Christmas Set Trouble Finding and Operating Helps; New Het-Duo-Gen Data; A Crystal Set That Operates Loud Speaker; Description of WGR at Buffalo

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Vol. XI

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SATURDAY, JANUARY 3, 1925

No. 13

# TEACHES ALIENS

# WILL DIRECT PLANES WITH GROUND CABLE

SEND CONTROLLING WAVES TO MACHINE IN AIR

Similar Method Used by Ships in N. Y. Harbor When Arriving at Port in Fog

LONDON. — Tremendous possibilities are opened up by experiments recently conducted in England for the control of the various airways by means of electrificd cables laid along the ground. There has been a certain risk of collision between airplanes traveling in opposite directions up to the present time, especially at night, so that it was felt that some system was needed whereby the airplanes could be guided automatically in the right course.

The apparatus tested out by the inventors receives the Radio waves emitted by the power cable on the ground and automatically warns the pilot if he leaves his course by the slightest degree, and a more advanced mechanism automatically steers the airplane along the course of greatest intensity of Radio waves from the ground cable.

#### Gives Pilot More Time

These electric brains, as they are known to the inventors, will permit the pilot to devote all his time to his motors and to his altitude, while he will assume complete control at the landings. In this manner, international or national airlines will be established as direct and permanent as railroad lines now are, so that it can be said that aerial railroads will be established between the important cities of the world.

This method has been used by ships in New York for some time. It is known as a "piloting cable."

# **BROADCASTS AMERICANIZE NEWCOMERS**

Enlist Aid of Stations

Foreigners Using Sets to Receive Music Will Learn Advantages of Citizenship

WASHINGTON.—The wonders of Radio combined with the innate love of music and the unknown in persons of foreign birth have been seized upon by two bureaus of the federal government as providing a fertile new field for the Americanization of more than six million adult aliens in the United States.

For plans are under way to enlist the aid of about twenty broadcasting stations throughout the land to carry words of instruction and advice to the great army of non-citizens who either do not know the laws which make citizenship possible or have not felt the inclination to take the



# \$1000 FOR BEST RECEIVER

# GOLD AWARD DRAWS FANS' **ENTHUSIASM**

Many Sets Are Entered

Only Two Weeks Left in Which to Submit Entry-Read Rules Carefully

Still they come in! Sets upon sets, of every description and kind are being received by the Radio Digest Gold Award Set Editor, until that gentleman is now almost ready to call the contest to a close-but that, of course, cannot be done until midnight of Saturday, January 17.

One thousand dollars in gold for the best original Radio receiver circults submitted during the contest! The prizes are attracting many.

Radiophans desiring to have their sets entered in the contest must not forget they have but two weeks more in which to send them in.

Fairness is the first consideration in the management of this award. Many letters have asked how soon their sets will be returned.' The answer is simple. Within a few weeks after the close of the contest, all sets, even winners, will be returned. Less fortunate sets may even be returned before the close of the contest-provided there is no possible chance of their winning.

Send Sets—Leave Judging to Judges Many experimenters, no doubt, have en-

tlrely new and improved schemes for Radio reception that they do not feel have a chance of winning. This should not be the case. They should be sure to send the sets in. The judges may find in one of these just what they are looking for!

BUT before sending in any receivers BE SURE to read the twelve rules carefully. These are listed on this page.

Remember that ability as an author does not count (Rule 4). Just draw a hook-up diagram of what you have and a short explanatory note. Send these to the gold award set editor. Then CARE-FULLY pack your set, insure it, and send it prepaid express or parcel post to the gold award set editor. Address him at Radio Digest, 510 N. Dearborn street, Chi-

Only two more weeks. Hurry!

#### RADIO TEACHES ALIENS

(Continued from page 1)

for the taking, and cheap to take, has brought the placing of Radio receiving sets in an estimated 90 per cent of the homes of the foreign born.

A trip through the east side of New York brought the first strong realization of the possibilities. For nine out of every ten tenement houses saw a maze of aerials on the roofs and practically all of the residences occupied by foreigners had their own receiving sets. The same sights were found in other centers. Music in the air and inexpensive receivers in the shop windows have wrought the miracle.

The leaders of the two groups point out that in 3,500 community schools now instructing adult aliens in the principles of cltizenship they have a strong nucleus for the new work. The schools have available, and in the proper shape, Instruction and instructors that could be utilized over the alr in the various communities where foreign poulations are large.

Aimlng at a firmer foundation for future welfare and unity through education and amalgamation, It is proposed to broadcast talks that would cover the requirements of citizenship, explaining the five-year residence rule and the fillng of first papers two years prior to admission.

The clting of such cases as those of two secretaries of labor, both of whom were foreign born, will be used to encourage the naturalization of more allens by pointing out the extent to which the rights of native born Americans are extended to newly-sworn citlzens. The two cablnet officials were Wilson, a Scotchman by birth, and James J. Davis, who was a

native Welshman. Broadcast from Pield Offices

As tentative plans are lined up, the hroadcasting will be from cities where field offices of the Bureau of Naturallzatlon are located. This means locations where aliens are numerous. Included in this list of cltles are New York, Brooklyn, Newark, Boston, Springfield, Philadelphia,

## \$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 reeeived up to that time will be
- 2. The thousand dollars in gold will be divided into the followlng 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 a be awarded to each tying contestant.
- Contest is open to all Radiophans, whether or not subscribers to Radio Digest Illustrated.
- 4. 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 prcpaid express or insured parcel post. All sets, including winners, will be returned insured collect to entrants.
- 6. Radlo 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.
- 7. 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 con-
- siderations. 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.

Camden, Baltimore, Washington, Buffalo, cisco, Oakland and Los Angeles. Rochester, Cleveland, Detroit, Chicago, The work in the schools and Cincinnati, St. Louis, Atlanta, New Or-

The work in the schools and in industrial institutions with adult aliens last leans, Dallas, Fort Worth, Denver, Salt year resulted in 425,540 adult aliens filing Lake City, Seattle, Portland, San Fran- first papers for citizenship.

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# Looking Ahead

Building the Het-Duo-Gen? It's Worth Trying. C. E. Brush will next tell how to construct the filter, and will give directions and drawings just as complete and detailed as those furnished this issue for the coupler and oscillator coils. This is a real, selective, two control set, and is hard to beat.

Experimenter Senior Is a New Circuit that combines the advantages of the ultra audion, absorption control of regeneration and a counterpoise. J. E. Owen, having taken the uninitiated through their A-B-C's in his home Radio demonstration series, now will give full instructions for building a set that is not only simple to put together, but embodies a brand new hook-up.

Christmas Set Recipients-Experienced or Not-will find next week's trouble shooting chapter of Harold O. Totten's helpful series invaluable when their outfits refuse to operate properly. Even the oldest of old-timers will find the suggested remedies good to try.

How to Use Variable High Resistances—a subject often puzzling to the average set builder and user—will be covered by E. W. Sawyer in an article soon to appear. Mr. Sawyer will show a dozen ways in which variable high resistances can be applied to good advantage.

Another Illustrated Description of a Popular Broadcasting Station will be presented in next week's issue. Meet the stations' staffs and read about their likes and dislikes; pasts, presents and futures.

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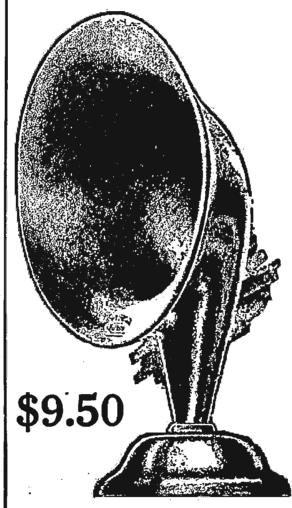
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# GALLI-CURCI HONORS **WORK OF BLIND GIRL**

USES HER SONGS ON TOUR OF EUROPEAN CITIES

Claire Dux Also Selects Numbers as Giving Life to Fancies of Shadow World

LOS ANGELES. — It is occasionally heralded as quite a feat worthy of note when some young musician is able to win the praise of the conservative critics of the music world, but how much more so of an accomplishment must be that of Beatrice Fenner, 20-year-old Los Angeles pianist and composer, who, although handicapped by blindness since childhood, has been able to put into musical thought the dim shadows and poetic fancies that flit through her mind in such wonderful form that she has become internationally famous before the time most girls are out of school.

Not only has this young blind girl won the unstinted praise of practically all critics who have reviewed her work, but she has gained public recognition in that her numbers are the only ones used in the American group by Galli-Curci in her recent European tour. In addition, Claire Dux, famous soprano, has selected five compositions and will use them in her January recital in New York.

Will Give Recital for Galli-Curci To Galli-Curci, Beatrice Fenner owes much, and she is able, through the medium of the genie Radio, to express her appreciation, although the two will be separated by more than a thousand miles. Sunday night, December 28, from 9 until 10 p. m., Pacific time, this famous girl planist is to give a recital from the studio of KNX especially for Galli-Curci, who will be listening in at Minneapolis, where she is spending the holidays.

Although the program will be dedicated to Galli-Curci, all listeners in will be able to hear as well and get a glimpse into the soul of the little blind girl who refused to be daunted by her handicap. Thought, music and Radio—what a similarity in the way they travel and their universal appeal.

#### Almshouse Get Radio

BIRMINGHAM, Ala.-Life to the inmates of the Jefferson county almshouse will be made more pleasant and more now fitted with direction finders, in order endurable this winter with a Radio set, to locate each other and avert collisions the board of county revenue announces. in fog or darkness.

## GALLI-CURCI WITH BLIND PIANIST



Blind since early childhood, Beatrice Fenner of Los Angeles has astounded music critics the world over. Scarcely twenty years of age, her compositions are used known to be equippe in recital by Galli-Curci (left) and Claire Dux. She played from KNX December 28. pictures of its artists.

#### INSTALL RECEIVER TO AMUSE HOBOES

ONDON .-- A receiving set complete with loud speaker, has been purchased by Nuneaton Guardians for the benefit of hoboes enjoying the hospitality of the town's tramp ward. "We don't want the tramps to look upon the institution as a palace," commented the mayor of Nuneaton, when the proposal to install the set was carried by the guardians, "but after all Radio is a necessity."

## PHOTO ROOM PART OF STUDIO AT KFI

Movie and Still Cameras Make Film Record of Visiting Celebrities

LOS ANGELES .-- One of the most interesting of the many rooms containing the new KFI station and studio is the camera room. This is a small, oblong, three-sided room that adjoins the supplementary studio of the station.

Probably very few other broadcast stations in the world have, or will have, a room similar to this one, for it has been designed and will be used for the taking of pictures of the celebrities that appear before the KFI microphone.

It is completely wired for the heavy duty Kleig and Cooper-Hewitt lights and the station will own a motion picture camera, as well as the regular variety of "still" camera. This is the first station known to be equipped to take motion

#### Music Critic on WOR Staff

NEWARK, N. J.-One of the features now being presented by Dr. Sigmund Spaeth, musical authority and former musical critic of two leading New York newspapers, who has been secured as musical editor of Station WOR, is a new series of broadcasts on Wednesday eve-

He gives a short review of the music heard in New York concert halls during the preceding week, after which he broadcasts news of the musical attractions for the coming week.

Whaling ships plying the North Sea are

# Madame Hyena, Mr. Cockatoo and Leo Africanus Render Operatic Arias

By W. E. Johnson

Radio reception in this country, as far as it is known, listeners in were treated not long ago to a group of selections rendered by the Carnivora Opera company, and its impresario, C. Emerson Browne, through Station WFI, Straw-bridge and Clothier, Philadelphia. The members of the company, be it known, hail from Africa, Australia, Asia, India, and points west. The members chose a modern composition in six movements for an initial appearance and it was sung in the company's permanent head- and Mrs. Sun Bear were assigned the quarters at the Zoological Gardens in Philadelphia.

The performance was one of the most successful ever staged by any broadcasting station and many unusual stunts were resorted to in an effort to have all the animals do their stuff in the most approved fashion. Everyone knows that one of the hardest things in the world to do is to have the favorite cat or dog do its stunt for the Sunday company at dinner, and C. Emerson Browne, superintendent of the zoo, had to be prepared with all kinds of stunts so that the animals would came to meeting doom during the entire do their stunts at the right moment.

Mme. Hyena Shows Temperament When the time came for Madame Hyena, one of the most popular and temperamental members of the company, to do her singing, she rebelled in the good old fashioned way of standing her ground—and not saying anything. Realizing there were thousands waiting to hear her clear,

cage and dance, while another poured a OR the first time in the history of steady stream of water on her. It was too much for Madame Hyena, and she laughed so heartily, last reports have it, that she was heard in Africa, even without the help of the microphone. The first movement of the Carnivora opera was

completed. It was in the fifth movement, however, that the triumphant opera reached the heights. In it was seen the sad plight of lovers grown old and impoverished. Instead of being smooth and sleek, we found them wrinkled and shaggy. Mr. roles, and executed them with a tragic realism only too affected. The husband was cool and bloated, seizing upon the family's little store of goods, and gorging it to his heart's content, unmindful of

which were heard over the entire country. Leo and Cockatoo Adore "Mikes"

the wails, cries and calls of his helpmate,

Leo Africanus took kindly to the sixth and final movement, and at one part of the opera was even willing to eat the microphone, if it had not been just outside his domain. This was the closest the "mike" showing of the opera, although a cockatoo showed more than the average woman's inquisitiveness and endeavored to look inside the "mike." What good it would have done him, nobody knows.

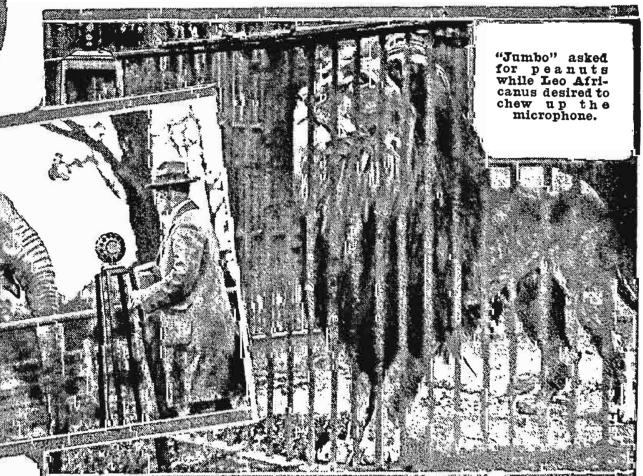
The elephants and monkeys, to say nothing of some other animals, did their stuff quite well over WFI's microphone, and it is understood that the Philadelphia round laughing song, Mr. Browne had one broadcasting station plans to give the of the guards jump on the top of her operas at frequent intervals.



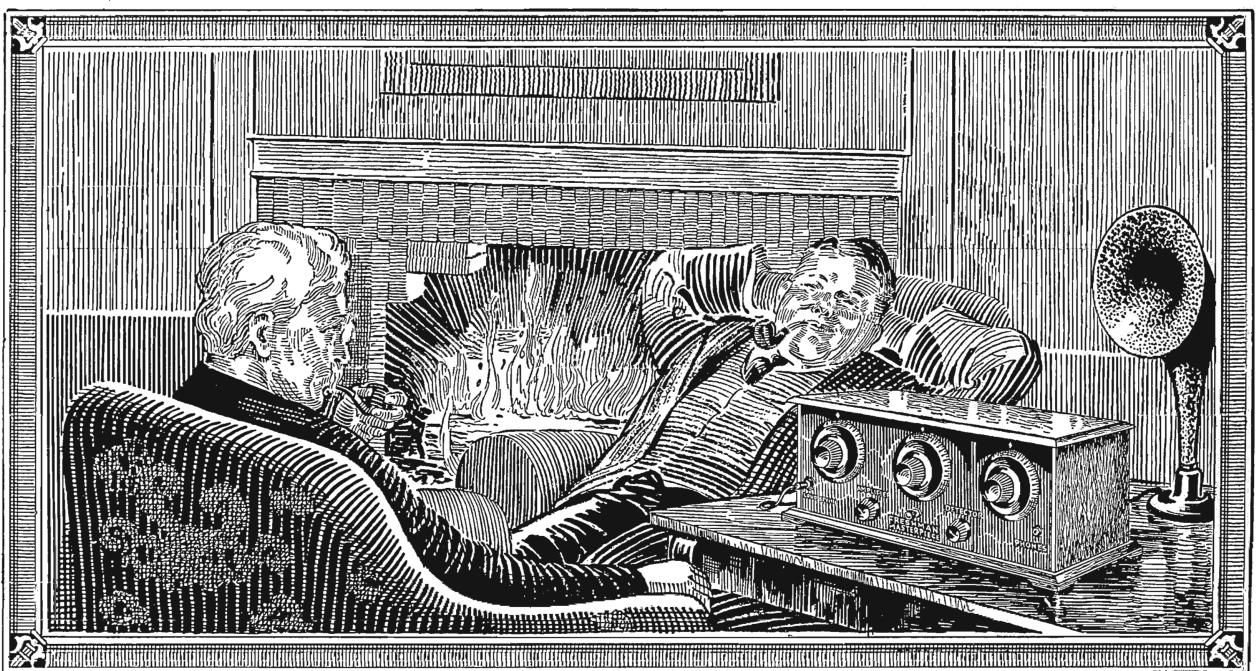
WASHINGTON, D. C .- Because members of the House of Representatives refused to make an appropriation for retaining the broadcasting and loud speaking apparatus installed a couple of years ago in the main hall of the House the apparatus has been dismantled.

One of the electrical companies installed the apparatus for experimental purposes just previous to one of the addresses made to Congress by the late President Harding. Considerable criticlsm was made by some members of Congress to the working of the apparatus and it was impossible to get any one interested enough in it to purchase the machinery for use in the Capitol.

The Berlin Telefunken broadcasting station is now giving daily concerts on a 750-inctor wave length.



# When Winter Winds Blow Cold



# FRESHMAN MASTERPIECE

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# A 5 TUBE TUNED RADIO FREQUENCY RECEIVER,

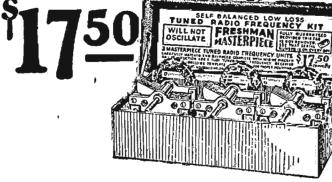
made of the finest low loss materials and in a beautiful genuine solid mahogany cabinet, that is attractive enough for the most pretentious room, and at sixty dollars, economical enough for the most modest.

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# WGR—"The Key City of Industry"—Buffalo





Left, Mark A. Rigg, Jr., director of Station WGR, Buffalo. Above, Mrs. Katherine Norton Britt, expert on home economics, sitting at the piano and Miss Florence Reed. Miss Reed is a favorite contralto and is well known to WGR fans. Right, Edward Stanko, chief engineer of WGR. Below, A. J. "Al" Erisman, a popular tenor and pioneer Radio impressario often heard over WGR.

# A Station with a Destination

By Lloyd S. Graham

(Photos by Colgrove Studio, Buffalo)

TOW don't get the idea for a moment, just because the title line declares that Station WGR, at Buffalo, has a destination, that actually it is going anywhere. In fact don't take anything in this article too literally.

You know, Radio stations are a lot like people. Often they are on their way but don't know where they are going. Sometimes the results are a little bewildering to the listener in. Sometimes the fact that a broadcasting station is on its way but doesn't know where it is going is the reason for some awfully punk programs. Sometimes it is the reason for some awfully good ones, but the latter rarely; for a station without a destina-tion is like a ship without a hand at the helm. It has no settled policy.

Comparisons are terribly odious, so they say. But any chronic listener in knows what its all about. He knows that there are stations that are highbrow. He knows that some stations feature jazz, the rollicking king of danceland. He knows that stations more and more are beginning to play up certain things. In other words stations are taking on individual characteristics. They vary according to the brains back of them; the amount of devotion, interest, thought and study that the studio manager and those associated with him, are willing to put into the game.

All of which brings us to the point where we may safely and fittingly introduce to you:

Mark A. Rigg, Jr., who has been the nurse of WGR ever since it was born. WGR was born on Sunday afternoon, May 21, 1922, at the plant of the Federal Telephone and Telegraph company which has always owned it and paid for costly transmitting tubes and the other little odds and ends that go to keep a station "on the air."

While M. A. R. was not present at the first gasp and yell of the infant station on that memorable Sunday afternoon, he arrived the following day and has been on the job ever since.

gigantic country-wide circulation, carrying a wellbalanced and honest service to its readers. Horace Greeley must have had somewhat the same idea in his day. And just as a great newspaper of that type pays a great deal of attention to its printing and general appearance, so Mr. Rigg also pays much attention to the mechanics, perhaps, better say electrics, of putting WGR on the air. He has tried to build up, and has succeeded in a large measure, a reputation for quality transmission.

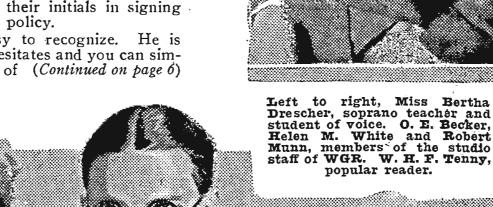
Miss Helen M. White is WGR's only feminine an-

nouncer; alive and not in captivity. Since the days of the oldest announcer Miss White has always been the same; same interests, same manner, same fraternity pin, same sports; you know, same everything, like the sands of the desert.

For some inexplicable reason Miss White chose to spend her vacation in Cleveland this year. And for want of something better to do she took up golf. So golf will be blamed for the change.

At that, O. E. Becker should know the symptoms. Now Becker takes the announcing game seriously, but not too seriously. Somebody has called him the "velvet-toned announcer." The only "air" way you will know Becker is the way he speaks on the air. None of the announcers use their initials in signing off. It is against Mr. Rigg's policy.

But Becker should be easy to recognize. He is always the same. He rarely hesitates and you can simply see the punctuation marks of (Continued on page 6)









# FANS HEAR SELVES TALK FROM WDAF

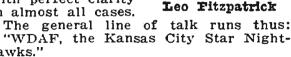
PHONE CONVERSATION IS RELAYED FROM STUDIO

Words of Both Speakers Go on Air; Some Enthusiasts Hum Original Tunes

KANSAS CITY, Mo.-Anybody can talk over the Radio now! A recent plan, instituted by WDAF, and perfected by the

Kansas City Telephone company, enables listeners all over the country to call the station over the telephone and to carry on a conversation with the station announcer, which is sent out on the air.

Preliminary trials have proved that the stunt is a complete success. On the first night, long distance calls were received and broadcast from both coasts, New York and San Francisco. Both sides of the conversation may be heard with perfect clarity in almost all cases.



"Hello, Merry Old Chief!" "Yes."

are enjoying your program fine and request your piano player to give us 'Red Hot Mamma.''

#### Listeners Hum Strains

The chief then thanks the listener for calling in and the piano player plays the request. Oftentimes when the pianist is unfamiliar with the number requested, the listener is asked to sing or hum a few strains, with more or less humorous results. On one occasion a Chicagoan had mitter. a new tune which he had composed, and wishing to try it out on the air, he called the WDAF Nighthawk frolic, and is provthe Star at Kansas City and asked to ing so popular that almost all of the be connected with the Merry Old Chief. trunk lines running into Kansas City are His song was broadcast over the telephone | completely tied up.

## ERECTION OF NEW EQUIPMENT SOON

Station KYW Will Build Transmitter on Roof of Congress Hotel

CHICAGO.—Westinghouse Station KYW, is not to move—but will build a new sta-

will embrace science's latest innovations. to the station at the noon recess and Likewise, the studio, which will be in the see what a Radio station looked like. Florentine Annex of the hotel, will also with accoustics best adapted for Radio

latest type devised by the Westinghouse company, employing water-cooled tubes. Rectified alternating current will be used, which will change the 60-cycle power service to high voltage direct current by the kenetron method. With the new mechanical equipment to be used at KYW, a vast the best in the country.

be broadcast by special wire to the sta- friend may ask of him. tion on the roof of the Congress Hotel.

From the Hearst studio, Station KYW will broadcast the usual afternoon frolics on Tuesday and Wednesday, the At Home show, the Revue and World Crier service. This last service goes on the ether every hour and half hour throughout the day and night.

line and both his voice and his banjo ac- tion. companiment came over great.

Thus the listener is not only able to his receiver. The idea is original with

## WGR—"KEY CITY OF INDUSTRY"

(Continued from page 5)

Becker's sentences as they come over the air. He might tell you that he merely stumbled into Radio. Looks more as though he landed in it like a man who slipped on a banana peel. He was on jury duty about a year ago and from the court room, where he sat, he could see the WGR tion to be located on the roof of the towers on top the Hotel Statler. He had Congress hotel—on the shores of Lake plenty of time, as one sometimes does lichigan.

On jury duty, to think about other things and he made up his mind he would go

When he went up to the station at noon, be constructed in the most modern fashion, he ran into M. A. R., himself. Maybe their souls vibrate on the same plane or something. WGR wanted an announcer The equipment to be used, is of the at that time. Becker was sick of the stocks and bonds game. And there you

About the same time that O. E. B. came to WGR, Robert Munn came along also. People affectionately know him as "Bob" Munn. And affection is right. Munn is nice. Everyone likes him. He improvement will be obtained over its is the sort that people usually impose present station which already is one of upon. That is to say, he has the very he best in the country.

Programs from the various studios will even the most impossible favor that a

> Munn is tall, slender, dark and possesses a nervous quickness. He is a musician of real talent. He has a baritone voice much beyond the ordinary, can rattle the ivories of a piano something wicked and can get by at the pipe organ like a professional. But he is not interested in those things particularly, except as a vehicle which will help him to success along the road to musical composi-

When Edward Stanko first came to WGR he was in the same class in that talk over Radio, but he may also hear respect as "Bob." But he isn't any more. his own voice as it comes back through Stanko is the chief operator. He is the chap that makes the wheels go round. WDAF, although other stations have also He has done wonders with the apparatus carried it out successfully. The first plan at WGR. Ask him anything about Radio, was to put the calls on a loud speaker and except how he got into the game, and he to place the loud speaker in front of the will hold up his end of a complicated dismicrophone. In the present plan no mi- cussion. But when you ask him how he crophone is used, and the calls are run got into the game, he can't tell you. In directly into the amplifier and trans- fact, he admits that he can scarcely remember the time when he was not inter-This is becoming a regular feature of ested in Radio and the things connected

> There was a time when WGR, like a lot of other stations, had to hustle to get Hudson H. Lyon of KDQZ, the S. S. programs, but that passed way back about | Frank G. Drum, reported the record.

the time WGR graduated from class C to class B. Since then there has been an ever increasing demand for program bookings until at the present time Mr. Rigg is constantly booking engagements for two and three months in advance. This has developed a great variety of entertainers, but probably the best known to WGR listeners, outside of Harold Gieser and his Vincent Lopez Hotel Statler dance orchestra, which is a regular station feature, is W. H. F. Tenny. Mr. Tenny is an author and reads his own writings. He has his way of doing it which has proven extremely successful.

Mr. Tenny has fine, small hands and, somehow, they give one the impression that he is a small man but that is not true unless you can call a man who weighs 180 pounds small. He also has white hair, so white, in fact, that he admits himself that the picture accompanying this article is the first picture he ever had taken in recent years that showed whether he had any hair at all or not.

Harriet Shire is another entertainer who has found a great deal of favor with WGR listeners. This lady of the lyric soprano voice of a colorature quality is tall, dark and energetic. She admits that her chief sport is "housekeeping" which is just another way of saying that she does not have time for the usual run of outdoor

Then there is Bertha Drescher, who made such a stir at WGR, following her appearance before the microphone, when letters began to come in complimenting her on the singing of "June" by Mrs. H. A. Beach and "On the Wild Rose Tree" by Rotoli. Bertha Drescher is a soprano; teacher and student of voice. This summer she spent in the Catskills at High Mount, a pupil of Franz Troschowsky.

Don't get the idea from all this about individual achievement that progress at WGR is made by individual effort alone. It is. And it isn't. One cannot be around the studio long without being struck by the high degree of team work which Mr. Rigg has managed to establish.

