotel; 7, musical program.

music; 6, dinne musical program.

musical program.

WDAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p.
in., the Star's string trio; 6-7, school of the air, plano
tuning-in number on the Duo-Art; Cecile Burton,
reader; the Teil-Me-a-Story Lady; music, Hotel Muchlebach Trianon ensemble; 11:45-1 a. m., nighthawk
frolic, the "Merry Old Chief" and the Plantation

WOAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., dally almanac; 12:02 p. m., Stanley theater organ cafe concert orchestra; concert orchestra; 2. Arcadia cafe concert orchestra; "Care of Children," Mrs. Louis Doddy's bedtime stories. Daddy's bedtime stories.

WDBY, Chicago, III. (Central, 258), 7 p. m., George S. Schuler, director: Carmen Smith, soprano; Francis Frederickson, Caroline Cedar, Violet Flodin, Ralph Briggs, baritone; Cari Blackmore, planist.

WEAF, New York, N. Y. (Eastern, 492), 6-7 p. m., dlnner musle, instrumental quartet; 7:30-8, Rev. Hans Dressel, string quartet; 9-9:45, musle, lobby of Hotel Waldorf-Astoria; 11-12, Vincent Lopez and his Hotel

Pennsylvania orchestra.

WEAO, Columbus, Ohlo (Eastern, 294), 8 p. m., chimes concert, Prof. A. P. McManigal; 8:15 p. m., short story, read by Sada Harbargor, department of English, Ohlo State univoreity; 8:25, program arranged by Raymond Gawler, violinist; quartet, qu Pennsylvania orchestra.

WEBW, Beloit, Wis. (Central, 268), 2 p. m., barnyard golfers, horse shoe pitching tournament; F. M. concert band.

WFAA, Oallas, Tex. (Central, 476), 12:30-1 p. m., Edmund Boettcher, tenor; William H. McRaven, planist; DeWitt McMurray; 8:30-9:30, W. B. Chenoweth and his Cornfield Symphony orchestra; 11-12, Adolphus

hotel orchestra.

WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3, housewives' Radio services, Mabei Swint Ewer; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddles' pal.

WGBS, New York, N. Y. (Eastern, 316), 1:30-2:30 p. m., Armand Veesey and his Hotel Ritz-Cariton orchestra; 3-4, special New Year's day program; 6-6:20, Uncle Geebee; 6:20-6:30, Loretta Ellen Brady, story teiling; 8-8:30, New Republic topics; 11-1 a. m., special program, studio in Picadilly theater.

WGN, Chicago, III. (Central, 370), 1:40 p. m., luncheon concert, Drake concert ensemble, Blackstone string quintet; 6:30-7, dinner concert.

WGR, Buffalo, N. Y. (Eastern, 319), 6-7:30 p. m., special Halipryd string quartet, New Year's day program.

WGY, Schenectady, N. Y. (Eastern, 380), 6:30 p. m., dinner music, Hotel Ten Eyck orchestra; 7:45, "A Few Moments with New Books;" 8 program, WGY orchestra; Nellie Bleakley, planist; talk, "Gold Minter"

WHAS. Louisville, Ky. (Central, 400), 4-5 p. m., selections, Alamo theater orchestra; 7:30-9, concert, Barney Rapp's orchestra; four-minute welfare talk.
WHB, Kansas City, Mo. (Central, 411), 2-3 p. m., ladles' hour program, Sweeney Radio trio; 8-9, varied muslcal program; 9-10, Gilbert Jaffy's orchestra.

ythn, New York, N. Y. (Eastern, 360), 5-5:30 p. m., Tangoland Ballroom orchestra; 6:30-7:10, Vincent Catanese and his Alamae orchestra; 7:10-7:30, WHN employment broadcasting; 9:30-9:37, Evening Bulletin current news; 10:10-10:30, Loew's Vaudeville artist; 10:30-11, Al Wohiman and his Club Madrid orchestra with Lee Kent; 11-12, Connie's Inn with Leroy Snith's orchestra; 12-12:30 a. m.. Ted Lewis and his Symphonic Ciowns by direct wire from Parody club; 12:30-1 a. m., Lou Gold and his orchestra.

WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Gimbel tea room orchestra, Ray Steen, director; 3, recital, students Kurtz School of muslc; 6:05, Art Coogan and his Club Madrid orchestra; 8:15, Philadelphia Police band: 11, Harvey Marburger and his vaudeville or-

WJY, New York, N. Y. (Eastern, 405), 7:30-9 p. m.

WIY, New York, N. Y. (Eastern, 405), 7:30-9 p. m., Larry Funk and his orchestra,
WKAQ, San Juan, P. R. (Intercolonial, 360), 8:30-10 p. m., musicale, La Cafetera.
WLS, Chicago, III. (Central, 345), 12-1 p. m., special New Year's day program; 8:30, Raiph Emerson, organist; 7, Ford and Gienn Woodshed theater; 7:15-8, New Year's calling in on WLS lingle bell sleigh.

WLW, Cincinnati, Ohio (Central, 423), 12:15 p. m., dance program, Woody Meyers' orchestra; 4, recital, Adelaide Apfel; 10, three minute message, U. S. Civil Service; 10:05, Doherty Melody Boys; 10:30, program of duets, Frank Freudenberg, Otto Heerle; Milnor Instrumental trio.

WMAQ, Chicago, III. (Central, 447.5), special program

WMC, Memphis, Tenn. (Central. 501), 12 m., musical program, from O. K. Houck Piano company; 8 p. m., Bedtime story, Uncle Percy; 8:30, classical program. WOC, Oavenport, Ia. (Central. 484), 12 m., chimes; 7 p. m., sandman's visit; 7:20, Carlisle Evans and his p. m., sandman's visit; 1:20, Garriste California or-Collseum orchestra; 9, Schuster Sisters' California or-

chestra.

WOO, Philadelphia, Pa. (Eastern, 509), 11 a. ni., organ recital, Mary E. Vogt; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 5:15, organ recital, Mary E. Vogt.

WOR, Newark, N. J. (Eastern, 405), 7-7:30 a. m., WOR morning gym class; 3-3:15 p. m., talk, "The Ship Model Society;" 6:15-6:30, "Radio for the Layman." Alhert E. Sonn; 6:30-7, Tom Cooper's Country club orchestra; 7:15-7:30, resume of the day's sports. Jolly Bili Steinke.

WOI Chicago III. (Central, 448), 7-8 p. m., dinner

sports. Jolly Bill Steinke.

WQJ, Chicago, III. (Central, 448), 7-8 p. m., dinner concert, Ralph Williams and his Rainbo Garden orchestra; Manuel Rodriguez, Spanish tenor; Lydia Lochner, contraito; Marion Henry, accompanist; 10-2 a. m., Ralph Williams and his Rainbo Skylarks; Jerry Suilivan; Harry Geise; Peggy McClure, "Rainbo Greetings" company; Rick, Whalen, Garner; Brock States barmany singers

Greetings" company; Rick, Whaten, Garner; Bruck Sisters, harmny singers.

WRC, Washington, D. C. (Eastorn, 469), 6:45 p. m., children's hour, Peggy Albion; 7, dinner concert, Levitow's Hotel Commodore orchestra; 8, talk on motoring, auspices American Automobile association; 8:15, music; 8:30, talk, auspices of Smithsonian institute; 9:20, Lee House trio; 10:30, dance program, Waldorf-Actoria orchestra.

Waldorf-Actoria orchestra.

WWJ, Oetroit, Mich. (Eastern, 513), 8:30 p. m., Jean and Theone, song fashlons; 10. danco music, Jean Goldketto's orchostra; 11:30, The Detroit News or-

#### Where to Hear Talks

Central Standard Time

TALKS, instructive, serious, humorous and even frivolous, are Radiocast daily and below are listed the stations.

Saturday, December 27: 6, WDAF; 6:15, WBZ; 6:30, WEAF; 7, KFI, WFI, WIP; 7:15, WRC; 7:30, WDAR, WOC; 8, WCCO, WOR; 8:20, WBBR; 8:30, KHJ; 8:40, WMAQ; 8:45, KFI, WOR; 9:05, KYW; 9:15, WFI; 9:30, KFSG; 9:45, KFI, KHJ.

Sunday, December 28: 8:25, WBBR; 8:45, KFI; 9, WJY.

Monday, December 29: 6, WCCO, WDAF, WOAW; 6:10, WHN; 6:15, WBZ, WGY; 6:30, WBZ; 6:45, WCAE; 7, KFI, WCAU, WHB, WHN, WNYC; 7:20, WBBR, WOC; 7:30, KSAC; 8, WAAM, WCCO, WDAF, WJZ, WMAQ; 8:20, WMAQ; 8:30, KFGZ; 8:50, WMAQ; 9, WEAF; 9:15, KFGZ; 10, KGO; 11, KPO.

Tuesday, December 30: 6, WDAF, WEBJ, WHN, WJZ, WOAW; 6:10, WHN; 6:15, WBZ; 6:45, WGY; 6:50, WDAR; 7:15, WRC; 7:30, KSAC, KYW; 8, WJY, WRC; 8:20, KYW;

8:30, KHJ, WGBS; 9, WJY; 9:30, KHJ, WGBS, WIP; 10, KGW.

Wednesday, December 31: 6, WCCO; WDAF, WGBS; 6:15, WBZ; 6:30, WCAU, WMAQ; 6:55, WHN; 7, KFI, WAAM, WDAR; 7:30, KSAC, WCAU, WNYC; 8, WMAQ, WOS; 8:30, KHJ, WOR; 9, WEAF; 9:05, KYW; 10, KPO; 11, KFI.

Thursday, January 1: 6, WDAF; 6:10, WHN; 6:45, WGY; 7, WGBS, WRC; 7:15, WEAO; 7:30, WCCO, WRC; 8, KYW; 8:10, WBBR; 10, WLW.

Friday, January 2: 6, WDAF; WEBJ; 6:15, WBZ; 6:30, KGO, WBZ; 6:35, WNYC; 6:45, WGY; 7, KFI, WAAM; 7:15, WJY; 7:20, WOC; 7:30, WEBJ, WJZ; 7:45, WEEI; 8, KYW, WJY, WMAQ; 8:30, KHJ, WCAL, WMAQ; 9, WMAQ; 9:10, WHN; 9:30, KFGZ, KFSG; 9:55, KFGZ; 10, KGW; 11:15, KFSG.

#### Friday, January 2

Friday, silent night for: CHNC, CKAC, KFKX, KJS, KPO, WBBR, WCBO, WOBY, WEAO, WHAZ, WKAQ, WRC.

KPO, WBBR, WCBO, WOBY, WEAO, WHAZ, WKAQ, WRC.

KOKA, E. Pittsburgh, Pa. (Eastern, 326), 7 a. m., morning exercises, O. Shannon; 8, morning exercises, O. Shannon; 12:30 p. m., Sunday school lessõn; 6:15, concert, Hotel Schenley Meyer Davis orchestra, Lon Chassy, director; 7:30, children's period; 8:15, program, University of Pittsburgh studio; 8:30, concert. KFAE, Pullman, Wash. (Paclfic, 330), 7:30-9 p. m., Mariam Zimmerman, planist; William P. Hanson, cornetist; Ivar Melander, planist; "Essentials of Successful Farm Management," Prof. George Severance; "Present Tendencles in Automobile Design," Prof. A. C. Abell; "Success or Failure with Bees," B. A. Sloeum; book reviews, Allee L. Webb. KFGZ, Berrien Springs, Mich. (Central, 286), 7 p. m., Blble bedtime story; 9-9:15, Radio Lighthouse choir; 9:15-9:30, Mrs. Mable C. Butterfield, soprano, negro spirituals; 9:30-9:45, "The Christian's New Years," O. Dunn; 9:45-9:55, H. E. Edwards, baritone; E. Hurd, tenor; 9:55-10:10, "New Years in South Africa," Herbert Sparrow.
KFI, Los Angeles, Calif. (Pacific, 469), 5-5:30 p. m., Evening Herald, table taik, news; 5:30-6, Examiner muslcal half-hour; 6:45-8, Aeolian residence pipe organ recital, Dan McFarland; 8-9, Evening Herald, dance orchestra; 9-10, Examiner, dance orchestra; 10-11, Ladonia Naylor, planist with assisting artists.
KFNF, Shenandoah, la. (Central, 266), 7:30 p. m., concert, Smith-Beiding Harmony orchestra.
KFOA, Seattle, Wash. (Pacific, 455), 12:30-1:30 p. nl., luncheon program; 6-6:30, concert, Seattle Piost-Intelligence; 6:45, program; 8:30-10, Seattle Times concert. KFQX, Seattle, Wash. (Pacific, 455), 12:30-1:30 p. nl., luncheon program; 6-6:30, concert, Seattle Piost-Intelligence; 6:45, program; 8:30-10, Seattle Times concert. KFQX, Seattle, Wash. (Pacific, 455), 12:30-1:30 p. nl., luncheon program; 6-6:30, concert seattle Times concert. KFQX, Seattle, Wash. (Pacific, 455), 10:30-1:30 a. m., sunshine hour; 3:30-4:30 p. m., organ recital, Roy Reid Brignall and assisting artlsts; 7:30-9:15. "Crusaders" mee

Francis; 5:30-6, the girls' half hour, Esther Wood Schneider.

KGW, Portland, Ore. (Pacific, 492). 12:30 p. m., concert, Original Serenaders of Winter Garden; 5, children's program, story, Aunt Nell; 8, popular lecture, University of Oregon extension service; 10:30, Hoot

Owls.
KHJ, Los Angeles, Calif. (Pacific, 395), 12:30 p. m., program of news and music; 2:30, Edward Murphy, reader; 6-6:30, Art Hickman's concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, storles American history, Prof. Walter Sylvester Hertzog; Richard Headrick, screen star. Uncie John; 8-10, Carrie Jacobs Bond program; 10-11, Earl Burtnett's Biltmore hotel dence orchestra.

dance orchestra.

KNX, Hollywood, Calif. (Pacific, 337), 8 a. m., morning prayer; 9, Town crier, news; 9:30, Estelle Lawton Lindsey, personal problems; 2 p. m., literary talk, R. D. McLean; 6:30-7:30, dinner hour, Nicholls Grain Milling company; 8-10, feature program; 10-11, amateur hour; 11-12, Abe Lyman's Cocoanut Grove dance, orchestrs.

chestra.

KOB, State College, N. M. (Mountain, 360), 7:30-8:30 p. m., vocal solos and duets, Alda and Leaette O'Hara.

KPO, San Francisco, Calif. (Paoific, 423), 12:45 p. m.,

Commonwealth club luncheon talks; 1-2, Rudy Seiger's Fairmont hotel orchestra; 4:30-5:30, Rudy Seiger's Falrmont hotel orchestra.

Fairmont hotel orchestra; 4:30-5:30, Rudy Selger's Fairmont hotel orchestra.

KSO, St. Louis, Mo. (Central, 546). 8 p. m., program. KYW. Chicago, III. (Central, 536), 11:35 a. m., table talk, Mrs. Anna J. Peterson; 6:35-7 p. m., children's bedtime story, Uncle Bob; 7-7:30, dinner concert, Congress hotel; 9-10, midnight revue; 10-2:30 a. m., midnight revue, Coon-Sanders Original nighthawks; W. Remington Welch, organist.

WAAM, Newark, N. J. (Eastern 263), 11-11:30 a. m., Radio cooking school course, Ada Bessie Swamp; 11:45-12, Rev. Edmund Hames, John A. Scott; 8-8:15 p. m., Ledger Lady Radio Cupid; 8:15-8:30, Ben Friedman, tenor; 8:30-8:45, Frank Catello's orchestra; 8:45-9, dance music; 9:15-9:30, Four Precious Jewels; 9:45-10, irving Porter, tenor; 10-11, Little Symphony orchestra Men's Bible class, direction Fred. G. Smith.

WBAV, Columbus, Ohio (Eastern, 423), 8 p. m., community concert, astists from South Charleston, Ohio, directed by W. E. Reveal.

WBZ, Springfield, Mass. (Eastern, 337), 6-7 p. m., concert; 7:10, kiddles' bedtime story; 7:15-7:30, lecture, address; 7:30-8, University Extension course; 10-11:30, concert; 11:30-12, McEnelly'e Singing orchestra.

WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m., dinner concert. William Penn hotel: 7:30. Unclo

concert; 11:30-12, McEneily'e Singing orchestra.

WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m.,
dinner concert, William Penn hotel; 7:30, Unclo
Kaybee; 8:30, musical program; 9, B. Fischer & Co.

"Astor Coffee" dance orchestra.

WCAL, Northfield, Minn. (Central, 360), 8:30 p. m.,
book talk, "Mark Twain's Autobiography," Dr. George
Welda Spohn.

Welda Spohn.

WCAU, Philadelphia, Pa. (Eastern, 278), 6 p. in., Meyer
Davis Hotel Pennsylvania dance orchestra; Louis Baer,
director; 7:30, recital.

WCX, Oetroit, Mich. (Eastern, 513), 4:15 p. m., music;
8, dinner concort, Book-Cadillao hotel; 8, musical
program; 10, Jean Goldkett'e Book-Cadillac hotel orchestra.

WOAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., the Star's string trio; 6-7, school of the air, plano tuning-in number on the Duo-Art; address.

apeaker, auspices Kansas City Children's bureau; the Tell-Me-a-Story lady; music, Hotel Muchlebach Trlanon ensemble; 8-9:30, popular program, the Star's Radio orchestra; 11:45-1 a. m., nighthawk frolic, the "Merry Old Chief" and the Plantation players.

WOAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., dally almanac; 12:02 p. m., Stanley theater organ recital; Arcadla cafe concert orchestra; 2, Arcadia cafe concert orchestra; play, students National School of Elocution and oratory; 4:30, talk, Mrs. Carrie B. Maschal; 7:30, Dream Daddy's bedtime stories; 8, Walter Greenough-WDAR players; 10, Arcadia cafe dance orchestra; Morning Glory concert; songs, Herscher and Zochrns.

dance orchestra; Morning Glory concert; songs, Herscher and Zoehrns.