KFNF Heard Off San Pedro

SHENANDOAH, Ia.-KFNF, operated here by the Henry Field Seed company, has been heard during daylight approximately 500 miles of San Pedro, Calif., on a ship enroute to Honolulu. Operator



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

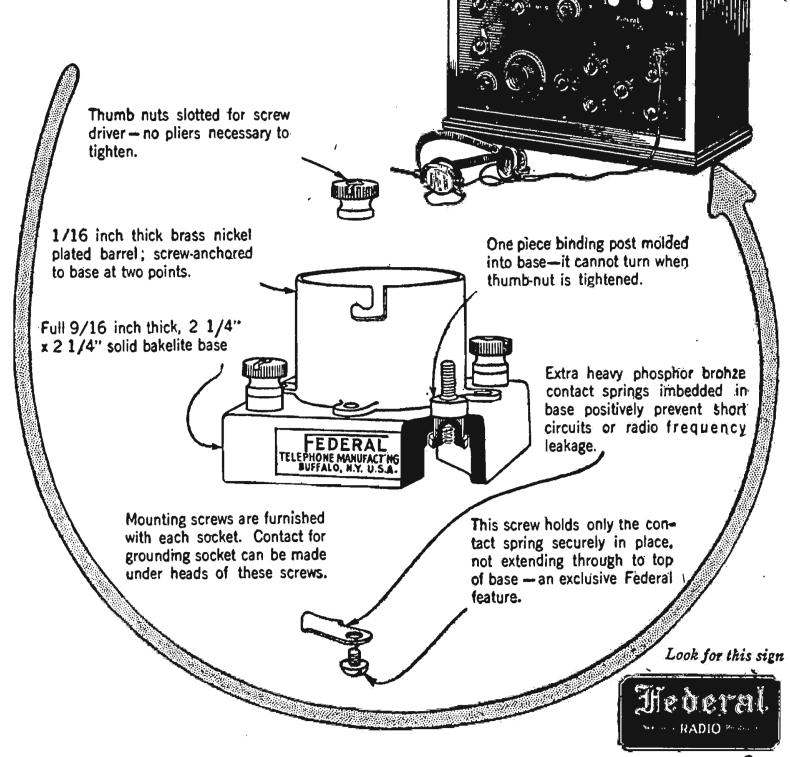
Federal sockets are but another evidence of the care and engineering skill used in designing and making Federal Standard Radio Parts.

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# CARING FOR YOUR NEW CHRISTMAS SET

#### Part I-Ground and Batteries

By Harold O. Totten

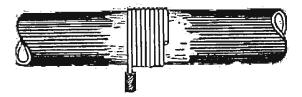
YOW that Christmas is over and a number of people have sets who never had them before, a word to the new fans on the care of their sets would not go amiss. This article will also help readers who have had sets before, but haven't known how to take the proper care of them.

One of the principal requisites for good reception is to have a good ground. By a good ground is meant a ground that is not a steam, gas or hot water pipe, but

a cold water pipe.

To make the ground connection, scrape the pipe with a knife for a length of about 3 inches to remove the dirt and rust which may have accumulated on it. Then take a piece of emery cloth, sand paper or a file and rub it back and forth on the pipe until it is clean and bright (see figure 1).

Run a wire from the ground post of the set to the pipe and wrap it securely



Pigure 1

several times around the pipe so there is no possibility of it slipping. Now, either run hot solder around the pipe and wire or cover the wrapped portion of the pipe with tape. Be careful when doing this that the hot solder does not run off onto the arms and wrist or carpet that may be underneath. If soldered, the joint can be taped with friction tape to prevent corrosion at the joint. This will make as ncar a perfect ground as it is possible

#### Batteries Should Be Watched

One of the most important places to watch for trouble in a Radio set is at battery and hold them about one inch and receiving qualities. When a number the batteries. If you are using a storage apart in the solution. Bubbles will appear A battery, buy a syringe hydrometerthis will cost about \$1.50—with which to

This series of articles is for the fan who has been given or has bought widely used due to their economy and a receiver for Christmas. It will also be of interest to the listener type tungar battery chargers, which are who has had a set, but who does not know how to give it proper care.

fully charged, and also how far it is causing serious injury to the offender. discharged at any time.

at one end with a rubber bulb at the pletc discharge of the battery. Acid should other end. Inside this glass tube is annot be added to a battery unless some has other tube called the float, one end of been spilled accidentally. Add nothing which is filled with shot. A printed scale is inside the float.

To tell the condition of a storage battery, unscrew the caps on the top of the the tops of the plates. Take the hydrometer in one hand, insert the open figure 2). end in the battery solution and squeeze the rubber bulb. Release pressure on the bulb, allowing the electrolyte to enter the hydrometer, which will cause the not connect a new battery with an old one float to rise. Lift the hydrometer out of as the new battery will be drained exthe battery—being careful that no drops of electrolyte get on the carpet or floorand read the scale at the point where it is at the surface of the solution.

When fully charged, the scale will read 1280 to 1300. Completely discharged, the scale will read 1150. Never under any condition allow a battery to run down below 1150.

#### Top of Battery is "Live"

Keep all terminals clean. When terminals show signs of becoming coated with "salt" (a green or white flaky substance), take a knife and scrape the contacts clean. While doing this, take a rag and wipe off all excess electrolyte from tery clean and dry at all times.

The "red" terminal on a battery is always the positive terminal. It may also be marked Pos. or with a + sign. When ate the battery. in doubt as to which is positive and which is negative, half fill an ordinary drinking Run a wire from each terminal of the on the negative wire.

test the batery. This hydrometer will electrolyte is in the battery. The hy-

tell you whether or not your battery is drogen gas thrown off is liable to explode,

Never lay tools on top of a battery as The hydrometer is a glass tube open they may short circuit it, causing a combut distilled water.

In order to check up on the B battery voltage-whether these batteries be of the wet or dry type—purchase a high battery. The electrolyte in the battery grade voltmeter reading 0-50 volts, which should come about one-half inch over will cost about \$5.00 for checking the amount of voltage in the batteries (see

> When a 22½-volt battery drops to 17 volts, or a 45-volt battery drops to 34 volts, it is time to throw it away. Do as the new battery will be drained exceptionally fast, and reception will be 'noisy."

> B batteries are always connected in series; this means that the positive terminal of one battery is connected to the negative terminal of the next.

> In order to increase or lower the voltage applied to the plates of the tubes, terminals are provided on the batteries at various voltages to take care of this condition. These terminals are marked with the voltages which they represent.

Never try to determine the amount of current in a B battery by taking a screwdriver and touching it to the positive and negative posts in order to see "how big the top of the battery. Keep top of bat- the spark is," as this is a certain method of running down the battery. Use a high resistance voltmeter, it gives the voltage available on a scale and does not depreci-

#### Charging Storage "Bs"

The larger Radio sets using from three glass with salt; fill with water and stir. to eight tubes have become increasingly details may be obtained from the batpopular due to their wide range, power tery manufacturers' instructions.

steady, dependable operation. The home so popular for charging A batteries, can be adapted for charging storage B batteries by means of a simple device, the B battery attachment.

This attachment is hung on the side of the charger and a short lead is clipped to the line tap in the 5-ampere tungar, or the soldered joint on the right of the transformer in the 2-ampere charger. The long lead from the attachment is connected to the positive terminal of the B battery and the negative tungar lead goes to the negative terminal of the battery. The positive tungar lead is not used and should be kept apart from the battery while charging. A 24-volt battery may be charged at 0.2 ampere and a 48volt battery may be charged at 0.1 ampere.

Higher voltage batteries can be charged bu using additional attachments. For instance, a 96-volt battery should be di-

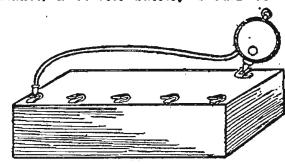
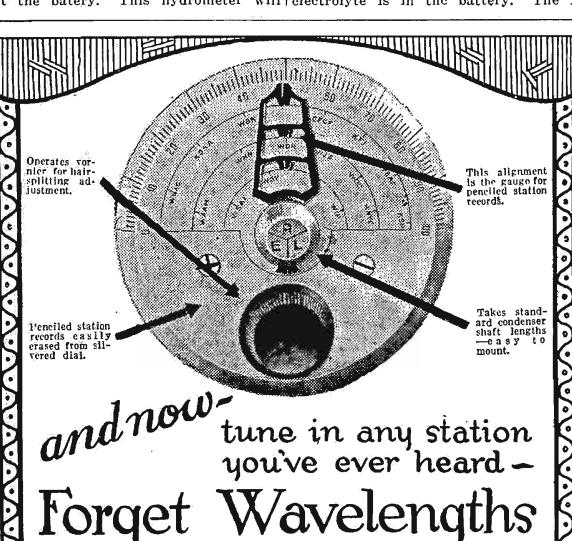


Figure 2

vided in half and the two negative terminals connected to the negative tungar Two attachments are used, the short leads being both connected to the tungar as before and one long lead going to each positive battery terminal. Thus, the two sections of the battery are charged in parallel.

An overnight charge once in two or three weeks, will, in general, be sufficient to keep the B batteries in good condition. The length of the charge and further

Editor's Note-In Part II Mr. Totten of tubes are used, the drain on the B will outline for the new Radiophans some batteries becomes proportionately greater. of the troubles that even the best sets Do not light a match to see how much For this reason the storage type of B will have and give methods of determinbatteries which can be recharged are now ing just where the trouble lies.)



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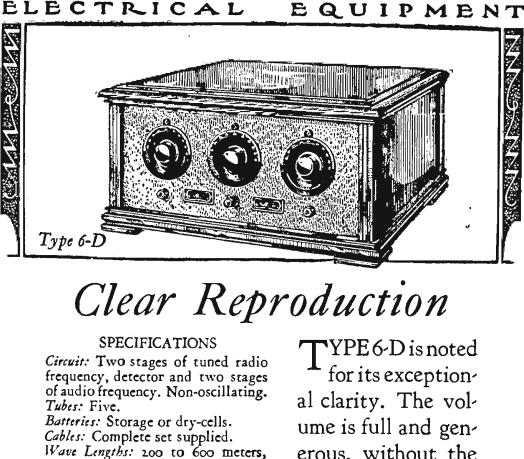
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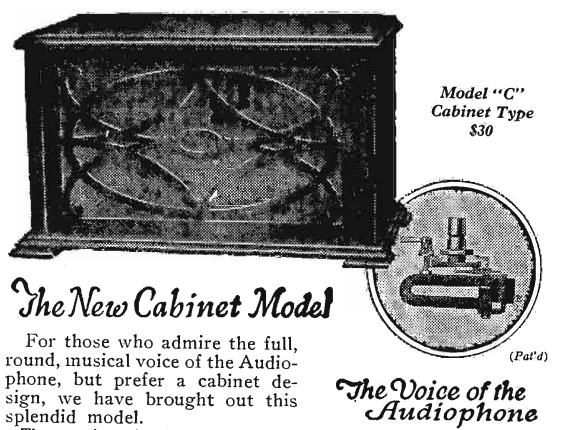
(SEE INSTRUCTIONS FOR USE BELOW)

	76/A			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
Station and City	Met.	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
AT9, Fort Bragg, N. C	435	7:00- 8:55		Silent	7:00-8:55	Silent	7:00-8:55	Silent
CFAC, Caigary, Alta CFCA, Toronto, Ont	430 400	Silent Silent	Silent 6:00- 7:00			6:00- 7:00 7:00- 8:00		
CFCN, Calgary, Alta	440	11:00- 1:00	Silent	Silont	12:30- 1:30	Silent	Silent	Silent
CHYC, Montreal, Que	341	Silent	8:00- 9:00	Silent	Silent	7:30-8:30	Silent	Silent
CKAC. Montreal, Que	437	6:30-9:30	3:30- 4:30	Silent	6:30-9:30	Silent	6:30-9:30	Silent
CKCD, Vancouver, B. C	410	10:30-11:30	Silent	10:30-11:30	10:30-11:30	10:30-11:30	10:30-11:30	
CKY, Winnipeg, Man	450 435	Silent 6:30-11:30	7:00- 8:00 Silent	Sllent	7:30-9:15	Silent	7:30-9:15	7:30-9:15
CYB, Mexico City, Mex	370	8:30-9:00	Silent	Silent .	Silont 8:30-9:00	6:30-11:30 Silent	9:00-11:00	
CYL, Mexico City, Mex	480	Silent	Silent	Silont	10:00-11:30	Silent	Silent	10:00-11:30
CYX, Mexico City, Mex	330	Silent	Silent	9:00-12:00	Stient	Silent	Silent	8:00-10:00
KDKA, E. Pittsburgh, Pa	$\frac{326}{330}$	5:30- 8:00 Silent	6:30-7:30 Silent	5:30-8:00 9:30-10:30	5:30-10:00 Silent	5:30-8:00 9:30-10:30	5:30-10:00 Silent	
KFAE. Puliman, Wash KFAU. Boise, Idaho	270 4 306	Silent	Silent 9:00-10:00	9:00-10:00 Silent	Silent	Silent	Silent	9:00-10:00
KFI. Los Angeles, Caif	469	Silent 8:45-2:00 7:20-11:30		8:45- 1:00	8:00-11:00 8:45- 1:00	Silent 8:45-2:00	Sflent 8:45- 1:00	8:00-11:00 8:45- 2:00
KFKB, Milford, Kan KFKX, Hastings, Nebr	273 291 275	Silent	Silent	7:20-11:30 9:30-11:00	7:20-11:30 Silent	7:20-11:30 Silent	7:20-11:30 9:30-11:00	7:20-11:30 Silent
KFMQ, Fayetteville, Ark	$\begin{bmatrix} 275 \\ 283 \end{bmatrix}$	Silent	Silent	Slient	9:00-10:00	Slient	7:30-8:30	Siient
KFMX, Northfleid, Minn.		Silent	7:00- 8:00	Silent	Silent	9:00-10:00	Silent	Siient
KFNF. Shenandoah. Ia	266	7:30-9:30	6:30-7:30		Silent	7:30-9:30	7:30-9:30	7:30-9:30
KFOA, Scattle, Wash	455	Silent	Silent		Silent	10:30-12:00	Silent	10:30-12:00
KFPT, Salt Lake Cy., Utah	268	Silent	Silent	10:00-11:00	Silent	10:00-11:00	Silent	10:00-11:00
KFQX, Seattle, Wash KGO, Oakland, Calif	312	7:15- 2:00 10:00- 3:00		10:00-3:00		Silent	Silent 10:00- 3:00	9:15- 1:00 Silent
KGW, Portland, Ore	492	12:00- 2:00	8:00-9:00	10:00-11:00	10:00- 2:00	10:00- 2:00	Silent	10:00- 1:30
KHJ, Los Angeles, Calif	395	10:00-12:00	10:00-12:00	Silent	10:00-12:00	10:00-12:00	10:00-12:00	10:00- 2:00
KJS, Los Angeles, Calif	360	Silent	9:15-11:30	Silent	10:00-11:00	Silent	10:00-11:00	Silent
	509	Silent	Silent	10:00-12:00	Silent	10:00-12:00	Silent	10:00-12:00
KLX. Oakland, Calif KNX, Hollywood, Calif	337 360	8:00-1:00 Silent	10:00-12:00 Silent	8:00 - 1:00 8:30 - 9:30	8:00-1:00 Silent	8:00-1:00 8:30-9:30	8:00-1:00	8:00-1:00
KOB, State College, N. M., KPO, San Francisco, Calif.	423	10:00- 2:00	10:30-12:00	9:00-1:00	9:00-1:00	9:00-12:00	Silent 9:00- 1:00	8:30-9:30 Silent
KSAC, Manhattan, Kan	275.2	Silent	Silent	7:00- 9:00	Silent	7:00- 9:00	Silent	7:00-9:00
	341	Silent	Silent	7:30- 8:30	7:30-8:30	7:30- 8:30	7:30-8:30	7:30-8:30
KSD, St. Louis, Mo	546	8:00-9:00	Silent	7:00-11:55	7:00-11:00	6:45-11:00	Silent	8:00-9:00
KTHS, Hot Springs, Ark.	375	8:30-11:30	8:30-11:30	8:30-11:30	8:30-11:30	8:30-11:30	8:30-11:30	8:30-I1:30
KTW, Scattle, Wash	405	Silent	9:00-11:30	Silent	Silent 7:00-2:30	Silent	Silent	Silent
KYW, Chicago, Ill	536	7:00- 2:00	7:00- 8:00	Silent		7:00- 2:30	7:00-2:30	7:00-2:30
NAA, Radio, Va	435	Silent 7:30-10:00	Silent Silent	5:45- 7:20 Silent	6:05- 7:20 Silent	6:25- 7:40 7:30-10:00	5:45- 7:40	7:05-7:40
PWX. Havana, Cuba WAAW, Omaha, Nebr	278	Silent	Silent	7:30-9:00	Silent	Silent	Silent 7:30-9:00	Silent Silent
WABL, Storrs, Conn	244	Silent Silent	Silent Silent	8:00-8:00 8:00-10:00	Silent Silent	6:00- 8:00 Silent	Silent 9:00-11:00	6:00-8:00 Silent
WAHG, Richmond, N. Y	316		Silent	6:30-1:00	Silent	6:30-11:00	Silent	6:30-10:15
WBAP, Fort Worth, Tex.	476		11:00-12:00	7:30-10:45	7:30-10:45	7:30-10:45	7:30-10:45	7:30-10:45
WBBF, Atlanta, Ga	423	9:00-11:00	Silent	Silent	7:00- 9:00	Silent	Silent	7:00-8:00
	270	Silent	Silent	9:00-10:00	Silent	Silent	7:00-8:00	Silent
WBBG, Mattapoisett, Mass.,	248	Silent	Silent	7:00-9:00	Silent	7:00- 8:00	Silent	6:00-1:00
	273	7:00- 8:00	8:10- 9:05	7:00-8:00	Silent	7:00- 8:00	8:10- 9:05	Silent
WBCN, Chicago, Ill	266 360	6:00- 1:00 Slient	4:00-10:00 5:30-6:30	6:00- 7:00 Silent	6:00-1:00	6:00-1:00	6:00-1:00	6:00-1:00
WBZ, Springfield, Mass	337	6:40- 8:55	6:00- 9:00	6:40-11:00	7:30- 8:30 6:40- 8:55	Silent 6:40-11:00	7:30- 8:30 6:40- 8:55	Silent 6:40-11:00
WCAL, Northfield, Minn	462	6:30- 8:30	6:30 - 8:30	6:30-10:30	6:30-10:30	6:30- 8:30	6:30-10:30	6:30-8:30
	360	12:00- 1:00	8:30 - 10:00	Silent	Silent	Silent	9:00-10:00	8:30-9:00
WCAP, Washington, D. C	469	Silent	6:20- 9:00	6:30 - 9:00	Silent	6:45- 9:00	Silent	6:30-11:00
WCAU, Philadelphia, Pa	278	Silent	5:00- 6:00	5:00 - 6:00	Silent	5:00- 8:00	5:00-8:00	5:00-10:00
	345	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	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
WDAF, Kansas City, Mo.	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		8:00 - 1:00 6:30-12:00
WEAF, New York, N. Y	492 294	5:00-11:00	6:20- 9:15 Silent	5:00-10:00 Silent	5:00-10:00	5:00-11:00	5:00-10:00	5:00-10:00
WEAY, Houston, Texas	360	Silent 6:15-7:15	Silent	6:15- 7:15	Silent 6:15-10:00	Silent 7:30-10:00	7:00-9:00 6:15-7:15	Silent 6:15-10:00
WEBJ, New York, N. Y	370	7:30-12:30	7:00- 9:00	Silent	7:30-12:30	7:30-12:30	7:30-12:30	7:30-12:30
	273	Slient	Silent	Silent	6:00-8:00	Silent	Silent	6:00-8:00
	303	Silent	6:20- 9:00	6:00- 9:45	6:00-11:00	6:00-11:00	6:00-11:00	6:00-11:00
	286	Silent	7:00- 9:15	7:00- 9:15	Silent	7:00- 9:15	Silent	7:00-10:00
	476	8:30-12:00	6:00-11:00	7:00- 9:15	8:30-12:00	Silent	8:30-12:00	8:30-9:30
	273	6:00-11:30	4:00-6:30	Silent	Silent	6:00-7:00	6:00-11:30	Silent
WFI, Philadelphia, Pa	395   263	Slient 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
WGBS, New York, N. Y	316	6:30-11:00	Silent	5:30- 6:30	7:00-11:00	6:00- 6:30	7:00-12:00	5:45- 6:30
	360	6:30- 9:00	7:30- 9:00	Silent	6:30- 9:00	6:30-9:00	6:30- 9:00	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	6:00-11:00	6:00-11:00	6:00-11:00
WGY, Schenectady, N. Y.	380	8:30- 9:30	6:30- 7:45	8:45- 9:00	5:30- 6:30 6:45- 9:00	5:30-11:00 Silent	5:30 - 6:30 6:45 - 9:00	5:30-11:00 6:45-10:30
WHAA, Iowa City	360	Silent	Silent	7:45- 8:45	Silent	7:45- 8:45	Silent	7:45-8:45
	484	7:30- 9:00	Silent	Silent	8:00- 9:00	9:00- 9:30	Silent	Silent
WHAS. Louisville, Ky	275	Silent	Silent	Silent	Silent	7:30- 8:30	Silent	Silent
	400	7:30- 9:00	4:00- 5:00	Silent	7:30- 9:00	7:30- 9:00	7:30- 9:00	7:30-9:00
WHAZ, Troy, N. Y	380	Silent	Silent	8:00-10:00	Silent	Silent	Silent	Silent
	411	Silent	8:00-10:00	7:00- 8:00	8:00-10:00	7:00-8:00	8:00-10:00	7:00- 8:00
WHK, Cleveland, Ohio	283	5:00-11:00	7:00-10:00	5:00- 6:30	5:30-6:30	5:00- 6:30	5:00-11:00	5:00-11:00
	360	6:30-11:00	8:30-11:00	6:30-11:00	8:30-11:00	6:30-11:00	8:30-11:00	8:30-11:00
WHO, Des Moines, Ia	526	Silent	7:30-9:00	7:30-12:00	Silent	7:30-9:00	Silent	7:30-9:00
	509	7:00-11:00	9:30-12:00	Silent	7:00-11:00	Silent	7:00-11:00	Silent
WJAR, Providence, R. L.	360 286	6:10-7:10 Silent	Silent	7:00- 8:00 7:30-10:00	7:00- 8:00	7:00-12:00	Silent	6:30-10:00
WJAX, Cleveland, O	390	Silent	Silent Silent	Silent	7:30-10:00 6:30- 9:00	7:30-10:00 Silent	6:30-9:00 8:00-10:30	6:30-9:00 Silent
WJY, New York, N. Y	278	7:15-12:00	Silent	7:15- 8:15	7:15- 8:15	7:15- 8:15	Silent	7:15- 8:15
	405	Slient	7:15- 7:45	Silent	6:45- 8:00	Silent	6:30-9:30	6:30-10:30
WKAQ, San Juan, P. R	455	6:00-10:30	6:00-10:30	6:00-10:30	6:00-10:00	6:00-10:30	6:00-10:30	6:00-10:30
	360	Silent	Silent	Silent	7:2-8:30	6:00- 7:30	6:30- 8:00	Silent
WKBF, Providence, R. 1	286	Silent	Silent	Silent	8:00- 9:30	Silent	Silent	Silent
WLBL, Stevens Point, Wis.	278	Silent	Silent	Silent	8:00- 9:00	Silent	Silent	Sijent
WLS, Chicago, Ili	345 423	8:00-12:00 Silent	6:30- 8:00 7:30- 9:15	Silent 8:00-10:00	6:30-1:00	6:30-12:00	6:30-1:00 10:00-12:00	6:30-11:00 Silent
WMAK, Lockport, N. Y	273	Silent	Silent	Silent	7:00- 9:00	Silent	Siient	Silent
	448	6:00-10:00	Silent	Silent	6:00-10:00	6:00-10:00	6:00-10:00	6:00-10:00
WMC, Memphis, Tenn	506	8:30-9:30 10:00-12:00	Silent	8:30-9:30	8:30-12:00	Silent	8:30-9:30	8:30-12:00
WNAC, Boston, Mass	278	9:00-10:00	Silent 7:30- 9:30	8:00-10:00 6:00-10:00	Silent 8:00-10:00	8:00-11:00 6:00-10:00	8:00-10:00 8:00-10:00	Silent 6:00-10:00
WOAI, San Antonio, Texas.	526	7:30-10:30	Silent	7:30-10:30	7:30-I0:30	7:30-10:30	7:30-10:30	7:30-10:30
	385	Silent	9:30-10:30	Silent	8:30-10:30	Sijent	9:30-10:30	Silent
WOC, Davenport, Ia	526	6:00-1i:00	9:00-11:00	6:00-11:00	6:00-12:00	Silent	6:00-12:00	8:00-11:00
	484	9:00-10:00	7:00-11:00	8:00-11:00	Silent	8:00- 9:00	9:00-10:00	8:00- 9:00
	360	Silent	Silent	10:00- 1:00	Silent	Silent	8:00-9:00	Silent
	509	Silent	Silent	6:30-10:00	Silent	6:30-10:00	Sijent	6:30-10:00
WOR, Newark, N. J	405 441	6:15-10:00 Silent	Silent	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, Chleago, Hi	448	7:00- 2:00	8:00-10:00	Silent	7:00- 2:00	7:00-2:00	7:00- 2:00	7:00-2:00
	278	Silent	7:30- 8:30	7:30-8:30	Silent	Stient	Silent	Silent
WRC. Washington, D. C	469	4:15-10:00	Silent	Silent	4:15-10:00	Silent	4:15-10:00	Silent
	88.3	7:00-10:00	5:00-6:00	Silent	6:15- 7:15	Silent	6:15- 7:15	Silent
WRL. Schenectady, N. Y	360	Silent	Silent	Silent	Silent	Silent	7:00- 8:30	Silent
WSAC, Clemson Coll., S. C.	273	8:00- 9:30	7:00- 8:00	6:00-9:00	8:00- 9:30	8:00 - 9:30	7:00-8:00	8:00-9:30
	360	Silent	Silent	Siient	Silent	7:00 - 8:00	Sijent	Silent
WSB, Atlanta, Ga	309 429	8:00-12:00	7:30- 9:15	10:00-12:00 8:00-12:00	8:00-12:00	10:45-12:00	10:00-12:00 8:00-12:00	Silent 8:00-12:00
WTAS. Elgin, lil	390	8:00-11:00)	Silent	7:00- 9:00	Slient	7:00- 9:00	Silent	Silent
	286	6:00-12:30	6:00-12:30	6:00-12:30	6:00-12:30	6:00-12:30	6:00- 1:30	6:00-12:30
WTAY, Oak Park, Ill	283	6:00-11:I5	Silent	Silent	6:45-11:15	6:45-11:15	6:45-11:15	6:45-11:15
	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

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

Meters	Call	Meter	s Call	$\mathbf{Meters}$	Call	Mete	rs Call	Meter	s Call	Meter	s Call
238 K	FQX	278	MllD	316 V	VGBS	360	WOI	410	CKCD	469	KFI
	ABN	278	WLBL	319	WGR	360	WRL	411	WDAF	469	WCAP
	VBBG	278	WNAC	326 F	<b>CDKA</b>	360	WSAC	411	$\mathbf{w}_{\mathbf{H}}\mathbf{B}$	469	$\mathbf{wrc}$
	/GAQ	278	WRBC	330	CXX	370	CYB	417	wcco	476	WBAP
	KENE	283	KFMX		KFAE	370	WEBH	423	$\mathbf{KPO}$	476	WFAA
	/BCN	283	WABL	337	KNX	370	WGN	423	$\mathbf{w}$	480	CYL
	CBK	283	WHK	337	$\mathbf{w}\mathbf{B}\mathbf{z}$	375	KTHS	423	wL $w$		WHAA
	$\langle \text{FPT} \rangle$	283	WTAY	341	CHYC	380	WGY	429	$\mathbf{wsb}$	484	woc
	FAU	286	WEMC		KSAC	380.	WHAZ	430	CFAC	492	<u>KG</u> W
	VBBF	286	WJAS		WCBD	385	WOAI	435	AT9	492	WEAF
	KFKB	286	WKBF	345	wls	390	WJAX	435	CNRO	506	$\mathbf{w}\mathbf{m}\mathbf{c}$
	<b>VBBR</b>	286	WTAS	360	KJS	390	WTAM	435	NAA	509	KLX
	VEBJ	288.3	WREO	360	ков	395	KHJ	437	CKAC	509	WIP
	FBH	291	KFKX	360	$\mathbf{WBT}$	395	WDAR	440	CFCN	509	woo
	MAK	294	WEAO		₩ÇAL	395	WFI	441	wos	513	$\mathbf{w}\mathbf{c}\mathbf{x}$
	WRW	303	WEEI		VEAY	400	CFCA	448	woj	513	$\mathbf{w}\mathbf{w}\mathbf{J}$
	FMQ	306	KFDM	360	WGI	400	PWX	448	$\mathbf{W}\mathbf{M}\mathbf{A}\mathbf{Q}$	526	WHO
	HAD	309	WMH	360	WHA	400	WHAS	450	CKY	526	WNYC
275.2	KQV	309	WSAI	360	WHN	405	KTW	455	KFOA	526	WOAW
	$\mathbf{AAW}$	312	KGO		WJAR	405	WJY	455	WJZ	536	KYW
278 <b>V</b>	7CAU	316	WAHG	360 V	VKAQ	405	WOR	462	WCAE	546	KSD



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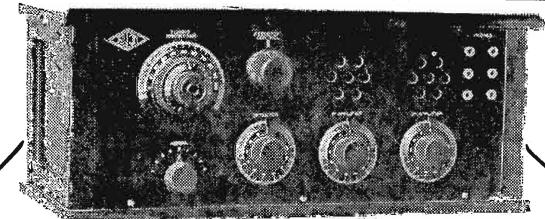
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(PLEASE PRINT IN PENCIL)

# DANISH MUSIC AT WGBS SATURDAY

#### Saturday, January 3

Saturday, silent night for: CHNC, KFKX, KOB, WCAP, WCBD, WEAO, WEBJ, WEEI, WHAZ, WHO, WJY, WKBF, WMAK, WOI, WOO, WOS.

CKAC, Montreal, Can. (Eastern, 437), 7 p. m., kiddles' stories in French and English; 7:30. Windsor hotel concert; 8:30, La Presse studio; 10:30, Windsor hotel danco program.

concert; 8:30, La Presse studio; 10:30, Windsor hotel danco program.

KDKA, E. Pittsburgh, Pa. (Eastern, 326), 1:30 p. m., concert, Daugherty's orchestra; 6, dinner concert, Westinghouse band, T. J. Vastine, conductor; 7:30, children's period; 8:30, concert.

KFNF, Shenandoah, la. (Central, 266), 6:30 p. m., program, East, River Twp., director, J. H. Thomas, KFOA, Seattle, Wash. (Pacific, 455), 8:30-10 p. m., Seattle Times concert; 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 hour; 10-12, Earl Gray and his Butter hotei orchestra.

KGO, Oakland, Calif. (Pacific, 312), 4-5:30 p. m., concert orchestra, Hotel St. Francis; 8, "Dulcy," drama in three acts, KGO players; 10-1 a. m., dance music, Henry, Halstead's orchestra.

KGW, Portland, Ore. (Pacific, 492), 10 p. m., dance music, Muitnomah hotel strollers.



Rose Mountain is one of the popular contraitos of WGY, Schenectady. She was heard recently on the Christmas Eve program and will be heard again this week.

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 Versatlle band; 8-12, Art Weldner and his dance orchestra.

KSD, St. Louis, Mo. (Central, 546), 8 p. m., program; 11:30, dance program, Varsity club orchestra.

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

KYW, Chicago, Ill. (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, Dorothy Congor, contraito; Dubuque Girls Novelty orchestra; 9:05, Youth's Companion; 9:35-11:30, Congress classic; 12-2 a. m., Congress hotel, Coon-Sanders Original nighthawks.

WAHG, Richmond Hill, L. 1. (Eastern, 316), 12 p. m., 2 a. m., Stuyvesant serenaders.

Congress hotel, Coon-Sanders Original nighthawks.

WAHG, Richmond Hill, L. 1. (Eastern, 316), 12 p. m., 2 a. m., Stuyvesant serenaders.

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

WBBR, New York, N. Y. (Eastern, 273), 8 p. m., Watchtower trio, George Twaroschk, Moses Carment, Chester Haughn; 8:15, Irene Kleinpeter, soprano; 3:20, Bible questions and answers, Judge Rutherford; 8:15, Irene Kleinpeter; 8:50, Watchtower trio.

WBZ, Springfield, Mass. (Eastern, 337), 7:05 p. m., bedtime story; 7:30, concert, Hotel Kimball trlo. 8, Albert D. Edwards, baritone; Ralph T. Entwistle, accompanist; 8:15, Joan Stuart. soprano; 9, Albert D. Edwards, baritone; 9:15, Edward Morgan, sololst: Robert Day, reader; 9:30, Hope Wright, violinist; 9:45, Gotel Brunswick orchestra; 10, music, WCAE, Pittsburgh, Pa. (Eastern, 462), 2:30 p. m., tea dansant music, Nixon restaurant; 4:30, orchestrai program, Ed Lally's Rendezvous cabaret orchestra; 6:30, dinner concert, William Penn hotel; 7:30, Uncle Kaybec; 7:45, special feature; 8:30, two-plano recitals, artist-pupils, studios of Anna S. Veverka, WCAL, Northfield, Minn. (Central, 360), 12 nildnight, musicale.

WCCO. M:nneanolis-St. Paul. Minn. (Central, 417).

WCAL, Northfield, Minn. (Central, 360), 12 nildnight, musicale.

WCCO, Minneapolis-St. Paul, Minn. (Central, 417), 10:45 a. m., home service. Betty Crocker: 8 p. m. 'Firesido Philosophies," Rev. Roy L. Smith; 8:15, talk, Dr. Gray McCiintock: 9:30, Paul Davin's Hotel Radisson orchestra.

WCX, Detroit, Mich. (Eastern, 513), 6 p. m., dinner concert, Book-Cadillac hotel.

WDAF, Kansas Citv. Mo. (Gentral, 411), 3:30-4:30 p. m., the Star's Radio orchestra; 6:7, school of the air, piano tuning-in number on the Duo-Art; address, speaker to be announced; the Tell-Mo-a-Story lady: musle, Hotei Muchiebach Trianon ensemble; 11:45-1 a. m., Nighthawk frolic, the "Merry Old Chlef" and the Piantation players.

WDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., dally aimanac; 12:02 p. m., Stanicy theater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra Marcella North, planist; 4:30, Cotton Plekers dance orchestra; 7:30, Arcadia cafe concert orchestra.

WEAF, New York, N. Y. (Eastern, 492), 4-5 p. m.

recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra Marcella North, planist; 4:30, Cotton l'ekers dance orchestra; 7:30, Arcadia cafe concert orchestra.

WEAF, New York, N. Y. (Eastern, 492), 4-5 p. m., Dart's Brooklake orchestra: 6-7, dinner music, Waldorf-Astoria orchestra: 7:30-7:50, boys' period, Fred J. Turner; 8-8:30, Eddio Foy Family, singers; 8:30-9, authors' program, Amorican Merchant Marine library; 0-9:45, Waldorf-Astoria orchestra, Joseph Knecht, director; 11-12, Vincent Lopez and bis Hotei Pennsylvania orchestra.

WFAA, Dallas, Tex. (Central, 476), 12:30-1 p. m., address, Epps G. Knight; 8:30-9:30, Blue Bonnet serenaders; 11-12, Adolphus botei orchestra.

WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Believue Stratford concert orchestra; 3:05, Leonard Zupb and sons, zithar players; 'Developing the Mind and Body in the Classroom,' Mary C. Desmond; 4, Columbians dance orchestra; 6:30, Meyer Davis Believue Stratford concert orchestra; 7, Sunny Jim, the kiddles' pal; 8, Mrs. Bose Boyle, soprano; Loretta Kerk, planist.

WGN, Chicago, III. (Central, 370), 1:40 p. m., luncheon concert; 2:30, Lyon & Heoly artist series; 3, rocking chair time; 5:30, Skeczix time; 6, organ recitai. Lyon & Healy; 6:30, dinner concert; 8:9, classical period; 10-11, denoe numbers, Don Bestor Druke erchestra.

## Headliners of the Week

F YOUR forefathers were Danes and came to this country while roaming the northern seas in those tiny valiant ships of olden days, you will wish to be reminded of these heroes by tuning in for the Danish program at WGBS, Saturday. The two-piano recital by artists pupils of Anna S. Veverka will make this evening's program at WCAE enjoyable to those who like classical music.

Shriners throughout the country will be interested in the memorial services to be broadcast by the LuLu Temple of Philadelphia, through WIP, Sunday, January 4. Many prominent statesmen and church dignitaries will be present.

J. P. Day will talk at WNYC, Monday, on "New York 100 Years from Now." It will be interesting to follow Mr. Day in his prophecy of future days. Do not think you have KFDM if you hear the Magnolia Petroleum company's band tonight. This is the Dallas band and is playing at WFAA.

The talk at KGO, Monday, by Charles W. Duncan, San Francisco advertising expert, will give the

business man some hints on the economic phases of advertising.

Tuesday night CKAC will do everything in its power to reach the "Petit Parisien" in Paris. One of the best known of newspaper men, Sir Campbell Stuart, editor-in-chief of the London Times, and Baron de Vitrolles, French consul general, will speak.

The Old Time String trio which has always been so popular at WOS, Jefferson City, will again please the Radiophans with old-fashioned tunes this Wednesday.

WBBF will give an unusually fine program Thursday night. Mrs. Trownsell, prominent Atlanta violinist, Helen Schaid, pianist, and T. C. Seidell, baritone will do their best to make this station famous,

South Africa seems a long way from Berrien Springs, Michigan, and yet college students from Cape Town, South Africa will give an entire program at WEMC (formerly KFGZ). There will be special talks on the life of the natives, native songs, talks about diamond mines and descriptions of this fascinating country.

dren's hour, Marjorle Tucker; 7:15, dinner music, Irving Boernstein's Washington hotel orchestra; 8:15. Bible talk; 8:30, Cornell Musical club concert; 10:30, Hotel Astor orchestra; 11:15, Otto F. Beck, organist. WSAI, Cincinnati, Ohio (Central, 309); 8:15 p. m.. Bicycle sextet; 8:45, Margaret Rolfes, violinist; Mercedes Voss, planist; 9:15, Bicycle mixed quartet; Bicycle male quartet; 12, popular songs; 12:30, Freda Sanker's New Toadstool orchestra. WTAS, Elgin, ill. (Central, 286), 6 p. m., Terraco Garden dance program, Fred Hamm and his orchestra; 9:30, Klmbali studio hour; Lee Slms, planist, 10:30, Terrace Garden supper dance orchestra; 11:30, Maxino Brown, Jay Gould.
WTAY, Oak Park, Ill. (Central, 283), 6:45-7:45 p. m. Leon Switzer, barltone; Bella Marta, violinist; Jean Joyaux, soprano; 9-10, Ray Kroc, planist; Hugb B. Marsball, tenor.
WWJ, Detroit, Mich. (Eastern, 513), 3 p. m., the Detroit News orchestra.

### Sunday, January 4

Sunday, silent night for: CKAC, CHNC, KFKX, KFOA, KFQX, KOB, KSD, WAHG, WBAV, WCAE, WEAO, WEBJ, WFI, WHAS, WHAZ, WHO, WKBF, WMAK, WMC, WNJ, WNYC, WOI, WOO, WOR, WRC, WSAI, WTAY.

WRC, WSAI, WTAY.

CFAC, Calgary, Alta, Can. (Mountain, 430), 11 a. m., Knox Presbyterlan church.

CKAC, Montreal, Can. (Eastern, 437), 4:30 p. m., studio concert.

KFNF, Shenandoah, la. (Central, 266), 3 p. m., religious services, Rev. Hort; 6:30, regular seedhousochapei service.

KGO, Oakland, Calif. (Pacific, 312), 11 a. m., service, First Presbyterian church, Rev. William Kirk Guthrie; 3:30 p. m., KGO Little Symphony orchestra. Carl Rhodehamel, conductor; 7:30, services, First Presbyterian church, Rev. William Kirk Guthrie.

KTHS, Hot Springs, Ark. (Central, 375), 11-12:30 p. m., First Presbyterian church services, Chauncey Hickok, pastor; 8:30-10, Deluxe concert, ten-plece Meyer Davis orchestra.

WBBR, New York, N. Y. (Eastern, 273), 9:10 p. m., I. B. S. A. chorai singers; 9:20, Fred Franz, tenor; 9:30, Bible lectures; 10, Fred Franz, tenor; 10:10, I. B. S. A. chorai singers.

WBZ, Springfield, Mass. (Eastern, 337), 10:45 a. m., church 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 Badlo church services; 4. Prof. Otto Kaltels, pianist; 6:30, dinner concert. William Penn hotel.

WCAL, Northfield, Minn. (Central, 360), 8:30 p. m., sacred program. sermon, Rev. William C. Benson.

WCAU, Philadelphia, Pa. (Eastern, 278), 5 p. m., talk; 6, Hotel Pennsylvanla orchestra, Louis Raer, director.

WCBD, Zion, III. (Central, 345), brass quartet, mixed quartet: Wledman Sisters, Erma Reynolds, soprano: Mark Whiteside, baritone; Mr. and Mrs. R. M.

WCBD, Zion, III. (Central, 345), brass quartet, mixed quartet: Wiedman Sisters, Erma Reynolds, soprano: Mark Whiteside, baritone; Mr. and Mrs. R. M. Steel, soprano and tenor; Cari Newcomer, saxophonist: Gladys Taylor, pianist; Grace Detienne. reader. WCCO, Minneapolis-St. Paul, Minn. (Central, 417); 10:20 a. m., church service; 4:10 p. m., House of Hope Presbyterian church, Rev. H. C. Swcaringen; 7:30, Second Church of Christ Scientist; 9:15, classical concert, Woodwind quintet.
WCX. Detroit, Mich. (Eastern, 513), 6 p. m., dinner concert, Book-Cadillac hotel; 7:15, services, Central Methodist Episcopai church.
WDAF, Kansas City, Mo. (Central, 411), 4-5 p. m., program, Harrisonville, Mo., band; 5-5:45, International Sunday school lesson, Dr. Walter L. Wilson.



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

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

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., selections, Alamo theater orchestra, Harry S. Currie, conductor; "Just Among Home Folks;" readings, Courier-Journal, Louisville Times; 7:30-9, concert, auspices Arthur Findling.

auspices Arthur Finding.

WHN, New York, N. Y. (Eastern, 360), 6:30-7:30 p. m.,
Vincent Catanese and his Hotei Alamac orchestra;
7:30-8, Hotel Carlton Terrace orchestra; 8-8:15, Arthur
Stone, blind jazz pianist; 8:30-9, Strand Roof entertainers; 10-10:30, Jimmy Clarke and his entertainers;
11:11:30, Connie's Inn with Leroy Smith's orchestra;
11:30 12, Roseland dance orchestra.

WHO Beliddelpia Ray (Factors 100), 1- m. Keel

11:30 12. Roseland dance orchestra.

WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Karl Bonawitz, organist; 3, Dai Ruch and his Arcadlans dance orchestra; "Me and the Boy Friend," "The Only, Only One," "I Picked the Wrong One to Love," "Some Other Day," "No One Knows What Its All About," "Tell Me Dreamy Eyes," "Everybody Loves My Baby," "Foliow the Swallow," "Too Tired," "Bye, Bye, Baby," "Show Me the Way," "Somebody Loves Me;" 8:05, Hotel St. James dinner orchestra; 7, Uncle Wip's bedtime atories; 8, "Timely talks to Motorists," Gene Hogle; 8:15, two plays, Emilie Krider Norris School of Expression and Stage Art, "When the Whirlwind Blows," "He Said and She Said;" 9, "In Fairyland," Kurtz Studio concert quartet, Isabolia Guthrie, soprano, Edna Loreaux, contraito, Waiter Start, tenor and Paui Grant, baritone; 10:05, Art Coogan and his Club Madrid dance orchestra; 11:05, Kari Bonawitz, organist.

WJD, Mooseheart, 111. (Central, 278) 7:15-8:15 p. m., Mooseheart theater orchestra; 9-12, dance music, Log Cabin.

Valdorf-Astoria dance orchestra; 10:30-11:30, Hotel Astor dance orchestra.
WLBL, Stevens Point, Wie. (Central, 278), 12 midnight,

WLS, Chicago, III. (Central, \$45), 7 p. m., iuliaby time, "Blg" Ford and "Littlo" Glenn; 7:15-12, Saturday midnite revue, Filddlin' Tom Danduran, Gloomy Gus Whitlock; Ralph Emerson, organist; Isham Jones and his College Inn orrhestra; Carpenter and Ingram. "The Marmony Girls!" Ford and Glunn; Walter

"Tho Kentucky Wonderbean." Peterson.

Peterson, "Tho Kentucky Wonderbean."

WMAQ, Chicago, Ili, (Central, 447.5), 6 p. m., Hotel LaSalle orchestra; 6:30, Radio photologue, Hawaii, Paui P. Hoierman; 9, weekly Balaban & Katz Cbicago theater revue.

WMC, Memphis, Tenn. (Central, 501), 12 m., musical program, O. K. Houck Piano company; 8 p. m., bedtime story, Uncle Joe; 8:30, musical program.

WNJ, Newark, N. J. (Eastern, 233), 10:30 p. m.-1 a. m., midnight dance revue, Paradise dance palace.

WNYC, New York, N. Y. (Eastern, 526), 6:30-7:30 p. m., Sam Wooding and his Club Alabam orchestra; 7:30-7:35, police alarms; 7:35-8:30, Chateau Four; 8:40-9:30, police quartet; 9:30-10:30, instrumental novelties; 10:30-10:40, police alarms and official weather forecasts.

novelties; 10:30-10:40, police alarms and official weather forecasts.

WOC, Davenport, Ia. (Central, 484), 7:30 p. m., discussion of the International Sunday school lesson, Rev. M. A. Getzendaner; 9, Louis Connor and his LcClaire hotel orchestra song and novelty numbers, Peter MacArthur.

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.

WOI, Ames, Ia. (Central, 360), 12:30 p. m., chimes, WOR, Newark, N. J. (Eastern, 405), 7-7:30 a. m., WOR morning gym class, direction of Arthur E. Gagiey; 2:30-2:45 p. m., Lena Angelina Sena, soprano; Massino Etzl, planist; 2:45-3:15, Mme. Nina and Marle Artska, Russian Ballet school, 3:15-3:25, Lena Angelina Sena; 3:25-3:45, George Haddon Saxon club orchestra; 7:15-7:30, resumo of day's sports, Joily Bill Steinke; 9-9:15, "How to Live 150 Years," Dr. Frederick W. Collins.

Collins.

WQJ, Chicago, III. (Central, 448), 11-12 m., "Skating,"
A. T. Conway; 3-4 p. m., koffee klatsch; 7-8, dinner concert, Ralpb Williams and his Rainbo Garden orchestra; Otis Pike Jester, soprano: Mary Thrash House; planist; Sheppard Levine, tenor; Effie Overson, accompanist; 10-2 Ralpb Williams and bls Rainbo Skylarks; Jerry Sullivan; Harry Geise; the Melodians, Laurie, Eddfe and Bennie; Brock Sisters, Julia and Ruth; Peggy McClure, prima donna; Lindsey Coons, barltone; Lew Butler, "The Giont of Radio;" Bernard and Robinson, "The Dixie Stars."

WRBC, Valparaiso, Ind. (Central, 278), 7:30 p. m., services.

WHO. Washington, D. O. (Eastorn, 469), 7 p. m., chil-



Edna La Verne Priebe has a voice like a bird. She has broken all records for singing high notes and reaches B flat above high C. Tune in Friday for WLS.

WDAR, Philadelphia, Pa. (Eastern, 395), 2:30 p. m., Arcadia cafe concert orchestra, direction Feri Sarkozi; 7:30, Round Table forum; 8:30, Sevon Arts Club

7:30, Round Table forum; 8:30, Sevon Arts Club concert and talk.

WEAF, New York, N. Y. (Eastern, 492), 7:20-9:15 p. m., Roxy and his Gang, Capitol theater; 9:15-10:15. Skinner organ recital.

WEEI, Boston, Mass. (Eastern, 303), 3:45-5:30 p. m., men's conference, Bedford Branch, Y. M. C. A.

WEMC, Berrien Springs, Mich. (Central, 286), 10:15-10:35 a. m., old time bymns; 10:35-10:50. Mrs. William Hanson, contraito; Mrs. H. B. Taylor, soprano; 10:50-10:55, Scripture lesson, Pastor W. R. French; 10:55-11:05, Andrew, Aragona, tenor; 11:05-11:20; studio chapel sermon, Pastor W. R. French; 8:15-8:20 p. m., organ prelude; 8:20-8:10, Radh, Ligbthouse choir; 8:40-8:50, Gertrude Sollards, soprano; 8:50-9, Charles Garber, saxophonist; 9:610, Scripture lesson, Pastor W. R. French; 9:10-9:30, sermon, Pastor W. R. French; 9:10-9:30, sermon, Pastor W. R. French.

WFAA, Dallas, Tex. (Central, 476), 6-7 p. m., Radio Bible class, Dr. William M. Andorson, pastor; 9

(Continued on page 10)

# ADVERTISING EXPERT TO TALK AT KGO

#### Sunday, January 4

(Continued from page 9)

9.30, singers, First Christian church; 8:30-11, Lee's

foxtrotters.

WFI, Philadelphia, Pa. (Eastern. 395). 1:30 p. m., chapel services, auspices Central Y. M. C. A.; taik, Dr. C. A. Barbour.

WGN, Chicago, III. (Central. 370). If a. m., Uncle Walt reads comics to the children; 11:45, twin organ recital, Chicago theater; 2 p. m., Lyon & Healy organ recital; 2:30, Tribuno Master artists concert; 3, Chicago Musical college; 9, "An Evening with the Great Composers," Charles II. Gabriel, Jr.; Drako concert ensemble.

Composers," Charles II. Gabriel, Jr.; Drako concert ensemble.

WGR, Buffalo. N. Y. (Eastern, 319), 3-4 p. m., vesper service, Buffalo Federation of churches; 1-4:30, George Albert Bouchard, organist; 7:15, Central Preshyterian church service, William Wali Whiddit, organist, and Dr. Robert J. MacAlpine, speaker.

WGY, Schenectady, N. Y. (Eastern, 380), 11 a. m., service, First Preshyterian church; Rev. Itobert W. Anthony, pastor; 3:35 p. m., WGY Symphony orchestra, Leo Kliwen, conductor; L. Le Roy Pickett, baritone; 5, Dr. Frank Sili Rogers, organist; 7:30, service, First Presbyterian church, sermon, Rev. Robert W. Anthony; 9, Symphony orchestra; 10, selections, Hampton Institute quartet.

WHAS, Louisville, Ky. (Central, 400), 9:57 a. m., organ music; 10, church service, Fourth Avenue Presbyterian church, Rev. Dr. Charles W. Welch, pastor; Esther Metz, soprano; Mrs. Virginia S. Herrick, contraito; Williams Layne Vick, tenor; William G. Meyer, baritone; William E. Conen, organist; 4, organ recitai, George Latimer, organist; 4:30, choral evensong service, Christ Church cathedral; Ernest Arthur Simon, organist.

WHN, New York, N. Y. (Eastern, 360), 3-4 p. m., Queens County Christian Endeavor program, represented by Rev. Lyons of Queens Reformed church: 5-5:30, Rosciand dance orchestra; 5:30-6, Olcott Vali



Marie Kelly, reader, is heard Wednesday and Saturday nights at WEBH, Chi-cago. Her readings are enjoyed by many fans.

and his string trio; 10-10:45, Gem Razor entertainers; 11-11:30, Vanity club revue; 11:30-12, Alja and hia Ciub Madrid orchestra with Lee Kent; 12-12:30 a. m., Harry Richman and his entertainers; Eddie Elkins and his orchestra.

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

WIP, Philadelphia, Pa. (Eastern, 509), 3 p. m., Shrine memorlal services; Lulu temple, direction of Albert H. Ladner; 4:30, "Sunday Talk" meeting; "America's Greatest Sin," Fred E. Smith; 7:15, services, Holy Trinity chapel; 8:30, Symphonic concert, Bed Stad and his WII' Symphony orchestra; Kari Bonawitz, organist.

and his WIP Sympton, organist.

WJJD, Mooseheart, III. (Central, 278), 7:45-8:40 p. m., services, Roman Catholic; 8:40-9:40, organ recital, Albert F. Brown; 9:40-11, Protestant services; 3-4, regular Sunday concert.

WJY, New York, N. Y. (Eastern, 405), 8:15-10 p. m., Bernhard Levitow's Hotel Commodore 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, original stories by authors, music by composers; 2:30-3:30 p. m., Radio Bible class, auspices of Federation of churches; 3:30-4, "Practical Religion," Rev. Dr. Harry Emerson Fosdick; 4-5:45, vesper services, St. Georges church; 5:45-7, "The Dream of America;" literary vespers, Edgar White Burrill: 7-8, Nather Aback Hetel Pensylvania perkletars; 18.1

America; Hiterary vespers, Edgar White Burrill; 7-8, Nathan Abas' Hotel Penusylvania orchestra; 10-11, Hampton institute quartet.

WKBF, Providence, R. I. (Eastern, 286), 10 a. m., chimes; 5 p. m., organ recital.

WLS, Chicago, III. (Central, 345), 6:30 p. m., Ralph Emerson, organist; 7-8, musical program, Walther League of the Lutheran church.

WLW, Cincinnati, Ohio (Central, 423), 9:30 a. m., school, editorial staff of Sunday School Publications, Methodlat 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, concert, Western and Southern orchestra, William Kopp, director; Cari Wunderle, Zither soloist.

WMC, Memphis, Tenn. (Central, 501), 11 a. m., services, First Baptist church, Rev. A. U. Boone, pastor.

Zither soloist.

WMC, Memphis, Tenn. (Central, 501), 11 a. m., services, First Baptist church, Rev. A. U. Boone, pastor.

WOC, Oavenport, Ia. (Central, 484), 8 p. m., Presbyterian church, Rev. J. G. Cooke; 9:30, The Palmer School Radio orchestra, Erwin Swindell, conductor.

WOO, Philadelphia, Pa. (Eastern, 509), 10:30 a. m., services, Bethany temple; 2:30, Sunday school scrvices, Bethany temple; 6:05, organ recital, Clarence K. Bawden; 7:30, services, Bethany temple, Rev. Gordon A. MacLennan, minister.

WOS, Jefferson City, Mo. (Central, 440.9), 7:30 p. m., First Methodist church, Rev. J. E. McDonald, pastor.

WQI, Chicago, III. (Central, 448), 10:30 a. m., sermon, Dr. Preston Bradley; 8-10, Ralph Williams and his Ralnbo Garden orchestra; Mrs. E. Spring, accompanist; Jeanette Gicdeman, soprano; Dr. Joseph A. Carey, haritone; Maria Dnaprova, Russian soprano; Carl G. Linner, planist.

WRBC, Valparaiso, Ind. (Central, 278), 7:30 p. m., music.

music. WSAI. Cincinnati, Ohio (Central, 309), 3 p. m. chlmes

WSAI. Cincinnati, Ohio (Central, 309), 3 p. m. chlmes concert: 3:10, sermonette.
WTAS, Elgin, III. Central, 286), 2 p. m., Villa Oliva Star Sunday concert; 6, Fred Ham and hls Terrace Garden orchestra; 9:30. Klmbail studio hour; Lec Slms: 10:30. Terrace Garden supper-dance program; 11:30, Jay Gould, Maxine Brown, Jlmmy Eggert, Jack Little, Paul Small, Lew Butler, Joey Stoole, Lindsey Coons. Betty Holioe., Bahe June.
WWJ, Oetroit, Mich. (Eastern, 513), 11 a. m., aervices of the St. Paul's Episcopal cathedral; 2 p. m., the Detroit News orchestra.

#### Monday January 5

Monday, silent night lor: CKAC, KYW. WBAV, WCAL, WEAO, WEHB, WEBJ, WF!, WHAS, WIP, WJY, WLS, WKBF, WMAK, WMAQ, WNJ, WQJ, WRC, WTAY.

CHNC, Toronto, Can. (Eastern, 350), 8:30 p. m., instrumental trio, Frank Blachford, Lionol Bilton, Simeon Joyce; Aeolian quartet, Walter Haynes, 1st tenor: Lawrence Defoe, 2nd tenor: Charles Schearer, baritone; A. E. Vandervoort, bass; Vera McLean, contraito; Agnes Adie, coprano.

CKAC, Montreal, Can. (Eastern, 437), 1:45 p. m., Windsor trio; 4:30, Ho lessons.

KFAE, Pullman, Wash. (Pacific, 330), 7:30 p. m., Catherine Hunt, soprano. singing, "Les Pappillon," "Little Silppers of the Rain," "Butterflies," "Como Down Laughing Streamlet;" Margery Segessenmann, pianist, playing "Humoresque," "Etuds in D Flat," "Scherzo;" "Important Points in Poultry Raising," Prof. J. S. Carver; "Control of the Sorious Hot Bod Disease," George L. Zundel; "Psychology in Industry," Dr. Carl I. Erickson; book chat, Alice L. Webb.

KFNF, Shenandoah, la. (Central, 266), 6:30 p. m., concert, seedhouso people and their friends.