WEAF, New York, N. Y. (Eastern, 492), 6-7 p. m., WEAF, instrumental quartet; 7:30-7:45, story telling, G. R. Kinney company; 8-8:30, Happiness Candy boys; 8:30-9 Parnassus trio, cello, violin and piano; 9-10, B. Fischer and Company Astor Coffee orchestra; 10-10:30, Kathleen Stewart and Winifred Barr, piano duets; 11-12, Meyer Davis Lido Venice orchestra.

WEBJ, New York, N. Y. (Eastern, 273), 7-7:15 p. m., Blybrun's reviews of new plays; 7:15-8, DeDroit's orchestra from the Balconnade bailroom; 8-8:15, Sara V. Turits, songs; 8:15-8:30, Gedney and Magee, banjoists; 8:30-8:45, railroad talk, Garrow T. Geer; 8:45-9, Jack Morrisee tenor.

8:30-8:45, raliroad talk, Garrow T. Geer; 8:45-9, Jack Morrisee tenor.

WEEI, Boston, Mass. (Eastern, 303), 6:30 p. m., Dok-Eisenbourg and his Sinfonians; 7, Boston Edison's Big Brother club; 7:30, Jay Riseman and his orchestra; 8, program, Commonwealth Health association; 8:45, "Sportsmanship," Capt. Percy Redfern Creed; 9, program, New York studio, B. Fischer & Company's Astor Coffee orchestra.

WFAA, Oalias, Tex. (Central, 476), 12:30-1 p. m., address, Dr. Robert Stewart Hyer; 8:30-9:30, Mrs. George S. Watson, soprano; Mrs. Jesse Lee Johnson, contralto; Mrs. Juanita Blair Price, accompanist.

WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3:05, Edward La Boube, violinist; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddies' pal.

WGBS, New York, N. Y. (Eastern, 316), 3-3:15 p. m., Hugh L. Ward, interview; 3:15-3:20, Gertrude Tucker; 3:40-4, piano lessons, Alfred Robyn; 6-6:30, Uncle Geebee; 6:30-7:30, Nat Martin's "I'll Say She Is"

orchestra.

WGN, Chicago, III. (Central, 370), 1:40 p. m., luncheou concert, Drake concert ensemble, Blackstone string quintet; 3, rocking cliair time, Chicago Tribune and Liberty magazine; 5:30, Skeezix time for the children, Quin Ryan; 6, organ recital, Lyon & Healy; 6:30-7, dinner concert; 8-9, classical program; 10-11, dance numbers, Don Bestor's Drake orchestra.

numbers, Don Bestor's Drake orchestra.

WGR. Buffalo, N. Y. (Eastern, 319), 2:30-4:30 p. m.,
Buffalo Courier and Enquirer musical program; 6:307:30, dinner music, Vincent Lopez Hotel Statler dance
orchestra, Harold Gieser, director; 8:30-9, Addy Britt
and Dick Finch, Cameo record artists; 9-10, Astor
House Coffee orchestra jointly with WEAF; 10-10:30,
recital, Alice Mackle; 10:30-11, the Lyric quartet;
11:30, supper-dance music. Vincent Lopez Hotel Statler
dance orchestra, Harold Gieser, director.
WGY, Schenectady, N. Y. (Eastern, 380), 2 p. m.,
health hints, Dr. C. W. Woodall; 7:45, nealth talk;
8, "The Little Teacher," WGY players; 10:30, joint
recital, Joseph Kreiner, violinist, Ellwood L. Clark,
baritone.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., selections, Alamo theater orchestra; 7:30-9, concert, auspices Mrs. Nic Bosler.

WHB, Kansas City, Mo. (Central, 411), 2-3 p. m., ladies' hour program, Sweeney Radio trio; 7-8, varied

whn, New York, N. Y. (Eastern, 360), 6:30-7 p. m., Vincent Catenese and his Alamac orchestra; 7-7:30,, Harry Richman and his entertainers with Eddie Elkins and his orchestra; 9:33-9:37, Evening Bulletin current news; 9:37-10. Dan Gregory and his Crystal Palace

and his orchestra; 9:30-9:37, Evening Bulletin current news; 9:37-10. Dan Gregory and his Crystal Palace orchestra; 10-10:10, fashion chats, Mme, Belle; 10:10-10:25, Bob Miller, songs; 10:25-10:30, "Storage Batteries," H. B. Shontz; 10:30-11, Roseland dance orchestra; 11-11:30, Judith Roth and Al Wilson, songs; 11:30-12, Sam Wooding and his Club Alabam orchestra; 12-12:30 a. m., Ted Lewis and his Symphonic Clowns with the Revue "Intime."

WHO, Oes Moines, Ia. (Central, 526), 7:30-9 p. m., Garber quartet and entertainers; Alina Garber Bridges, soprano; Ruth Garber, contralto; Paul Garber, tenor; Leon Garber, bass; Neil Garber, banjo soloist; M. P. Garber, tenor; L. T. Bridges, baritone soloist.

WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Gimbel tea room orchestra, Ray Stocn, director; 3, recital, students Frank Oglesby studlos; Lols Kershaw, sopranu; 6:15, Harvey Marburger and his vaudeville orchestra.

WJJO, Mooseheart, Ill. (Central, 278), 3:30-4:30 p. m., music, Mooseheart children; 6:30-7:15, Albert F. Brown, organist; 7:15-8:15, solos, Mooseheart children; Mooseheart Novelty orchestra; tulk, M. P. Adams; 11:30-12:30, request program, Albert F. Brown, organist.

WJY, New York, N. Y. (Eastern, 405), 8:15-9 p. m.

ganist.

WJY, New York, N. Y. (Eastern, 405), 8:15-9 p. m. "State Legislative Review," Julius S. Berg; 9-9:30, "International Book Review," Dr. Cilfford Smyth. 10-11, Ace Brigade and his 14 Virginians direct from Club Monte Carlo.

WJZ, New York, N. Y. (Eastern, 455), 4-4:"0 p. m. Olga Erika, soprano; 7-8, Erdody's Park Lane hotel orchestra; 8:30-8:45, Looseleaf Current topics; 9:30-10, Sandu Albu, violinist.

WLS, Chicago, III. (Central, 345), 12 m., Robinson and Bernard; 6:30 p. m., Raiph Emerson, organist; 7. luliaby time; 7:15, Wabash Y. M. C. A. quartet; 7:30, Isham Jones and his orchestra; 7:45, Wabash Y. M. C. A. quartet; 9: WLS thoater; 9:30, Isham Jones and his orchestra; 9:45, Robinson and Bernard; 10. Rudolph Bryant mandolin orchestra; 10:30, Isham Jones and his orchestra; 10:40, Ford and Glenn.

(Continued on page 14)

# RADIO PROGRAMS ASSIST OLD YEAR OUT, WELCOME NEW YEAR IN

#### Where to Hear Concerts

Central Standard Time

THESE are the stations for music lovers to dial, and you can hear, providing you dial-correctly and read the programs carefully, everything

Saturday, December 27: 6, CKAC.

Saturday, December 27: 6, CKAC.

WCX, WCN, WGR; 8:15, WRC; 8:30,
WFAA, WIX, WMC; 8:45, KFI.

WGN; 8:35, WNYC; 0:45, WTAY; 7,

KYW, WDAR, WJZ, WLS, WOR,

KYJ; 7:15, WFI, WIP, WLS; 7:30,

CKAC, KDKA, KFI, KFNF, PWX,

WBZ, WIAS, WJZ, WNYC; WOR; 8,

KHJ, KNX, KFO, RYW, WIBR,

WMAQ, WNYC; 6:16, WOR; 6:30,
KTHS, WCCO, WFAA, WGB, WMC;

8:40, WBBR; 9, KNX, WGB, WMC;

8:40, WBR; 9, KNX, WGB, WMC;

8:40, WBR; 9, KNX, WGB, WMC;

8:40, WBR; 9, KNX, WGB, WMC;

8:40, WCR, WSD, WBZ; 11, KFI, KFQX,

KNX, WFAN; 11:15, WHO; 12, KFI,

WCR, WGN, WJID, WOO;

RYAAM, WBZ; WGAE, WHN, WTAY; 7, KYW,

WCR, WGN, WJID, WOO;

RYAAM, WGAE, WIAS,

WCAL, WGN, WJID, WOO;

RYAAM, WBR;

WCAL, WGN, WJID, WOO;

RYAAM, WGAE, WAAM, WFAY; 7, KYW,

WCAL, WGN, WAAM, WBP; 7:20, WEAF,

WCC, WGN, WAAM, WBP; 7:20, WEAF,

WCR, WGN, WAAM, WBP; 7:20, WGR,

WCR, WGN, WAAM, WBP; 7:20, WGR,

WCR, WGN, WAAM, WBP; 7:20, WGR,

WCR, WGN, WAAM, WGR

Wednesday, December 31: 8, KGO, WCN, WGN, WMAQ; 8:30, WEAU, WEEL, WGN, WJJD, WOO; 8:45, KSD, WCALE, WHN, WTAY; 7, KYW, WCAU, WIELL, WHS, WQJ; 7:16, KDKA, WAAM, WIP, 7:20, WEAF, WGR; 7:30, KOKA, WFI, KPF, PWX; WAAM, WBZ, WCAE, WHAS; 8, KFOA, KHJ, KNX, KYW, WAAM, WCBD, WDAF, WGN, WGY, WOC, WOR; 8:15, KFGZ; 8:30, WMAQ; 6:45, KFI, KIFOA, WNYC; 9, KNX, KSD, WCCO, WMAQ, WTAY; 9:03, WDAR, WOO; 9:15, WAAM; 9:30, WDAR, WOO; 9:15, WAAM; 9:30, WFAE, KHI, WAAM, WCAE; 9:35, WNYC; 9:45, KYW; 10, KDKA, KYI, KGO, KHJ, WEEL, WQJ; 10:15, WJZ; 10:30, KFOA, WOC; 11, KFQX, KNX; 11:55, WGY,

(Confinued from page 11)

#### Wednesday, December 31

tal New Yest's ere doube. Heary Halstead's political.

Perlland, Ore. (Pasific, 492), 12:30 p. m. con11iii Therby's cordentier's 5, stilliden's programs, 
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DANCING (Central Time)

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11:45, Web. 120. What.
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Where to Hear Talks

Control Standard Time

TALKS, instructive, serious; humorous and even frivolous, are Radiocast daily and below are listed the stations.

8:30, KIIJ, WEIRS, 9, WIV, 9:30,

#### Friday, January 2

WDAF: WGBS, WCCO, BR; 10,

WDAF;
), WBZ;
7, KFI,
)C; 7:30,
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in's bureau; the ehlebach Trianon he Star's Radio plic, the 'Merry

rs.
)), 11:45 a. ni., y theater organ
2, Arcadia cafe
ional School of
Mrs. Carrie B.
ime stories; 8,
), Arcadia cafe ; songs, Herscher

32), 6-7 p. m., 5, story telling, appiness Candy olin and piano; Coffee orchestra; red Barr, plano e orchestra; red Barr, plano e orchestra.

1, 7-7:15 p. m.,

3, DeDroit's or8-8:15, Sara V.

1agee, banjoists; er; 8:45-9, Jack

:30 p. m., Dok-on Edison's Big I his orchestra; sociation; 8:45, ern Creed; 9,

12:30-1 p. m., 8:30-9:30, Mrs. se Lee Johnson, ccompanist. 1 p. m., Meyer stra; 3:05, Ed-Davis Bellevue im, the kiddies'

. 3-3:15 p. m.. ertrude Tucker; 6-6:30, Uncle 1 Say She Is"

p. m., luncheon lackstone string go Tribune and or the children, Healy; 6:30-7, 1; 10-11, dance

:30-4:30 p. program; 6:30-el Statler dance )-9. Addy Britt ts; 9-10, Astor EAF; 10-10:30, Lyric quartet; ez Hotel Statler

180), 2 p. m., 15, nealth talk; rs; 10:30, joint wood L. Clark,

). 4-5 p. m., 7:30-9, concert, 1), 2-3 p. m., trio; 7-8, varied

6:30-7 p. m., thestra; 7-7:30... th Eddie Elkins

the Eddie Elkins
Bulletin current

Crystal Palace

ne. Belle; 10:10

10:30, "Storage Bat
10:30, "Storage Bat
12-12:30 a. m., Ted Lewis and his Symphonic Clowns

with the Revue "Intime."

WHO, Des Moines, la. (Central, 526), 7:30-9 p. m.,
Garber quartot and entertainers; Alma Garber Bridges,
soprano; Ruth Garber, contraito; Paul Garber, tenor;
Leon Garber, bass; Neil Garber, banjo soloist; M. P.
Garber, tenor; L. T. Bridges, baritone soloist;

WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Gimbel
tea room orchestra, Ray Steen, director; 3, recital,
students Frank Oglesby studios; Lois Kershaw, soprano;
6:15, Harvey Marburger and his vaudeville orchestra.

WJJO, Mooseheart, 111. (Central, 278), 3:30-4:30 p. m.,
music, Mooseheart children; 6:30-7:15, Albert F.
Brown, organist; 7:15-8:15, solos, Mooseheart children;
Mooseheart Novelty orchestra; talk, M. P. Adams;
11:30-12:30, request program, Albert F. Brown, organist.

WJY, New York, N. Y. (Eastern, 405), 8:15-9 p. m.

Mooseneart Noverty Orchestra; talk, M. P. Adams, 11:30, 12:30, request program, Albert F. Brown, organist.

WJY, New York, N. Y. (Eastern, 405), 8:15-9 p. m., "State Legislative Review," Julius S. Berg; 9-9:30, "International Book Review," Dr. Clifford Smyll. 10-11, Ace Brigade and his 14 Virginians direct from Club Monte Carlo.

WJZ, New York, N. Y. (Eastern, 455), 4-4:"0 p. m., Olga Erlka, soprano; 7-8, Erdody's Park Lane hotel orchestra; 8:30-8:45, Looseleaf Current toples; 9:30-10. Sandu Albu, violinist.

WLS, Chicago, Ill. (Central, 345), 12 m., Robinson and Bernard; 6:30 p. m., Ralph Emerson, organist; 7. lullaby time; 7:15, Wabash Y. M. C. A. quartet; 7:30, Isham Jones and his orchestra; 7:45, Wabash Y. M. C. A. quartet; 9, WLS theater; 9:30, Isham Jones and his orchestra; 10:40, Ford and Glenn.

(Continued on page 11)

4 p. m., magazine hour, 'Happy New Year,' 5:30, children's hour; 6, dinner concert, Minneapolie Athletic club, C. Eddy Fortler, leader; 7:30, New Year's message to business women, Mame Stevens.

WCX, Oetroit, Mich. (Eastern, 513), 4:15 p. m., music; 6, dinner concert, Book-Cadillac hotel; 7, musical program.

WDAF, Kansas City Me (Cantrol 411), 2000, 100

9:30,

Veaf, 0:30, Kf1, Kpo,

8:50, Whb, Whn, Whn, Wlw; K(1, Whn; Kgo,

2: 8, 8:30, Whn; Wly; Whn, Vnyc; Weaf, Wbz, Kf1, 1:45, Kh);

musical program.

WDAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p.
m., the Star's string trio; 6-7, school of the air, plano
tuning-in number on the Duo-Art; Ceclle Burton,
reader; the Tell-Me-a-Story Lady; music, Hotel Muehlebach Trianon ensemble; 11:45-1 a. m., nighthawk
frolic, the "Merry Old Chief" and the Plantation
players.

frolic, the "Merry Old Chlef" and the Plantation players.

WOAR, Philadelphia, Pa. (Eastern. 395), 11:45 a. m., daily almanac; 12:02 p. m., Stanley theater organ recital; Arcadia cafe concert orchestra; 2. Arcadia cafe concert orchestra; 10:20 p. m., Stanley theater organ recital; Arcadia cafe concert orchestra; 2. Arcadia cafe concert orchestra; 10:20 p. m., Stanley theater organ recital; Arcadia cafe concert orchestra; 2. Arcadia cafe concert orchestra; 10:20 p. m., Dauls; 10:20 p. m., Dauls; 10:20 p. m., Dauls; 10:20 p. m., Dauls; 10:20 p. m., George S. Schuler, director; Carmen Smith, soprano; Francis Frederickson, Caroline Cedar, Violet Flodin, Ralph Briggs, baritone; Carl Blackmore, planist.

WEAF, New York, N. Y. (Eastern, 492), 6-7 p. m., dinner music, instrumental quartet; 7:30-8, Rev. Hans Dressel, string quartet; 9-9:45, music, lobby of Hotel Waldorf Astoria; 11-12, Vincent Lopez and his Hotel Pennsylvania orchestra.

WEAO, Columbus, Ohlo (Eastern, 294), 8 p. m., chimes concert, Prof. A. P. McManigal; 8:15 p. m., short story, read by Sada Harbarger, department of English, Ohlo State university; 8:25, program arranged by Raymond Gawler, violinist; quartet, Gawler, violing Clarence Snyder, cello; C. N. Fox, flute; Mildred Davis, plano; Radio talk, "Wave Lengths and Kilocycles," A. M. Rose,

to be announced.

WMC, Memphis, Tenn. (Central, 501), 12 m., musical program, from O. K. Houck Plano company; 8 p. m., Bedtime story, Uncle Percy; 8:30, classical program. WOC, Oavenport, Ia. (Central, 484), 12 m., chimes; 7 p. m., sandman's visit; 7:20, Carlislo Evans and his Coliseum orchestra; 9, Schuster Sisters' California orchestra.

WOO, Philadelphia, Pa. (Eastern, 509), 11 a. m., organ recitai, Mary E. Vogt; 12:02 p. m., Wanamaker crystal tea room orchestra. Robert E. Golden, director; 5:15, organ recital, Mary E. Vogt.

tea room orchestra, Robert E. Golden, director; 5:15, organ recital, Mary E. Vogt.

WOR, Newark, N. J. (Eastern, 405), 7-7:30 a. m., WOR morning gym class; 3-3:15 p. m., talk, "The Ship Model Society;" 6:15-6:30, "Radio for the Layman," Alhert E. Sonn; 6:30-7. Tom Cooper's Country club orchestra; 7:15-7:30, resume of the day's sports. Joily Bill Steinke.