KFOA, Seattle, Wash. (Pacific, 455), 5-6 p. m., Scattle Post-Intelligencer; 6-6:30, Post-Intelligencer concert; 6:45-8:15, Sherman, Clay & company; 8:30-10, Scattle Post-Intelligencer concert.

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 hour; 10-11, Earl Gray and his Butler hotel orchestra.

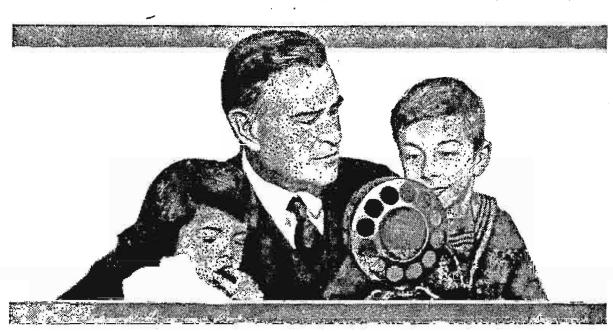
program; 6, dinner concert, Book-Cadillae hotel; 8:30,

program; 6, dinner concert, Book-Cadillae hotel; 8:30, musical program.

WOAF, 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 air, plane tuning-in number on the Due-Art; address, C. H. Cheney, seventh of a serles of talks on banking; the Tell-Me-a-Story Lady; music, Hotel Muehlebach Trianon ensembls; 8-9:15, "Around the Town with WDAF;" 11:45-1 a. n., nighthawk frolic, the "Merry Old Chief" and the Plantation players.

WOAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., daily almanac: 12:02 p. m., Stanicy theater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; Marcalla North, planist; 4:30, Isabella Sgarra, planist; 7:30. Dream Daddy; 9:30, Stanicy theater symphony orchestra; 10:03, Arcadia eafe dance orchestra; vaudsviile featurss from Fay's theater.

WEAF, Nsw York, N. Y. (Eastern, 492), 2:15-4:15 p. m., Government club meeting, Hotel Astor; 4:15-5,



The Radio bedtime story man at WGBS tries out his tales on two young friends and is highly pleased at the results. As he softly finished his tale the two listeners shown happily dropped their lids and were wafted into slumberland.

KGO, Oakland, Calif. (Pacific, 312), 3 p. m., studio musical program; 4-5:30, Henry Haistead's dance orchestra; 5:30-6, Aunt Betty stories and KGO Kiddles' kiub; 8, Arion trio; "Water for the Farm and the Farm Home," Prof. P. L. Hibbard; "A Lesson in English," Wilda Wilson Church; economics course, Charles W. Duncan; "Chats about New Books," Joseph H. Jackson; 10-1 a. m., dance music, Henry Halstead's orchestra.

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

Halstead's orchestra.

KOB, State College, N. M. (Mountain, 360), 7:30-8:30 p. m., Arlei trio, Mrs. Alice B. Marshall, director.

KSAC, Manhattan, Kan. (Central, 341), 12:30 p. m., tuning in piano selection, Osceola Hall Burr; talk. W. R. Martin; "Heat Dairy Cows' Drinking Water,"

J. W. Linn; 7:20, college bell and opening exercises; 7:30, "History of the Development of the Hog Industry," A. D. Weber; 7:40, Radio College quartet; 7:45, "Business Side of Purebred Dairy Cattle Breeding," J. B. Fitch.

7:45, "Business Side of Purebred Dairy Cattie Breeding," J. B. Fitch.

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

KTHS, Hot Springs, Ark, (Central, 375), 8:30-10 p. m., down on the form program including old-time hose-

down on the farm program, including oid-time hoe-down tunes; French harp selections and songs, Luke Hignight; banjo, harp, and Mack Hignight, fiddler; 10:30-11:30, Chicago serenade dance program.

KYW. Chicago, III. (Central, 536), 6:30 a. m., morning exercises, Paul Leonhardt; 11:35, table talk, Mrs. Anna J. Peterson; 6:35-7, children's bedtime story, Uncle Rob.

Uncle Bob.

Uncle Bob.

WAHG, Richmond Hill, L. I. (Eastern, 316), 8-8:15
p. m., Emory Deutsch, violinist; 8:15-8:30, Thomas
Stevens, Irish tenor; 8:30-8:45, Besse Llebowitz, planist; 8:45-9, Elsie Edwards, soprano; 8-9:15, Irving
Firatemberg, planist; 9:15-9:30, Harold Pratt, tenor;
9:30-9:45, Emory Deutsch; 9:45-10, Thomas Stevens;
10-10:15, Besse Llebowitz; 10:15-10:30, Elsie Edwards; 10:30-10:45, Asciuto Brothers dance orchestra;
12-2 a. m., dance orchestra.

WBBF, Atlanta, Ga. (Central, 270), 9-10 p. m., Hamnett Munger, pianist; Nellis Munger, violinist; Mrs.
G. C. Munger, violinist; Mrs. Annie Mueller Munger, pianist.

pianist. WBBG, Mattapoisett, Mass. (Eastern, 248), 8 p. m., Rittmore orchestra.

WBBR, New York, N. Y. (Eastern, 273), 8 p. m., Watchtower string quartet; 8:10, Carl Park, vioinist; 8:20, world news digest, Editor Goiden Age; 8:40, Carl Park, vlolinist; 8:50, watchtower string quartet.

M a rcell a North, pianist, will be heard

again at

WDAR, Philadelphia, Tues-

day, January 6.

Prof. Leroy Arnold, Columbia university; 6-7, dinner music, Waidorf-Astoria orchestra; 7:10-8:30, Strand theater program; 8:45-9, Leslie Joy, baritone; 9-10, A and P Gypsies; 10:15-10:30, Richard McClanahan, pianist; 10:30-11:30, Midnight Sons orchestra.

WEE!, Boston, Mass. (Eastern, 303), 6:30 p. m., Boston Edison Big Brothers club; 7, Dok-Eisenbourg and bis Sinfornians; 7:30, talk, Edwin E. Tumer, Jr.; 7:40, Dok-Eisenbourg and his Sinfonians; 8, program, courtesy, C. F. Hathaway & Sons, wholesale bakers; 8:30, Courtney Bird and his "Uke;" 8:45, Buddy's Bostonians; 9:30, Gertrude La Puri Drisko, dramatic soprano; Lillian Breslin, soprano; Alice Walsh Hutchinson, accompanist; 10, musicale; 10:30, Dok-Eisenbourg and his Sinfonians.

WEMC, Berrien Springs, Mich. (Central, 286), 8:15-8:30 p. m., Jeanette Richardson, soprano; 8:30-8:40, Owen Blake, trombonist; 8:40-8:50, Prof. H. L. Pearson, reader; 8:50-9:05, Betty Keily, planist; 9:05-9:15, Cyril Kellman, elarinetist.

WFAA, Dallas, Tex. (Central, 476), 12:30-1 p. m., address, Dr. J. B. Cranfili; 8:30-9:30, Magnolia Petroleum company's Dalias band, Paui E. Ashley, director.

WF1, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3:15, cantata students of Hanna school; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim,

cantata students of Hanna school; 6:30, Meyer Davis Bellevue Stratford concert orohestra; 7, Sunny Jim, the kiddies' pal.

WGN, Chicago, III. (Central, 370), 1:40-2:30 p. m., luncheon music, Drake concert ensemble, Biackstone string quintet; 2:30-3, recital, Lyon and Healy concert hali; 3-3:30, rocking chair time.

WGR, Buffalo, N. Y. (Eastern, 319), 2:30-4:30 p. m., Buffalo Courier and Enquirer musicai program; 6:30-7:30, dinner music, Vincent Lopez Hotel Statler dance orchestra; Harold Gieser, director; 9-10, musical program, direction of Dr. David W. Lang; 10-11, musical program, Buffalo Trust company, Cecile Kertz, director; 11:30, supper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gieser, director.

WGY, Schenectady, N. Y. (Eastern, 380), 7:45 p. m., William A. Fisher, pianist; John Dick, baritone; Eleanor Johnson, flutist; William A. Fisher, pianist.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., selections, Alamo theater orchestra, Harry S. Currie, conductor; readings, Courier-Journai, Louisville Times.

WHAZ, Troy, N. Y. (Eastern, 380), 9 p. m., "The Masque of Troy," presents "So There," "That Brute Simmonds," John M. Francis, director.



Marion Gaines pianist, blues singer and so-ciety debu-tante is one of WSB's favorite stars.

WHN, New York, N. Y. (Eastern, 360), 6:30-7:10, p. m., Vincent Catanese and his Hotel Alamac orchestra; 7:10-7:30, fashion chats. Mme. Belle; 7:30-8, Hotel Carlton Terraco orchestra; 8-8:05, "Storage Batteries," H. B. Shontz; 8:05-8:20, Roseland dance orchestra; 8:50-9:20, Littman's Employees orcheatra; 9:20-9:30, Richard B. Gilbert with his taropatch; 9:30-9:35, "How to Got What You Want," Mrs. Genevieve Behrend; 9:35-10, Dan Gregory and His Crystal Palace orchestra; 10-11, Jack Shack orchestra; 12-12:30, Lou Gold and his orchestra, direct from Wigwam elub. WHO, Des Moines, Iowa (Central, 526), 7:30-9 p. m., "Care of Tecth." Emma Welsgarber; Herman A. Breithaupt, zither soloist; classical program, Dean Cowper, director; 11:15-12, L. Carlos Meler, organist. WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Gimbel toa room orchestra, Ray Steen, director; 3, Bible talk, J. G. Calhour; 6:05, Hotel St. Junes dinner orchestra; 7, Uncle Wip's bedtime stories; dancing lessons, Milier Conservatory of Dancing.
WJJD, Moosebeart, III. (Central, 278), 3:30-4:30 p. m., music, Moosebeart children; 6:80-7:15. Albert F. Brown, organist; 7:15-8:15, Mooseheart Novelty orchestra; talk, Ben Oswalt; 11:30-12:30, request program, organ music, Mr. Brown.
WIZ, New York, N. Y. (Eastern, 455), 10-10:20 a. m., WBZ, Springfield, Mass. (Eastern, 337), 7:30-8 p. m., University extension courses; 8-10:30 p. m., concert; 11:30-12, McEnelly's Singing orchestra.

WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m., dinner concert, William Penn hotel; 7:30, Uncle Kayhee; 7:45, address; 8:15, address, H. F. Bucher; 8:30, concert, quartet, Lillian Feldman, director; 10:30, flight of the Mythical Dirigible, Press-Kaybce and orchestral concert concert, quartet, Lillian Feldman, director; 10:30, flight of the Mythical Dirigible, Press-Kaybee and orchestral concert.

WCAU, Philadelphia, Pa. (Eastern, 278), 6 p. m., Hotel Pennsylvania orchestra, direction, Louls Baer; 7:30, housshold talks: 8, recital.

WCBO, Zion, III. (Central, 345), 8 p. m., Junior choir, Fred Faassen organist; trombone quartot; Arthur Rendall, clarinetist; E. B. Paxton, baritone: Mrs. Esther Cook Rendall, soprano; L. J. Hire, violaist; Eleanor Pihi, pianist; Mrs. S. H. DePew, reader. WCCO, Minneapolis-St. Paul, Minn. (Central, 417), 10:45 a. m., "Recipe Exchange," Betty (rocker; 2 p. m., woman's hour, "My Job," Byrd Frost Crowell; 2:30. matinee musical; 4, magazine hour, "Prolude," Edgar Valentine Smith; 5:30, children's hour, Mrs. R. G. Cargil; 8, sport talk; 8, "Curront Events," W. P. Lemon; 8:30, Fort Snelling Third Infantry hand; travelogue, "Hawaii, Guam, Philippines," Capt. Raymond C. Wolfe: 10, Dick Long's Nankin Cafe orchestra; Mrs. W. H. Grinden, mezzo-soprano. WCX. Detroit, Mich. (Eastern, 513), 4:15 p. m., musical

organ music. Mr. Brown.
WIZ, New York, N. Y. (Eastern, 455), 10-10:20 a. m., housewives' league menu, Mrs. Julian Heath: 10:20-10:30, shoppers' gulde, Mrs. Pauline Peck; 10:40-

10:50, "Diet and Hoalth," Dr. Lulu Hunt Peters; 1-2 p. m., Honry Vander Zanden's Hotel Ambassador Trio; 4-4:30 Bert Dixon, baritono; Eimer Russ, accompanist; 7-8, Bernhard Levitow's Hotel, Commodore dinner concert; 8-8:10, Wall Strest Journal Review; 8:10-8:30, "American History," N. Y. U. Air College; 9:15-9:30, "Philosophy of Nutrition," Alfred W. McCann; 10:45-11:45, Jacques Green and his Club Deauvillo orchestra; Clark's Hawailans.

WLS, Chicago, Ill. (Contral, 345), 3:45-4:45 p. m., "Music In the Homo," Miss Streator; "Federal Constitution and Chiid Labor," Mrs. Florence Bennett. WLW, Cincinnati, Ohio (Central, 423), 6 p. m., dinner hour concert, Cincinnati Post; 8-10, Times Star program: Times Star orchestra; Howard Hafford, tenor; Karl Kirksmith, collist; Senator Schultz in monologues. WMC, Memphis, Tsnn. (Central, 501), 12 m., musical program, O. K. Houck Piano company; 8 p. m., bedtimo story, Uncls Percy; 8:30, concert, Hotel Gayoso orchestra.

WNYC, New York, N. Y. (Eastern, 526), 7:30-7:45 p. m., polico alarms; 7:35-7:40, health talk; 8:15-8:30, "New York 100 Years from Now," J. P. Day; 8:30-9:45, Riesenfsld's Rialto program, Rialto theater; 9:45-10, talk, Fred A. Wailis, commissionsr, department of correction; 10-10:30, dance program; 10:30-10:45, polics alarms and official weather forscasts.

WOC, Oavenport, lowa (Central, 484), 9 p. m., Mrs. Frank W. Eiliott, pianist; Mrs. Grace Huber-Lohmiller, soprano; Mrs. William A. Kleinhen, reader; Mrs. Harry Bartlet, violinist; 10, "The Rough Diamond," one-act comedy, dramatic club, W. Roy Van Allen, director.

WOI. Ames, lowa (Central, 380), 12:30 p. m., collego chimes; "The Neod of Planning the Year's Farm

Alien, director.

Wol, Ames, lowa (Central, 380), 12:30 p. m., collego chimes; "The Need of Planning the Year's Farm Business:" 10, program, popular music.

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

WOR, Newark, N. J. (Eastern, 405), 7-7:30 a. m., WOR morning gym class; directed by Arthur E. Bagiey; 2:30-2:45 p. m., Mildred J. Pfumen, soprano;





3-3:15, Mildred, J. Pfumen; 3:15-3:30, talk, Charm magazine; 6:15-7:15, "Music White You Dine," Dave Harmon's Cinderella orchestra; 7:15-7:30, resume of day's sports, Jolly Bill Steinke; 8-8:30, Albert Vertchamp, violinist; 8:30-9:30, musical program, Bradford theater; 9:30-9:45, Dr. Frank Vizetelly, lexicographer; 9:45-10:45, Dr. Sigmund Spaeth, musical critic and his party.

WOS, Jeffsrson City, Mo. (Central, 440.9), 8 p. m., Harry Snodgrass, planist.

WOJ, Chicago, III. (Central, 448), 11-12 m., "Home Economics Talk," Marcia Meadows; "Balance and Distribution of Ornaments and Furnishings," Stefling Bryan McDonald; "Yeast for Health," J. Schinkel; 3-4 p. m., "lodine in Food," Helen Harrington Downing; "The Care of the Hair." Madame Huntingford.

WRC, Washington, D. C. (Eastern, 469), 4 p. m., book reviews, auspices League of American Pen Women; 4:20, talk, National Geographic society; 4:30, teamusic, Meyer Davis' New Willard hotel trie; 6, children's hour, Peggy Albion.

music, Meyer Davis' New Willard hotel trie; 6, children's hour, Peggy Albion.

WSAI, Cincinnati, Ohio (Central, 309), 10 p. m., Doc Howard's Cuvler entertainers.

WTAS, Elgin, III. (Central, 286), 8-12 midnight, Villa Olivia Monday night program.

WWJ, Oetroit, Mich. (Eastern, 513), 3 p. m., The Detroit News orchestra; 7, The Detroit News orchestra; Ina M. Lockart, contraito; T. Stanley Porry, tenor.

#### Tuesday, January 6

Tuesday, silent night for: CHNC, KFAE, KFKX, KFNF, KOB, WAHG, WBBR, WCAL, WCAP, WCBD, WCCO, WEAO, WEMC, WHAZ, WHO, WOC, WO1, WOO, WOS.

CKAC, Montreal, Can. (Eastern, 437), 7 p. m., kiddles' stories in French and English; 7:30, Windsor hotel concert ensemble; 8:30, La Presse studio entertainment; 10:30, Windsor hotel dance orchestra; 12 midmight, Capitol theater quartet; greetings, Sir Campbell Stuart, editor in chief of the London Times; Baron de Vitrolles, French consul general.

KFDM, Beaumont, Texas (Central, 306), 8 p. m., musical concert.

concert.

KFOA, Seattle, Wash. (Pacific, 455), 12:30-1:30 p. m.,

Kiwanis club weekly luncheon; 5-6. Seattle P. I.;

6-6:30, Seattle P. I. concert; 6:45-8:15, Rhodes Department Store studio program; 8:30-10, Seattle P. I.

musicai program; 10:05-11, Eddie Harkness' Jazz or-

musicai program; 10:05-11, Eddie Harkness' Jazz orchestra.

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

KGO, Oakland, Calif. (Pacific, 312). 4-5:30 p. m., concert orchestra, Hotel St. Francia; 8, Adelphian club: Mrs. Floyd J. Collar, soprano; Mabei Mellia Shires, contralto; Mme. Mabrice Couchot, soprano; Mrs. Pbilip Eberhart, planist; program, "D" Radio company: mixed quartet selections, Metropolitan Four, Thelma Werll, soprano; Sylvia Hashpao Spaulding, contralto; Harold Spaulding, tenor; Philip Pedgrift, bass; Vera Parker, accompanist; 10-1, dance music, Henry Halstead's orchestra.

KSAC, Manhattan, Kan. (Central, 341), 12:30 p. m., tuning in plano selection, Osceola Hall Burr; "Harvesting and Storing Ice," W. G. Ward; "Green Feeds for Poultry." D. J. Taylor; 7:20, college bell and opening exsrcises; 7:30, "Place of Alfalfa in Kansas Agriculture," J. C. Mohier; 7:40, Radio College trio; 7:45, "The Production of Hatching Eggs," L. F. Payne.

KSO, St. Louis, Mo. (Central, 546), 4 p. m., home economics program; 6, concert, Benjamin Bader's orchestra, Missouri Athletic association; 9 program.

KTHS, Hot Springs, Ark. (Central, 376), 8:30-10 p. m., concert, Arthur Platz Vocal studio; Natalie Brigham, violinist violinist

violinist.

KYW, Chicago, III. (Central, 536), 11:35 a. m., table talk, Mrs. A. J. Peterson; 2:35-4 p. m., afternoon frolic; 6:35-7, children's bedtime story, Uncle Bob; 7-7:30, dinner concart, Congress bottel; 7:30-7:45. Around the Town with KYW in Chicago; 8-8:20, musical program; 8:20-8:45, speeches, auspices Amarican Farm Bureau federation; 8:45-9:30, continuation of musical program: 10-11:30, evening at home.

(Continued on page 11)

# SOUTH AFRICAN PROGRAM AT WEMC

### Tuesday, January 6

(Continued from page 10)

WBAV. Columbus, Ohio (Eastern, 423), 8 p. m., program of popular and semi-classical numbers, WBAV orchestra, Frances Handibeau, director.

WBZ, Springfield, Mass. (Eastern, 337), 8:30-10:30 p. m., concert; 11:30-12, organ concert.

WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m., dinner concert. William Penn hotel; 7:30, Uncle Kaybee, 7:45, special feature; 8, vocal quartet, Fred Johnson, director; 9; concert, National Carbon company's Eveready entertainers; 10, concert, Goodrich Silvertown Cord orchestra; 11, concert, artists and orchestra, Nixon restaurant:

WCAU, Philadelphia, Pa. (Eastern, 278), 6 p. m.,

man, bass; 11-12, Palace theater grand organ, Dwight Brown.

WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer

WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevuc Stratford concert orchestra; Loretta Kerk, pianlst; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddies' pal; 9, Everyeady Hour from WEAF; 10. Goodrich Silvertown Cord orchestra from WEAF; 10. Goodrich Silvertown Cord orchestra from WEAF.

WGN, Chicago, III. (Central, 370), 1:40-2:30 p. m., luncheon music, Drake Concert ensemble, Blackstone string quintet; 2:30-3 recital, Lyon and Healy concert hall; 3-3:30, rocking chair time; 6-6:30, Lyon and Healy organ recital; 6:30-7, dinner music, Drako Concert ensemble, Blackstone string quintet; 8-3, classic hour; 10-11, Jazz seamper, dance orchestra.

WGR, Buffalo, N. Y. (Eastern, 319), 2:30-4:30 p. m., Buffalo Courier and Enquirer musical program; 6-7:30, dinner music, Hallpryd string quartet; 9-10, "Everready Hour," jointly with WEAF; 10-11, Goodrich Silvertown Cord orchestra, jointly with WEAF; WGY, Schenectady, N. Y. (Eastern, 380), 2 p. m., "Women in Industry," Mrs. A. Dingman; 6:30, dinner

in Poultry and Egg Marketing," F. A. Gougler; 3:45-4:15, homemakers' hour; "The Budget Every Housewife Should Understand," Mrs. W. E. Fribley; 6:30, Ralph Emerson, organist; 6:50, specialties, Senate Theater studio; 7, Iuliaby time, Ford and Glenn; 7:15, Miriam Worrell, contralto; Alfred Stoddard, tenor; 7:30, Isham Jones and his College Inn orcbestra; 7:45, "Treasure Island," Anthony Wons; 8-9, evening R. F. D. program; Grace Wilson, contralto; Feeding Dairy Cattle," Prof. Frank B. Morrison; "What the Farm Bureau Has Done and is Doing to Solvo the Farmers' Transportation Probleus," L. J. Quasey; 9, Art Kahn's Senate Symphony orchestra; 9:15, WLS theater, Anthony Wons; 9:45, Florence K. White, soprano; 10, Evans Brothera Male quartet; 10:30, Isham Jones and his College Inn orchestra; 10:40, Ford and Glenn time; 11, "A Nite Among the Heatber," Scotcb program, Jessle and Nan Muir; 12, midnite review, Ralph Emerson, organist. WLW, Cincinnatl, Ohlo (Central, 423), 12:15 p. m., program, Delta Omicron sorority; talk on automobiles, Henry Schlensker; dance numbers, Woody Meyer's orchestra; 4, Mab Jongg lecture, Lucy Blackburn; recital, pupils William Kyle; "What Is Evolution," M. V. Whitacre; 6, dinner hour concert, courtesy Cincinnati Post; 10, Keefer-Kocker orchestra; 10:30, concert, courtesy Radio division, Ohio Rubber and Textile company; quartet; special numbers, Pat Berryman, banjoist; Leonard Henkel, saxophonist; Forrest Bradford, pianist; Paul Specht'a Post Lodge orchestra. WMAK, Lockport, N. Y. (Eastern, 273), 8:15 p. m., musical program, Mrs. Ericson H. Merritt, director. WMC, Memphis, Tenn. (Central, 501), 12 m, musical program, O. K. Houck Piano company; 8, p. m., bedtime story, Uncle Jerry; 8:30, musical program; 11, midnight frolic.
WNI, Newark, N. I. (Eastern, 233), 10:30-11 p. m., Frank Daily and his fanous "Meadowbrook orchestra; 11:30-12, Original Dixleland jazz band; 12-12:30 a. m., dance music, Frank Daily and his Meadowbrook dance orchestra.

dance music, Frank Daily and his Meadowbrook dance orchestra.

WNYC, New York, N. Y. (Eastern, 526), 7:30-7:35 p. m., police alarms; 7:35-7:45, sports analysis, Thornton Fisher; 7:45-8:45, dance program; 8:45-9, piano recital; 9-10:30, Brooklyn Mark Strand program, Edward L. Hyman; 10:30-10:40, police alarms and official weather forecasts.

WOI, Ames, Iowa (Central, 360), 12:30 p. m., "Planning a Cropping Program." Doctor C. L. Holmes.

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.

WOR, Newark, N. J. (Eastern, 405), 7-7:30 a. m., WOR morning gym class; 2:30-3:15 p. m., Josephine Levandoski soprano; 3:15-3:30, Josephine Levandoski; 6:15-6:30, "Music While You Dine," Harry Lafferty's Canary Cottage Inn orchestra; 6:30-7, man in tho moon stories, for children, Josephine Lawrence and Wm. F. B. McNeary, courtesy Newark Sunday call; 7-7:15,

Rose Brown is called "The Girl with the Charming Voice," and plays the lead in many of the Radio plays at KGO. She is Dulcinia of "Dulcy" to be given Saturday, January 3. Prudence Penny (right), has started her Radio career with KPO, San Francisco. Tune in some Monday or Friday morning and take advantage of her helpful hints on home making. Eli Rasmussen is the Danish violin instructor in Omaha and will be heard January 3 at WOAW.

Hotel Pennsylvania orchestra, direction Louis Baer;

Hotel Pennsylvania orchestra, direction Louis Baer; 7:30, talks; 8, concert.

WCCO, Minneapolis-St. Paul, Minn. (Central, 417), 10:45 a.m., "Meat Dishes." Betty Crocker; 2 p. m., woman's hour, Minnesota League of Women Voters; 4, magazine hour, "Shadowed;" 5:30, children's hour, Gold Medal Lady; 6:15, feed talk; 6:30, dinner concert, Riley's Grand Cafe orchestra; Kenneth Johnson, tenor; Eleanor Freemantel, accompanist.

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

WDAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., the Star's atring tric; 5-5:30, weekly child-talent program; Anna June Gearhart; 6-7, school of the air, plane tuning-in number on the Duo-Art; thirteenth of a series of Radio plane lessons, Maudcllen Littlefield; the Tell-Me-a-Story Lady; muslc, Hotel Muchlebach Trianon ensemble; 11:45-1 a.m., nighthawk frolle, the "Merry Old Chlef" and the Plantation players.

WDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a.m.,

Plantation players.

WDAR, 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; 2:30, Mary P. Eichelberger, contralto; Mildred Tindall, soprano, Marcella North, accompanist; 7:30, Dream Daddy'a bedtime stories.

WEAF, New York, N. Y. (Eastern, 492), 11-11:30 a. m., Board of Education; 11:45-12, motion pleture forecast, Adele Woodard; 4-4:15 p. m., Lehman Bych, tenor; 4:15-4:30, Kathryn J. Neuschwonder, pianist; 4:30-5, Women's program; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:30, Empire State Novelty orchestra; 7:45-8. Arline Thomas, soprano: 8-8:15, talk, Bank Astoria note; 7-7:30, Empire State Novemy organisms, 7:45-8, Arline Thomas, soprano; 8-8:15, talk, Bank of America; 8:15-8:30, Charles Mertens, baritone; 8:30-9, Gold Dust twins; 9-10, Everoady hour; 10-11, Goodrich Silvertown Cord orchestra, under Joseph

WEBJ, New York (Eastern, 273), 7-7:15 p. m., Bly-brun's reviews of new photo-plays; 7:15-8, Nat Perrin's orchestra from the College of City of New York; 8-9, songs, Edythe Traub; May Singhi Brccn and her

Syncopators.

WEEI, Boston, Mass. (Eastern, 303), 2 p. m., program, Charles L. H. Wagner; 6:30, Boston Edison Blg Brother elub; 7, Dok-Eisenbourg and his Sinfonians; 7:30, talk; 7:40, program, Dok-Eisenbourg and his Sinfonians; 8, program, courtesy, C. F. Hathaway & Sons Wholesale Bakers; 8:30, musicale; 9, program, Eveready hour; 10, program, Goodrich Silvertown Cord orchestra.

WFAA, Dallas, Tex. (Central, 476), 12:30-1 p. m., music, player and singer from Dallas Young Men's Christian association, C. E. Osborne, director; 8:30-9:30, musical recital, artists from Vernon; Edwin Lis-

music, Hotel Ten Eyck trio; 7:45, drama talk; WGY orchestra; 8:15, "Rosemary," WGY players; 11:20, Stephen E. Boisclair, organist.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., selections, Alamo theater orchestra, Harry S. Currie, conductor; readings, Courier-Journal, Louisville Times; 7:30-9 concert, Carl Zoeller's Melodists; chapters 1X and X of the "Billy and Jane" stories, James Speed.