WQJ, Chicago, Ill. (Central, 448), 7-8 p. m., dinner concert, Ralph Williams and his Rainbo Garden orchestra; Manuel Rodriguez, Spanish tenor; Lydia Lochner, contraito; Marion Henry, accompanist; 10-2 a. m., Ralph Williams and his Rainbo Skylarks; Jerry Sullivan; Harry Gelse; Pergy McClure, "Rainbo Greetings" company; Rick, Whalen, Garner; Brock Sisters, harmony singers.

WRC, Washington, D. C. (Eastorn, 469), 8:45 p. m., children's hour, Pergy Albion; 7, dinner concert, Levitow's Hotel Commodore orchestra; 8, talk on motoring, auspices American Automobile association; 8:15, music; 8:30, talk, auspices of Smithsonian institute; 9:20, Lee House trio; 10:30, dance program, Waldorf-Aetoria orchestra.

WMJ, Oetroit, Mich. (Eastern, 513), 8:30 p. m., Jean and Theone, song fashlons; 10, dance music, Jean Goldketto's orchostra; 11:30, Tho Detroit News orchiestra.

talk, Mrs. Anna J. Peterson; 6:35-7 p. m., children bedtime story, Uncle Bob; 7-7:30, dinner concert, Congross hotel; 9-10, midnight revue; 10-2:30 a. m., midnight revue. Coon-Sanders Original nighthawks; W. Remington Welch, organist.

WAAM, Newark, N. J. (Eastern 263), 11-11:30 a. m., Radio cooking school course, Ada Bessie Swamp; 11:45-12, Rev. Edmund Hames, John A. Scott; 8-8:15 p. m., Ledger Lady Rudio Cupid; 8:15-8:30, Ben Friedman, tenor; 8:30-8:45, Frank Catello's orchestra; 8:45-9, dance music; 9:15-9:30, Four Preclous Jewels; 9:45-10, Irving Portor, tenor; 10-11, Little Symphony orchestra Men's Bible class, direction Fred, G. Smith.

WBAV, Columbus, Ohio (Eastern, 423), 8 p. m., community concert, astists from South Charleston, Ohio, directed by W. E. Reveal.

WBZ, Springfield, Mass. (Eastern, 337), 6-7 p. m., concert; 7:10, kiddles' bedtime story; 7:15-7:30, lecture, address; 7:30-8, University Extension course; 10-11:30, concert; 11:30-12, McEnelly'e Singing orchestra.

WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m., dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 8:30, musical program; 9, B. Fischer & Co. "Astor Coffee" dance orchestra.

WCAL, Northfield, Minn. (Central, 360), 8:30 p. m., book talk, "Mark Twain's Autoblography," Dr. George Welda Spohn.

WCAU, Philadelphia, Pa. (Eastern, 278), 6 p. m., Meyer Davis Hotel Pennsylvania dance orchestra; Louis Baer, director; 7:30, recital.

WCX, Oetroit, Mich. (Eastern, 513), 4:15 p. m., music: 6, dinner concort, Book-Cadillao hotel; 8, musical program; 10, Jean Goldkett'e Book-Cadillac hotel orchestra.

chestra. WOAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. in., the Star'e string trio; 6-7, school of the air, plane tuning-in number on the Due-Art; address.

#### Friday, January 2

(Continued from page 13)

WLW, Cincinnati, Dhio (Central, 423), 12:15 p. m., dance program, House's Brunswlek orchestra; 4. recital,

danec program, House's Brunswlek orchestra; 4. recital, pupils Leo Stofregen.

MMAQ. Chicago. III. (Central, 447.5), 4 p. m., scries of taiks on English diction, Mrs. J. Elliott Jenkins; 4:30, pupils, Bush conservatory; 5, the luliaby lady, Mrs. Gene Davenport; 6, organ recital, Chicago theater; 6:30. Hotel LaSalle orchestra; 8, weekly Wide-Awake club program, Mrs. Frances M. Ford; 8:30, musical geography; 9, "Lost and Found in Florida," Edward G. Taylor; 9:15, music.

WMC, Memphis, Tenn. (Central, 501), 12 m., musical program, from O. K. Houck Plano company; 8 p. m., bedtime story, Unele Jerry; 8:30, concert, Britting's Novelty orchestra, Frank Bracciante, director; 11, midnight frolle.

bedtlmc story, Unele Jerry; 8:30, concert, Britting's Novelty orchestra, Frank Bracciante, director; 11, nuidnight frolle.

WNJ, Newark, N. J. (Eastern, 233), 10:30-12:30 a. m., Frank Dally and his Meadow Brook dance orchestra.

WNYC, New York, N. Y. (Eastern, 526), 7:30-7:35 p. m., police alarms; 7:35-8, resume, meeting of board of estimate, Peter J. McGowan, secretory; 8:30-10, studio program; 10:30-10:35, poilee alarms; 10:35-12, Ben Bernie's Hotel Roosevelt orchestra.

WDC, Davenport, Ia. (Central, 484), 7:20 p. m., educational lecture, M. H. Calderwood; 8, "Mississippi Hot Spots" dance orchestra.

WDD, Philadelphia, Pa. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 5:15, organ recital, Mary E. Vogt; 7:30, A. Candelori and his orchestra from Hotel Adelphia; 8:30, Erno Rapee ond his Radio Gang from Fox theater; 9:30, WOO orchestra, Robert E. Golden, director; 30, WOO orchestra, Robert E. Golden, director; 10:03, A. Candelori and his dance orchestra; 10:30, Vincent Rizzo and his Hotel Sylvania dance orchestra.

WDR, Nowark, N. J. (Eastern, 405), 7-7:30 a. m., WOR morning gym class; 3:15-3:30 p. m., talk, Allan R. Cullimore, director Newark Technical school; 6:15-6:30, Rubenstein trio; 6:30-6:15, man-in-the-moon storles, Wm. F. B. McNeary and Josephine Lawrence, courtesy Newark Sunday Call; 7-7:15, Rubinstein trio; 7:15-7:30, resume of day's sports, Jolly Bill Steinke of Newark Morning Ledger.

WQJ, Chicago, III. (Central, 448), 11-12 m., Fred Mann's Sunday dinner menu, Ted Wilmus; 3-4 p. m., "The Evening After," Dorothy McLain Dickens; "A Trip to the Mardl Gras at New Orleans," Mrs. Harry T. Sanger; 7-8, dinner concert, Ralph Williams and his Rainbo Skylarks; the Rogers boys, Larry and Billy; Nubs Allen, contralto; James J. Whalen, tenor; West Brothers; Monogram trio.

West Brothers; Monogram trio.

WRC, Washington, D. C. (Eastern, 469), 4 p. m., fashion developments of the moment, Eleanor Gunn; 4:10, Eleanor Glynn, pianist; 4:20, "Beauty and Personality," Elsic Pierce; 4:30, tea music, Meyer Davis' New Willard hotel trio; 6, children's hour, Peggy Albion.

WWI, Detroit, Mich. (Eastern, 513), 3 p. m., the Detroit News orchestra; 8:30, the Detroit News orchestra; Anne Campbeli, News poet; Claudine Secor, soprano; Francis Firth, baritone.

Francis Firth, baritone.

#### Additional Programs

(Received too late for Classification)

Saturday, December 27

WEBH, Chicago, III. (Central, 370), 7 p. m., Edgewater Beach Orlole orchestra; Radio Sunday School iesson; musical blts. Riviera theater; 9-10, Langdon brothers, guitarists; Oriole orchestra; Marie Kelly, reader; 11-12. Oriole orchestra; Cambridge Sisters; Langdon brothers; Banks Kennedy, pianist; Wayne Meyers; Loos Brothers

Sunday, December 28
WEBH. Chicago, III. (Central, 370), 5-6 p. m., twilight muslcale; 7-9, artists program.

#### TABLE FOR MAKING TIME TRANSITIONS

Eastern Standard Time	1 2 3	4	5	6	7	8	9	10	11	12
Central Standard Time	12 1 2	3	4	5	6	7	8	9	10	11
Mountain Standard Time	11 12 1	2	3	4	5	6	7	8	9	10
Pacific Standard Time	101112	1	2	3	4	5	6	7	8	9

HOW TO USE. If a station is giving a program at 8 o'clock Mountain time and you wish to find what this is equivalent to in Central time, find 8 o'clock in the third of Mountain time row. Then immediately above it in the same vertical column will be found the figure 9 in the Central time row. This indicates that the program would be heard at 9 o'clock Central time.

Monday, December 29
WSB, Atlanta, Ga. (Central, 429), 12 m., Britlings orchestra; 5-6 p. ni., bedtime story, Bonny Barnhardt; 8-9, Vick Myers Melody orchestra; 10:45, Pilgrim quartet.

Tuesday, December 30
WEBH, Chicago, III. (Central, 370), 7 p. m., Oriole orchestra; 8, musical bits, Riviera theoter; 9, Radio Age program; Dennis Sisters; Dean Emick, pianist; Oriole orchestra; 11-12, Loos Brothers: Riviera revue;

Oriole orehestra; 11-12, Loos Brothers: Riviera revue; Oriole orehestra.

WSB, Atlanta, Ga. (Central, 429), 12 m., entertainment: 5-6 p. m., hedtime story, Bonnie Barnhardt; 8-9, variety program, Mrs. J. T. Deliesseiine, director: 10:45, Peeriess Entertainers dance orchestra.

Wednesday, December 31

WEBH, Chicago, Ill. (Central, 370), 7 p. ni., Oriole orchestra; Riviera theater; Dean Remick, pianlst; 9, Langdon brothers, gultarists; Marie Kelly, reader; Frederick Agard, tenor; Bob Cougle, accompanlst; Oriole orchestra; 11-12, Landon brothers, guitarists; Marle Kelly, reader; Edna Solomon, contralto; Oriole orchestra,

wsb, Atlanta, Ga. (Central, 429), 12 m., Britlings orchestra; 5-6 p. m., bedtime story, Bonnie Barnhardt; 10:45, New Years Eve Skyiark.

Thursday, January 1

WEBH, Chiago, III. (Central, 370), 7 p. m., Oriole orchestra; Dean Remick, pianist; Guy L. Hayne, baritone; John Stamford, tenor; 9-10, golf iesson, Amber Andrews; Beile Forbes Cutter, soprano; John Stamford, tenor; Oriole orchestra; 11-12, Harry Davis, baritone; Loos Brothers; Banks Kennedy, pianist; John Stamford, tenor; late revue.

WSB, Atlanta, Ga. (Central 429), 12 m., entertainment; 5-6 p. m., bedtlme story, Bonnie Barnhardt; 8-9, New Years day program; 10:45, program.

Friday, January 2

WEBH, Chicago, III, (Central, 370), 7 p. m., Adrieme De Vere, soprano; Harry Waiker, barltone; Oriole orchestra; musicai bits, Riviera; 9-10, Oriole orchestra; Erederick Agard, tenor; Rita McFawn, soprano; 11-12, Orlole orchestra; Three Musketeers; Sandy Meek, tenor. WDS, Jefferson City, Mo. (Central, 441), 8 p. m., address, member of the Missouri State Board of Agriculture; 8:15, musical program, Jameson Conservatory of Music, William Woods college.

WSB, Atlanta, Ga. (Central, 429), 12 m., entertainment; 5-6 p. m., bedtime story, Bonnle Barnhardt; 8-9. "The Honey Moon Coupic," Dr. and Mrs, Tom Fowler; 10:45, Landers Brothers quartet.

#### WSB. Atlanta, Ga. (Central, 429), 11 a. m., Flrst Presbyterian church services; 5-6 p. m., sacred program, Ed and Grae McConnell; 7:30, Wesley Memorial church service. in Sacred Music Concert

NEW YORK .- A concert of sacred music given by the 300 singers and soloists comprising the Oratorio society of the New York city Christian Science institute, was recently broadcast by Station WHN.

Fraser Grange, baritone, sang several solos as assisting artist. Other soloists, members of the society included Vida Milholland and Kitty Cheatham, sopranos, Harriet Foster, contralto and J. Steel Jamison, tenor. A number of original sacred choral compositions, specially written for the society were heard for the first time.

#### Alabama Allows Convicts to Tune in Christmas Day

BIRMINGHAM, ALA.—Christmas, 1924, was one of the most pleasant holidays ever spent by Alabama prisoners in the state penitentiary and state convict. camps, state officials say.

Radio sets were placed in all the state prisons and state convict camps throughout the state for the entertainment of the prisoners. These sets were installed just prior to Christmas day.

### New Long Distance Crystal Gives Remarkable Results

A recent invention in crystals is amazing Reflex and Crystal Set owners everywhere. It is stated that this marvelous Crystal Detector gets distant stations loud and clear and there is no disagreeable "hunting" for spots because the entire surface is sensitive. Many are finding it far superior for Reflex work and claim it the last word in mounted synthetic crystals.

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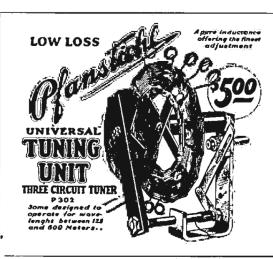
In order to introduce his invention, the owner, Mr. Hick, offers you two \$1.00 Crystal Detectors for the price of one. Sell one, and put the other on your own set without cost to you. Just send name and address to Mr. Hick, Dept. 5, 1018 So. Wabash Ave., Chicago. Pay Postman \$1.00 (plus postage). Unless you are absolutely satisfied write Mr. Hick and money will be cheerfully refunded.



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The construction of loop aerials, storage "B" batteries, a charger and even the cabinet are gone into thoroughly. This manual covers the complete installation of a selective, quiet, long range Radio outfit. Send money

by his directions and you cannot go wrong.

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# Construction of the Six Tube Het-Duo-Gen

Part I—Explanation of the Circuits

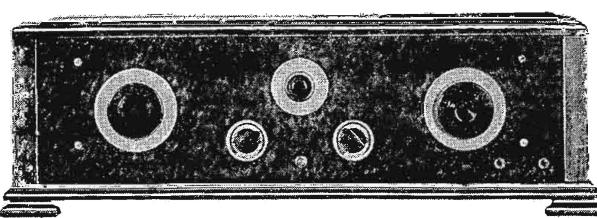
By C. E. Brush

HIS circuit is the utilization of the principles presented by different ♣ writers in recent issues of Radio Digest. William W. Harper explained principles of regeneration and pointed out how selectivity was gained through its application. John G. Ryan presented an excellent method of utilizing regeneration to sharpen the tuning of a loop antenna, i.e., the split inductance and feedback control condenser.

In heterodyning, we have the greatest aid to selectivity known at this time, the super-heterodyne knows no superior for the separation of broadcasters in Chicago and New York. The only objection to the "super" is the number of tubes used to bring up signal strength for its application to the second detector and the necessity of cutting down on the number of audio frequency stages for economy's sake. If the heterodyne could be kept, a more economical means of increasing weak signals found, and three audio stages used, Radio would have the well-nigh perfect set.

The writer believes that, in the set to be described, such a receiver has been found. The circuit and constants used were not found by chance; they are the result of hours of study of circuits, building of coils and construction of sets. The idea started with the elimination of one stage of intermediate amplification from a standard super-heterodyne, then two stages and, finally, all three. Naturally, something had to be inserted to make up in sensitivity for the tubes removed, so regeneration was added to the secondary of the coupler by the method usually used on loop aerials.

Then the question naturally occurred, "Why heterodyne to several thousand meters? Why not to a wave length just above broadcasting?" So a new filter was made, redesigned and rebuilt until the tenth one was found to be right. Since all signals were now reaching the second tube on one wave length, and adjustment of regeneration for each new staion tuned would not be necessary, it was decided to add regeneration to the "second detector" also.



special semi-variable condensers for coneverything has been worked out to the smallest detail and that if directions are followed carefully he will have a receiver on which no further experimenting is nec-

Het-duo-gen, as the name implies, is a circuit combining heterodyne with regeneration, not only on one tube but on two tubes; hence, duo-gen. The cost of making such a set is low, as only one large condenser is used and the inductances must be made by the builder of the set. The three audio stages are there, too, and the faintest whisper that reaches the antenna is amplified to a strength that makes every station a local.

The Mixer Tube

To explain the use of every part we must refer to figure 2. An outdoor or indoor antenna and a good ground are the difference between the frequencies of used and connected to the aperiodic primary L-1. This primary is loosely coupled to its secondary L-2 which is tuned by variable condenser C-1. A center tap is taken from L-2 to be connected to the filament circuit while the the "mixer" tube, or "heterodyne mixer" end of the inductance ordinarily connected to filament is connected to condenser C-2 which, in this case, is a feedback control.

This made necessary the designing of | At the grid end of the inductance L-2, a pick-up coil L-3 is inserted which is, in trol of this regeneration, which will be turn, coupled to an oscillator circuit, L-4, described in detail later. In building this L-5. Condenser C-2 can be adjusted to set, the reader can feel assured that the point where regeneration reduces the resistance of circuit L-2, C-1 to almost zero and the sensitivity and selectivity of that circuit increased 100 per cent.

For the benefit of those readers who have not as yet taken up the super-hetrodyne, a short explanation of the word "heterodyne" and the action of tube "U" may be in order. The incoming signals are electrical energy changing its direction of motion millions of times a second, the number of times being called the frequency. In tube V we create more energy changing its direction of travel at any frequency we desire and controlled by con-

If these two energies are led to one circuit and mixed in a vacuum tube, the resulting energy which can be taken out has an entirely new frequency equal to our two original sources of energy. Tube "U" is the one used for this purpose and, while called the first detector, it does not rectify or detect in the usual sense of the word. It should more properly be called

just as we call the oscillator, the "heterodyne oscillator."

#### The Oscillator

The oscillator circuit is very unusual; it covers a wave length range of but 136 meters, yet the receiver as a whole covers the range 200 to 550 meters. To see how this is done, it first must be explained that signals are not heterodyned to any such wave lengths as 3,000 to 10,000 meters; they are raised to one just above broadcasting, let us say, 600 meters. A 200-meter signal has a frequency of 1,-500,000 while 600 meters is equivalent to 500,000 cycles. We can set our heterodyne at this end to 2,000,000 cycles or 150 meters. At the other end of the scale we find that 550 meters equals 545,545 cycles, so our oscillator, to be 500,000 cycles different, can be 1,045,545 or 286 Hence the range is but 136 meters. meters.