WHN, New York, N. Y. (Eastern, 360), 2:15-3:15 p. m., overture and vaudeville, Loew's State theater, 6:30-7. Strand roof entertainers; 7-7:10, E. S. Colling, movie critic in "Personal Chats of the Stage and Screen;" 7:10-7:30, WHN employment broadcasting; 9:30-9:35, "What Becomes of Old Watches?" 9:35-10, Bertram J. Goodman's orchestra; 10:30-11, the New Rockwell Terrace revue; 11-12, Club Rose revue; 11:30-12, Sam Wooding and his Club Alabam orchestra; 12-12:30 a. m., Ted Lewis and his symphonic clown.

WIP, Philadelphia, Pa. (Eastern, 509), 1 p. nn., Karl Bonawitz, organist; 3. Catharine B, Heuser, trumpeter, playing "The Maid of the Mist," "Only a Dream," "Columbia Polka," "Romance;" 6:15, Harvoy Marburger and his vaudeville orchestra; 7. Uncle Wip'a bedtime stories; 8. "The Theater," Elilott Lester; 8:15, Philadelphia police band, direction Liout. Joseph Kiefer; 9, recital, Laserow Instrumental quartet; 10:05, "Eino's" weekly movie talk; 10:30, Harvey Marburger and his vaudeville orchestra.

WJJD. 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, Mooseheart concert band; talk, "Child Care." M. P. Adams.

WJY, New York, N. Y. (Eastern, 405), 9-10 p. m., "Tolltical Situation in Washington Tonight," Frederick William Wile, from WRC.

WJZ, New York, N. Y. (Eastern, 405), 9-10 p. m., 'Tollical Situation in Vashington Tonight," Frederick William Wile, Grave P. Noxon; 10:30-10:30, "Etiquette." Vogue magazine; 10:30-10:40, "Art for a Dime," Grace P. Noxon; 10:30-10:50. Tribune Instituto, Bertha Baldwin; 10:50-11, fashion talk, Eleanor Gunn; 1-2 p. m

Harry Lafferty's Canary Cottage Inn orchestra; 7:15-7:30; resume of day's sports, Jolly Bill Stelnke.

WQJ. Chicago, III. (Central, 448), 11-12 m., "One-Dish Dinners," Agnes M. Olson; talk, Mrs. E. Tolman East; "American Citizenshlp." Mrs. Jasper T. Darling; 3-4 p. m., "Eating for Correct Welghts," Josephine Naylor; "Little Foxes," Dr. Lena K. Sadler; 7-8, dinner concert, Ralph Williams and his Rainbo Garden orchestrat, Leroy Trauger, hartione; Edit Phillips Heller planists.

"Little Foxes," Dr. Lena K. Sadler; 7-8, dinner concert, Ralph Williams and his Rainbo Garden orchestra; Leroy Trauger, baritone: Edith Phillips Heller, pianist; Excelsior quartet; 10-2, Ralph Williams and his Rainbo Skylarks; Nubs Allen, contralto; Will Rossiter; Bernard and Robinson; Rick, Whalen and Gardner.

WRC, Washington, D. C. (Eastern, 469), 7 p. m., children's hour, Peggy Alblon; 7:15, dinner music, New Willard Meyer Davis orchestra; 8, "Show Shopping," Leonard Hall, 9, "The Political Situation in Washington Tonight," Frederick William Wile; 10, "Brunswick Hour of Music;" 11-2, dance program, Meyer Davis' Le Paradis orchestra.

WSA1, Cincinnati, Ohio (Central, 309), 7 p. m., Hotel Gibson orchestra; 7:30, chime concert; 7:45, children's story; 8, Hotel Gibson orchestra; 9, University of Cincinnati speaker; 9:15, Lucy de Young, contralto; Irish songs, Tom Brady; E. Metz, tenor.

WTAS, Elgln, Ill. (Central, 286), 6 p. In., Fred Hamm and his famous Terraco Garden orchestra; 9:30, Kimball studio hour, Jack Little, Paul Smail, Lee Sims, Lindsey Coons, Betty Holmes, Babe June, Joe Mertz, Jimmy Eggert, Lew Butler, Joey Stoole, Tubby Edlin, Sammy Epstein, Ziegler Sisters; 10:30, Fred Hamm and his orchestra; 11:30, Maxine Brown, Jay Gould; Fred Hamm and his orchestra; 11:30, Maxine Brown, Jay Gould; Fred Hamm and Harry Sosnik, Melody Boys; Raynor Dalheim and company orchestra.

WTAY, Oak Park, Ill. (Central, 283), 6:45-7:45 p. m., Ray Kroc and Harry Sosnik, Melody Boys; Raynor Dalheim and company orchestra; W. D. Leitch, tenor.

## Wednesday, January 7

Wednesday, silent night for: CKAC, CHNC, KFKX, KGO, WBAV, WCAL, WCBD, WEBJ, WFAA, WFI, WGY, WHAZ, WIP, WJY, WKBF, WMAK, WMC, WOI.

CKAC, Montreal, Can. (Eastern, 437), 1:45 p. m. Windsor hotel trio; 4:45, Windsor hotel dance promusical program.

Windsor hotel trio; 4:45, Windsor hotel dance prowing Dairy Cattle," Frank B. Morrison; "Pioneering KFAE, Pullman, Wash. (Pacifio, 330), 7:30 p. m.,

Evelyn Sparlin, violinist, playing "Meditation from Thais," "Serenade," "Berceuse from Jocelyn," "Concerto in E. Minor;" Norma Sparlin, pianist, playing "Minuet in G." Margarete MacLachlan, violinist, playing "Old Refrain," "Indian Lament," "Flower Song;" violin duets, Evelyn Sparlin, M. McLaughlin; "Relation of Chemistry to Medicine," Dr. C. C. Todd; "Pointers on Dairy Farming," Prof. E. V. Eilington; kitchen arrangements, Gladys Gallup; book chat, Allee L. Webb.

KFNF, Shenandoah, Ia. (Central, 266), 6.30 p. m., concert, Elk's band, Harry Day, director.

KFOA, Seattle, Wash. (Pacific, 455), 12:30-F30 p. m., Seattle Rotary club weekly luncheon program; 5:6, Seattle P. I.; 6-6:30, Seattle P. 1. concert; 6:45-8:15, Hopper-Kelly Musle company; 8:30-10, Seattle Times studio concert.

KFQX, Seattle, Wash. (Pacific, 238), 7:15-7:45 p. m., bedtime story, Aunt Vivien; 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), 3 p. m., musical program and speaker, Cora L. Williams institute; 4-5:30, concert orchestra, Hotel St. Francis.

KOB, State College, N. M. (Mountain, 360), 7:30-8:30 p. m., College male quartet; vesta Frisch, pianist; vocal solos, Wilburn Patrick; "The Relation of Agricultural Research to the Agriculture of the State," Prof. Fabian Garcla; "The Climate of New Mexico," R. E. Mc-Bride.

KSAC, Manhattan, Kan. (Central, 341), 12:30 p. m.,

solos, Wilburn Patrick; 'The Relation of Agricultural Research to the Agriculture of the State," Prof. Fabian Garcla; 'The Climate of New Mexico," R. E. Mc-Bride.

KSAC, Manhattan, Kan. (Central, 341), 12:30 p. m., tuning in piano selection, Osceola Hall Burr; 'A Story of the Three Good Kafirs," H. R. Sumner; 'The Value of Kafir for Poultry Feeding," D. J. Taylor; 7:20, college bell; 7:30, 'What Constitutes a Good Public Road," L. E. Conrad; 7:49, 'Harold Flamm, soloist; 7:45, 'Expression in Architecture," Paul Weigel.

KSD, St. Louls, Mo. (Central, 546), 6:45-D. m., Abergh's Concert ensemble; Arne Arnesen, violinist; 11, dance program, Varsity club orchestra.

KTHS, Hot Springs, Ark. (Central, 375), 8:30-10 p. m., concert, Conservatory of Muslc, Effic Cline Fonca, director; 10:30-11:30, jazz concert, New Arlington hotel orchestra.

KYW. Chicago, III. (Central, 536), 11:35 a. m., tablc talk, 'Mrs. Anna J. Peterson; 6:35-7, children's bedtime story, Unclo Bob; 7-7:30, dinner concert, Congress hotel; 8-9, musical program, Sherwood School of Music; 9:05, talk, 'Many Problems in One," president of American Meat Packers; 9:45-2:30 a. m., midnight revue.

WAHG, Richmond Hill, L. I. (Eastern, 316), 7:30-11 p. m., Brooklyn Dally Eagle special program.

WBZ, Springfield, Mass. (Eastern, 337), 8:30-10:30 p. m., concert; 11-12, dance program, Leo. F. Reisman and his Hotel Brunswick orchestra.

WBBR, New York, N. Y. (Eastern, 273), 8. p. m., Frank Wood, flutist, 8:10, Fred Twaroschk, tenor; 8:20, Frank Wood, flutist.

WCAE, Pittsburgh, Pa. (Eastern, 273), 6 p. m., dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 7:45, special feature; 8:30, concert, artists and orchestra, Nixon restaurant.

WCAU, Philadelphia, Pa. (Eastern, 278), 6 p. m., Hotel Pennsylvania orchestra, direction, Louis Baer; 7:30, fashion talk, Mile. Madeleine; 8, Breyer Icc Cream half hour of songs.

WCCO, Minneapolis-St. Paul, Minn. (Central, 417), 10:45 a. m., 'Oven Temperatures,' Valentine Thorson; 2 p. u., woman's hour; 2:30, children's hour, Al

program; 6, dinner concert, Book-Cadillac hotel; 8:39, 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. piano tuning-in number on the Duo-Art; address, speaker, auspices Health Conservation association; address, speaker, auspices Meat Council of Greater Kansas City; the Tell-Me-a-Story Lady; musio, Hotel Muehlebach Trianon ensemble; 8-9:15, classical pro-

gram, the Trianon ensemble and soloists; 11:45-1 a. m., nighthawk frolic, the "Merry Old Chief" and the Plantation players.

Plantation players.

WDAR, 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; 7:30, Dream Daddy's bedtime stories; 8:30, Norristown night, talks, songs and orchestral renditions by various clubs of Norristown, direction Rotary club; 10:05, Arcadia cafe dance orchestra.

direction Rotary club; 10:05, Arcadia cafe danco orchestra.

WEAF, New York, N. Y. (Eastern, 492), 11:10-11:20
a. m., "Your Child Laundry Problem," Janet Read; 11:40-12, Dr. Wm. H. Kilpatrick of Columbia university; 12-12:30 p. m., chapel servics, Columbia university; 6-7, dinner nusic, Waldorf-Astoria hotel orchestra: 7:30-8:20, U. S. Army band, WRC; 8:20-8:30, talk, American Bond and Mortgage company; 9-9:45, Brooklyn Socioty orchestra; 11-12, Club Lido Venice orchestra.

WEAO, Columbus, Ohio (Eastern, 294), 8 p. m., ohimes concert, Prof. A. P. McManigal; miscellaneous program, Ohio State University Alumni association.

WEEI, Boston, Mass. (Eastern, 303), 6:30 p. m., Boston

(Continued on page 12)

# CKAC ENTERTAINS PARIS WITH SPE

## 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, January 3: 6, KGO, WCX, WGN; 6:15, WRC; 6:30, CKAC, KFNF, WBZ, WDAR, WGN; 6:35, WNYC; 6:45, WCAE, WTAY; 7, KYW, WBBR, WBZ, WEAF, WFI, WHN, WLS, WQJ; 7:15, WIP, WLS; 7:30, CKAC, KDKA, WBZ, WCAE, WHAS, WRC; 7:45, WBBR; 8, KHJ, KSD, KYW, WBZ, WGN, WIP; 8:15, WSAI; KTHS, WBZ, WCCO, WMC, WNYC; 8:45, WSAI: 9, WBZ, WTAY; 9:30, WMAQ; 9:35, KYW; 10, KGO, KHJ, KTHS, WQJ; 10:05, WIP; 10:15, WRC; 10:30, KFOA; 11, KFQX; 12, WCAL, WLBL, WSAI.

Sunday, January 4: 6:20, WEAF; 6:30, WDAR, WLS; 7, KYW, WLS; 7:30, WBZ, WDAR, WIP, WRBC; 8, WCBD, WGY, WQJ; 8:10, WBBR; 8:15, WEAF; 8:20, WBBR; 8:15, WEAF; 8:20, WBBR; 8:15, WEAF; 8:20, WBBR; 8:10, WBBR; 8:15, 8:15, WEMC; 8:30, KTHS, WCAL, WLW; 8:50, WEMC; 9, WBBR, WFAA, WGN, WGY, WJZ; 9:15, WCCO, WEAF; 9:30, WCC.

Monday, January 5: 6, WCX, WJZ, WLW; 6:10, WEAF; 6:30, KFNF, WJJD, WOO; 6:45, WGY; 7, KSD, WAHG, WBBR, WCAU, WEEI, WOR; 7:30, CHNC, WAHG, WCAE, WEEI, WNYC, WOO, WOR; 7:40, KSAC, WBBR: 7:45, WEAF; 8, KFOA, KTHS, WAHG, WBZ, WCBD, WGR, WHAZ, WHO, WOS, WTAS; 8:15, WEMC; 8:30, KOB, WAHG, WCCO, WDAR, WEEI, WEMC, WFAA, WMC, WOS; 8:45, KFOA; 8:50, WEMC; 9, KSD, WEEI, WGR, WOC; 9:03, WOO; 9:15, WEAF; 9:30, KFAE, WCAE, WTAS; 10, KGO, WOC; 10:30, KFOA; 11, KFQX; 11:15, WHO; 11:30, WJJD.

Tuesday, January 6: 6, KGO KSD, WCX, WGN, WLW; 6:15, WRC; 6:30, CKAC, WCCO, WGN, WJJD; 6:45, WCAE, WEAF, WTAY; 7, WBAV, WCAE, WCAU, WEBJ, WEEI, WQJ; 7:15, WEAF, WGY, WIP, WJJD, WMAK; 7:25, WJZ; 7:30, CKAC, WBZ, WEAF, WEEI, WHAS, WHO, WSAI; 7:40, KSAC; 7:45, WNYC; 8, KFDM, KFOA, WCAE, WEEI, WFI, WGN, WIP, WLBL; 8:20, WRC; 8:30,

KTHS, WFAA, WMC; 8:45, CFAC, KFOA; 9, KSD, WCAE, WRC; 9:15, WSAI; 10, KGO, WCAE, WQJ; 10:20, WGY; 10:30, KFOA, WLW, WBZ; 11, KFQX, WFAA.

Wednesday, January 7: 6, KGO, WCX, WEEI, WGN, WLW, WTAS; 6:30, KFNF, WAHG, WEAF, WGN, WOO; 6:35, WNYC; 6:45, KSD, WCAE, WNYC, WTAY; 7, WBBR, WCAE, WNYC, WTAY; 7, WBBR, WCAU, WEAO, WEEI, WQJ; 7:25, WJZ; 7:30, WBZ, WCAE, WDAR, WEEI, WHAS, WNYC, WOO; 7:40, KSAC, WBBR; 8, KFOA, WEEI, WLW, WOC, WOR; 8:15, WEMC; 8:30, KTHS, WGR; 8:45, CFAC, KFOA, WNYC; 9, KFAE, WCCO, WLW, WTAY; 9:03, WOO; 9:30, WTAS; 10, WEEI, WNJ, WQJ; 10:15, WRC; 10:30, KFOA; 11, KFQX.

Thursday, January 8: 6, KGO, WCX, WGN, WLW, WRC; 6:30, WCCO, WGN; 6:35, WNYC; 6:45, WCAE, WTAY; 7, WEAO, WEEI, WGY, WNYC, WQJ; 7:15, WGY; 7:30, CKAC, WBZ, WCAE, WEAF, WGY, WHAS, WWJ; 7:40, KSAC; 8, CNRW, KFOA, WCBD, WCCO, WEAF, WEEI, WSAI; 8:10, WBBR; 8:15, WOI; 8:30, KTHS, WEAF, WMC; 8:45, KFOA; 9, WCAL, WEMC; 9:05, WBBR; 9:15, WSAI: 9:30, WSAI, WTAS; 10, CNRC, KGO, WQJ; 10:03, WLW; 10:30, KFOA, WGY; 11, WLW; 12, WSAI.

Friday, January 9: 6, KGO, WCX, WEEI, WGN; 6:15, WEBJ; 6:30, KFNF, WCCO, WEEI, WGN, WJJD, WOO; 6:45, WTAY; 6:55, WNYC; 7, WAHG, WBAV, WCAU, WDAR, WEAF, WEBI, WQJ; 7:15, WEBJ; 7:30, CNRT, WCAE, WEAF, WEBJ, WEEI, WHAS; 7:40, KSAC; 7:45, WEBJ; 9, CFAC, KFDM, KFOA, KSD, WAHG, WEEI, WGR; 8:30, KOB, KTHS, WCAL, WCCO, WFAA, WCCO, WFAA, WMC; 8:45, KFOA, WNYC; 9, KYW, WAHG, WBZ, WCCO, WGR, WTAY; 9:30, CNRE, KFAE, WTAS; 10, WQJ; 10:30, KFOA, WGR; 11, KFQX, KYW; 11:30, WJJD; 12, CFAC.



#### Wednesday, January 7

(Continued from page 11)

Edison Big Brother club; 7-8, musicale; 8, program, courtesy, C. F. Hathaway & Sons; 8:30, concert, Madrigal quartet; 9, program, Jack O'Brien; 11, Lloyd G. Del Castilio, organist.

WEMC, Berrien Springs, Mich. (Central, 286), 8:15-9:15 p. m., miscellaneous program, Spanish Department, Emmanuel Missionary college.

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

wFAA, Dallas, 162. (Central, 707, 12:307 p. m., Massical program, Dallas theater.

WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3:10, Loretta Kerk, planist; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddles'

Stratford concert orchestra; 7, Sumy Jim, the Riddies pal.

WGN, Chicago, III. (Central, 370), 1:40-2:30 p. m., iuncheon music, Drake concert ensemble, Blackstone string quintet; 2:30-3, recital, Lyon & Healy concert hall; 3-3:30, rocking chair time; 6-6:30, Lyon & Healy organ recital; 6:30-7, dinner music, Drake concert ensemble, Blackstone string quintet; 8-9, classic bour; 10-11, Jazz scamper, dance orchestra.

WGR, Buffalo, N. Y. (Eastern, 319), 2:30-4:30 p. m., Buffalo Courier and Enquirer musical program; 6:30-7:30, dinner music, Vincent Lopez Hotel Statler dance orchestra, Harold Gieser, director; 8-8:15, lecture, Dr. C. E. Cummings, Buffalo Society of Natural Sciences, "Some Common Superstitions in Nature;" 9-9:30, recital, Prof. H. Collier Grounds; 9:30-11, concert, direction of J. P. Quinn; 11:30, aupper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gleser, director.

Gleser, director.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., selections, Alamo theater orchestra, Harry S. Currie; readings, Courier-Journal and Louisville Times; 7:30-9, Tropical Hawalian quartet; chapters XI and XII of the "Billy and Jane" stories, James Speed.

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 Hotel Alamae orchestra; 7:30, Harry Richman and his entertainers: Eddle Eikins and his orchestra; 8-8:10, "College Clothes," Mme. Belle: 9:30-10, Rose-Danceland orchestra; 10-11, Clover Gardens dance orchestra; 12-12:30 a. m., Strand Roof entertainers.

Roof entertainers.

WHO, Des Moines, Ia. (Central, 526), 7:30-9 p. m.,
dance program, Bankers' Life Radio orchestra, Wm.
L. Marsh, director, J. W. Ocker, veteran minstrel

singer.
WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Gimbel
tea room orchestra, Ray Steen, director; 3, Frank
Lewis Fleishman, baritone, singing, "Serenade," "My
Curly Headed Baby," "Ah, Love But a Day;" 6:05,
Art Coogan and his Club Madrid orchestra; 7, Uncle

Curly Headed Baby," "Ah, Love But a Day;" 6:05. Art Coogan and his Club Madrid orchestra; 7. Uncle Wip's bedtime stories.

WIJD, 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), 10:30-10:45 a. m., "Finding the Right Job for Your Daughter," Helen Hoerle; 10:40-10:50, "Be Your Own Decorator," Amy Mali Hicks; 10:50-11, fashlon talk, Eleanor Gunn; 4:30-5:30 p. m., Hotel Belmont tea muslc; 8-8:10, Wall Street Journal review; 8:10-8:25, N. Y. U. air college; 8:25-8:45, Dorys Le Vene, pianist; 8:45-9:15, "50 Questions," Times Weekly News magazine; 9:15-10:15, "Bridge the Hudson," meeting, direct from Town ball; 10:30-11:30, Billy Wynne'a Greenwich Village Inn orchestra.

WKAQ, San Juan, P. R. (Intercolonial, 360), 8-9:30 p. m., Municipal band.

WLS, Chicago, III. (Central, 345), 12-12:30 p. m., Frankie Eulvanno, tenor; "The More-Dollars-on-the-Tree," A. B. Leepers; 3:45-4:45, "Tho Old Woman Made New," Rosells Desn; "Seity in the Home,

School and Street," Iealah Gordon; "The Exploitation of Our Children," Mrs. Mark P. Mears; recipe, Edith Shearer; 6:30, Ralph Emerson, organist; 6:50, specialties, Senate Theater studio; 7, Juliaby time, Ford and Glenn; 7:15, program, WLS Tribe of Lone Scouts; 7:30, Isham Jones and his College Inn orchestra; 7:45, program, WLS Tribe of Lone Scouts; 8-9, evening R. F. D. program; "Farm Flickerings," E. B. Heaton; "Live Stock Marketing Costs," Charles A. Stewart; Ralph Emerson, organist; 9, Art Kahn's Senate Theater Symphony orchestra; 9:15, WLS theater, Wallace Bruce Amsbary; 9:30, Isham Jones and his College Inn orchestra; 9:45, Robinson and Bernard, "The Dixie Stars;" 10, Phyllis Campbell; 10:30, Isham Jones and his College Inn orchestra; 10:40, Ford and Glenn time. Glenn time, WLW, Cincinnati, Ohio (Central, 423), 12:15

Mu Phi Epsilon sorority; dance program; Ahaus Brunswick shop orchestra; 4. program for the "Shut-Ins," Duning Benevolent and musical cervice; Lillian Aldrich Thayer Settlement School of music; 6, dinner hour concert, courtesy Cincinnati Post; 8-9, Herschede-Flint Motor company; Billie Waterworth, planist; Billie Anderson, baritone; trio; vocal duets, Mary Steele, contralto; Ferd Raine, tenor; Grace Raine, accompanist; 9, Paul Bachelor's Ballet, Schuster-Martin school; Formica band, Walter Esberger, director.

WMC, Memphis, Tenn. (Central, 501), 12 m., musical program, O. K. Houck Piano company.

WNJ, Newark, N. J. (Eastern, 233), 10:30-11 p. m., dance music, Frank Daily and his Meadowbrook orchestra; 11-11:15, Victor Wilbur, baritone; 11:15-12, Original Dixicland Jazz band; 12-12:30 a. m., Frank Daily and his Meadowbrook orchestra.

WNYC, New York, N. Y. (Eastern, 526), 7:30-7:35 Mu Phi Epsilon sorority; dance program; Ahaus Bruns-

WNYC, New York, N. Y. (Eastern, 526), 7:30-7:35 p. m., police alarms; 7:35-7:45, studio program; 7:45-8:30, Gedney, Vand, Magee, banjoists; 8:30-9:45, "Appreciation of Music," Dr. Henry T. Fleck; 9:45-10:30, studio program; 10:30-10:40, police alarms and official weather forcests. official weather forecasts.

WOC. Davenport, Ia. (Central, 484), 7:20 p. m., "The Spinal Column." A. G. Hinrichs: 8, Erwin Swindell,

Spinal Column," A. G. Hinrichs: 8, Erwin Swindell, organist; Robert McGregor, baritone.

VOI, Ames, Ia. (Central, 360), 12:30 p. m. college chimes; "Planning a Livestock Program," Dr. C. L.

Holmes.

WOO, Philadelphia, Pa. (¿astern, 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's Hotel Adelphia ensemble; violin solos, A. Candelori's 8:30, J. W. C. I. band; 9, WOO orchestra, Robert E. Golden, director; 10:03, organ recital, Harriette G. Ridley; 10:30, Vincent Rizzo and his Hotel Sylvania dance orchestra.

WOR, Newark, N. J. (Eastern, 405), 7-7:30 a. m., WOR morning gym class; 6:15-6:55 p. m., "Music While You Dine," Harry Cox' Robert Treat orchestra; 6:55-7. resume of day's sports, Jolly Bill Steinke: 8-

8:30-8:45, "Behind the Scenes of a Newspaper Office," Wells Hawkes; 8:45-9, "Topics of the Day," Literary Digest; 8-8:15, "Perslan Garden, Wallace Hermann and Joseph M. Barnett.

wos, Jefferson City, Mo. (Central, 440.9), 8 p. m., address, faculty member, Missouri College of Agriculture; 8:15, address, member of State Department of Education; 8:30, barn dance tunes, Old Time etring

trio.

WQJ, Chlcago, III. (Central, 448), 11-12 m., "American Made Household Lottery," Mrs. Wilbur E. Fribley; "Salad Secrets." Mary Hale Martin; "The Responsibility of the Purchaser," Mrs. Mary Day Harris; 3-4 p. m., "First Lesson, Domestic Science Course," Helen Herrington Downing; "Are You Fed or Merely Filled?" Martha Logan; 7-8, dinner concert, Ralph Williams and his Rainbo Garden orchestra; Lancaster Smith, bass, Mrs. Lancaster Smlth, accompanist; Maxine Mordy, violiniat; Dorothy Davie Dillow, soprano; James Mitchell, baritone; the Melodians, Laurie, Eddle, Bennie; Fred Jacobsen, Swedish monologues; Lew Butler, "The Giant of Radio;" Nate Caldwell, pianist.

WRC, Washington, D. C. (Eastern, 469), 4 p. m., fashion developments, Eleanor Gunn; 4:10, George F. Ross, pisnist; 4:20, talk, Outlook; 1:30, top musio, Mayer

Thursday, January 8

Thursday, silent night for: CHNC, KFAE, KFQX, KGW, KOB, KSD, WAHG, WBAV, WCAP, WCAU, WEBJ, WEMC, WHAZ, WHO, WJJD, WJY, WOO, WOS.

CKAC, Montreal, Can. (Eastern, 437), 8:30 p. m., Canadlan National Railways concert. CNRC, Calgary, Can. (Mountain, 430), 9-11 p. m., bedtime travel tale; Mme. Mamie Gardiner, contraito;

bedtime travel tale; Mme. Mamie Gardiner, contralto; instrumental party.

CNRW, Winnipeg, Can. (Central, 450), 8-11 p. m., bedtime travel talk; program, Winnipeg Chapter Order of Demolay for Boys; Vernor Taylor, planist; Ed Keir, vocalist; K. Spencer, vocalist; I. Cowan; C. Wright, reader; F. McLeavy, violinist; L. H. Clegg, xylophonist; F. S. Holmes, G. F. Holmes, xylophonists; Frank Wright's Country club dance orchestra. KFKX, Hastings, Nebr. (Central, 291), 9:30-11 p. m., Hastings dance orchestra. KFNF, Shenandoah, Ia. (Central, 266), 6:30 p. m., orchestra music, P. R. Simpson, director. KFOA, Seattle, Wash. (Pacific, 455), 6-6:30 p. m., Seattle P. I. concert; 6:45-8:15, Rhodes Dept. store studio program; 8:30-10, Seattle P. I. musical program; 10:05-11, Eddie Harkness' Jazz orchestra. KGO, Oakland, Calif. (Pacific, 312), 11:30-1 p. m., luncheon concert; 4-5:30, concert orchestra, Hotel St. Francls; 8, "Lady Windermere's Fan," KGO players; 10-1 a. m., dance music program, Henry Halstead'e orchestra.

orchestra.

KSAC, Manhattan, Kans. (Central, 341), 12:30 p. m.,
Osceola Hall Burr, reader; "Ordering Trees for Spring
Planting," W. R. Martin; "Value of Good Arsenicals,"
E. G. Kelly; 7:20, college bell and opening exercises;
7:30, "Ruge and Rug Making," Harriet W. Allard;
7:40, Radio college trio; 7:45, "Do You Always Make
Good Bread?" Martha S. Pittman.