New? Decidedly!

Having mixed the frequencies and gotten all programs to a wave length of 600 meters in the plate circuit of tube U, we pass them to inductance L-6 which is the primary of a filter coupler whose secondary is L-7. Tube W is the usual detector, or, in the case of a "super," the second detector. At first glance it would appear that these inductances L-6 and L-7 are not tuned and therefore would not filter very much. Inductance L-7, like L-2, is provided with a center tap for filament connection and a feedback control condenser C-4. Here we have a pleasant surprise, because, since all signals come through at 600 meters, our condenser C-4 can be a fixed one and regeneration is kept at maximum on this tube without the need of varying any-

#### Double Regeneration Equals R. F.

Detector tube W having rectified programs in the usual way, it is only necessary to pass them into tubes X, Y and Z for amplification at audio frequencies to (Continued on page 20)

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Described by Laurence M. Cockaday in January "Popular Radio"—On Sale Now

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In our Chicago and New York stores an exact duplicate of Mr. Cockaday's original set is on display. The specifications and layout of the designer have been followed in every particular.

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	solantite Condenser					an	
	eneral Instrument .0005					<b>Fransformer</b>	
	solantite Condenser	5:50				nce Coupler	
			(2)				
	recision Autodyne Coupler		(1)				
	et of 4 Matched Haynes-					ount	
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(1) .0	05 Daven Resistance	.50					
(2) .5	Daven Resistance (ea.)	.50	(1)	Amsco	2 ohm F	theostat	1.35
	meg Daven Resistance	.50	(1)	Bakel	lite Pa	nel 7x24",	
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	ondenser	.45				Binding	
	001 New York Coil Con-	• 110	4.7				
(2) .0	OUL NEW FOLK COIL COIL-	.35	(1)			bber Strip	
(1) at	enser (ea.)		(-)			lar Radio"	
(1) B	enjamin Standard Socket	1.00				ing panel	
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(1) P	acent Double Circuit Jack	.60				layout and	
(1) P	acent Single Circuit Jack	.50		wiring	diagran	1	1.10
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AII ti	ch Tuned Loop (recommend	oda w vd bar	Mr (	Jockada	v) extra		\$16.50
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#### Going Through Interference

The Most Difficult Trouble Is Being Eliminated INTERFERENCE, which has kept many potential I fans from accepting Radio seriously, is gradually ference have learned how to avoid it by using a selec- get. tive receiving set, a short aerial instead of a long one, a loop antenna where the design of the receiver will permit, or hooking in a wave trap. Obviously the development of the Radio art, in broadcasting at least.

is not solely up to the engineers; it is dependent to a considerable extent on the fans, who must keep posted on developments and make their sets as selective as possible.

There is no simple cure-all for interference. Both natural and man-made interference must be coped with and the former is found the more difficult to overcome. There are many sources of interferences, in the reduction of which we are fast approaching the limit attainable. One is atmospheric electrical disturbances, both natural and artificial, which always exist in greater or less intensity and are particularly troublesome in summer. The Radio public is going to have to learn to distinguish between removable interference and inevitable interference. Science will find ways to circumvent these sources of interference

which man cannot remove.

The slight electrical discharges always going on in the atmosphere, similar to very tiny lightning discharges, cause a certain background of noise in a Radio receiving set and these discharges may never be prevented any more than variations of weather can be prevented. They are a sort of a natural limit to what a receiving set can do, for if the waves from a distant station are weaker than the average of these atmospheric disturbances, no increase of amplification in the receiving set can bring in the distant station without the interference. This would mean that there are definite limits to the distance satisfactory reception is possible. To increase that distance higher power must be used in the broadcasting stations.

#### Value of Radio

Rural Field Is a Big One Undeveloped

NOW is the beginning of the time when Radio relieves the monotony of rural life. Statistics at Washington show that there are more than two and a half times as many sets in use on farms in this country as there was a year ago. The survey was made through county agricultural agents. One quarter of our inhabitants are engaged in farming and it appears as if they were now coming into the market for Radio. Perhaps one reason why the farmer has been slow is that he has not known what to buy or how to build his own set.

This phase of the development of Radio has been a puzzle to manufacturers, for if anyone could make practical use of Radio, it is the farmer. It is not only useful for entertainment but for giving information

first hanf that it is valuable.

To rural dwellers Radio is the greatest invention of all time. It means an end to isolation. The big future of Radio lies in the farm field.

#### What You Miss

Everything in Modern Life Covered by Broadcasts

NOT until you have listened to the wonderful per-formance of some great artist, brought to you by Radio in the quiet seclusion of your home without the accompanying noises of public gatherings or of inchanical reproduction, can you realize the great benefit and pleasure to be derived from a Radio set in your home. Those who do not have the opportunity of listening in on Radio programs are getting to be as much out of date as those who do not read the newspapers.

The fascination, the thrill and the mystery of Radio all make a strong appeal to keep abreast of the times, and the pleasure of having a set in your home and of choosing your own type of program and listening to it, away from the crowd, makes Radio well worth

#### RADIO INDI-GEST

#### Lower Mathematics

Turkey Creek, Wisconsin.

Indi-Gest Editor, Chicago. Hon. Sir:

Mebby some of the young fellers will think that an old man 70 years old like me ain't got no business experimenting with Radio. But I don't agree with them. The experiment I just finished was very certain in its results to my mind and may save your readers a lot of trouble.

All the time I been wanting to hear them Night Hawks in Kansas City, and I couldn't never get them yet. So I was talking with Jim Hopkins' boy Newt., from over Thompson's Corners, and he said I orter make a loop, which you got to point where the music is coming from. He told me how to make it, and being pretty handy with tools, I got her all hooked up. But the thing I wasn't smart to, was to find out just exactly where Kansas City is from Turkey Creek. Then I went to the railroad agent who has charge of shipping to all parts of the U.S. A., and sometimes to foreign countries, and asked him where to find Kansas City from Turkey Creek. He figured with me and we calculated about south by southwest.

Tuning in again and getting no results, I decided to buy a compass and put on the loop and aim her exactly south by southwest, but nothing come in. Then last night at half past 12 this morning I changed back to the ant-emma and who should come in but them Night Hawks. I guess I been going to bed too early was the trouble.

But about my loop experiment that is conclusive and nobody need go over my ground. My results may be expressed very simply by a formula like this. 1+1=0. Now I will explain: the first 1=a loop and being eliminated. Fans who suffer from local inter- the second 1=a peanut tube and 0=the results you

> Respectfully yours. DAN'L TUCKER.

#### Sir Static and the Radio

Sir Static is my name, I rule the ether waves, The Radio I shame, And knock the thing to staves.

When program's coming fine, I rip and snort and tear; Right there is where I shine, And cause the Phan to swear.

When Prima Donna sings, I rip her voice to shreds, I give her broken wings, And see she never weds.

When preacher tries to preach, Disturbance then I raise, Turn sermon into screech, Make senseless finest phrase.

All science I defy, Break into all hook-ups, From tube to tube I fly. And make them howling pups.

I spatter, sputter, spit, I clutter, clatter, clat, For all big noise I'm it, For luck I'm blackest cat. REV. MARCUS L. GRAY.

#### Mrs. Partington Speaks Out

Dear Indi: Mizz Partington says Radion' ain't been none too good for the past week so far as she is concerned. She says that whilst she was expertin on play with a vim.

> she blowed eight perfectly new tubes - something allus takes the joy out of life -even to Radio.

> She heard the "Merry Qld Chief" and his Night Hawks celebrating their two-yearold birthday, and she says she don't know whether the Chief is through cutting his teeth or not, but he has sure learned to talk and can put more of it through the microphones in one night than some others could do between anniversaries. His orchestra can sing, dance, jazz, or play music, whichever the applause telegram requests calls for and they seem like a right cheerful

party at their studio.

KDKA put on another pioneer stunt last night, with the entertainers all in costume and scems like they was visible to be seen by any of the public who wanted to take a peek, and she says that if they look as good as they sounded in her speaker horn, why they was worth looking at.

Tonight, she says, she's been listening at a preacher whose text was about his broken leg he's just recovered from, but which is still more interesting than Mrs. Cohens' operation, which she was telling "Abie's Irish Rose" all about. Well, for one thing, she says there is lots in the Bible about broken bones, but not a thing about appendixes. SIGNING OFF.

#### Well—Did He Get a Good Ground?

Dear Indi:-The Remington Typewriter band playing at WGY. Schenectady accompanied a church choir singing at Providence, R. I., broadcasting station, according to E. L. Fuller of the latter city. "The band," writes Mr. Fuller, "was playing a medley including 'Massa's in the Cold, Cold Ground,' and the choir was singing the same song at exactly the same time. I made a split on dial settings and could get both. The band kept perfect time for the singing until the last few bars when the band won out." SPIDER WEBB.

#### The New Arrival



#### Condensed

By DIELECTRIC

On my first trip to Lansing, Mich., I found a jazz concert going on at a merry rate from the studio of WREO. This is one of the stations that has been on the air only a comparatively short time and yet the announcer hales his unseen audience with the assurance of an old-timer. We shall see what there is to hear when jazz is silent.

WLW had an unusual visitor one evening when the dials snapped into position for the Cincinnati station. It was none other than a singer with the euphonious name of Wendell Hall. You may have heard of him, though I doubt his songs are known to more than a half-dozen regulars-really! The weather has surely captivated this singer's attention, for I heard him say "We're goin' to have weather, whether or not."

Absent mindedly shifting around for some unknown Radiocast station I discovered myself back in Michigan once more; this time in Saginaw, Station WABN. Here was another jazz band! They certainly do run to the classics out there. All dance; sisters, aunts and cousins.

Then for a happy foil to this mad whirl we chanced on WRC to find the Little Symphony orchestra of the United States Marine band giving a varied and very entertaining musical program. Those service men do feel the spirit of music in their bones and

We differ in tastes in music as in other things and, fortunately for all, Radiocast stations are aware of it. For those who enjoy grand opera, occasions are rare when it may be heard. The more reason then to congratulate WIP for successful miking "Aida," as sung by the San Carlo Opera forces. It is to be hoped that station will secure the response to an appeal which would put grand opera on the air next vear.

Seldom indeed do listeners in hear such consummate art as Senor Guerrero displayed at Station WGY, rendering piano works by the masters with interpretative insight and executing legato passages with exquisite charm. Ferdinand Fillion was equally pleasing in his choice of numbers, an evidence of mastery of his instrument—the violin.

There's a station at Mattapoisett, Mass., WBBG, which had an orchestra entertaining the Radio audience very commendably. Although in the Cape Cod district there was no flavor of the piscatorial about their playing at all, in fact scales were not in

After an absence of some weeks I considered it about time to visit Hastings, Neb., so tuned in KFKX to find a program replete with both instrumental and vocal numbers and varied to meet the requirements, of a fastidious clientele. Neither the announcers nor technicians are in need of any advice; certainly not of censure. Having established a certain high standard they mean to maintain it.

Every time WTAM has the sole privilege of holding my attention I feel impelled to congratulate the station on having so nearly perfect transmission. While Spitalny's orchestra is not one to cause enthusiastic comment, the manner in which the various instruments were given their true quality justifies praise for the management of WTAM.

# Demonstrating Radio Principles at Home

## Chapter III—Types of Aerial Installations

By J. E. Owen

RADIOPHANS inclined to experiment will find in this series of articles, directions for illustrating to their own satisfaction the underlying principles of Radio. They will be told how to set up the experimental apparatus, which will be simple and not so complicated as to require the equipment of a large laboratory, using odds and ends probably already at hand. Few new parts will be needed. The chapters to follow will be:

Chapter IV-Devising New Circuits. Chapter V-Presenting the Experimenter Senior.

Chapter VI-Presenting the Experimenter Junior.

Chapter VII-Presenting the Experimenter Supreme.

Chapter VIII-Experimenting with Push Pull Amplifiers.

EVICES for intercepting Radio waves and converting them into electric waves of Radio frequencies are called aerials, antennas, loops, and a great many other similar names, these

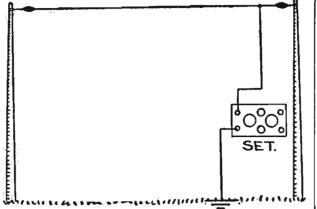


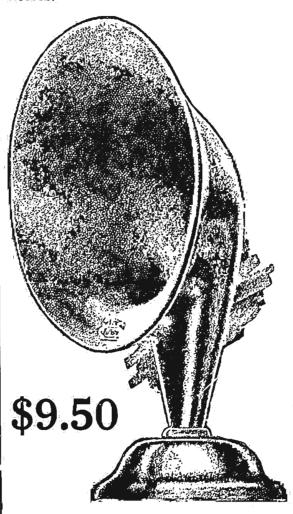
Figure 1

applying to various types of devices. The different types each have their respective good points, but since local conditions determine the relative values of these points of superiority, it is well to consider local conditions before selecting a type for one's own particular use.



#### The Ford of Loud Speakers

Fultone has been thoroughly tested on regenerative, reflex, tuned radio frequency and super-heterodyne receivers and has proven its ability to handle both faint programs from distant sta-tions and the roaring volume of the locals. This it does without distortion, ting and with absence of tinny or other metallic

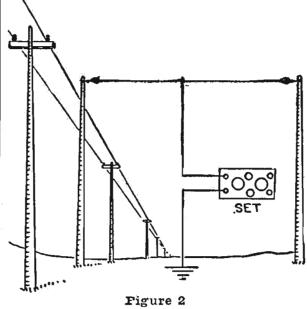


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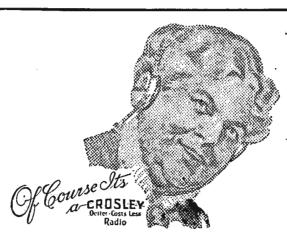
it being possible to change this direction at the operator's will. Signals and static are directional. That is, they come from of figure 1 and a counterpoise. Of course certain directions like puffs of wind, though unlike winds, they may come from all directions simultaneously. A loop receiver, then, receives static from one



direction principally, most of the static from other directions being eliminated. The loop has a most serious drawback, however. It receives only a very small amount of energy. Its use for distance reception is limited to the most sensitive sets. It is seldom suitable for sets employing as few as four tubes. It will, of course, give some results on one tube, but the range with this type receiver is limited to only a few miles.

#### Four Principal Installations

For use with the usual type of set, there are four principal aerial installations that will give the utmost satisfaction. Figure 1 is a single wire aerial of the inverted L type using a simple ground connection. Figure 2 is a single wire T



Think of the boundless delight of that dear old mother, confined to the house by the rigors of winter or the infirmities of age, when she listens in for the first time on a Crosley Radio. Imagine the joy of the kiddies, when

Imagine the joy of the kiddies, when they awaken you Christmas morning with the glad tidings that "Santa has brought us a Crosley Radio." Then decide to make this a Crosley Christmas.

There can be no gift with greater possibilities for continued happiness than a Crosley set. It carries Christmas along through the year, continually giving new thrills and happiness and bringing pleasant thoughts ness, and bringing pleasant thoughts of the giver.

It is a delight to operate a Crosley. The immediate response to the turn of the dials; the clearness of reception from far distant points; the real ease with which local stations may be tuned out; all help to make Crosley reception distinctive and exceptionally pleasurable. The very low cost at which this really remarkable radio performance can be obtained places Crosley sets within the reach of all—the ideal Christmas gift. It is a delight to operate a Crosley.

#### BEFORE YOU BUY-COMPARE YOUR CHOICE WILL BE A CROSLEY

Crosley Regenerative Receivers are licensed under Armstrong U. S. Patent No. 1,113,149. Prices West of the Rockies, add 10%



Crosley Model 51, Price \$18.50 With two tubes and Crosley Head Phones, \$30.25

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Crosley owns and operates Broadcasting Station WLW

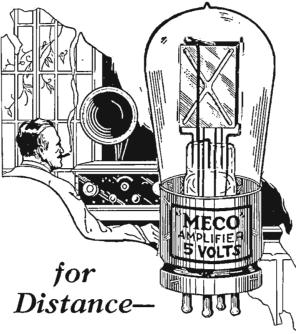
feature its ability to receive directionally, consisting of a single wire suspended from a high support. Figure 4 is a combination of the single wire arrangement there are cage and other multi-wire antennas, but for the most part, they are modifications of these four types. The counterpoise may be used with either the T or the vertical aerial.

The simplest and often the most satisfactory form of aerial is that of figure 1. The construction of such an aerial is very simple, the cost is low, and the troubles resulting from defective insulators and breaking wires are reduced to a minimum. This form of aerial is somewhat directional, it being that reception is best in the direction in which the aerial lies, advanage being given to the direction at the lead-in end. These directional effects are so low, however, that in ordinary reception it is impossible to tell that they exist at all. The writer has received Glasgow, Scotland, on an aerial of this type lying due north and south. The installation was in western Oklahoma, the set being a three tube regenerative of the writer's own design.

If there is a power line close by, it is advisable to make the installation such that the aerial is at right angles to the direction of the power line. The single wire inverted L of figure 1 may be used, but a slightly better arrangement is the T aerial of figure 2. Were the aerial parallel to the power line, there would be currents induced in the aerial due to the alternating currents in the power line, and these in turn would cause an undesirable hum in the receiving set. By placing the aerial at right angles to this power line, the induced currents are reduced to a minimum, the least hum being present when the T type aerial is used, provided one end is not too close to the power line.

#### Inverted L Is Directional

The T type aerial is not quite as directional as the inverted L. Too, it gives slightly stronger signals since it inter-



If you are a "bug" on getting distant stations, try standardizing on MECO Tubes. You will notice an improvement in greater volume together with clear, distinct receptive tone.

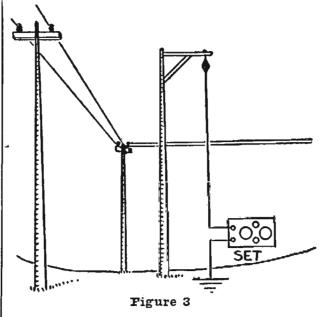
A radical improvement in construction gives MECO Tubes longer life as well as other outstanding advantages. Genuine M E C O Tubes have MECO stamped on the base. Look for it.

Made in 3 volt and 5 volt sizes with large or small bases. Sold by dealers everywhere at standard prices and distributed by recognized radio jobbers and set manufacturers.

#### Metropolitan Electric Co. Des Moines, Iowa



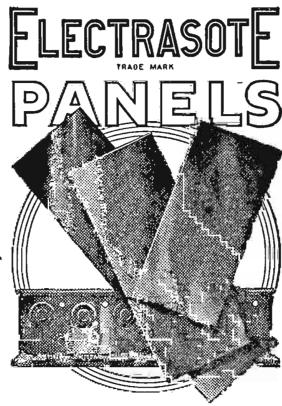
A loop aerial has as its most valuable | type aerial. Figure 3 is a vertical aerial, | cepts a greater portion of the wave. In installing an aerial of this kind, the horizontal portion should be about twice as long as the horizontal portion of the inverted L. This, for ordinary regenerative sets, should be about 160 to 200 feet. If it is desired to receive on very short wave lengths, it is necessary to reduce this length somewhat. In selecting wire for this form of aerial, be sure to get strong wire since the aerial is not only



longer than the ordinary type, but in addition, it has to support at its middle the weight of the lead-in wire.

Either of the above installations is very satisfactory with the power line passing by in only one direction, but (Continued on page 18)

In the building of any good receiving set, the panel plays an important part. Therefore, the best can be none too good.



should be your choice when buying. Unaffected by weather conditions, they neither warp nor change They reduce surface color. leakage to a minimum. Their handsome finish contributes to the attractive appearance of your set. Moreover, they are lower priced than other standard panels.

Electrasote is a product of The Pantasote Company, Inc. —a name that stands for Quality all over the world.

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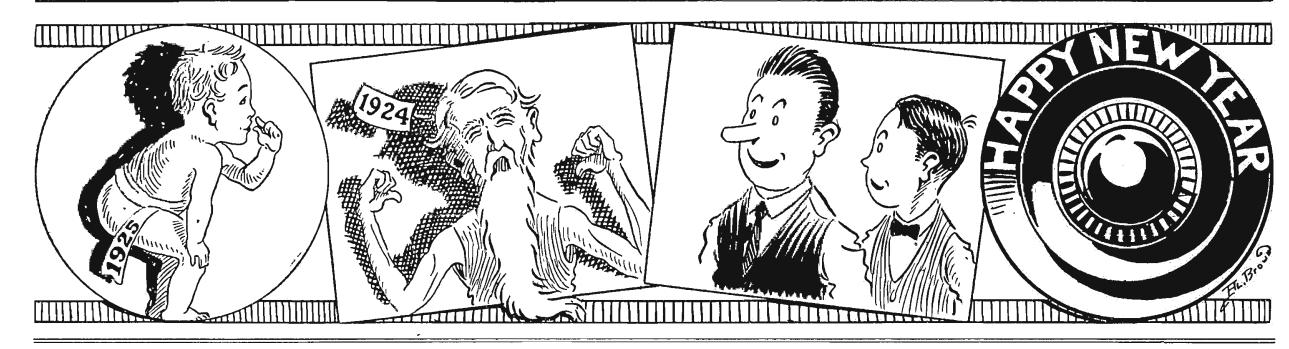
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THE ANTENNA BROTHERS

Spir L. and Lew P.

Tune in on the New Year



#### DEMONSTRATING RADIO

(Continued from page 17)

neither of them will do if two power lines pass at right angles, or the power line makes a right angle turn as in figure 3. By far the most satisfactory way out of this difficulty is to install a vertical aerial, it being that a vertical aerial is at right angles to both directions of the power line. The support may in this case be a single guyed pole, though best results will be obtained when two poles are erected, a wire strung between them, and the vertical acrial suspended from this wire. The whole arrangement will then look somewhat like that of figure 2, the principal difference being that the poles are closer together and there is an insulator between the vertical and horizontal wires. The poles should be at least 6 or 8 feet apart.

The vertical aerial is not directional. This is greatly in its favor. It is very efficient on short wave lengths, this form often being used on both transmission and reception of wave lengths below 100 meters. Because of the small space it occupies, and because of its inherent low loss condensers placed on the market, ability to reduce power line hum to a and an examination of the construction suspended along the side of a tall build- aerial. The most striking change in the

cannot be as good as when the aerial is out in the open.

Aerial Losses

This brings up the problem of aerial losses. An aerial is a condenser. Within the past few months there have been

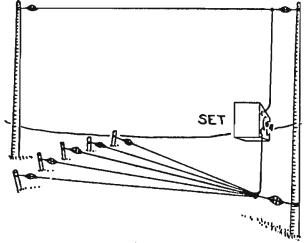


Figure 4

minimum, it is recommended for city and of these condensers will enable one to large town installations. Often it is determine just how to install a low loss

ling, the building itself being the support. condenser design is the removal of in-Ishaped as shown, or they may be placed Results with this form of installation sulating supports from the electrostatic parallel, their ends being joined with anfield within the condenser. This, in fact, other wire. All joints should be soldered. is practically the whole story of low loss condensers, and if it applies to condensers type. Good glass insulators are always within the set, it most certainly applies satisfactory for Radio work when they to condensers without the set. Since the aerial is a condenser, in order for it to be low loss, the space between the aerial be as long as the horizontal portion of and the ground (the ground representing) one plate of the condenser) must be free from trees, buildings, and the like; the guy wires must be kept as far as possible from the aerial; the lead-in wire must be kept as far as possible from the building, and in passing through the wall must be very short, and the ground and aerial lead-in wires must be separated by a considerable distance.

#### Counterpoise Installation

The fourth type of installation is more complicated, but in many cases it is advisable. Often in dry climates the ground will be very dry several feet from the surface. A number of earths have high ohmic resistances when they are dry. There may be no water system which can be used for a ground. In such cases it is always advisable to install a counterpoise. One may be made by placing a number of wires 3 to 6 feet above the ground and insulating them from their supports. They may be arranged fan- Radio.-Editor's Note.)

All insulators must be of the highest have a sufficiently high tensile strength. When possible, the counterpoise should the aerial.

The action of a counterpoise is very simple. It is very common for a receiving set to have a condenser in series with the acrial, either above or below the tuning coil. With it below, one plate is connected to the tuning coil and the other to the ground. This is exactly the arrangement when a counterpoise is being used. The counterpoise is the plate connected to the tuning coil, and the ground is itself the other plate. It is therefore unnecessary to make any connection to the ground. There is one fundamental difference in counterpoise and simple condenser action, however, and that is the wires of the counterpoise in reality are aerials, this, of course, giving the advantage to the counterpoise.

(Mr. Owen will present the subject of devising new circuits in the next article and will give some idea of an engineer's problems in designing new things for

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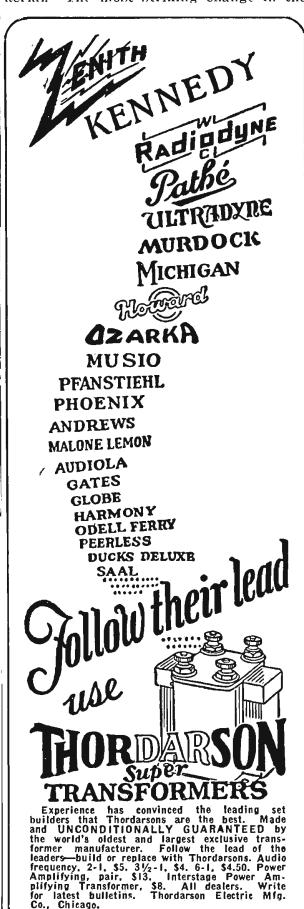
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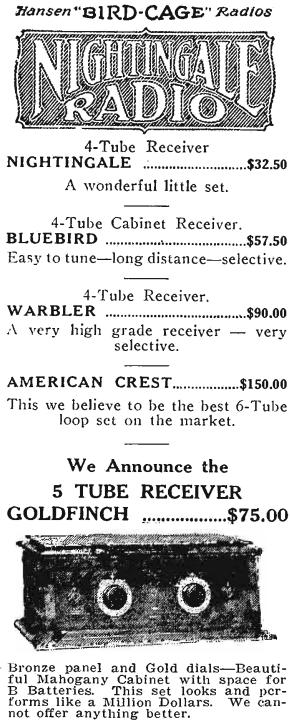
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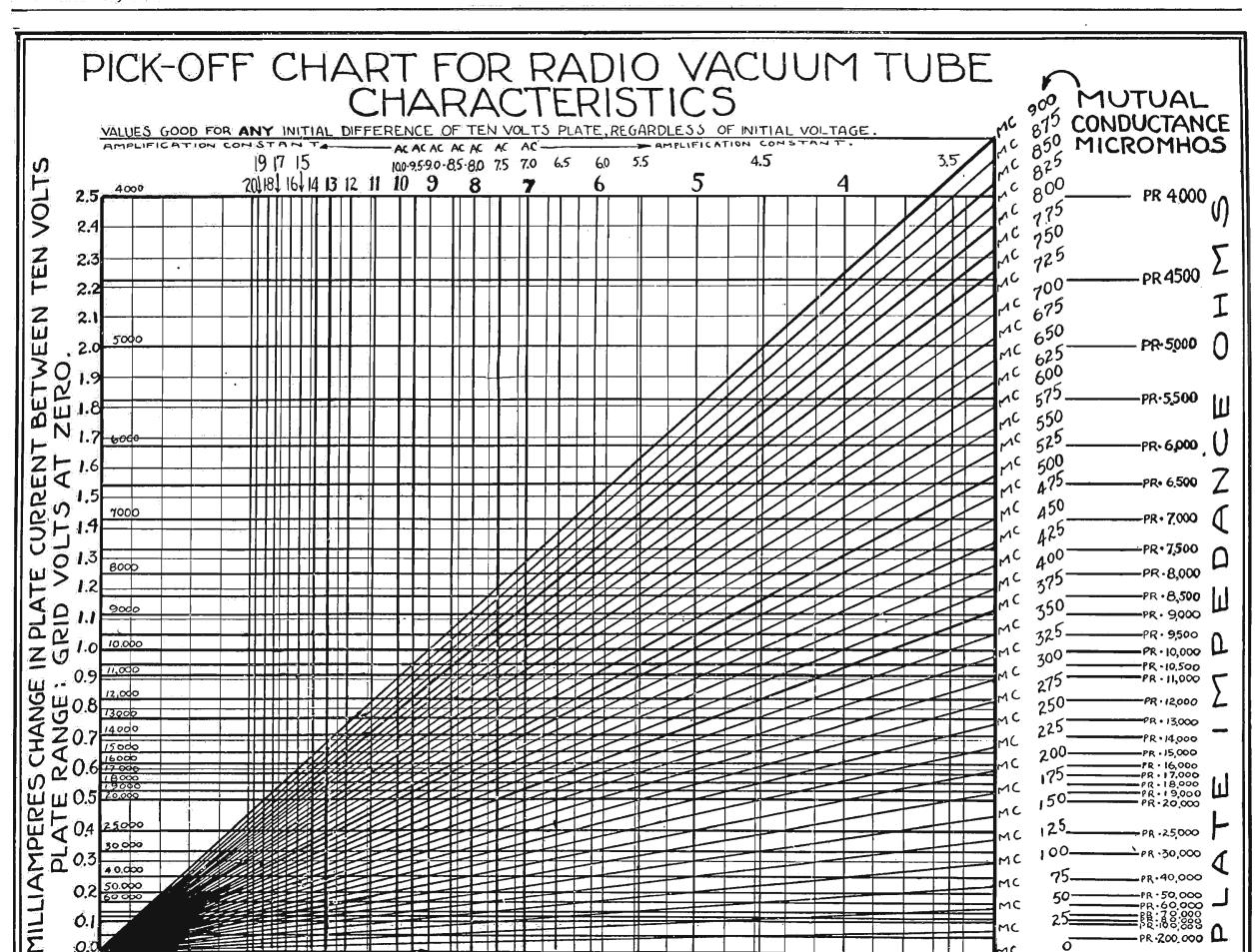


Send your name and your dealer's name for the Lincoln Catalog. Describes Lincoln Loops, Lincoln Low-Loss

Loop, \$6.50

Condenser, Lincoln "Long 45" Tuner, Lincoln Kit, and Lincoln Oscillascope. Shows 6 interesting hook-ups.

Lincoln Radio Corporation 224 North Wells Street, Chicago



# Matched Tubes Improve Set

Part II—Vacuum Tube Characteristics

By D. C. Wilkerson

of a tube depend then upon such infinitesimal and delicate factors, it is no wonder that tube manufacturers are unable to provide tubes of exactly identical characteristics. Here is where troubles begin, for in the unbalanced The answer is, try to obtain a set of conditions in a Radio set, because of tubes tubes for your Radio receiver all of we are forced to resort to external balancing condensers, potentiometers, chokc coils, and the so-called "losser methods" in order to control regenerative effects which spoil reception.

The above refers, of course, to types of sets using Radio frequency stages of amplification, such as neutrodynes, superheterodyncs and special multi-tube hookups.

#### Qualities of Transformers

Most neutrodyne and super-heterodyne kits, for the make-his-own fellow, contain Radio frequency transformers which are properly made, and which possesses identical qualities, stage to stage. The directions of wiring such kit-sets are usually written by a technician who designs the whole with an idea of balance, and low-loss placement of the various units.

The factory-built multi-tube set employing Radio frequency stages also follows this idea of identity and balance as far as possible.

In the first critical test of such a set, when it is placed in its future home for the first time under operating conditions, ninety-nine times out of a hundred, when the tubes are placed in their sockets, no thought is given to the electrical quali- frequency reflex set, and two six-tube ties of the tubes themselves. In other words, in a well-balanced Radio set, its audio frequency stages, with increased first trial is with a set of unbalanced tubes performance and gratifying results in which, by their very natures, cannot function properly in an amplifying Radio fre-

quency unit. Five or six tubes bought at the ordi-

THERE the electrical characteristics | nary Radio store, or in other Radio market places, will, upon inspection, show marked differences from each other in electrical characteristics. How can we expect the tubes or the sets to produce their best results under these conditions?

of diverse characteristics working there, which possess equivalent characteristics. If it is impossible to get a whole set of equivalent tubes, be sure to use in the Radio frequency stages tubes whose characteristics are approximately identical. This includes also the detector tube. For example, if you have a fivetube neutrodyne set, get three matched tubes and place two of them in the Radio trequency stages, and use the remaining one as a detector. You will find that it will be possible to disconnect the neutrodons and do without them in nearly every

#### Distortion in Super-Heterodyne

In an eight-tube super-heterodyne set brought to the writer lately for adjustment, the distortion and regenerative squealing were extraordinarily marked. The set was partially re-wired where inductive effects were noticeable, and a whole set of matched tubes was installed, in audio, Radio, detector and oscillator sockets. On a two-foot loop, stations a thousand miles away began to come in with remarkable clarity and without distortion.

Believing that there was some catch in it, the writer tried out this stunt in six more sets, three neutrodynes, one Radio sets having Radio frequency, detector and cvery case.

The addition of the matched tubes turned the trick. It was found also that Radio frequency control in every case was

not critical enough for potentiometer use. lent types must be procured. brings greater volume.

9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0

CHANGES IN NEGATIVE GRID VOLTS BETWEEN TEN VOLTS PLATE CHANGE

Another desirable feature in owning a The operation of such a set is simple, around, from socket to socket, it is not at small cost. necessary to readjust units, re-tune or otherwise fiddle with the external controls in order to get the receiver to working properly.

When the tube industry is able to turn out exactly uniform tubes, the Radiophan can look for tremendously better Radio results in distance, selectivity and volume. Equipment for Matching Receiving Tubes

Many Radio clubs, dealers, distributors, experimental laboratories and manufacturers desire to properly test out Radio tubes, but thus far no rapid means for doing the job is known.

A test set composed of meters of differ-

The elimination of the potentiometer from of one type of test set built for the gen-Radio frequency circuit naturally eral market was shown in Part 1. One can build his own if he desires.

COPYRIGHTED 1924

BY D.C. WILKERSON

set of matched tubes, is that should the and with ordinary intelligent handling, tubes by accident or design be changed real worth-while information can be had

If you want to make your own, get the following meters and units:

One voltmeter with central zero point 10-0-10 volts for the grid circuit. One milliammeter 0 to 10 milliamperes

for plate current. One special voltmeter 0 to 150 for plate

circuit.

One filament voltmeter 0 to 7 volts. One filament ammeter 0 to 2 amperes.

One potentioneter for regulating grid volts, 300 ohm.

One potentiometer for regulating plate volts, 400 ohm.

(Continued on page 20)



### Radiotron UV-199 A Small Tube That's a Big Performer

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for detection

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quality is your protection.

The new UV-199 is proving a mighty popular member of the Radiotron family, particularly for portable sets.

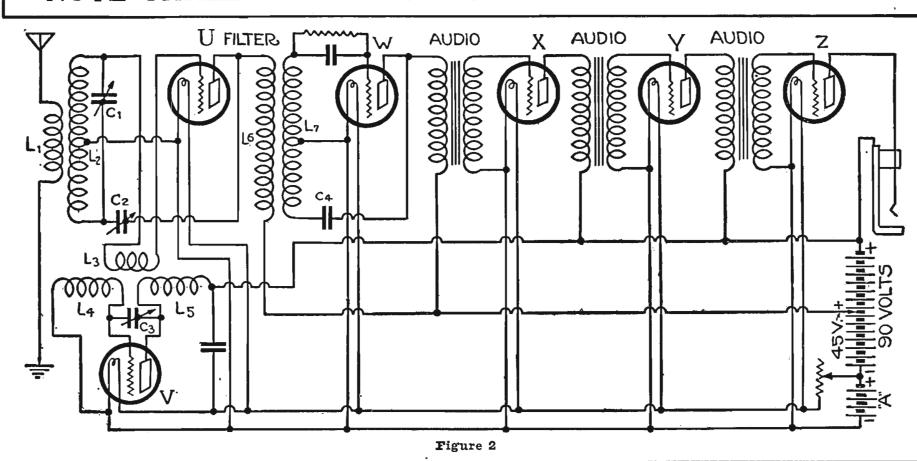
For quiet operation—great ruggedness—uniform operation Radiotron UV-199 is unsurpassed. Each new Radiotron has marked a big step in radio advancement. The RCA mark is the foundation of radio growth—and your protection when you buy. Ask for Radiotrons—and look for the mark.