KSD, St. Louis, Mo. (Central, 546), 4 p. m., home hour.

KTHS, Hot Springs, Ark. (Central, 375), 8:30-10 p. m.,
concert, thirty-piece violin ensemble, Oscar Rust
studio.

concert, thirty-piece violin ensemble, Oscar Rust studio.

KYW, Chicago, III. (Central, 536), 11:35 a. m., table talk, Mrs. Anna J. Peterson; 6:35-7, children's bedtime story, Uncle Bob; 7-7:30, dinner concert, Congress hotel; 8-8:20. "Twenty Minutes of Good Reading," Rev. C. J. Pernin; 8:20-9:05, program, Auburn orchestra; 9:15, safety first talk, Z. C. Elkin; 10-11:30, evening at home.

WBBF, Atlanta, Ga. (Central, 270), 7-8 p. m., Mrs. Mary Townsell, violinist; Heien Schaid, pianist; T. C. Seldell, baritone.

WBBR, New York, N. Y. (Eastern, 273), 9:10 p. m., Moses Carment, clarinetist; 9:20, Kay Macrae, coloratura soprano; 9:30, International Sunday school lesson, S. M. Vam Sipma; 9:50, Kay Macrae, soprano; 10:05, Carl Park, violinist; 10:20, Moses Carment, clarinetist. WBZ, Springfield, Mass. (Eastern, 337), 8:30-10:30

Carl Park, violinist; 10:20, Moses Carment, charmetist.
WBZ, Springfield, Mass. (Eastern, 337), 8:30-10:30
p. m., concert.
WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m.,
dlinner concert, William Penn hotel; 7:30, Uncle
Kaybee; 7:45, special feature; 8:30, concert, artlets
from Moores' cafeteria, E. T. Moores, manager.
WCAL, Northfield, Minn. (Central, 360), 9 p. m., Ruby
Jacobson, planist; Lyla Pederson, contralto; Evelyn,
Jerdee, Mezzo-soprano; Lillian Bentley, pianist.
WCBD, Zlon, Ill. (Central, 345), 8 p. m., mlxed quartet;
celestial bells; Editb Carey, contralto; Mrs. J. D.
Thomas, soprano; J. D. Thomas, baritone; Emelia
Nelson, pianist; Lillian Detyenne, reader.
WCCO, Minneapolis-St. Paul, Minn. (Central, 417),
10:45 a. m., home service, "Hot Lunchea," Betty
Crocker; 2 p. m., woman's hour, "The Popular,
Concert," Agnes Fryberger; 4, magazine hour, "Home
Brew;" 5:30, children's hour, Gold Medal lady; 6:30,
dinner concert, Minneapolls Athletic club orchestra;
Lou Emmel baltone; 7:45, heaith talk, auspices Ramsey
County Medical aociety; 8, pogram, auspices Soo railroad; 10, Orchestral Art association, William MacPhail,
conductor; Annetto Vde Lake, seprane; Eng Hemilton,
pisniah

WCX, Detroit, Mich. (Eastern, 513), 4:15 p. m., mualcal program, 6, dinner concert, Book-Cadillac hotel; 8:30, musical program.

WDAF. Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., the Star'e string trio; 6-7, school of the air, plano tuning-in number on the Duo-Art; Cecile Burtun, readings; 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. tation players.

WDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m.

WDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., dally almanac; 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's bedtime stories.

WEAF, New York, N. Y. (Eastern, 492), 4:15-5 p. m., Columbia university, lecture on Bernard Shaw and religion; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:30, services, Federation of churches; 8-8:20, lecture, Columbia university; 8:30-9, Packard Motor company; 9-9:30, Hohner Harmony four; 9:30-10, choir of Cathedral Incarnation of Garden city; 11-12, Vincent Lopez and his Hotel Pennsylvania orchestra.

WEAO, Columbus, Ohio (Eastern, 294), 8 p. m., chimes concert, Prof. A. P. McManigal; educational music program.

program.

WEEI. Boston, Mass. (Eastern, 303), 6:30 p. m., Boston Edison Blg Brother club; 7. Dok-Elsenbourg and his Sinfonians; 7:30, talk; 7:40, dance selections, Dok-Eisenbourg and his Sinfonians; 8, concert, Maurich quintet; 9, Gillette Safety Razor concert orchestra.

WFAA, Dallas, Tex. (Central, 476), 12:30-1 p. m., music, Edmund Boettcher, tenor; William H. McRaven, planist; address, DeWitt McMurray; 8:30-9:30, Frank Davenport and his eight-piece orchostra; 11-12, Adolphus Hotel orchestra.

WFI, Philadelphia, Pa. (Eastern, 395). 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3:05, Housewives Radio exchange, direction Mavel Swint Ewer; talk, auspices Philadelphia Mothers' club; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 8, Sunny

wives Radio exchange, direction Mavel Swint Ewer; talk, auspices Philadelphia Mothers' club; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 8, Sunny Jim, the kiddies' pal; 8, Boy Scouts' meeting.

WGN, Chlcago, III. (Central, 370), 1:40-2:30 p. m., luncheon music, Drake concert ensemble, Blackstono etrling quintet; 2:30-3, recital, Lyon & Healy concert; 3-3:30, rocking chair time; 6-6:30, Lyon & Healy organ recital; 6:30-7, dinner music, Drake concert ensemble, Blackstone string quintet; 8-9, classic hour; 10-11, Jazz scamper, dance orchestra.

WGR, Buffalo, N. Y. (Eastern, 319), 2:30-4:30 p. m., Buffalo Courier and Enquirer musical program; 6-7:30, dinner music, Hailpryd string quartet; 8:30-9, Dr. Robert J. MacAlpine, speaking at the dinner of the Central Railroad club, at the Hotel Statler on "Playing the Game from the Railroad Man's Point of View."

WGY, Schenectady, N. Y. (Eastern, 380), 2 p. m., "1s

View."

WGY, Schenectady, N. Y. (Eastern, 380), 2 p. m., "1s a Home Well Furnished?" Anna Randolph Kelm; 6:30, dinner music, Hotel Ten Eyck orchestra; 7:45. "A Few Moments with New Books" William F. Jacob; 8, studio program, J. T. Quinlan, baritone; Earle Rice, pianist; 8:30, Marcel Dupre, organist; 9:30, banquet of the Automobile Engineering society; 11:30, Stephen E. Bolsclair, organist; WHAS, Louisville, Ky, (Central, 400), 4-5 p. m., selections, Alamo theater orchestra; readings, Courfer-Journal and Louisville Times; 7:30-9, concert, auspices, Mrs. Jobn E. Harmon, Jr.

Mrs. John E. Harmon, Jr. WHN, New York, N. Y. (Eastern, 360), 6:30-7:10 p. m.

WHN, New York, N. Y. (Eastern, 360), 6:30-7:10 p. m., Vincent Cantanese and bls Hotel Alamac orchestra; 7:10-7:30, WHN employment broadcasting; 10:25-10:30, "What Becomes of Old Watches?"; 10:30-10:45, Alia and his Club Madrid orchestra, Lee Kent; 11-11:30. Connie's Inn with Leroy Smith and his orchestra; 12-12:30 s. m., Ted Lewis and his Symphonic Clowns from Parody club; 12:30-1 s. m., Lou Gold and bis orchestra, Wigwam club.

WIP, Philadelphia, Pa. (Eastern, 509), 9 s. m., commencement exercises, West Philadelphia high school; 1 p. m., Gimbel tea room orchestra, Ray Steen, director; 3, 6:15, Harvey Marburger and his Vaudeville orchestra; 7, Uncle Wip's bedtime stories; 8, "Magazine of the Air," consisting of talks on science, economics, public affairs, the theater and current events; 19:95, Harvey Marburger and his vaudeville, Harvey Marburger and current events;

DA

Wbav. aa: 8 Whn; 11. 11:30, Kg Kgo, Kg Wcal; 12:1 Wsal.

Monday. Weaf, Wla 8:20, Wha 9, Ksd, 9:03, Wdan Weaf, Wee Wjz; 10, Wjz; 10, Wol Wssi Wbz, Wg Whn: 12, 1

Tuesday, Kyw, Wsal 8:45, Kyw, Weaf, We Ckac, Wip 10, Kfqx, Wiw, Wnic 10:30, Wi Whn, Wni; 12, Kfqx, Kfoa,

Wednesda B, Kyw, We Whin; 9, 7 9:05, Wdar Wnj. Wood 10, Kfax, Wtas, Ww. Whn, Wnj. 12, Kfqr.

Thursday, Cnrw; 8:30, Wfaa; 9, Wip; 9:30, Wnj, Wrd; Kyw, Wcco, Whn, Wnj; Wtas; II, p Whn, Wmal II 30, Wim Kfqx, Kgo

8:30. Whn. Weel, Wiy. 9:03. Wdar. Wabg, West 10:30, Wbz 11, Whn, Wta: 12, B

# AL MIDNIGHT PROGRAM TUESDAY



WJZ, New York, N. Y. (Eastern, 455), 10-10:20 a. m., housewives league menu, Mrs. Julian Heath; 10:20-10:30, review of reviews; 10:30-10:40, "Household Linens," editor of Needle Art; 1-2 p. m., Nathan Abas' Hotel Pennsylvanla orchestra; 4:30-5:30, Bernhard Levitow's Hotel Commodore tea orchestra; 7-8. Bernhard Levitow's Hotel Commodore orchestra; 8:25-9, Hennesey dance orchestra; 9-9:15, Society of Automotive Engineer's banquet, Hotel Astor; 9:15-9:30, "Aims and Objects of Museum of American Indian," A. B. Skinner; 10-10:15, "American Negro in Art and Literature," James Weldon Johnson; 10:30-11:30, Waldorf-Astoria dance orchestra.

WKAQ, San Juan, P. R. (Intercolonial, 360), 8-9:30 p. m.; musical program, La Cafetera.

WKBF, Providence, R. 1. (Eastern, 286), 8 p. m., oducational talk, member of faculty of Brown university.

act, Wednesday, Jan-uary 7, from KFI, Anthony's, Los An-geles. The two sisters

have a very ardent Radiophan following, if mail is any indica-tion. Witzel Photo

oducational talk, member of faculty of Brown university.

WLS, Chicago, Ill. (Central, 345), 12-1 p. m., music numbers, Robinson and Bernard; "Clean Hearts and Herds," M. H. Peterson; 3:15-4:45, homemakers hour: "Successful Chicken," Mrs. Louise Secor; "A Stork Shower," Julia M. Deal; 6:30, Ralph Emerson, organist; 6:50, specialties, Senate theater studio; 7, Big Fords and Little Gienn's Woodshed theater players; 7:15, WLS theater, operetta.

WLW, Cincinnati, Ohio (Central, 423), 12:15 p. m., dance program, Woody Meyer's orchestra; 4, French lesson, Madame Tcimpidis; Adelaide Apfel, planist; 6, dinner hour concert, Cincinnati Post; 10, three minute message, U. S. Civil service; 10:03, concert program, auspices Cooper Tire and Battery corporation, orchestra, quartet; 11, Camp Washington M. E. church choir, Robert Suddendorf, director; special program, Milnor instrumental trio; dance program, Doherty Melody boys. Melody boys.

Melody boys.

WMAK, Lockport, N. Y. (Eastern, 273), 12 midnight, Murray Whiteman'a mldnight serenaders.

WMC, Memphis Tenn. (Central, 501), 12 m., musical program, O. K. Houck Plano company; 8 p. m., bcd-time story, Uncle Joe; 8:30, musical program.

WNYC, New York, N. Y. (Eastern, 526), 7:30-7:35 p. m., police alarms; 7:35-7:45, sports analysis, Thornton Fisher; 7:45-8, "Timely Topics," F. P. Brent; 8-10:30, entire program, Borough of Queens; 10:30-10:35, police alarms and weather forecasts; 10:35-12, Borough of Queens program.

8-10:30, entire program, Borough of Queens; 10:30-10:35, police alarms and weather forecasts; 10:35-12, Borough of Queens program.

WOC, Oavenport, Iowa (Central, 484) 7:20 p. m., educational lecture, 9, program, Schuster sisters; 11, Louis Connor and his LeClaire hotel orchestra; song and novelty numbers, Peter MacArthur.

WOI, Ames, Ia. (Central, 360), 12:30 p. m., college chimes: "How Farm Practice Affects Profits," Dr. C. L. Holmes; 8:15. men's glee club.

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.

WOR, Newark, N. J. (Eastern, 405), 7-7:30 a. m., WOR morning gym class; 6:15-6:30 p. m., "Radio for the Layman," Albert E. Sonn; 6:30-7:15, Jimmy Lent's Famous Society orchestra; 7:15-7:30, resume of the day'a sports, Jolly Bill Steinke.

WOJ, Chicago, III. (Central, 448), 11-12 m., "Hot Suppers for Zero Nights," Erna Bertrams; "A Frock for the Holidays," Eleanor Chalmers; "Authority on Horticulture," C. P. Binner; 3-4 p. m., "Gauging Meals by the Weather," Josephine Naylor; "Household Refrigeration and Frozen Desserts," Mrs. George M. Shirk; 7-8, dinner concert, Ralph Williams and his Itainbo Garden orchestra; Manuel Robriguez, Spanish tenor; Lydia Lochner, contralto; Marion Henry, pianist; 10-2 a. m., Raiph Williams and his Rainbo skylarks; Jerry Sullivan; Peggy McGuire; Rick, Whalen, Gardnor; Rosemary Hughes, soprano; Will Rossiter, daddy of them all.

WCC, Washington, D. C. (Eastern, 469), 6:45 p. m., children's bour, Peggy Albion; 7, dinner concert,

WRC, Washington, D. C. (Eastern, 469), 6:45 p. m., children's bour, Peggy Albion; 7, dinner concert, Bernhard Levitow's Hotel Commodore orchestra; 8, talk, auspices American Automobile association; 8:30, talk, auspices Emithsonian institute; 9:20, concert, Lee House trio; 10:30, dance program, Waldorf-Astoria orchestra.

WBZ, Springfield, Mass. (Eastern, 337), 7:30-8 p. m., University extension courses; 10-11:30, concert, 11:30-12, dance program, McEnelly's singing orchestra.

8:15, Bicycle sextet; Oramay Ballinger, violinist; 9:15, Alice Huebner, pionist; 9:30, Bicycle mixed and male quartets; 12, popular songs; 12:30 a. m., Freda Sanker's New Toadstool orchestra.

WTAS, Elgin, Ill. (Central, 286), 12:30-1:30 p. m., Kimbail hall classical concert; 6, Terrace Garden dance program; 9:30, Kimball studio hour; 10:30, supper dance program. Terrace Garden orchestra; Jimmy Eggert, Jack Little, Paul Small, Lindsey Coons, Lee Sims; 11:30, Jay Gould, Maxine Brown.

WTAY, Oak Park, Ill. (Central, 283), 6:45-7:15 p. m., Rev. Garfield Dawe, tenor; Herbert Schaeffer, pianist; Julia Tomlinson, soprano.

Rev. Garfield Dawe, tenor; Herbert Schaester, planist; Julia Tomlinson, soprano.

WWJ, Ostroit, Mich. (Eastern, 513), 3 p. m. The Detroit News orchestra; 7. The Detroit News orchestra; 10, Jean Goldkette's Victor Recording orchestra.

## Friday, January 9

Friday, silent night for: CKAC, CHNC, KFKX, KGO, WCBO, WEAO, WFI, WHAZ, WIP, WKBF, WLW, WMAK, WOI, WOS, WRC.

CKAC, Montreal, Can. (Eastern, 437), 1:45 p. m., Windsor hotel luncheon concert; 4:30, 110 lessons. CNRE, Edmonton, Can. (Mountain, 450), 7:30-8 p. m., children's half hour; 8:30-10:30, Jesuit College trio. CNRT, Toronto, Can. (Eastern, 400), 6:30-8 p. m., Luigi Romanelli and his King Hotel concert orchestra; 8:30-10, studio program, Hambourg Conservatory of Music; Rachelle string quartet, Rachelle Copeland Stephenson, first violinist; Nellie McGhie, second violinist; Ruby Dennison, violaist; Gertrude McKeown, violoncellist; Carmoletta Sheridan, soprano; Ada Lingham Wagner, accompanist; 9, address; 10:30-12, Luigi Romanelli and his King Edward Hotel dance orcheatra. KFAE, Puilman, Wash. (Pacific, 330), 7:30 p. m., Marguerite Miller, soprano, singing, "Sierra Sue," "Break O'Day," "Pastorale;" Doris McReynolds, violinist, playing "Ave Moria," "Romance Andalusia." "Sarasate." "Concerto in G Minor;" "Essentials of Successfui Farm Monagement," Prof. George Severance; "Getting Ready for the New Crop," Leonard Hegnauer; "Reiation between Banker and Farmer," F. C. Forrest. rest. KFOM, Beaumont, Texas (Central, 306), 8 p. m., Mag-

nolia Refinery band.

KFNF, Shenandoah, Ia. (Central, 266), 6:30 p. m., community program, Coin, Ia., Dr. Luke, director.

KFOA, Seattle, Wash. (Pacific, 455), 6-6:30 p. m., Seattle P. I. concert; 6:15-8:15, Sherman, Clay & company studio program; 8:30-10, Scattle Times concert.

cert.
KFQX. Seattle, Wash. (Pacific, 238), 7:15-7:45 p. m., bedtime story, Aunt Vivien; 8-9, Earl Gray and his orchestra; 9-10, concert; 10-11, Earl Gray and his

Butler hotel orchestra.

KGO, Oakland, Calif. (Pacific, 3|2), 3 p. m., studio musical program; 4-5:30, concert orchestra, Hotel St. Francis; 5:30-6, The Girls' Half Hour, Esther Wood

Krancis; 5:30-b, The Giris' Half Hour, Esther Wood Schneider.

KSAC, Manhattan, Kan. (Central, 341). 12:30 p. m.. Osceola Hall Burr, reader; farm and home week; L. C. Williams; "Why Tax Counties with Scalp Bountios," A. E. Oman; 7:20, coliego bell; 7:30, lectures on music, Ira Pratt; 7:40, musical numbers, department of music; 7:45, lecture on music, Ira Pratt.

KSO, St. Louls, Mo. (Central, 546), S p. m., program, R. Elmer Guenther, baritono; Paul Mchl. pianist.

KTHS, Hot Springs, Ark. (Central, 375), 8:30-10 p. m., program recital, Princess theater; Meyer Davis orchestra.

KYW, Chicago, III. (Central, 536), 11:35 a. m., table talk, Mrs. Anna J. Peterson; 6:35-7, children'a bedtime story, Uncle Bob; 7-7:30, dinner concert, Congress hotel; 8, spoeches, American Farm bureau; 9-10, midnight revue; 11-2:30 a. m., midnight revue; Coonsanders Original Nighthawks; W. Remington Welch, organist. organist.
WAHG, Richmond Hill, L. I. (Eastern, 316), 8-8:15

P. m. Arthur Nelson, tenor; 8:15-8:30, Chas. Van Clees, violinist; 8:30-8:45, Helen Kuck, soprano; 8:45-9, Norman Grayson, pianist; 9-9:15, Harry Waisb, baritone; 9:15-9:30, Bennett and Marsh, songs; 9:30-9:45, Arthur Nelson; 9:45-10, Chas. VanClees; 10-10:15, Helen Kuck; 10:15-10:30, Norman Grayson; 10:30-10:45, Harry Waish; 11-12, George Walter and his orchestra.

## Where to Hear Talks

Central Standard Time

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

Saturday, January 3: 6:15, WBZ; 6:30, WEAF; WMAQ; 7, WIP; 7:15, WRC; 7:30, WOC; 8, WCCO, WOR; 8:15, WCCO; 8:45, KHJ; 9:05, KYW.

Sunday, January 4: 6, WFAA; 7:15, WJY; 8:30, WBBR; 9, WEMC.

Monday, January 5: 6, WCCO; 6:10, WHN; 6:30, WBZ, WCAU, WEEI; 6:35, WNYC; 6:45, WCAE; 7, WHN, WJZ; 7:10, WJZ; 7:15, WCAE, WNYC; 7:20, WBBR; 7:30, KSAC, WHO; 7:45, KSAC; 8:15, WJZ; 8:30, WBZ, WHN, WOR; 8:40, WEMC; 8:45, WNYC, WOR.

Tuesday, January 6: 6, WEBJ, WHN, WJZ; 6:10, WHN; 6:15, WCCO, WBZ; 6:30, WCAU, WEEI; 6:35, WNYC; 6:45, WGY; 7, WEAF, WGY, WIP, WJZ, WRC; 7:10, WJZ; 7:20, KSAC; 7:45, KSAC; 8, KYW, WJY, WRC; 8:30, WHN; 9, WSAI; 9:05, WIP.

Wednesday, January 7: 6, WCCO; 6:15, WBZ; 6:30, WCAU; 7, WGR, WHN, WJZ; 7:10, WJZ; 7:20, KSAC, WBBR, WEAF, WOC; 7:30, WOR; 7:45, KSAC, WJZ, WOR; 8, WOS; 8:30, KOB; 9:05, KYW; 9:15, WJZ.

Thursday, January 8: 6, WEAF; 6:10, WHN; 6:15, WBZ; 6:30, WEEI; 6:45, WNYC, WGY; 7, WEAF, WFI, WIP, WKBF, WRC; 7:20, KSAC, WOC; 7:30, WCCO, WGR, WRC; 7:45, KSAC, WCCO; 8, KYW; 8:15, WJZ; 8:30, WBBR, WGY; 9, WJZ; 9:25, WHN; 10, CNRC.

Friday, January 9: 6, WEBJ, WGY; 6:15, WBZ; 6:30, WBZ, WCAU; 6:35, WNYC; 6:45, WGY; 7, WGY; 7:15, WJY, WJZ; 7:20, KSAC; 7:30, KGO, WCCO, WNYC; 7:45, KSAC; 8, CNRT, KYW; 8:45, KOB; 8, WHN; 9:20, WEMC; 9:25, WHN; 10, WLW.

dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 8:30, musciai program; Oswald Johns Welsh, baritone.

WCAL, Northfield, Minn. (Central, 360), 9 p. m., "Points of View," "Dear Cornelia," reviewed by Dr. George Welda Spohn.

WCAU, Philadelphia, Pa. (Eastern, 278), 6 p. m., Hotel Pennsylvania orchestra, direction Louis Baer; 7:30, electrical talk; 8, recital.

WCCO, Minnoapolis-St. Paul, Minn. (Central, 417), 10:45 a. m., "Have You Had Your Iron Today?" Betty Crocker; 2 p. m., woman's hour, community welfare talk; 2:30, matinee musical; Ronald Jonson and his rollicking four; 4, magazine hour, "Not Wanted," Jessie Lynch Williams; 5:30, children's hour, Court of Gold Medal; 6:30, dinner concert, Minneapolls Athletic Club orchestra, George A. Greene, one stringed violin soloist; Mrs. George A. Greene, accompanist; Eleanor Poehler, soprano; Eleanor Freemantel, accompanist; 7:30, "Importance of a Strong Business Personnel," J. Henry Todd; 8:30, program; 9, "Pa's F. & R. Family."

WCX, Oetroit, Mich. (Eastern, 513), 4:15 p. m., musical program; 6, dinner concert, Book-Caddilae hotel; 8:30, musical program; 10, dance program.

WOAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., the Star's string trio; 6-7, school of the air, piano tuning-in number on the Duo-Art; address, speaker, auspices Kansas City Children's Bureau; the Tell-Me-a-Story Lady; music, Hotel Muehlebach Trianon cnsemble; 8-9:15, popular program; 11:45-1 a. m., nighthawk frolic, the "Merry Old Chiof" and the Plantation pleyers.

WOAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., nighthawk frolic, the "Merry Old Chiof" and

nighthawk frolic, the "Merry Old Chiof" and the Plantation pleyers.

WOAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., daily almanac; 12.02 p. m., Stanley theater organ recital; Arcadia cafe concert orchestra; play, students National School of Elocution and Oratory; 7:30, Dream Daddy's bedtime stories; 8, play by WDAR players; weekly treasure hunt; 10:03, Arcadia cafe dance orchestra; Morning Glory elub concert; songs by Hersche; and Zoehrms.

WEAF, New York. N. Y. (Eastern, 492), 4:10-4:30 p. m., French lesson, Columbie university; 6-7, dinner music, Waldorf-Astoria hotel; 7:30-8, story telling, G. R. Kinney Shoe compeny; 8-8:30, Happiness Candy Boys; 8:30-10, U. S. Navy band, WRC; 11-12, Club Lido Venice.

Boys; 8:30-10, U. S. Navy band, WRC; 11-12, Club Lido Venice.

WEBJ, New York, N. Y. (Eastern, 273), 7-7:15 p. m., Blybrun's reviews of new plays on Broadway; 7:15-8, Nat Martin's "I'll Say She 1s" orchestra; 8:15-8:30, Hains and Scott, songs; 8:30-8:45, Pauline Spivak;

Hains and Scott, songs; 8:30-8:45, Pauline Spivak; 8:45-9, novelty.

WEEI, Boston, Mass. (Eastorn, 303), 6:30 p. m., Boston Edison Big Brother club; 7, musicale; 7:30, Mrs. Alice Monroe Evans, soprano; 8, Sarah Alice King, contralto; 8:30, Gilchrist quartet; 9, program, New York studio; 10, Dok-Eisenbourg and his Sinfonians.

WEMC, Berrien Springs, Mich. (Contral, 286), 9-9:20 p. m., oldtime hymns and gospel songs; 9:20-10, South African night, college students from Cape Town, Africa, native songs, talk on life of natives, diamond mining, descriptions of the country.

WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevue-Stratford concert orchestra; 3:05, Caroline Hoffmon, planist; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddles pal.

wFAA, Oailas, Tex. (Central, 476), 12:30-1 p. m., address, Dr. Robert Stewart Hyer; 4:30-5, woman's hour. Mrs. Bessie M. Trible; 8:30-9:30, vocal recital, G. Haydn Jones and singers, choir of First Presbyterian

church.

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; 8:20-8:55, Hutchinson High School orchestra; 9-10, musical program,
Lucas-Lux Motor Corporation; 10-11, musical program,
direction of Mrs. E. A. Southall; 11:30, aupper-dance
music; Vincent Lopez Hotel Statler dance orchestra,
Harold Gieser, director

inson High School orchestra; 9-10, musical program, Lucas-Lux Motor Corporation; 10-11, musical program, direction of Mrs. E. A. Southall; 11:30, aupper-dance music; Vincent Lopez Hotel Statler dance orchestra, Harold Gicscr, director.

WGY, Schenectady, N. Y. (Eastern, 380), 7:45 p. m. WGY orchestra; 8, "What Every Voter Should Know About His City Government," Prof. Frank T. Mc-Kibben; 8:15, Edward A. Rice, violinist; Giovanni Trombini, cellist; Rice string quartet; Peter Schmidt, clarinetist; 10:30, program, Bluebird dance orchestra; "A New Method of Measuring the Flow of Water;" How to Bohavo in Society," Frederick B. Allen; WGY orchestra.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., selections, Alamo theater orchestra; readings, Courier-Journal and Louisville Times; 7:30-9, concert, auspices, Mrs. Robert K. Van Pelt.

WHN, New York, N. Y. (Eastern, 360), 6:30-7 p. m., Vincent Catanese and his Hotel Alamac orchestra; 7-7:30, Harry Richman and his entertalners, with Eddle Elkins and his orchestra; 3:30-10, Dan Gregory and his Crystal Palace orchestra; 10-10:10, fashion chats, Mmo. Belle; 10:25-10:30, "Storage Batterles," H. B. Shonts; 10:30-11, Roseland dance orchestra; 11-11:30, Vanity club revue; 11:30-12, Sam Wooding and his orchestra from Alabam club; 12-12:30, Ted Lewis and his Symphonic Clown.

WHO, Oes Moinos, Iowa (Central, 526), 7:30-9 p. m., Williamson brothers; Y. M. C. A. naale quartet, W. A. D. I'arke, first tenor, Frank Shipioy, first tenor; George Parks, baritone, Hibbard Cleveland, bass; Dr. Charles Sitzer, pianist; Richard Hyde, 11-year-old soprano; Mrs. R. C. Hyde, accompanist.

WIP, Philadelphia, Pa. (Eastorn, 509), 1 p. m. Gimbel tea room orchestra, Ray Steen, director; 3, "Food for Anaomics," Mrs. Anna B. Scott; 3:15, M. Dorothy Deacon, soprano; Milton J. Demon, tenor; 4:15, "Abnormal Children," Dr. F. H. Leavitt; talk, Laura Belle Staley; 6:05, Art Coogan and his Club Madrid orchestra; 7, Uncle Wip's bedtime stories.

WIJO, Mooseheart, Ill. (Central, 278), 3:30-4:30 p. m., music, Mo

WJY, New York, N. Y. (Eastern, 405), 8:15-8:45 p. m., "State Legislative Review," Julius S. Berg; 10-11. Ace Brigade and his fourteen Virginians, direct from Monte Carlo club.

WJZ, New York, N. Y. (Eastern, 455), 1-2 p. m., Henry Vander Zanden's Hotel Ambassador trio; 7-8. Savarin ensemble; 8:15-9, "State Legislative Review, Julius S. Berg; 10-11, Ace Brigade and his fourteen Virginians, direct from Monte Carlo club.

WLS, Chicago, III. (Central, 345), 12-1 p. m. R. F. D. program; George Simons, tenor; "Handing the Farmers' Legal Problems," Donald Kirkpatrick; 3:45-4:45 homemakers' hour; "Is Your Sweet Tooth Healthy?" Louise Fitzgerald; "The Busy Woman of Today," Helen Bennett; 6:30, Ralph Emerson, organist; 6:50, specialties, Senate theater studios; 7, Iullaby time, Ford and Glenn; 7:15, Ida Miller, contralto; Hans Madsen, tenor; 7:30, Isham Jones and his College Inn orchestra; 8-9, evening R. F. D. program: Irving Epstein, violinist; "The Twentieth Century Cooperative," George R. Wicker; 9, Art Kahn's Scnate theater Theater symphony orchestra; 9:15, WLS theater; 9:30, Isham Jones and his Collego Inn orchestra; 10:40, Ford and Glenn timo.

WLW, Cincinnati, Ohio (Central, 423), 1:15 p. m., popular program, Ahaus Brunswick Shop orchestra; 4, recital, pupils of Leo Stofregen.

WMC, Memphis, Tenn. (Central, 501), 12 m., musical progrom, O. K. Houck Piano company; 8, p. m., bedtime story, Uncle Percy; 8:30, concert, Britlings Novelty orchestra, Frank Bracclante, director; 11, midnight frolic.

WNJ, Newark, N. J. (Eastern, 233), 10:30-11 p. m., dance music, Frank Daily and his Meadowbrook orchestra: 11-11:30, Wolfe Gilbert and company; 11:30-12, Original Dixieland Jazz band; 12-12:30 a. m., dance music, Frank Daily and his Meadowbrook orchestra.

WNYC, New York, N. Y. (Eastern, 526), 7:35-7:35

orchestra.

WNYC, New York, N. Y. (Eastern, 526), 7:30-7:35
p. m., police alarms; 7:35-7:55, resume of meeting
of board of estimete; 7:55-8:30, musical program; 8:308:45, talk on sports, Fred G. Lieb; 8:45-9:45, danco
program by Irving Bloom and his Club Tokio orchestra; 9:45-10, song recital; 10:30-10:35, police alarms
and weather forecasts; 10:35-12, Ben Bernie's Hotel
Roosevelt orchestra. Roosevelt orchestra.

OC, Oavenport, Iowa (Central, 484), 9 p. m., Wrixen's

Capitol Harmony Kings orchestra.

Wol. Ames, Iowa (Central, 360), 12:30 p. m., collego chimes; "How Keeping Farm Records Affects Profits," Dr. C. L. Holmes.

WOO, Philadelphia, Pa. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanamaker

Dr. C. L. Holmes.

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. Candelori and his Hotel Adelphia concert orchestra; 8:30, Erno Rapee and his Radlo gang from Fox theater; 9:30, WOO orchestra, Robert E. Golden, director; 10:03, A. Candelori and his dance orchestra; 10:30, Vincent Rizzo and his Hotel Sylvania dance orchestra.

WOR, Newark, N. J. (Eastern, 405), 7-7:30 a. m., WOR morning gym class; 3-3:15 p. m. talk, Alian R. Guillmore, Newark Technical school; 6:15-6:30, "Music While You Dine," Bluebird orchestra; 6:30-7, man in the moon stories for children, Josephine Lawrence and Wm. F. B. McNeary; 7-7:15, Bluebird orchestra; 7:15-7:30, resume of tho day's sports, Jolly Bill Steinke.

WQI, Chicago, Ill. (Central, 448), 11-12 m., Fred Mann's Sunday dinner menu; Ted Wilnus; 3-4 p. m., "A Club Luncheon." Dorothy McLain Dickens: "Touring Europe," Mrs. Harry T. Sanger; 7-8, dinner concert, Ralph Williams and his Rainbo Garden orchestra; Sheppard Levine, tenor; Effio Overson, accompanist; Dorothe Schubert, Jugo-Slav soprano; 10-2, Ralph Williams and his Rainbo Skylarks; the Rogers boys, Larry and Billy; Nubs Allen, contralto; James J. Whalen, tenor; West brothers; Monogram trio. WRC, Washington, D. C. (Eastern, 469), 4 p. m., fashion developments of the moment, Eleanor Gunn; 4:10, Eleanor Glynn, planist; 4:20, "Beauty and Personality," Elsie Pierce; 4:30, tea music, Meyer Davis' New Williard hotel trio; 6, children's hour, Peggy Albion.

WTAS, Eigin, III. (Central, 286), 12:30-1:30 p. m., Kimbali hall elassical concert; 6, Terrace Garden dance program; 9:30, Kimbali studio hour; 10:30, supper dance program, Jimmy Eggert, Jack Little, Paul Smail, Lindsey Coons, Leo Sims; 11:30, Jay Gould, Maxine Brown.

WTAY, Oak Park, III. (Central, 283), 6:45-7:45 p. m., Ray Kroc and Harry Sosnik, the Melody boys; Black Cat orchestra; 9-10, George H. Clark, organist.

WWJ, Oetroit,

#### Additional Programs

(Received Too Late for Classification)

#### Saturday, January 3

KFI, Los Angelos, Calif. (Pacific, 469), 5-5:30 v. vj., Evening Herald, table talk and news; 5:30-6, Examiner's musical half hour; 6:45-7:30, dauco orthostro; 7:30-8, song recital; 8-9, vocal and instrumental; 9-10, Examiner, varied program; 10-11, Packard Radio club. KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-11:30 a. m., sunshine hour; 3:30-1:30 p. m., impromptu studio program, Gladwyn Nichols, cornetist; 7:30-9:30, auditorium service, sermion on Divine Healing, Almee Semple McPherson, pastor.

(Claubinued on page 14)

# CKAC ENTERTAINS PARIS WITH SPECIAL MIDNIGHT PROGRAM TUESDAY

#### Where to Hear Concerts

Central Standard Time

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

Bunday, January 41 6:20, WEAF; 8:30, WDAR; WLS; 7, KYW, WLS; 7:30, WBZ, WDAR; WIP, WRBC; 8, WCBD, WGY, WQI; 8:10, WBBR; 8:15, WEMC; 8:30, KTHS, WCAL, WLW; 8:50, WEMC; 9, WBBR, WFAA, WGN, WGY, WJZ; 9:15, WCCO, WEAF; 9:30, WOC.

Did you ever admire the celliet on the Lyon & Healy programs from WGN, Chicago? This is abs—Anne Slaok. Like Hor?

GKAC, Mentreal, Can, (Eastern, 437), 8:30 p. m., Canedian National Radiaway control, 9:11 p. m., CANGC, Calgary, Con. (Meuniain, 430), 9:11 p. m., beddime travel late; Munc. Mamie Ordiner, contraine; instrumentel party can. (Central, 450), 8:11 p. m., bedden Calley, Windhaller, Derrorm, Winnibung, Chapter, Order of Demolsy for Reys; Vernor Taylor, planist, Ed. Kelr, rocalist, K. Soprier, vocalist; I. Cowari, C. Wricht, reader; F. McLesry, violinius; D. H. Cleeg, aylophonist; F. S. Holmes, O. F. Holmes, Solophonist; F. S. Holmes, O. F. Holmes, Solophonist; F. S. Holmes, O. F. Holmes, Solophonist; F. S. Holmes, O. F. Holmes, Solophonists; F. S. Holmes, G. F. Holmes, G. J. J. M., KFNF, Sheasadesh, Io. (Central, 265), 6:30 p. m., dichustra musio, P. H. Blumpon, director, 300 p. m., KFOA, Seattle, Wash, (Pacific, 453), 6:30 p. m., Seattle, P. L. concept, Blumpon, director, 300 p. m., Seattle, P. L. concept, Blumpon, director, 300 p. m., William C. L. Chapter, J. M. L. Chapter, J. Chapter, J. M. L. Chapter, J. M. L. Chapter, J. Chapter, J. M. L. Chapter, J. L. Chapter, J. M. L. L. Chapter, J. Chapter, J. L. Chapte

DANCING

(Central Time)

Mendey, January 8: 6, Wisk, Whe Wes, S. 20, Wisk, S. 55, What, S. 56, What, S. 56, What, S. 56, What, S. 56, What, S. 57, What, S. 57,

Rath (left) and Lilah Carlson, who will give a popular piano cong act, Wednesday, Jan-nary 7. from EFI. Anthony's, Loc An-geles. The two sisters have a very artent Radiophan following, if mall is any indica-tion. Wilzel Photo

m., mustool program, La Caletea,

WKBF, Pravidenes, R., 1. (Eastern, 286), B. D. im,
sturational [13], member of faculty of Brown university.

WLS, Chimage, Ill. (Contral, 345), 19-1 D. im., musto
immbers, Robinson and Hormide, "Chom. Hearts, and
Horiz, "Successful Chicken," "Chom. Hearts, and
Horiz, "Successful Chicken," Mrs. Louise Secort, "A
Nork Shower," Julia M. Deal; Sci. 345, homenakers,
Nork Shower," Julia M. Deal; Sci. 35, Balph Emeton,
organist; 6:50, specialities, Senste iheater, studio; 7:

"Ille Forde and Little Glema's Woodshed Unclear players," 7:15, WLS shoater, operetia.

WLW. Chichnett, Oble Geniral, 423), 17:15 D. m.,
dance peogram. Templdic; Adaleide. Apfel, Disnist
B. dinner hour concert, Chechnait Post; 10, three
minute message, U. S. Civil service; 10:03, concert
program, suspiect Cooper Tite and Nattery corporation,
orchesteo, quartes, 11, Camp. Washindon M. E. church
choir, Robert Suidendorf, directar; specia, poherry
WMAK, Leckoper, K. Y. (Eastern, 273), 12 midnicht,
Murray Wristenn's middight screenaders;
WKC, Hewy York, K. (Eastern, 273), 12 midnicht,
Murray Wristenn's middight screenaders;
WKC, New York, K. (Eastern, 273), 12 midnicht,
Murray Wristenn's middight screenaders;
WKC, New York, K. (Eastern, 273), 12 midnicht,
310:715, 11:135, 7; Hinoly Topics, W. P. Brent,
8:10:30, entire program, Horough of Queens; 10:30-10:30, 10:31-10:30,
WKYC, New York, K. (13:57:35-35), 11:30 p. m., college
chimes; 110-8; Thomps Topics, W. P. Brent,
8:10:30, entire program, and weather forecusts; 10:35:12.
Borough of Queens program, Horough of Queens; 10:30-10:31-10:30,
WCC, Devenger, Iswa Gentral, 484), 7:20 p. m., educuiloust leedure, 9; peogram, South ordering; 10:35-12.
Borough of Queens program, Horough, 11:30 p. m., college
chimes; 11:40 p. program, 10:00 ortherity; 10:30-12.
Borough of Queens program, 10:00 ortherity; 10:30-12.

Friday, January 9

Friday, Henli nichl far: CKAC, CKNC, KFKX, KOO, WCEO, WEAO, WFI, WNAZ, WIP, WKBF, WLW, WMAK, WOI, WOS, WRC.

CKAC, Mentresl, Con. (Estein, 437), 1:15 p. m., Wisdor hele! Wincheon concert; 4:230, He teatons, CKRE, Edmand, Andrew Constructions, Constructions,

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

Where to Hear Talks

Central Standard Time

Saturday, January 3) 8:15, WBZ: Sunday, January 4: 6, WFAA; (15, WJY; 8:30, WBBR; 9, WEMC.

Monday, Jannary 5: 8, WCCO: 8:10, Wiln: 8:30, WBZ, WCAU, WEE1; 8:35, WNYC; 8:45, WCAE; 7, WIIN, WJZ; 7:15, WCAE, WNYC; 7:20, WBBR; 7:30, KSAC, WIIO; 7:45, KSAC; 8:15, WJZ; 8:30, WBZ; WIIN, WOR; 8:40, WEMC; 8:45, WNYC, WOR.

Theaday, January 8: 6, WERI, WHN, WIZ, 8:10, WHN; 8:15, WCCO, WEZ; 8:30, WCAU, WEBI; 8:35, WNYC; 8:45, WGZ; 7, WEAF, WGY, WIP, WIZ, WIC; 7:10, WJZ; 7:20, KSAC; 7:45, KSAC; 8, KYW, WJY, WRC; 8:30, WIN; 8, WSAI; 8:05, WIP.

Wadnesday, January 7: 18, WCCO; 8115, WBZ; 8:30, WCAU; 7, WGR; WHN, WJZ; 7:10, WJZ; 7:20, ISAC; WBRR, WEAF, WOC; 7:30, WOR; 7:45, ISAC, WJZ; WGR; 8, WOS; 8:30, KOB; 8:05, KYW; 9:15, WJZ;

Thursday, January 8; 8, WK.VF; 8;10, WHN; 8;15, WHZ; 6;30, WHEEL 8;45, WNYC, WGY; 7, WEAF, WFI; WIF, WKEF, WRC; 7;20, KSAC, WCCO, WCR, WRC; 7;45, KSAC, WCCO; 8, KYW; 8;15, WJZ; 8;30, WHR; WGY; 9, WJZ; 9;25, WHN; 10, CNRC.

dest, Dr. Robert Steast, Hyer, 4,30-5, woman hour, Mr. Hestol A. Tible, 2,30-930, retail reveals, 0. Haydra Jones and shurery-chole of First Preblack O. Haydra Jones and Loudiner molecular programs 0.20-7-30. Ulmor mules, University of the President of State of The Control of The Haydra John Cheef, director x.20-8.55, Routh-lines Haydra John K. L. A. Kouthall; H. 30, supper-dame unite, When H. Jones Hole Haydra H. Haydra John K. L. A. Kouthall; H. 30, supper-dame unite, When H. Jones Hole Haydra H. Haydra John K. L. A. Kouthall; H. 30, supper-dame unite, When H. Jones Hole H. Haydra H. Haydra John H. Haydra

Additional Programs (Received Too Late for ('lussification)

## Wednesday, January 7

(Contlined from page 11)

Edison Big Broller club: 7-8; musicele; 8; program, coursey. C. Hallmany A. Mone; 8:56, concert; Judo 20. Del Castille, precitan, Jack O'Brieni II. Judo 20. Del Castille, organist. Lake O'Brieni II. Judo 20. Del Castille, organist. Lake Castille, organist. Lake Castille, organist. Lake Castille, organist. Lake Castille, organist. Del Castille, organist. Department Fammanuc Missionary relited. Principle of the Castille Cast

hall 10 300-11 300 1110 Wymne 1 Mresidel San Juan, P. R. (Intercelental, 560), 20-130 1 Municipal, bind. theses. Ill. (Central, 345), 12-12-30 p. m., c. Suivanno, lenor; "The More-Dollars on the A. R. Lesner; 315-44-5, The John Wannah Kry. (Nobelle Dean "genty" in the More-

Hiddey; 10:30, Yuccan layas and ne scole System-dance ortherida M. J. (Eastern, 405), 7:7:30 a. m., WOR, monina sym\_clast; 6:13:6.55 p., mn, "Mode Will be You Dine," Harry Mode Treal protective (5:55-7, course Ingraina's Great Notel Jun criteria; 5:35-7, course Ingraina's Great Notel Jun criteria; 5:30:5;3:8, "Helpid like Scenes of a Newspaper Office, Wells Hawker 8:48:50," Topics of the Day," Littery Dilgest; 8-5:15, "Persian Garden, Wallere Hermann and Joseph M. Ramell.

### Thursday, January 8

i-8:45 p. m., Berg: 10-11. direct from

1-2 p. m., r trio; 7-8, lsiative Ro-ide and his Carlo club. Carlo club.

1. R. F. D.

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1. the Farm
1. 3:45-4:45

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1. rant VLS theater; n orchestra; rshall High his Collego

me. 1:15 p. m., p orchestra; m., musical

p. m., bed-t, Britlings lrector; 11,

0-11 p. m., lowbrook or-pany: 11:30-2:30 a. m., Meadowbrook 7:30-7:35

of meeting gram: 8:30--9:45, danco oklo orches-olice alarms mlc's Hotel

a., Wrixen's

m., college

11 a. m., Wanamaker
m, director;
l. Candelori
8:30, Erno
eater; 9:30,
;; 10:03, A.
30, Vincent
tra.
:30 a. m.,
talk, Allan
6:15-6:30,
tra; 6:30-7,
phine Law5, Blucbird
ly's sports, Wanamaker

Fred Mann's a., "A Club "Touring ner concert, accompanist;

Davis' New Willard instell trio; 6, children's hour, Peggy Alblon.

WTAS, Elgin, III. (Central, 286), 12:30-1:30 p. m., Kimball hall classical concert; 6, Terrace Garden dance program; 9:30, Kimball studio hour; 10:30, suppor dance program, Jimmy Eggert, Jack Littlo, Paul Small. Lindsey Coons, Lee Sims; 11:30, Jay Gould, Maxine Brown.

WTAY, Oak Park, III. (Central, 283), 6:45-7:45 p. m., Ray Kroc and Harry Sosnik, the Melody boys; Black Cat orchestra; 9-10, George H. Clark, organist.

WWJ, Detroit, Mich. (Eastern, 513), 3 p. m., Tho Detroit News orchestra; Anne Campbell, The Detroit News orchestra; Anne Campbell, The Detroit News poet.

#### **Additional Programs**

(Received Too Late for Classification)

#### Saturday, January 3

KFI, Los Angeles, Callf. (Pacific, 469), 5-5:30 p. m., Evening Heraid, table taik and nows; 5:30-6, Examiner's musical half hour; 6:45-7:30, danco orchestra; 7:30-8, song recital; 8-9, vocal and instrumental; 9-10, Examiner, varied program; 10-11, Packard Radio club. KFSG, Los Angeles, Callf. (Pacific, 278), 10:30-11:30 a. m., sunshine hour; 3:30-4:30 p. m., impromptu studio program, Gladwyn Nichols, cornetist; 7:30-9:30, auditorium service, sermon on Divine Hoaling, Almee Sompio McPherson, pastor.

(Chutiqued on ugge 14)

Borough of Queens program.

WOC, Davenport, Iowa (Central, 484) 7:20 p. m., educational lecture, 9, program, Schuster sisters; 11, Louis Connor and his LeClaire hotel orchestra; song and novelty numbers, Petor MacArthur.

WOI, Ames, Ia. (Central, 360), 12:30 p. m., collego chilmes; "How Farm Practice Affects Profits," Dr. C. L. Holmes; 8:15, men'e glee club.

WOO, Philadelphia, Pa. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanamaker crystal tca 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; 6:15-6:30 p. m., "Radio for the Layman," Albert E. Sonn; 6:30-7:15, Jimmy Lent's Famous Society orchestra; 7:15-7:30, resume of the day'a sports, Jolly Bill Steinke.

WOJ, Chicago, Iii. (Central, 448), 11-12 m., "Hot Suppers for Zero Nights," Erna Bertrams; "A Frock for the Holldays," Eleanor Chalmers; "Authority on Horticulture," C. P. Binner; 3-4 p. m., "Gauging Meals by the Weather." Josephine Naylor; "Household Refrigeration and Frozen Dosserts," Mrs. George M. Sbirk; 7-8, dinner concert, Ralph Williams and his Italnbo Garden orchestra; Manuel Robriguez, Spanish tenor; Lydia Lochner, contraito; Marion Henry, planist; 10-2 a. m., Ralph Williams and his Rainbo skylsrks: Jerry Sullivan; Peggy McGuire; Rick, Whalen, Gardner; Rosemary Hughos, coprano; Will Rossiter, daddy of them all.

WRC, Washington, D. C. (Eastern, 469), 8:45 p. m., children's bour, Peggy Albion; 7, dinner concert, Bernhard Levitow's Hotel Commodore orchestra: 8, talk, auspices American Automobile association; 8:30, talk, auspices Smithsonian Institute; 9:20, concert, Lee House trio; 10:30, dance program, Waldorf-Astoria orchestra.

musical program; 4-5:30, concert orchestra, Hotel St. Francis; 5:30-6, The Giris' Half Hour, Esther Wood

musical program; 4-5:30, concert orchestra, Hotel St. Francis; 5:30-6, The Giris' Half Hour, Esther Wood Schneider.

KSAC, Manhattan, Kan. (Central, 341), 12:30 p. m., Osceola Hall Burr, reader; farm and home week; L. C. Williams; "Why Tax Countles with Scalp Bountles," A. E. Oman; 7:20, collego bell; 7:30, lectures on music, Ira Pratt; 7:40, musical numbers, department of music; 7:45, lecture on music. Ira Pratt.

KSD, St. Louis, Mo. (Central, 546), 3 p. m., program, R. Elmer Guenther, barltone; Paul Mehl, planist. KTHS, Hot Springs, Ark. (Central, 375), 8:30-10 p. m., program recital, Princess theater; Meyer Davis orchestra.

KYW, Chicago, III. (Central, 536), 11:35 a. m., tablo talk, Mrs. Anna J. Peterson; 6:35-7, children's bedtlme story, Uncle Bob; 7-7:30, dinner concert, Congress hotel; 8, speeches, American Farm bureau; 9-10, midnight revue; 11-2:30 a. m., midnight revue; CoonSanders Original Nighthawks; W. Remington Welch, organist.

Sanders Original Nighthawks; W. Remington Weich, organist.

WAHG, Richmond Hill, L. I. (Eastern, 316), 8-8:15
p. m., Arthur Nelson, tenor; 8:15-8:30, Chas. Van Clees, violinist; 8:30-8:45, Helen Kuck, soprano; 8:45-9, Norman Grayson; planist; 9-9:15, Harry Walsb, baritone; 9:15-9:30, Bennett and Marsh, songs; 9:30-9:45, Arthur Nelson; 9:45-10, Chas. VanClees: 10-10:15, Helen Kuck; 10:15-10:30, Norman Grayson; 10:30-10:45, Harry Walsb; 11-12, George Waltor and his orchestra.

his erchestra.

WBAV, Columbus, Ohio (Eastern, 423), 8 p. m., concert, Dispatch Little Symphony orchestra; John Ciark, director; Mrs. T. C. Tussey, reader.

WBZ, Springfield, Mass. (Eastern, 337), 7:30-8 p. m., University extension courses; 10-11:30, concert, 11:30-12, dance program, McEnelly's singing orchestra.

Kibben; 8:15, Edward A. Rice, violinist; Giovanni Trombini, cellist; Rice string quartet; Peter Schmidt, clarinetist; 10:30, program, Bluebird dance orchestra: "A New Method of Measuring the Flow of Water;" 'How to Behavo in Socioty," Frederick B. Allen; WGY orchestra.

WHAS, Louisville, Ky. (Central, 400), 4-5 p.m., selections, Alamo theater orchestra; readinge, Courier-Journal and Louisville Times; 7:30-9, concert, auspices, Mrs. Robert K. Van Pelt.

WHN, New York, N. Y. (Eastern, 360), 6:30-7 p.m., Vincent Cataneso and his Hotel Alamac orchestra; 7-7:30, Harry Richman and his entertainers, with Eddle Elkins and his orchestra; 9:30-10, Dan Gregory and his Crystal Palace orchestra; 10-10:10, fashion chats, Mine, Belle; 10:25-10:30, "Storage Batterles," H. B. Shonts; 10:30-11, Roseland dance orchestra; 11-11:30, Vanlty club revue; 11:30-12, Sam Wooding and his orchestra from Alabam club; 12-12:30, Tcd Lewis and his Symphonic Clown.

WHO, Des Moines, lowa (Central, 526), 7:30-9 p. m., Williumson brothers; Y. M. C. A. male quartet, W. A. D. Parke, first tenor, Frank Shlploy, first tenor; George Parks, barltone, Hibbard Cleveland, bass; Dr. Charles Sitzor, pianist; Richard Hyde, 11-year-old soprano; Mrs. R. C. Hyde, accompanist.

WIP, Philadelphia, Pa, (Eastern, 509), 1 p. m. Gimbel tea room orchestra, Ray Steen, director; 3, "Food for Ansomics," Mrs. Anna B. Scott; 3:15, M. Dorothy Deacon, soprano; Milton J. Demon, tenor; 4:15, "Abnormal Childron," Dr. F. H. Leavitt; talk, Laura Belle Staley; 6:05, Art Coogsn and bis Club Madrid orchestra; 7, Unclo Wip's bedtime stories.

WIJD, Mooseheart, III. (Central, 278), 3:30-4:30 p. m., mueic, Moosehosrt children; 6:30-7:15. Albert F. Brown, organist; 7:15-3:15, "solos, Moosehoart children; Mooseheart, Novelty orchestra; talk, M. P., Allama: 11:80-12:19th, Albert F. Brown, organist; 7:15-3:15, "solos, Moosehoart children; Moosehoart children; 6:30-7:15. Albert F.

orchestra. Eggi, Binginngil, anju (gunyyl, nga), a m m., gumna,

#### Additional Programs

(Received too late for Classification)

#### (Continued from page 13)

KHJ. Los Angeles, Calif. (Pacific, 395), 12:30-1:30 p. m., 11 Moulton and his orchestra; 2:30-5, Charlie Well-man's Saturday afternoon froile; 6-6:30, Arl Hick-man's concert orchestra, Edward Fitzpatrick, director; Scotler Veneria, Edward Phepatrick, director, 6:30-7:30, stories, American history, Prof. Walter Sylvester Hertzog; David Durand and Uncle John; Fornwell Street School glee club; 7:45, "Care of Body," Dr. Lovell; 8-10, program, Dr. A. Zimmerman; 10-11, Earl Burtnett's Biltmore hotel dance or-

kNX, Hollywood, Calif. (Pacific, 337), 8 a. m., morning prayer; 9. Town Crier, news; 9:30, technical talk on Radio, Forbes Van Why; 5 p. m., closing markets; 5:30-6, Town Crier and the Village Urchins; 6-7:30, dinner hour music; 8-9, "A Trip to the South Sea Islands with Capt. Edw. Sallshury," sponsored by Sallshury and Alexander; 9-10, Manual Arts Ainmal program; 10-11, Abo Lyman's Ambassador Hotel dance orchestra.

orchestra.
WBAP, Fort Worth, Tex. (Central, 476), 7 p. m., roview, interdenominational Sunday school losson, Mrs. W. F. Baruum.

#### Sunday, January 4

KFI, Los Angeles, Calif. (Pacific, 469), 10 a. m., L. A.

KFI. Los Angeles, Calif. (Pacific, 469), 10 a. m., L. A. Church Federatton service; 4-5 p. m., vesper service, Annie Mottram Craig, director; 6:45-7, musical approclation talk; 7-8, stago acts, specialties and concert orchestra from Metropottam theater; 8-9, song recital; 9-10, Examinev, dance music; 10-11, Thereon Bennett and one of his dance orchestras.

KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-12:30 p. m., morning service of Angelus temple, broadcast from puipit, Aimee Semple McPhersen, pastor; 2:30-4:30, afternoon service of Angelus temple, Silver band, choir and musical numbers by visiting artists; 7-9:45, musical hour program and evening service of Angelus temple; 10-11, urgan recital, Esther Fricke Green, organist.

temple; 10-11, urgan recital, Esther Fricke Green, organist.

KHJ, Los Angeles, Calif. (Pacific, 395), 10 a. m., Rev. Benj. Urquidl, pastor, El Salvador Mexicam Baptist church; 10:30-12:30 p. m., complete church services of First Methodist Episcopal church, Arthur Blakely, organist; 6:30-7, Art Hickman's concert orchestra. Edward Fitzpatrick, director; 7-7:30, organ recital from First Methodist Episcopal church. Arthur Blakely, organist; S-10, program, Julio Kellar, harpist and assisting artists.

KJS, Los Angeles, Calif. (Pacific, 360), 10:30-12:30 p. m., complete religious service of Church of Open Door broadcast from pulpit, music and organ numbers; 6-7, vesper service, vocal numbers, Scripture talk; 8-9:30, evenling service and sermon.