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Chicago, Ill.

#### NOTE THREE AUDIO STAGES IN SIX TUBE HET-DUO-GEN



(Continued from page 15)

any strength desired. Many will wonder why there are no "intermediate" amplifiers between tubes U and W. In the writer's opinion, the amplification in tubes U and W, due to regeneration reducing the resistance of these circuits, is fully equal to the amplification at Radio frequencies obtained from "intermediate" stages as ordinarily built and operated. Due also to regeneration and low resistance, the tuning is knife-like in its sharpness. Condenser C-2 can be reduced serting this capacity, a path is provided for ease in finding stations within a few hundred miles and then brought up to not only eliminate interference, but act audio frequency trains of ripples. The as a volume control. Tuning is primarily done on C-1 and C-3 with the action from C-2 as described. Stations can be logged and returned to at will.

When demonstrating this receiver to Radio Digest, one het-duo-gen was located within three-quarters of a mile of WQJ and one mile of WEBH, two of the most powerful stations in the middle west. WLS, WMAQ, WGN and KYW were but five miles away. With all of these stations going full blast, het-duo-gen went through and brought in at will WJY of New York, WIP of Philadelphia, WTAM of Cleveland, WMC at Memphis, WDAF in Kansas City, WFAA in Dallas and KGO at Oakland, California, by the log sheet. Then, just to prove that location and long aerial were not responsible, tests were shifted to another het-duo-gen in Evanston where the same list was heard and KFI of Los Angeles, WOAI of San Antonio and WOR of Newark added. All tuning was done on the loud speaker as anything that gets on the antenna of this set is immediately at loud speaker volume One can tune with head receiver

plugged-in at first stage, but why do it? Beginning next issue, Mr. Brush will give the panel drilling layout and full details of the construction of the inductances so that anyone can duplicate this set and its remarkable results .-Editor's Note.)

#### "X" NEUTRALIZATION

(Continued from page 7)

the diagram figure 2. It may be found that there is no tap. Count the turns from the F end at which the tap is taken , on L and L-1 and count this number from

### Two tubes do the work of five

THE Shamrock-Harkness two-tube set that has this amazing pulling power is described in "Shamrock Radio Builder's Guide Book." Before building your set, send 10 cents for this wonderful booklet. It will save you money.

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Dept. 22-C. Market St., Newark, N. J.
I enclose 10 cents (U. S. Stamps or coln)
for copy of "Shamrock Radio Bullder's Guide
Book," containing diagrams and complete instructions for building 10 sets at prices ranging from \$15 to \$50.

Name Address Dealer's Name

SIX TUBE HET-DUO-GEN F on L-0. Slip a knife point under that turn just enough to raise the wire slightly and slip a piece of cardboard under the wire at that point. Remove the insulation and solder to that point as the connection for the aerial.

> An item that will be new to many is the .5 mfd. condenser shown. This is a by-pass condenser that is essential to good tone and clearness of reproduction. If this condenser is not included, the high resistance of the B batteries would tend to cut off part of the wave train component of the Radio frequency. By inthat offers but little resistance to the Radio frequency oscillations and their third neutrodon is an adjunct that has been overlooked for a long time by most writers and experimenters although one manufacturer of complete sets has been using it with success for some time, while two more have recently added it.

#### How to Make Rubber Rotor Shafts

It is quite difficult to purchase the right size hollow fiber tube for use in making rotor shafts. When I could not find the right size I purchased a rubber stirring rod at a photographic store, sawed the ends off and drove out the aluminum rod. This gave me a 4-inch hollow rubber rod that has no capacity effects.—E. E. Alden, Rochester, N. Y.

#### Cotton Instead of Paper

I have found that in neutralizing a neutrodyne set that it is a good plan to place a little cotton on the prongs instead of the paper. The cotton sticks better and is good insulation.—Milton Witt, Ida,



#### **PREMIER** Microstat

THE SLIDING SCALE **VERNIER** RHEOSTAT

#### FINE TUNING MADE EASY

Premier "MICROSTAT" is a wonder for tuning in the distant stations. Stands alone in its fineness of adjustment and minute control. Two resistor units—one six ohms and one forty ohms—connected in parallel. Vernier adjustment on high resistor. Noiseless in operation. Insures freedom from sputtering and scratching. Premier "DUOSTAT" combines two rheostats in one. Provides all necessary control of two tubes with one panel mounting. Premier Double Disconnect Potentiometer

is the last word in plate current control, Its special feature, a double break switch, automatically disconnects "A" and "B" batteries when lever is off. Prevents battery waste and tube burn out danger.

All three above instruments are typical in design. Each requires only one hold in panel. Bakelle moulded. Silver etched dlals. Many other superior features. All one price, \$2.50 each.

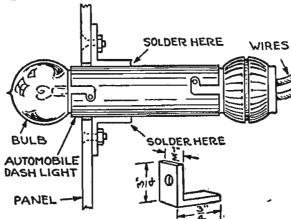
Write for Free Bulletin No. 94 showing complete line of Premier Quality Radio Parts. Ask your dealer if he has Premier free hook-ups. If not, send his name and receive a set free.

Premier Electric Company

Quality Radio Parts

#### Panel Light for Set

The illustration shows an arrangement for lighting the panel on a portable set: however, the same thing may be used on any set. It consists of an automobile light and socket fastened to the back side



of the panel with angles, the globe protruding through a hole drilled in the panel. The 6-volt automobile light will give sufficient light for operating the dials and it can be run from the regular storage A battery.-Willie Stagner, Hartsville, S. C.



ELYRIA, OHIO

Erla precision parts get the best out of Erla

circuits; most powerful, tube for tube. Ask for Bulletin 24.

Electrical Research Laboratories, Chicago



#### MATCHING TUBES

(Continued from page 19)

One 25-ohm rheostat for regulating filament temperature.

One mounting panel to accomodate the above.

One cut-out switch for grid circuit

One cut-out switch for B battery circuit. Necessary binding posts, bus bar wire, solder, etc. A wiring diagram was shown in Part 1,

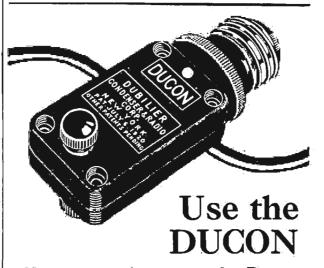
and the procedure for operating the test

set with the pick-off chart is as follows: With 40 volts in the plate circuit of the tube, and zero grid volts, read the plate current in milliamperes. Let us say you get 1.4. Then, with grid volts still at zero, raise the plate volts to 50, or, in other words by 10. Read plate current again in milliamperes and, let us say,

Subtracting 1.4 from 2.1 leaves .7, which represents the milliamperes change of plate current for a corresponding change of 10 volts plate voltage. Now, change the grid volts to negative until the plate current is the same as before; that is 1.4. Then read the grid volts required to produce this change; say 1.25 volts was required. Referring now to the chart, figure 3, enter the left vertical column with .7 and enter bottom horizontal line with 1.25. From their point of intersection, marked for this example with a small circle, read up to top margin. Here you

From this same small circle read diagonally up to the right, and you find that the mutual conductance is midway between 550 and 575, which is 562 micromhos. Now read straight right from the original intersection and you find that the plate resistance is between 14,000 and 15,000 or about 14,250 ohms.

find 8. This is the amplification constant.



No antenna-just screw the Ducon into your electric light socket and tune in. A great saving in expense and labor-and great results with your set.

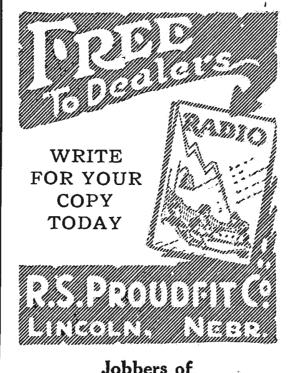
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# Automobile Coil Aids Loud Speaker

#### **Output of Receiver Not** in Series with Battery

It is a well-known fact that unless connections are properly made to the telephones or loud speaker, the direct current from the B battery tends to neutralize the

#### WORKSHOP KINKS EARN A DOLLAR—

HERE 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

magnetism in the permanent magnets and thus destroy their sensitiveness and ultimately their usefulness.

The accompanying sketch and explanation describes a method whereby the B batteries are not connected in series with the loud speaker, and only alternating current passes through it.

The Ford spark coil, which has so often thrown itself in the breach and won the battle for general economy with the amateur, is again called to the front.

The condenser is used as it is, care being taken to see that it has not been burned out or punctured.

One of the secondary coils is carefully removed and heavier wires soldered to the ends. These wires are covered with

Cut a circle about 1% inches in diameter, crimp the edges of one end so that the hard rubber disk will not push through

# Your Crystal Set

will work 400 to 1,000 miles if made by my plans. No tubes or batteries. Copyrighted plans \$1.00; or furnished FREE with complete parts for building set, including special coil and panel correctly drilled for only \$5.00. Satisfaction guaranteed or money refunded. Satisfied customers everywhere. Particulars free.

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## STAR-ITE CRYSTAL Because many people have

had good results with the STAR-ITE CRYSTAL

had good results with the STAR-ITE CRYSTAL used as a detector with non-regenerative tube seta, we have had a great many letters from radio folks who seem to be of the impression that this is the—as yet unperfected—OSCIL-LATING CRYSTAL, of which so much has been said in the radio press.

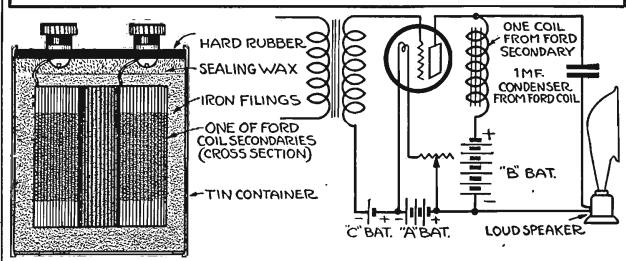
We have secured oscillation with crystals in a laboratory fashion, but would not attempt to soll the STAR-ITE to take the place of amplifying tubes.

We do say that the STAR-ITE is the absolute pinnacle of perfection as a crystal to be used in a REFLEX Set, or a CRYSTAL Set, and as a detector in many nongenerative tube sets, and are glad to support our belief by making it extremely easy to try for yourself.

As this crystal is a new one put out by an old firm in the crystal business your dealer may not have it, but try to get him to order one for you, on our money back guarantee. If he does not wish to do so send us his name with a \$1.00 bill at our risk, and we will send you one with the understanding that you may return it, and we will refund you the \$1.00 at any time within 30 days. Gold Cat Whisker in Each Package

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#### IMPEDANCE UNIT IN CIRCUIT



and place the disc in the end with the coil inside the tube. Pour melted sealing wax or paraffin to cover the binding post

Take a strong permanent magnet to the nearest machine shop and pick up a quantity of iron filings around the emery

These filings are to be tightly packed in the tin tube, completely surrounding the coil and filling the center.

Cut a tin circle to fit the bottom and solder it in place. Connect as shown in the accompanying diagram.

The improved quality of reception will well repay the effort.—Geo. B. Hostetter, Freewater, Oregon.

Placing the Receiver
Noises in a set are often picked up as a result of placing the receiver in the magnetic field surrounding lighting wires running behind the wall, and the receiver should therefore be moved to another part of the room to make sure that the iron cores of the inter-valve transformers are not picking up interference from this

# **Radio Batteries** -they last longer

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FADA book you can build a 5-tube Neutrodyne receiver that

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It contains everything neces-

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every detail of assembling clear. 30 pages of trouble shooting. Large picture wiring diagram.

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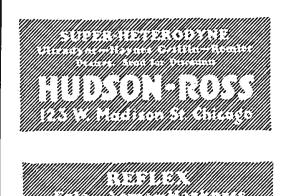
#### Socket Clip Tool

The spring clips in a socket will need some adjustments from time to time in order to make a good contact with the points on the tube. To do this with the fingers or pliers is difficult and if the battery current is on a tube in the circuit may be blown. The tool illustrated



is a great help in making the adjustments. It is made from some kind of insulating material such as wood, fiber or rubber. When the notch is placed under the spring clip the latter can be easily raised into position without fear of making a high voltage contact.—William A. Schulz, Astoria, L. I.

When a 22½-volt dry B battery drops below 17 volts it should be discarded.



# BLUEBIRD



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Distinctly New AND EFFICIENT, satisfying every radio fan's wish in per-formance and price. Our direct sales plan enables us to sell at this low figure. "Bluebird" assures increased range and undistorted volume.

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Type 401A-5 Volts, .25 Ampere Amplifier and Detector

Type 499-3-4 Volts. .06 Ampere Amplifier and Detector

Type 499A—3-4 Volts, .06 Ampere with Standard Base Amplifier and Detector.

412—1½ Volts, .25 Ampere Platinum Filament Amplifier and Detector.

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#### Inexpensive Homemade Charger for B Batteries

With the coming general use of storage B batteries the question of charging them is a problem to many set owners. If you have direct current then it is quite easy to charge a battery, but with alternating current, a charger must be used to rectify the current. I have found that an excellent charger can be made from a cheap toy transformer and a Radio tube socket, using one of the 201A tubes from the receiving set as a rectifier. The

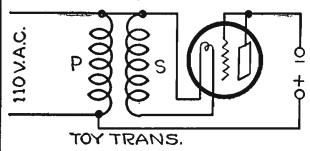


diagram is self-explanatory. Be sure the voltage of the secondary of the transformer is 6 and not 10, as some of them are designed for higher voltages and would burn out the tube.

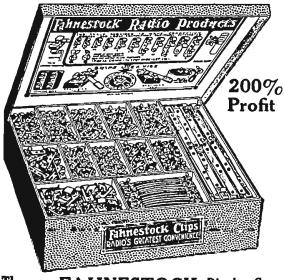
The tube is used as a two-element rectifier by connecting the grid and filament together. Using the plate only it will pass about 1/20 ampere, but using both plate and grid I have found some tubes that would pass almost ¼ ampere without heating or damaging the tube in any way. Most tubes will pass about 1/6 ampere. All the parts can be purchased for from \$1.50 to \$1.75.—Chas. Middleton, Laporte, Ind.

The life of the "C" battery is from six months to a year.

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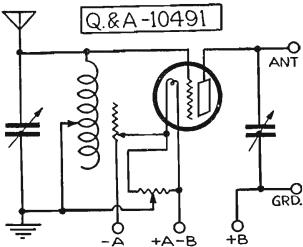
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# Ouestions and Answers

Radio Frequency on Weagant Circuit I have a honeycomb coil set using the Radio frequency as shown in your issue of January 6, 1923, but I could not make



it work until I removed the condenser from the tickler coil. I do not care to do this as it saves the trouble of moving the coils in tuning. Will you please tell me the way to add Radio frequency to the Weagant hook-up?

Will the use of a potentiometer shorten the life of a dry cell A battery, or is one needed with peanut tubes? I am building a four tube set as shown in the January 3, 1923 issue and I desire to get more volume with four tubes. What is the best way to proceed?

A.—We are advising in your inquiry that the Weagant circuit is in a sense the "daddy" of the Reinartz tuner and has many of its characteristic qualities and attributes, one of which is a debatable advantage of using Radio frequency amplification. We would not recommend it except from an experimental standpoint and certainly not at the sacrifice of two

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stages of audio frequency amplification any difference in the volume of signals? | modulation, and as the phone does not (10491) WGO, Kirbey, Saskachewan, Can. This can be worked out on that basis by Weagant hook-up and have tried to use between your tuner and your detector practice. tube, output to input. We are giving herewith a diagram of a simple method of adding Radio frequency to meet your requirements without disturbing your present arrangement.

In the common method of connecting a potentiometer there is a drain on the A battery, which although slight is undesirable, particularily when non-recharging dry cells are used. The objection can be overcome by connecting one side of the resistance of the potentiometer to the positive of the filament battery and the other (instead of the usual to negative) is connected to the filament side of the filament rheostat. If the arm of the rheostat is connected to the filament and the resistance itself to the negative side of the battery the potentiometer connection goes to the arm side of the rheostat. This method enables the potentiometer to be cut out of the A battery circuit by turning off the filament rheostat, which simultaneously breaks the potentiometer connection on one side and prevents any flow of current through the resistance.

Code Practice Circuit (9878), LP, Holden, Alta., Canada.

Will you kindly publish a circuit for Radio code practice using a high-toned buzzer and receivers?

Does the length of battery leads make

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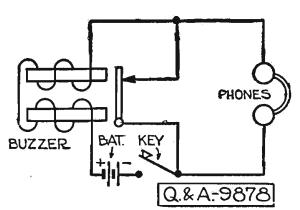
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connecting your Radio frequency stage will meet your requirements for code like to have you advise me of a different



The length of battery lead is not important in the matter of effect on volume if the wire is sufficiently heavy to carry the required current.

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fice, Washington, D. C., for 10 cents.

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

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AA3, Denver, Colo. 440 meters. Fltzsimmons Gen.
Hospital. (Educational Dept. U. S. Army). Aniouncer, John B. Crandall. Daily ex Sun, 12:30-1 pm, AA 3's Shelled Schocked Serenaders. Mountain, AQ6, Canton, O. 425 meters. Hdqts. 135th Field Artillery O. N. G.
AT9, Fort Bragg, N. C. 435 meters. 500 watts. U. S. Government. Announcer, Lieut. James Y. LeGette. Slogan, "The Pioneer Broadcasting Statlon of the Field Artillery." Tues, Thurs, Sat, 8-9:55 pm, dance music, talks, bands, fights. Sun, 8-9 pm, service. Eastern.
AV7, St. Paul, Minn. 400 meters. 6th Inf. Mlnn.

AV7, St. Paul, Minn. 400 meters. 6th Inf. Mlnn. Nat'i Guard, St. Paul Armory. Irregular schedule.

Nat'i Guard, St. Paul Armory. Irregular schedule, Central.

AW5, Dayton, O. McCook Field, U. S. Army. Experimental work only.

KDBG, San Pedro, Calif. 146 meters. 100 watts. Thouas H. Ince private yacht "Edris."

KDKA, E. Pittsburgh, Pa. 326 meters. 1,000 watts. Westinghouse Elec. & Mfg. Co. Announcer, H. W. Arlin. Slogan, "Tho Pioneer Broadcasting Station of the World." Daily ex Sun, 9:45-10 am, 12-1 pm, market reports, music; 6:30-10, news, features, markets, concert 9:55-10, time. Sun, 10:45 am, church services; 2:45 pm, concert; 4, organ; 4:45-6:30, dinner concert; 7:30, church service. Eastern.

KDPM, Cleveland, O. 270 meters. 500 watts. Westinghouse Elec. & Mfg. Co. Announcer, J. J. Francis. KDPT, San Diego, Calif. 244 meters. 50 watts. Southern Elec. Co. Announcer, William O. Heathcote. Slogan: "At the End of the Trail." Daily ex Sun, 1:30-2:30 pm. Tues, 8-9 pm. Thurs, Fri, Sat, 6:00-6:45 pm. Wed, 8:00-10:00 pm. Pacific.

KDYL, Salt Lake City, Utah. 360 meters. 100 watts. Newhouse Hotel. Announcer, H. C. Mailander. Slogan, "Better Radio." Daily ex Sun, 3-4 pm, 6:30-8, news, music. entertainment. Mountain. KDYM, San Diego, Calif. 280 meters. 100 watts. Savoy Theater.

KDYQ, Portland Ore. 213 meters. 50 watts. Oregon

Savoy Theater.

KDYQ. Portland Ore. 213 meters. 50 watts. Oregon Institute of Technology. Announcer. George Sturley. Slogan: "The Radio School." Educational programs. KDZB, Bakersfield, Calif. 360 meters. 100 watts, Frank Siefert. Daily ex. Sun. 8-9 p.m. reports, music. Pacific. KDZR, Bellingham, Wash. 231 meters. 50 watts. The Bellingham Pub. Co. Announcer, A. M. Brown. Slogan, "Tulip Town." Daily ex Thurs, 7-8 pm. Pacific.

Pacific.

KFAB, Lincoln, Nebr. 240 meters. 200 watts. Nebraska
Buick Auto Co.

KFAD, Phoenix, Ariz. 360 meters, 100 watts, McArthur
Brothers Mercantile Co. Announcer, Arthur C. Anderson. Slogan, "Where Summer Winters." Dally ex
Sun, 7:30-8:30 pm, news, weather, stock reports,
music. Mountain

Brothers Mercantile Co. Announcer, Arthur C. Anderson. Slogan, "Where Summer Winters." Dally ex Sun, 7:30-8:30 pm, news, weather, stock reports, music. Mountain.

(FAE, Pullman, Wash. 330 meters. 500 watts. State College of Washington. Announcer, George Bayles. Slogan: "Your Service Station." Wed, Fri, Mon, 7:30 pm, talks, music. Pacific.

KFAF, Denver, Colo. 278 meters. 500 watts. Western Radio Corp. Announcer, George D. Walker. Slogan: "Voice from the Rockles—Out Where the West Is."

KFAJ, Boulder, Colo. 261 meters. 100 watts. Unlv. of Colo. Announcer, F. M. Orsborn. Tues, Thurs, Sat, 9 pm, time, music, addresses by faculty. Sat, 2:30-5 pm, sports. Mountain.

KFAR, Hollywood, Calif. 227 meters. 100 watts. Studio Lighting Service Co.

KFAU, Boise, Ida. 270 meters. 500 watts. Boise H. S. Announcer, David Taylor. Slogan: "Follow the Oregon Trail to Boise." Daily ex Sat, Sun, 3:30-4:15 pm, markets, weather, news. Mon, Frl, 8-9 pm, concert. Mountain.

KFAW, Santa Anna, Calif. 280 meters. 10 watts. Radlo Den. Slogan: "Where There 1s Always a Frlend from Your Old Home Town." Dally ex Sun, 4:30-5 pm, news, reports, music. Mon, Thurs, 6:30-7:30 pm, concert. Pacific.

KFBB, Hayre, Mont. 275 meters. 50 watts. F. A. Buttrey Co. Announcer, C. W. Willey. Daily ex Sun, 12:30 pm, markets, weather, reports. Mountain.

KFBC, San Diego, Calif, 278 meters. 15 watts. W. K. Azbill. Thurs, Sun, 8-9 pm, Bible Iesson, sermon. Pacific.

KFBG, Tacoma, Wash. 252 meters. 50 watts. First

KFBG, Tacoma, Wash. 252 meters. 50 watts. First Presbyterian Church. Announcer, Frank, Touey. Sun, 11-1 pm, 7:30-9. Pacific.

11-1 pm, 7:30-9. Pacific.

KFBK, Sacramento, Calif. 283 meters 100 watts. Klmball-Upson Co. Announcer, L. E. Grogan. Slogan: "Gateway to California." Daily ex Sun, 5:45-6 pm, concert, news, codes. Pacific.

KFBL, Everett, Wash. 224 meters. 20 watts. Lesse Bros. Announcer, R. H. Leese. Daily, 7:15-8:15 pm. Siin, 2-3 pm. Pacific.

KFBS, Trinidad, Colo. 280 meters. 10 watts. Chronicle News & Gas & Elec Supply Co. Mon, 8-10 pm. Mountain.

Mountain.

KFBU, Laramie, Wyo. 283 meters. 50 watts. The Cathedral. Sun, 7:30 pm, church service. Mountain.

KFCB, Phoenix, Ariz. 278 meters. 10 watts. Nielsen Radio Supply Co. Announcer, E. A. Nielsen. Slogan: "When 1t's Wintertime in Michigan, 1t's Summer time Down Here." Daily. 7-7:30 pm, bedtime storles.

tline Down Here." Daily. 7-7:30 pm, bedtime storles. Mountain.

KFCC, Helena, Mont. 248 meters. 10 watts. The Flrst Congregational church.

KFCF, Walla Walla, Wash. 256 meters. 100 watts. Frank A. Moore. Slogan: "The Valley They Liked So Well They Named It Twice."

KFCL, Los Angeles, Calif. 236 meters. 500 watts. Leslie E. Rice.

KFCP, Odgen, Utah. 360 meters. 25 watts. Ralph W. Flygars.

KFCV, Houston, Texas. 360 meters. 10 watts. Fred Mahaffey, Jr. Dally ex Sun, 7:30-8 pm, entertalnment. Sun, 2-3 pm, entertalnment. Central.

KFCZ, Omaha, Neb. 258 meters. 50 watts. Central H. S. Announcer, C. H. Thompson. Dally ex Sat, 3-5 pm, orchestra, organ. Mon, Tues, Thurs, 7:30-9 pm. Sat, midnight program. Central.

KFDD, Boise, Idaho, 275-1 meters. 10 watts. St. Michael's Episcopal Cathedral. Announcer, Paul Roberts. Sun, 11:15-12:30 pm, 7:30-9:15. Mountain.

KFDH, Tucson, Arlz. 268 meters. 50 watts. Univ. of Arlz. Announcer, Max Voss Kuehler. Irregular schedule.

KFDJ, Covallis, Ore. 360 meters, 50 watts. Oregon

schedule.

KFDJ, Corvallis, Ore, 360 meters, 50 watts. Oregon
Agri. College. Announcer, Jacob Jordan. Mon, 8:309:30 pm. Thurs, 8-9 pm. Pacific.

KFDL, Denver, Colo. 226 meters. 5 watts. Knight
Campbell Music Co.

KFDM, Beaumont, Tex. 306 meter. 500 watts. Magnolia Petroleum Co. Announcer, Magnolene Mike.
Slogan, 'Kall for Dependable Magnolene.' Tues,
Tri 8 pm. concerts. Every other Sun. 9 pm. Central.

Fri, 8 pm, concerts. Every other Sun, 9 pm. Central. KFDX, Shreveport, La. 250 meters. 100 watts. First Bantist Church. Announcer, Dr. M. E. Dodd. Wed, 9-10 pm, music, talks. Sun, 11 am, 7:30 pm.

Central.
KFDY, Brookings, S. D. 273 meters. 50 watts. D. State College. Announcer, G. A. Rietz. Dally ex Sun, 12:15 pm, livestock markets. Tues, 11 am, music, lecture. Thurs, 8-9 pm, music, lectures.

entral. DZ, Minneapolis, Minn. 231 meters, 10 watts.

Harry O. Iverson.

KFEC, Portland, Ore. 248 meters. 50 watts. Meler & Frank Co., Inc. Dally ex Sun, 12 m, weather, reports; 4-5 pm, music; 6:30 pm, weather, crop, markets, reports. Thurs, 9-10 pm, concert. Sat, 11 am-12 m, children's hour. Pacific.

KFEL, Denver, Colo. 254 meters. 50 watts. The W. L. Winner Radio Shop. Announcer, Capt. W. L. Winner. Dally ex Sun, 9 am, 10, 11, 2 pm, 3-4. Tues, 8-9 pm. Thurs, 10-12 m. Fri, 8-9 pm. Sun, 9-10 sin. Mountain.

KFEQ, Oak, Nebr. 268 meters. 100 watts. J. L. Scroggin. Announcer, Clarence Koch. Fri, 9-10 pm. Central.

KFER, Fort Dodge, Ia. 231 meters. 10 watts. Auto Electric Service Co. Announcer, H. E. Giltner, KFEV, Casper, Wyo. 263 meters. 250 watts. Casper Radio Club. Announcer, C. D. Spicer. Slogan: "The Industrial Hub of the West."

Wed, 8:30-9:30 pm, Engineering program. Central:

KFFP, Moberly, Mo. 266 meters, 50 watts. First

Baptist Church. Announcer, Granville Ray Boote.

Slogan: "The Gospel Messenger of the Air." Sun,

11 am; 8 pm. Central.

11 am; 8 pu. Central.

KFFR, Sparks, Nev. 226 meters. 10 watts. Jim Kirk. Thurs, 7-8 pm, "Sagebrush Canaries." Pacific.

KFFV, Lamonia, Ia. 250 meters. 100 watts. Graceland College. Mon, 7:30 pm, musicale. Thursday, 7-7:30 pm, educational program. Sun, 11 au, 2nd 3rd, 4th Sundays; 7:45 pm, 1st Sun, each week.

KFFY, Alexandria, La. 275 meters. 50 watts. Pincus & Murphey, Inc. Mon, Thurs, 7-8:30 pm. Central KFGC, Baton Rouge, La. 254 meters. 100 watts. Louisiana State University.

KFGD, Chickasha, Okla. 252 meters. 200 watts. Okla. College for Wonien. Announcer, J. A. Tceters. Tues, Thurs, Sat, 8 pm, music, lectures. Wed, 10 am, chapel service; 11 pm, special jazz program. Central.

KFGH, Stanford Univ., Calif. 273 meters. 500 watts. Leland Stanford Junior University. No regular sched-ule.

KFGQ, Boone, Ia. 226 meters. 10 watts. Crary Hardware Co. Announcer, Harold E. Wilcox. Slogan: 'Daniel Boone Station.' Wed, 8-9 pm. Sun, 3-4

"Daniel Boone Station." Wed, 8-9 pm. Sun, 3-4 pm. Central.

KFGX, Orange, Tex. 250 meters. 500 watts. First Prosbyterian Church. Announcer, C. A. Doane. Sun, 11 am. 7:30 pm, church services. Central.

KFGZ, Berrlen Springs, Mich. 286 meters. 500 watts. Emanuel Missionary College. Slogan, "The Radio Lighthouse." Mon, Wed, Fri, 7 pm, bedtime story. Mon, Wed, 8:15 pm, music, lectures. Fri, 9-10 pm, sacred music. Sun, 10:15 am, chapel services; 7 pm, bedtime story; 8:15, chapel services. Central.

KFHA, Gunnlson, Colo. 252 meters. 50 watts. Western State College of Colorado. Announcer, E. Russel Wightman. "Where the Sun Shines Every Day." Tues, Fri, 6:30 pm, bedtime story; 7:30 pm, musicale; 10:30, orchestra. Mountain.

KFEX, Minneapolis, Minn. 261 meters. 100 watts.

Augsburg Seminary. Temporarily closed.

KFEY, Kellogg, Ida. 360 meters. 10 watts. Bunker
Hill & SullIvan Mining & Con. Co. Announcer,
Walter C. Clark. Slogan: "Voice of the Coeur
D'Alene." Mon, Wed, Sat, Sun, 7:30-8:30 pm.
Pacific.

KFEZ, St. Louis, Mo. 248 meters. 250 watts. Associated Engineering Societies. Announcer, Frank H.
Schubert. Slogan: "Lend Your Ears to the Engineers."
Wed, 8:30-9:30 pm, Engineering program. Central.

KFKB, Milford, Kans. 273 meters. 50 watts. Brinkley-Jones Hospital Assn. Announcer, J. R. Brinkley-Jones Hospital Assn. Announcer, J. R. Brinkley. Slogan: "The Home of Glaud Transplantation."
Daily ex Sun, 7:20-8 pm, "College of the Air"; 8 pm, lecture; 10:30-11:30. Tues, Fri, 9-10 pm, music. Sun, 10 am, 11, 8-10:30 pm, church services. Central. KFKQ, Conway, Ark. 250 uneters. 100 watts. Conway Radio Lab. Announcer, B. H. Woodruff. Slogan: "Known for Knowledge Quest." Tues, Fri, 8 pm,

"Known for Knowledge Quest." Tues, Fri, 8 pm, inusic. Central.

KFKV, Butte, Mont. 283 meters. 50 watts. F. F. Gray. Sun, Wed, Fri, 8:30-9:30 pm. Mountain.

KFKX, Hastings, Neb. 291 meters. 1000 watts. Westinghouse Elec. & Mfg. Co. Announcer, Wm. G. Hay. Slogans: "The Empress of the Air." "The Pioneer Re-Broadcasting Station of the World." Mon, Thurs, 9:30-11 pm. handcasts.

Ne-Broadcasting Station of the World." Mon, Thurs, 9:30-11 pm, broadcasts own program. Re-broadcasts KDKA's programs. Central.

KFKZ, Colorado Springs, Colo. 234 meters. 26 watts. Nassour Bros. Radio Co. Announcer, W. Nassour. Daily ex Sun, 12-1 pm, 5-6, matinee musicale. Sun, 11-12 m, church services. Mountain.

KFLA, Butte, Mont. 258 meters. 5 watts. Abner R. Willson

KFLA, Butte, Mont. 258 meters. 5 watts. Abner R. Willson.

KFLE, Denver, Colo. 268 meters. 100 watts. National Educational Service. Daily ex Wed, 6-6:30 pm, Broadcasts for schools on request. Mountain.

KFLQ, Little Rock, Ark. 261 meters. 10 watts. Bizzell Radio Shop. Irregular schedule.

KFLR, Albuquerque, N. M. 254 meters. 100 watts. U. & N. M. Announcer, Philip S. Donnell. Slogan, "The Sunshine Center of America." Fr, 8 pm, educational program. Mountain.

KFLU, San Benito, Texas. 236 meters. 100 watts. Rio Grande Radio Supply House. Announcer, R. W. Thacker. Slogan, "Heart of the Magic Valley." Mon, Thurs, Sat, 8:30-10 pm, concert. Sat, 8:30 pm. Sunday school lesson. Central.

KFLV, Rockford, 111. 229 meters. 100 watts. Swedish Evangelical Mission Church. Announcer, A. T. Frykman. Mon, Fri, 8:30 pm. Sun, 12:30 pm, service for shut-lns (Swedish); 9:30, service (English). Central.

KFLX, Galveston, Texas. 240 meters. 10 watts. George R. Clough. KFLZ, Atlantic, Iowa 273 meters. 100 watts. Atlantic Automobile Co. Slogan: "The Garden Spot of Iowa."

Comes In." Tues, Wed, Thurs, Fri, 2:30-4 pm; 7:30-10. Mon, 8-10 pm. Sat, 2:30-5 pm; 7:30-10. Sun, 11-12 m., 8-9 pm. Pacific.

KFDO, Salt Lake City, Utah. 261 meters. 10 watts. Latter Day Saints University, Announcer, Don C. McRae.

KFDR, David City, Neb. 226 meters. 20 watts. David City Tire & Elec. Co. Slogan, "The Voice of David City."

KFDT, Wichita, Kansas. 231 meters. 50 watts. College Hill Radio Club. Announcer, Leon Garnett. Slogan, "Radiocasting Church." Sun, 11-12:30 pm; 7:30-9, church services. Mon, 9-10:30 pm, music,

Central.

KFDU, Richmond, Caiif. 254 meters. 100 watts.

Hommel Mfg. Co. KFOX, Omaha, Neb. 248 meters. 100 watts. Board of Education, Technical High. Announcer, H. E.

Bennett.

KFDY, St. Paul, Minn. 252 meters. 50 watts. Beacon Radio Service. M. G. Goldberg. Slogan, "St. Paul Radio Central." Tues, Frl, 7-8 pm, muslc. Sun, 3:30-5 pm. Central.

KFDZ, Fort Smith, Ark. 233 meters. 20 watts. Leon Hudson Real Estate Co. Mon, Fri, Sun, evening program. Central

program. Central. KFPB, Seattle, Wash. 224 meters. 15 watts. Edwin

KFPB, Seattle, Wash. 224 meters. 15 watts. Edwin J. Brown.

KFPG, Los Angeles, Caiif. 238 meters. 100 watts. Garretson and Dennis.

KFPH, Salt Lake City, Utah. 242 meters. 50 watts. Harold Charles Mailander.

KFPL, Dublic, Tex. 252 meters. 15 watts. C. C. Baxter, announcer. Mon, Thurs, 8 pm; Sat, 10-11 pm; Sun, 7-8 am. Central.

KFPM, Greenville, Tex. 242 meters. 10 watts. The New Furniture Co., the Home of Good Furniture," located at Greenville, Texas, where you find "The Blackest Land, the Whitest People." Dally ex Sun, 2 pm, muslc. Tues, Wed, Thurs, Fri, 7:45 pm. Sun, 11 am, services. Central.

KFPN, Jefferson City, Mo. 242 meters. 100 watts. Missouri National Guard. Announcer, Lleut. Roy M. Schnell. Slogan, "Voice of the National Guard." Temporarily off the air.

KFPD, Denver, Colo. 231 meters. 500 watts. Colo. National Guard.

KFPP, Olympla, Wash. 236 meters. 20 watts. G. & G. Radio and Elec. Shop. Dally 6:30-7:30 pm. Wed, 8-11 pm. Pacific.

KFPR, Los Angeles, Calif. 231 meters. 500 watts. Los

8-11 pm. Pacific.

KFPR. Los Angeles, Callf. 231 meters. 500 watts. Los

KFPR, Los Angeles, Callf. 231 meters. 500 watts. Los Angeles Co. Forestry Dept. Irregular schedule. KFPT, Salt Lake Clty, Utah. 268 meters. 500 watts. Radlo Service Corp. of Utah. Announcer Charles H. Hays. Mon, Wed, Fri, 9 pm. Mountain. KFPV. San Francisco, Calif. 236 meters. 50 watts. Heintz & Kohlmoos, Inc. Announcer, Ralph H. Heintz, Slogan, "Ain't We Got Fun." Sun, 7-8:30 pm. Pacific. KFPW, Carterville, Mo. 268 meters. 20 watts. St. John M. E. Church, S. Slogan, "Keeplng Pace with Christ Means Progress." Wed, Fri, 8-10 pm, popular program. Sun, 1-3 pm, chapel service. Central. KFPX, Plne Bluff, Ark. 242 meters. 50 watts. First Presbyterian Church. Announcer, Howell L. Westbrook. Sun, 11 am, 12 m, 7:30-8:30 pm, church services. Central.

KFPY, Spokane, Wash. 268 meters. 100 watts. Symons Investment Co. Announcer, E. B. Craney. Tues, Wed, Thurs, Frl. 12:01-12:30 pm, time, music, market reports; 6:15-7, news, weather, music. Mon, 8:30-9:30 pm, lectures, music. Fri, 9:30-11:30 pm, lectures, music. Pacific.

KFQA, St. Louis, Mo. 261 meters, 50 watts. The Principia.

Principia.

KFQB, Fort Worth, Tex. 254 meters, 150 watts. The Searchlight Pub. Co. Announcer, Y. M. Cornellus. Sun, 11 am, 7:15 pm, church services. Tues, Wed, Thurs, Fri, 8:30 pm, music. Central.

KFQC, Taft, Calif. 227 meters. 100 watts. Kidd Bros. Radio Shop.

KFQD, Anchorage, Alaska. 280 meters. 100 watts. Chovin Supply Co.

KFQE, Colorado Springs, Colo. 224 meters. 5 watts. Dickinson-Henry Radio Laboratories.

KFQG, Los Angeles, Calif. 226 meters. 100 watts. Southern Calif. Radio Assn.

KFQH, Burlingame, Calif. 231 meters. 50 watts. Albert Sherman.

Sherman. KFQK, Fayette, Mo. 236 meters. 10 watts. Democrat

am; 9-10 pm. Pacific.
KFQD. Russell, Kansas. 261 meters. 15 watts. Meier Radio Shop. Announcer, A. R. Meier. Mon, 8:30-9:45 pm, music. Wed, concert. Thurs, 8:30-10 pm. Sat, 10:30-11:45 pm. Central.

KFQP, Iowa City, Iowa. 224 meters. 10 watts. George S. Carson, Jr., Wed, 8-9 pm. Sat, special programs. Central.

Central.

KFQR, Oklahoma Clty, Okla. 250 meters. 10 watts.

Walter La Fayette Ellis.

KFQT, Denison, Tex. 252 meters. 10 watts. Texas

National Guard. Announcer, Robert Cox.

KFQU, Holy City, Callf. 234 meters. 100 watts. W.

Riker. Announcer, Arthur J. Landstrom. Daily ex

Mon, Sun, 8-9 pm. Sun, 11-12 m., 8-9 pm. Pacific.

KFQW, North Bend, Wash. 215.7 meters. 50 watts. The

Photo Radio and Elec. Shop. Announcer, Carl K.

Knlerim. Slogan, "At the Western Entrance of

Snoqualmie Pass." Mon, Wed, Frl. 7:30-8:30 pm.

Pacific.

Pacific.

KFQX, Seattle, Wash 238 meters. 1500 watts. American Radio Telephone Co. Announcer, Vivlen Potter. Slogan, "Daddy of 'Em All." Daily ex Sun, 6-7 pm, weather, stocks. 7-7:45, children's hour; 8-9, orchestra; 10-11. Sat, 11-12. Pacific.

KFQY, Belden, Neb. 273 meters. 10 watts. Farmers State Bank. Announcer, A. H. Abts. Slogan, "Where Corn Is King."

KFQZ, Hollywood, Cailf. 240 meters, 250 watts, Taft Radlo company.

Radio company.

KFRA, Carver, Minn. 240 meters. 100 watts, Marvin S. Olson. KFRB. Becvilie, Tex. 284 meters, 250 watts, Hall

Brothers.
KFRC, San Francisco, Calif. 280 meters, 50 watts.
Radlocast studio. KFRF, Alexandria, La. 242 meters. 10 watts. W. R.

KFRG, St. Louis, Mo. 236 meters. 20 watts. Cieveiand High school. KFRH, Grafton, N. D. 268 mcters. 10 watts, The

Radio Shop. KFRI, Denver, Coi. 224 meters. 5 watts. The Reynolds Radio Co., Inc. KFRJ, Conway, Ark. 250 meters. 10 watts. Guy Sim-

KFRM, Fort Sill, Okla. 263 meters. 50 watts. James KFRN, Hanford, Calif. 224 mcters. 5 watts, M. Laurence

KFRD, Fort Worth, Tcx. 246 meters. 50 watts. Curtls Printing Co. Announcer, James R. Curtis. Slogan: "Who Does Your Printing?" Sat, 8-10 pm. Central. servicos. Central.

KFJM, Grand Forks, N. D. 278 meters. 100 watts.
University of North Dakota. Slogan: "Grand Forks,
the Educational Center of the State."

KFJR, Portland, Ore. 263 meters. Ralph Scinceloch
Co.
KFJX, Cedar Fails, lowa. 258 meters. 50 watts. 10wa
State Teachers' College. Educational programs.

KFJY, Fort Dodge, Iowa. 246 meters. 50 watts. Tunwall Radio Co. Announcer, Carl Tunwall. Dally,
I2 m, 5:45 pm, markets, news, weather.
bulletins, news. Sun, 11 am, 7:30 pm, church service

KFOL, Malace, Idaho. 224 meters. 10 watts. The
RKFDL, Marongo, Ia. 234 meters. 5 watts. Leslie M.
Schalbuch.
KFOL, Wallser, Calif. 236 meters. 100 watts. The
Nation of Mines." Irregular schedule
KFDL, Marongo, Ia. 234 meters. 5 watts. Moberly
KFDL, Marongo, Ia. 234 meters. 5 watts. Leslie M.
Schalbuch.
KFOL, Wallser, Calif. 240 metors. 100 watts.
Who Does Your Printing?" Sat, 8-10 pm. Central.
KFRR, Redlands, Calif. 211 meters. 10 watts.
FFRR, Portland, Ore. 213 meters. 5 watts.
FFRR, P

### CHALLENGE!

NE DOLLAR will be paid to the Radiophan submitting the most errors in any one station's listing. Letters must reach Radio Digest office not later than one week from date of issue corrected. Readers are not limited to correcting one station, but such corrections must be certified by the stations themselves, and NOT by comparison to other so-called accurate Radiocast directories and lists.

That's just how sure Radio Digest is that this Radiophone station directory is correct! To make the challenge fair for everyone, Radiocast. stations and their employes are barred from this offer. Why? Because the Radiocasters are the source of all the data given herein. They are (or should be) interested enough to answer the inquiry sent them every time data on their station appears. This inquiry contains a proof of their last listing and must either be corrected or O K'd as correct and returned to the Digest. Nevertheless, sometimes the stations are careless

and mistakes are made. But Radio Digest is so sure of the exactness of this directory that this challenge is made unconditionally.

With reference to the directory: It appears in five parts, serially continuously; the first four parts are station data listings, arranged alphabetically; the fifth part is a state, city index of stations. The information contained in each station data listing is given in the following order: Call letters, city, state, wave length. used, watts antenna input, owner's name, announcer's name, slogan used if any, name of listener in "club," schedule of operating hours, and kind of time used, as "Central," "Mountain," etc.

Five successive issues of Radio Digest will give one the most complete and accurate list of Radiocast stations obtainable. This service is original with this publication, and has been maintained from the start. Right of reproduction without permission of any or all of the data contained herein is denied.

KFHL, Oskaloosa, Iowa. 240 meters. 10 watts. Penn KFHL, Oskaloosa, Iowa. 220 meters. 10 watts. Penn College.

KFHR, Seattle, Wash. 263 meters. 100 watts. Star Elec. & Radio Co. Announcer, R. Mattmueller, Slogan: "The Voice of the Charmed Land." Daily ex Sun, 4:30-5:30 pm. Mon, Wed, Fri, 6:30-7:30 pm. Tues, Thurs, Sat, 7:30-10:30 pm. Sun, 1-3 pm; 4:30-7:15. Pacific.

KFI, Los Angeles, Calif. 469 meters. 1,500 watts. Earle C. Anthony, Inc. Announcer, Paul W. Reese. Slogan: "The Radio Central Station." Daily ex Sun, 5-6 pm, 6:45-8 pm, 8-11 pm. Wed, Fri, Sat, 8-12 midnight. Sunday, 10-10:45 am, 4-5 pm, 6:45-8, 8-11. Pacific.

KFIF, Portland, Ore. 360 meters, 200 watts. Benson Tech. Student Body.

KFID, Spokane, Wash. 252 meters. 50 watts. North Central High School.

KFIQ Kakima, Wash. 256.3 meters. 50 watts. First Methodist Church. Announcer, Dr. 1. M. Miller. Wed, 7:30 pm, organ. Sun, 11 am, 7:30 pm. Pacific.

KFIU, Juneau, Alaska. 226 meters. 10 watts. Alaska Elcc. Light & Power Co. Announcer, O. E. Shoembell. Mon, Wed, Fri, 7-8 pm. Alaskan.

KFIX, Independence, Mo. 268 meters. 250 watts. Reorganized Church of Jesus Chrlst of Latter Day Saints. Announcer, Arthur B. Church. Tues, Thurs, 9 pm. Sun 11 am, 7:30 pm. Central.

KFIZ, Fond du Lac, Wis. 273 meters. 100 watts. Daily Commonwealth and Seyfert Radio Corp. Announcer, Albert Mayer. Daily ex Sun, 5 pm, music, news, markets, weather. Central.

KFJB, Marshalltown, 1owa. 248 meters. 10 watts. Marshall Elec. Co. Announcer, E. N. Peak. Slogan: "Marshalltown, the Heart of Iowa." Daily ex Sun, 10 am, markets. Tues, Frl, 8:30 pm. Central.

KFJF, Oklahoma Clty, Okla. 261 meters. 225 watts. National Radio Mfg. Co. Announcer, Tired Hand. Slogan: "Radio Headquarters." Daily ex Sun, 9:30 am, 12:15 pm, markets. Sat, 1:15 pm, markets. Tues, Frl, 8:30 pm. special concerts. Sun, First Baptist church. Central.

KFJI, Astorla, Ore. 245.8 meters. 10 watts. E. E. Marsh and Liberty Theater. Announcer, E. E. Marsh and Liberty Theater. Announcer, E. E. KFHR, Seattle, Wash. 263 meters. 100 watts.

KFJI, Astorla, Ore. 245.8 meters, 10 watts, E. E. Marsh and Liberty Theater. Announcer, E. E. Marsh, Wed, Frl, 10-11 pm, organ. Sun, 10:30-11 pm, Wed, Fri, 10-11 pm,
Pacific.

KFJK, Bristow, Okla. 233 meters. 110 watts. Delano
Radio & Elec. Co. Daily ex Sun, 3-4 pm, music.
Thurs, 8-9:30 pm, music. Sun, 7:30 pm, church
servicos. Central.

N D 278 meters. 100 watts.

Wed, 6-7:15 rm, dinner program; 9-11, music. Sat, 11-12:30, mldnlght, dance music. Sun, 8 pm, church service. Central.

KFMB, Little Rock, Ark. 254 meters. Christian

churches of Little Rock.

KFMQ, Fayetteville, Ark. 275 meters. 500 watts. U. of Arkansas. Announcer, C. V. Bullen. Tues, 9 pm. Thurs, 7:30 pm. Central.

Sioux City, Ia. 261 meters. 10 watts. Morningside College. Announcer, Jesse C. Duconmun. Tues, Thurs, Frl, Sat, 8:55 am. Tues, Thurs, Sat, 12 m. Central.

Tues, Thurs, Fit, Sat, 5.55 a.m.

12 m. Central.

KFMT, Minneapolis, Minn. 261 meters. 100 watts. Dr. George W. Young. Announcer, Dr. George W. Young. Slogan: "Always Young." Mon, 7 pm; Wed, 8 pm; Thurs, 9 pm; Sun, 1:30 pm. Central.

KFMW, Houghton, Mich. 266 meters, 50 watts. M. G. Sateren (announcer).
KFMX, Northfield, Minn. 283 meters. 500 watts.

Carleton College. Announcer, Dr. Bruno Meinecke. Wed, 9 pm. Sun, 7 pm. Central.

KFNF, Shenandoah, Ia. 266 meters. 500 watts. Henry Field Seed Co. Announcer, Henry Field. Slogan: 'Friendly Station In a Friendly Town.' Dally ex Sun, 12:25-1:15 pm. Daily ex Sun, Mon, 7:30-9:30 pm, concert. Sun, 3 pm, services; 6:30-7:30, sacred song service. Central.

KFNG, Coldwater, Miss. 254 meters. 10 watts.

song service. Central.

KFNG, Coldwater, Miss. 254 mcters. 10 watts.
Wooten's Radio Shop. Announcer, S. D. Wooten.
Slogan, "The Most Powerful 10 Watt Station In the
World." Sat, 9:30-10:30 pm. Sun, 8-9 pm. Central.
KFNJ, Warrensburgh, Mo. 234 meters. 50 watts.
Central Missourl State Teachers College. Announcer,
John McNay.

KFNL, Paso Robies, Calif. 240 meters. 10 watts.
Radio Broadcast Assn. Announcer, Early W. Moore.
Slogan, "The Home of the Nut." Mon, 8-10 pm,
muslc. Pacific.

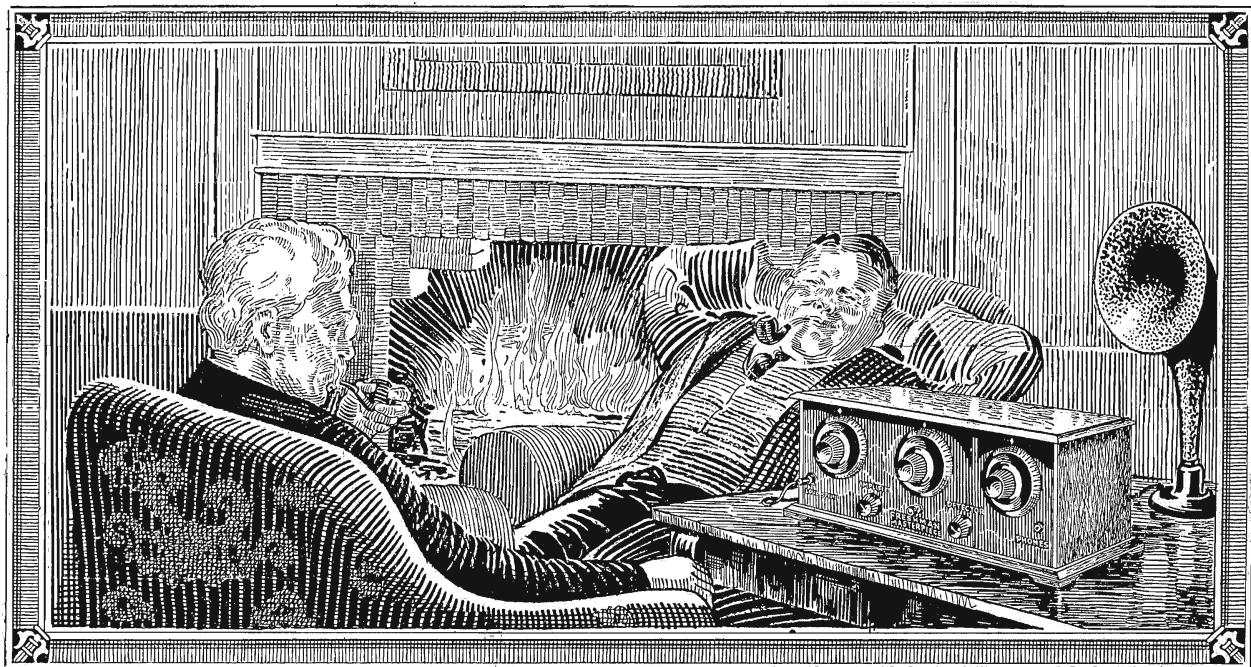
KFNV, Santa Rosa, Calif. 227 meters. 5 watts. L. A.

KFNY, Helena, Mont. 248 meters. 50 watts. V. Kemp Roberts. Experimental station.
KFNZ, Burlingame, Callf. 231 meters. 10 watts.
Radio Sales Co. Announcer, A. R. McGregor, Daily ex Sun, 4-5:30 pm, concert; 7-7:30, news, weather. Wed, 8-10 pm, classical music. Sat, 8-12 pm, dance music. Pacific.
KFOA, Seattle, Wash. 455 meters. 500 watts. Rhodes Dept. Store. Announcer, Carl E. Haymond. Mon, 8:30 pm; Frl, 12:30 pm; Sat, 2 pm. Wed, Fri, Sat, 8:30 pm, Seattle Three programs. Daily ex Sat. 3:45-

KFNY, Helena, Mont. 248 meters. 50 watts. V. Kemp

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