KNX, Hollywood, Calif. (Pacific, 337), 7-7:45 p. m., vesper servico, International Bible Students' association; 8-9, Ambassador hotel concert orchestra. Jos. Rosenfeld, director; 9-11, program, El Encanto Apartments.

wents.

WBAP, Fort Worth, Tex. (Central, 476), 11 a. m., services. First Methodist church, Rev. J. W. Bergin; Will Foster, organist; 11-12, midnight frolics, Ted Miller's Crazy Hotel orchestra.

#### Monday, January 5

KFI, Los Angeles, Calif. (Paoific, 469), 5-5:30 p. m., Evening Herald table talk and news; 5:30-6, Examiner's musical half hour; 8-9, Evening Herald, Patrick and Marsh's "Nightingales" dance orchestra, Margaret Edwards, vocalist; 9-10, program, Walter M. Murphy Motors company; 10-11, Examiner, dance music

music. KHJ, Los Angeles, Calif. (Pacific, 395), 12:30-1:15 p.

m. Piggly Wlggly Girls trio.

KNX, Hollywood, Calif. (Pacific, 337). 8 a. m., morning prayer; 9, Town Crier, news; 10:30, Mrs. Kate Brew Vaughn, home conomics; 11. Dr. Richard M. Scott, talk on pets; 5 p. m., closing markets; 5:30-6, Town Crier and Village Urchins; 8-10, program, Western Auto Supply company; 10-11, Juno Purcell, the

KNX girl; 11-12, Abe Lyman's Cocoanut Grove dance

wbap, Fort Worth, Tex. (Central, 476), 7:30-8:30 n. m., popular nusic, frensley Mooro Bluck and Gold Screnaders; 9:30-10:45, musical program, Montgomery Ward's entertainers.

wmaq, Chicago, III. (Central, 447.5), 4 p. m., mothers in council, Mrs. Frances M. Ford; 4:30, talk on English, Mrs. J. Elliott Jenkins; 6, Chicago thoater organ recital: 6:30, Milan Lusk, violinist.

#### Tuesday, January 6

Tuesday, January 6

KFI, Los Angeles, Callf. (Pacific, 469), 5-5:30 p. m.. Evening Herald, tablo talk und news; 5:30-6. Examiner's musical half hour; 6:45-8. Aeoffan residence pipe organ recital, Dan McFarland, organist; 8-9. Ceccilian quartot; 9-10. Examiner. program presonted by Janc of the Examiner; 10-11. Packard ballad hour. KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-11:30 a. n., sunshine hour; 3:30-4:30, organ recital, Esther Fricke Green and assisting artists; 6:30-7:30, chlidren's hour with "Cousin Jim" and associates.

KHJ, Los Angeles, Calif. (Pacific, 395), 12:30-1:30 p. m., news and music; 6-6:30, Art Hickman's Riltmore hotel concert orchostra, Edw. Flizpatrick, director; 6:30-7:30, 1'rof. Walter Sylvester Hertzog, stories, American history; woekly visit of Queen Titania and the Sandman of Fairyland, Uncle John; 8-10, program, Associated General Contractors' association; 10-11. Earl Burtnett's Riltmore hotel dance orchostra.

KJS, Los Angeles, Calif. (Pacific, 360), 8-9:30 p. m., musical program of classical nature, vocal and instrumental with organ numbers.

KNX, Holloywood, Calif. (Pacific, 337), 8 a. n., morning prayer; 9, educational program for schools by State Board of Education; 10:30, Mrs. Kate Brew Vaughn, home economics; 5 p. m., closing markets; 5:30-6, Town Crier and Village Urchins; 6-7:30, dinner hour music; 8-10, feature program; 10-12, "movle" night at the Ambassador hotel with the Town Crier introducing flimland celebrities.

WBAP, Fort Worth, Tex. (Central, 476), 7:30-8:30 p. m., concert, Old Time Flddlers; 9:30-10:45, program. Rotary club.

WMAQ, Chicago, Ill. (Central, 447.5), 12 m., weekly program, auspices Illinols Manufacturers' association; 4 p. m., American Red Cross home nursing talk. Estelle Weltman; 4:30, musical program; 5, lullaby lady, Mrs. Gone Davenport; 6, Chicago theater organ; 6:30, Hotel LaSalie orchestra; 7-9, Twolfth Night party for the children.

#### Wednesday, January 7

Wednesday, January 7

KFI, Los Angeles, Calif. (Pacific, 469), 5-5:30 p. m., Evening Herald, table talk and news; 5:30-6, Examlner's musical haif hour; 6:45-7:30. Nick Harris, detective stories; 7:30-8, Carison trio; 8-9, Evening Herald, Ken Smith's Kentucky Colonels, Sophle Cooper, mezzo-soprano; 9-10, Examiner, "Mampus" night presenting movieland; 10-11, vocal recital.

KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-11:30 a. m., sunshine hour; 2:30-4:30 p. m., auditorium serv-vice, sermon and testimonials on Divine Healing; 6:30-7:30, children's hour with little Mary Elizabeth and Helen Edwina Hughes.

KHJ, Los Angeles, Calif. (Pacific, 395), 12:30-1:30 p. m., Abe Perluss and his Rose Room orchestra; 6-6:30, Art Hickman's Blitmore hotel concert orchostra, Edw. Fitzpatrick, director; 6:30-7:30, stories, American history, Prof. Walter Sylvester Hertzog; Dick Winslow, juvenile reporter; Uncle John; 7:30-8, program, University of Southern California; 8-10, program, So. Calif. Music company; Suily Balano, violinist; Gladys Blackwell Plekering, soprano; Bill Graves, xylophonist; Mort Stuart, baritone; 10-11, Earl Burtnett's Blitmore hotel dance orchestra.

KNX, Hollywood, Calif. (Pacific, 337), 8 a. m., morning prayer; 9, Town Crier, news; 10:30, Mrs. Kate Brew Vaughn, talk for women; 5 p. m., elosing markets; 5:30-6, Town Crier and Village Urchins: 6-7:30, dinner hour music; 8-10, feature program; 10-12, Hollywoodland dance orchestra.

WBAP, Fort Worth, Tex. (Central, 476), 7:30-8:30 p. m., Aivarado string orchestra, Ila Griggs, director; 9:30-10:45, dance program, Jim Riley's Texas hotel orchestra.

orchestra.

WMAQ, Chicago, III. (Central, 447.5), 1 p. m., speechee, weekly iunchcon of the Association of Commerce: 4.

storiee from Child Life; 4:30, program. McLoan school; 6, Chicago thoater organ recital; 6:30, stories for children, Georgene Fauikner; 8, weekly lecture, Northwestern university; 8:30, music; 9, musicaic.

#### Thursday, January 8

KFI. Los Angeles, Calif. (Pacific, 469), 5-5:30 p. m., Evening Herald, table talk and news: 5:30-6, Examiner's musical half hour: 6:45-7:20, Bon Ton Ballroom orchestra; 7:20, Y. M. C. A. speaker: 7:30-8, one act play; 8-9, instrumental quartet; 9-10, Examiner, varied program; 10-11, program by John Smallman.

aminer, varieu program, 12.
Smallman.
KFSG. Los Angeles, Calif. (Pacific, 278), 10:30-11:30
a. m., sunshino hour; 3:30-4:30, organ recital, Roy Reld Brignall; 7:30-9:15, water baptismal and sermon by Almeo Sempio McPherson, pastor, Esthor Fricke Green, organist; 9:15-10, studio program, Silver Band and Temple choir; 10-11, organ recital, Esther Fricke Green.

Kricko Greon.

KHJ, Los Angelos, Calif. (Paoific, 395), 12:30-1:30 p.
m., news and music; 6-6:30. Art Hickman's Biltmoro
hotel concert orchestra, Edw. Flizpatrick, director;
6:30-7:30, children's hour, stories, American history,
Prof. Walter Sylvester Hertzog; Dickle Brandon,
sercen juvenile; Uncle John; 7:45, "Carc of Body."
Dr. Lovell; 8-10, Atwater-Kent program arranged by
Unclo Remus; 10-11, Earl Burtnott's Biltmoro hotel
dance orchestra.

dance orchestra.

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

KIS, Los Angeles, Calif. (Pacific, 360), 8-9:30 p. m., vocal and instrumental concert.

KNX, Hollywood, Calif. (Pacific, 337), 8 a. m., morning prayor; 9, Town Crier, nows; 10:30, Mrs. Kate Brew Vaughn, home economics; 11. Dr. Richard M. Scott, talk on pets; 5 p. m., closing markets; 5:30-6, Town Crier and Vitlago Urchins; 6-7:30, dinner hour music; 8-10, feature pmgram; 10-11, Abe Lyman's Cocoanut Grove dance orchestra; 11-12, June Purcell.

WBAP, Fort Worth, Tex. (Central, 476), 7:30-8:30 p. m., program, Texas Christian univereity, Prof. H. D. Guelick, director; 9:30-10:45, musical program, artists, Howard Payne college.

WMAQ, Chicago, Ill. (Central, 447.5), 4 p. m., housohold hour, Mrs. Elizabeth O. Hiller; 4:30, Illinois Federation of Women's clube; 6, Chicago theater organ; 6:30, Hotel LaSalle orchestra; 8, musicale; 8:15, Boy Scout talk; 8:30, musicale; 9, lecture, University of Chicago; 9:15, musical program.

#### Friday, January 9

Friday, January 9

KFI. Los Angeles, Calif. (Pacific, 469), 5-5:30 p. m., Evening Herald, table talk and newe; 5:30-6, Examiner's musical half hour; 6:45-8, Aeolian residence pipe organ recital, Dan McFarland, organist; 8-9, Evening Herald, Owen Fallon's Californians, Mile. Alexandria, vocalist; 9-10, Examiner, dance music; 10-11, Foothili Four quartet.

KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-11:30 a. m., sunshine hour; 3:30-4:30 p. m., organ recital, Roy Reid Brignall and assisting artists; 7:30-9:15, "Crusaders Raily," scrmon and testimony of young people; 9:15-10, band concert by Silver band, technical Radio talk; 10-11, organ recital, Roy Reid Brignal KHJ, Los Angeles, Calif. (Pacific, 395), 12:30-1:15 p. m., program of news and music; 6-6:30, Art Hickman's Blitmore hotel concert orchestra. Edw. Fitzpatrick, director; 6:30-7:30, stories, American his-

tory, Prof. Walter Sylvester Hortzog; "Sir" Richard Headrick, screen stariet; Uncle John; 8-10, University of California, Southern Branch, Women's Giee club; 10-11, Earl Burtnett's Biltmore hotel dance orchestra. KNX, Hollywood, Calif. (Pacific, 337), 8 a. m., morning prayer; 9, Town Crier, news; 9:30, Estelle Lawton Lindsey, porsonal problems; 2 p. m., literary talk, R. D. McLean; 5, closing markets; 5:30-6. Town Crier and Village Urchins; 6-7:30, dinner hour music; 8-10, program, Eastern Outfitting company and Columbia Outfitting company; 10-11, amateur hour; 11-12. Abo Lyman's Cocoanut Grovo danco orchestra from Auhassador hotel.

WBAP, Fort Worth, Tex. (Central, 476), 7:30-8:30 p. m., music, K. P. Mandoiin orchestra, Juila Struve, director; 9:30-10:45, program, Municipal band, Charles Ifunstall, director.

l'unstall, director.

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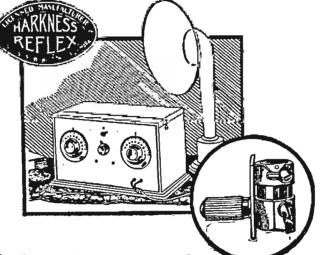
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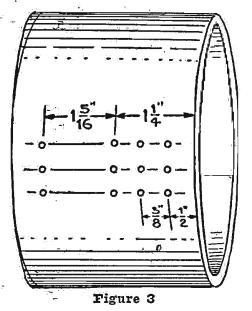


# Construction of the Six Tube Het-Duo-Gen

## Part II—How to Wind the Inductances

By C. E. Brush

always best to have all of the parts of the primary winding. to be used actually on hand when the assembly is begun. In this way the parts with the holes drilled for the primary may be tentatively arranged in their positions and the builder will have a clear the same end as before, three more holes idea of just how it will look when finished, should be drilled in a line for the beginand know just how to proceed in the ning of the secondary winding. Mark actual construction.



This holds true with Het-duo-gen, and as three of the units used in this set must be made by the builder, we will first go into the construction of these parts.

The units to be made are L-1, L-2 the tuning coil, or fixed coupler; L-3, L-4, L-5, the oscillator coil; and L-6, L-7 the filter coil, on which is the condenser regeneration control. The rest of the apparatus to be used are stock items, which can be purchased at any Radio store.

#### . The Antenna Coupler

The materials necessary for the tuning coil are one bakelite or hard rubber tube 3 inches inside diameter by 3 inches long, and 4 pound of number 22 dsc. wire. This coil comprises an untuned primary winding of 12 turns of wire, which is to be connected in series with the aerial and ground, and a secondary winding of 43 turns of wire, with a tap taken from the middle (or 22nd) turn; this to be tuned by a .0005 mfd. condenser.

With a small drill, slightly larger than the number 22 wire, the following holes should be drilled in the tube to provide beginning and ending anchorages for the two windings (see figure 3).

At a point ½ inch from one end of the tube drill three small holes in a row, parallel with the edge of the tube, and spaced 14 inch apart. These holes will be taken up later, a the prianchoring for the beginning of the primary winding. Mark off a space % inch from the holes just made and drill three

N CONSTRUCTING a Radio set, it is These will be the anchoring for the ending | 2 % inches in diameter by 1 ½ inches long, | quarter of the circumference of the tube

Now turn the tube, and still on a line winding, and at a point 11/4 inches from off a space 1 inch from the holes just made, and drill three holes at this point

for the ending of the secondary winding. The windings are to be wound clockwise, that is when holding the tubc with one end toward you, the windings traverse the tube in the same direction that the hands of a clock revolve, and build along the tube away from you. Between the first two sets of holes drilled, wind 12 turns of the number 22 dsc. wire. Anchor the beginning of the winding by passing the end of the wire down through the first hole, up through the second, and down again through the third, allowing about a foot of the wire for connection to other parts of the circuit. The end of the winding is to be anchored in the same fashion, also allowing about a foot of wire for further connections. Tuck the ends of the winding inside the tube and begin the secondary winding.

The Secondary

The secondary winding is wound in the same direction and manner as the primary, and consists of 43 turns of the number 22 dsc. wire. If the winding is done care-

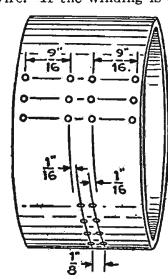


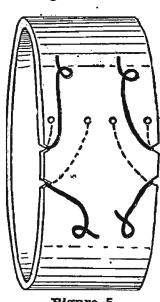
Figure 4

fully and smoothly you will find that the distances between the two sets of holes will just accomodate the number of turns specified, and the space between the two windings will be % inch. The manner of fastening this coil in the set will be taken up later, and we will now begin

#### Oscillator Windings

Materials necessary for the oscillator others on a line with those already made. | coil are one bakelite or hard rubber tube

two discs of fiber or other material 2% inches in diameter, one strip of ½ inch by 16 inch flat brass 3 inches long (for the standard), one 8-32 brass machine screw 2 inches long (or 2 inches of 8-32 threaded rod), two 8-32 brass hexagon nuts. The material other than the dielectric tube is for the mounting of the coil in the set.



Pigure 5

For the present we are concerned with the winding of the coils.

As before, we drill holes for anchoring the ends of the winding (see figure 4). This coil consists of three windings, two of which comprise the oscillator inductances and the third is the pick-up coil which couples the oscillator to the first

At a point as near the edge of the tube as possible, say about  $\frac{1}{16}$  inch, drill a row of three small holes, as before, spaced 14 inch apart. Turn the tube, and directly opposite these, and on the other edge of the tube, drill another row of these holes. Now mark off a point exactly inch from each of the two rows already made, and drill a row of three holes at each of these points. You will now have four rows of holes, all directly opposite and in line with each other, with a space of 1/4 inch between the two inside rows. We will now wind the wire in the two spaces we have just provided for. The winding here, as on the other, must be in clockwise manner. Each space is to be wound with 28 turns of number 26 dsc. wire, the ends to be anchored in the same manner and leaving about a foot of wire for connections.

#### The Pick-Up Coil

In the space between the two windings should be placed in the forward (the just made, and at a point about one-

from the other rows of holes, we now drill two more rows, this time of four boles each, as nearly in the center of the two windings as possible, and just far enough apart to accommodate two turns of the number 22 dsc. wire used on the tuning coil. These two turns of wire are to be wound in the same direction as the others, and with ends left long enough for connections. You will find that using the four holes for anchoring these ends, the ends of the wire will be on the outsido of the tube, whereas the other four ends are on the inside of the tube. This is as

We are now ready to assemble the oscillator coil for mounting. The 3-inch piece of flat brass should be bent to a right angle about 1/2 inch from one end, forming a foot and standard. A holc large enough to accommodate the S-32 screw, or bolt, should be drilled at the center of the foot, and also at a point about 1/2 inch from the end of the long arm. At the center of each of the 23/4inch discs, the same sized hole should be

The parts are ready now to be bolted together, but before clamping the end pieces (discs) to the end of the tube, we must arrange to bring the ends of the wires to the outside. This is to be

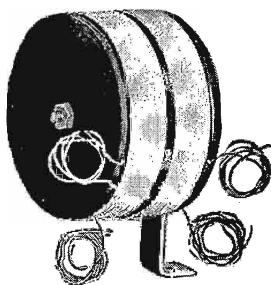


Figure 6-The Oscillator Unit.

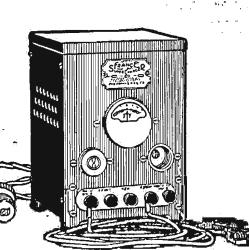
done by filing a small notch for each of the four ends, two on either end of the tube, and about 1/2 inch to 3/4 inch apart. Now arrange the ends of the wires in the filled notches as follows (see figure 5). Holding the tube in one hand, the inside end of wire on the left hand winding

(Continued on page 20)

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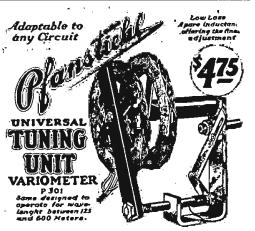
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Vol. XI. Chicago, Saturday, January 3, 1925. No. 13

#### Demand Hoover Live Long

#### Or Else Pass Suitable Radio Legislation

CAN Herbert Hoover live to be 100 years old? Perhaps, but more than likely he wouldn't remain in office as secretary of commerce during all that time. We, and many other well wishers, hope he lives to be 100 and acts as secretary of commerce till he dies.

All because— He has written Representative White a lengthy letter asking that no remedial Radio legislation be passed for the time being.

We cannot always be sure we have a Hoover in the chair of secretary of commerce. We cannot predict who may be our next secretary and head of Radio administration. We may need a law with less leeway if we are so unfortunate as to have Hoover succeeded

by men less altruistic in their motives. Preston Nolan, philosopher, has said, "In business.

put it in writing; in love, never."

How applicable! Why not put our Radio laws in writing instead of in generalities. If revisions are needed—there are future Congresses to convene.

Our request that Secretary Hoover live to be 100 is not original. It is taken from a paper written on this subject by E. F. McDonald, Jr., president of the National Association of Broadcasters. He speaks vested with authority. Let us excerpt from his paper:

"As president of the National Association of Broadcasters, I want to make it known that I stand four square on the proposition that the proposed legislation would be perfectly safe so far as Mr. Hoover is concerned. But we do not know who Mr. Hoover's successors will be. Mr. Hoover would exercise any power given him with discretion, but someone else might abuse such power. And under the proposed legislation it is obviously possible to divert such a power into channels grossly adverse to the common good.

"One of these days we shall be confronted with the need of special communication laws, and if that need exists now let me urge for the good of the community, that if it is to stay in the hands of the department of commerce that provision be made for appealing from any decision of the secretary of commerce. There should be a power of review, an appellate court, so to speak.

"Communications today, including telephone, telegraph, cable and Radio, have reached such tremendous proportions and are such a vital factor in our daily civilized life that they micrit a separate commission to function only in control of these mediums. A communications commission, if you please. The interstate commerce commission, as is common knowledge, is woefully overloaded with work. In fact, it has been in that condition for a long time. It is safe to state that the commission is years behind with some of the problems with which it is beset. And yet, it is called upon from time to time to add to the present burden. It is even confronted with highly technical matters, such as telephone and tele-graph communications. Now with Radio, the world's greatest mechanical educator, as an additional element of enormous proportions in the field of communication, a vast subject in itself, the interstate commerce commission will unquestionably be called upon for advice and assistance.

"Modern progress is wholly dependent upon the speed of communication. Paralysis of the railroads would affect it no more than paralysis of our communication system. Certainly so large, and important, and vital a factor as communication, is in need of special attention that only a highly specialized group of men can give. The natural and logical solution, therefore, should be a communications commission to function on the order of the interstate commerce commission, to be self-controlling, and to be vested with powers similar to those granted the interstate commerce commission, and it should have under its jurisdiction the allied means of communication-

telegraph, telephone, cable and Radio.
"Then, and not until then, give us legislation

for this body of men to administer."

So ends Mr. McDonald. So would end our problem. Mr. Hoover, let's reconsider. Let's stop and think who our successor will be, before we make rash That's All There Is, There Isn't Any More recommendations to Congress. You cannot be very sure of being secretary of commerce forever, and good legislation such as has been advised herewith will see that your work is carried out to everyone's satisfaction—even though you were to die tomorrow.

#### RADIO INDI-GEST

#### The Song of the Radio Singer

Somewhere in my invisible audience Methinks that I can see An old time friend who has been kind In many ways to me. Tonight, on the waves of the ether It seems to me I hear Love singing throughout the ages And many souls are near.

Somewhere in the infinite ether The so-called dead are there; And in the dusk of the twilight-Hear my evening prayer. God's symphonies in the ether In harmony divine Seem to come from another world and Enter this soul of mine.

Somewhere in my world wide audience I sing to one I love; And God will guide all those in tune To His great laws above; Some time through the veil of the ether Will burst the dawn of light; Then we shall see Eternal day-And never more know night. RHEA SHELDON.

#### Probably Smelled the Smoke News Item

HAMBURG .- Some Radio fans of this city, boasting of powerful sets and giant antennas, claim to have heard programs of a Pittsburgh station during the last three night of the month of September. They also claim to have heard the piano player cough. SPIDER WEBB.

#### The Radio-Ations

When you say to yourself, at your Radio set, "I'll stick 'till I get that station." And you tune 'till your nerves are all upset,
That's determination.

When that boastful bird, with the super-het Says he got some other nation, And you admitted that local was all you could get, That's mortification.

But when you're tuning and the things you say Are not fit for publication, The announcer caimly says, "KHJ." That's gratification.

DICK N. LACY.

#### Practicing What They Preach

Dear Indi:-Recently while listening to a sermon from WOAW, someone began tuning in a nearby regenerative set, which caused a howl in my set, completely killing reception. Suddenly the howl stopped. The first words I heard were, "and now its all spoiled." RAY D. ATION. Can you beat that?

#### The Lost Announcement

(Apologies to Adelaide Proctor) Seated one day at the Radio, Forgetting my former triais, And my fingers feverishly wandered Over the polished dials. I know not what I was seeking ('Twas the slip of hand or thumb), But I heard a crash of static Like the beat of a big bass drum.

It flooded my aching ear drums Like the buzz of a whining saw, And it ruffled my fevered spirit, Already wounded and raw. It howled like a soul in torture Or feeding time at the zoo-Ran the scale of human discord

And — Satanic crew.

It linked all kinds of noises Into one perfect fit, And it rumbled away into silence As if it were loath to quit. I have sought, but I seek it vainly, That announcer's blatant yell Which came from out of the ether, But static busted to -

It may be death's bright angel ('Twould make life worth the game) Will clear away the static-Let me hear that station's name. It may be that death's bright angel Will repeat that word again-It may be that only in heaven I shall learn that station's name. B. K. VAN PETT.

#### Famous Calls Heard



Introducing GRR. Often heard where rough bow wows or pooches abound. Station reported hard on trousers, etc. Beware!

E. L.

Heave a deep sigh, For all of the boobs, Who cross up their batteries, And burn out five tubes.

But They're at It Now



## Condensed

Some time ago I ventured to question the necessity of waiting for WEBH to leave the mike in the Riviera theater to return to that in their studio. There are no pauses any more. Personally, I should have enjoyed staying at the theater the other night to hear more of the truly wonderful coloratura singing of Miss Helen Yach. Immediately her numbers ended, the studio was prepared to continue the pro-

Once again WIP, in Philadelphia, is to be handed a bouquet for featuring that fine lyric tenor, Frank Oglesby. I warned you listeners before to be on the watch for programs presenting Mr. Oglesby, so if you missed it don't blame me. Especially pleasing was his singing of the aria from the opera of "Elisir d'Amore," with orchestra accompaniment.

A very fitting memorial was the rendition by the orchestra of numbers from "La Boheme," one of the best known of the late Puccini's operas, sent out from WIP. The organ was also used during this concert.

Perhaps as good a concert as one could wish for was heard from that powerful Canadian station, CNRO, when the Salvation Army band of Ottawa was brought before their "mike." They play as a unit.

I have no doubt that the feature on WGN's program devoted to musical compositions of Spanish composers afforded pleasurable instruction to a great many listeners. The speaker ably characterized the work of each and presented a biographical background. Both those words of Albanez of Granados which were played showed the familiarity of the pianist with the interpretative intent of the composers.

There is more genuine music in chamber music than any other form. In spite of that statement being generally accepted as true, attendance at chamber music concerts is usually woefully small. Yet, see how popular stringed quartets have become with Radio audiences. A very good one was listened to through WDAR, the Philadelphia stringed quartet.

When a man leaves prison he needs all the aid possible to get, to help him back into society. Radio casting has proved a valuable asset in such cases, as witness the case of Mr. Snodgrass, known to thou-sands through Station WOS. We heard from their announcer of the many gifts sent to him and his family on the eve of his departure from confinement.

Just why there should be so much criticism of stations whose schedules include sopranos is beyond me. If variety is demanded, then why not pick some of the other overworked features for condemnation. At any rate, I am recording here high praise for the work of Dorothy Bloom, whose singing of "At the Well" from the studio of WEBH is a very pleasant memory.

We were cautioned to listen for Lombardo and his Royal Canadians, if a treat was desired. They are good. But a more lovely oriental selection than "A Japanese Sunset" is hard to find, and equally so, a better rendition than that of the Tall Cedars band. I believe if the call letters were omitted you would know reference was made to WTAM.

Speaking of tenors, the softly modulated tones of the coed announcer at the studio of the University of Ohio caught my attention and held it until a tenor's voice was heard. Both singing and songs were quite acceptable. So also is the voice of the announcers.

# Demonstrating Radio Principles at Home

# Chapter IV—Devising New Circuits

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 V-Presenting the Experi-

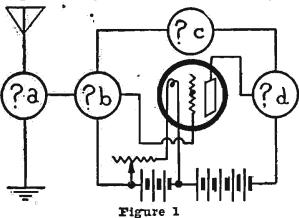
menter Senior.

Chapter VI-Presenting the Experimenter Junior.

Chapter VII-Presenting the Experimenter Supreme. Chapter VIII—Experimenting with

ADIO is a science, but its applica-tion is an art. The successful designer of Radio apparatus and receiving sets is truly an artist, his abilities for penetrating into the art of designing, depending on his scientific knowledge of

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the fundamentals of Radio and the interrelations of electric, magnetic, and dielectric circuits within a complicated arrangement of apparatus.

The science of Radio deals with the functions and characteristics of various types of apparatus. The art of Radio

designing deals with what combinations to sclect and what to expect of a receiver if certain portions of apparatus are used with certain connections. Theory is often not complete enough to permit the development of certain types of sets that have been and are now being developed. For example, in reflex circuits where more than one tube is being reflexed, there are no formulas by which the constants of capacity and inductance may be accurately determined. To make certain inverse reflexes function properly, it is often necessary to construct an experimental set; the units for capacity, resistance, and the like, being variable, these later being adjusted so that maximum results are obtained.

#### Circuit Arrangements

The vacuum tube as a receiver or transmitter has, for most purposes, the possibilities of circuit arrangements shown in figure 1. There are the aerial, the grid, and the plate circuits, these being so arranged that a piece of apparatus may be used in one that will, either through electric, magnetic or dielectric circuits, influence either or both of the others. Influences due to dielectric circuits are often detrimental, and, in fact, low loss coils and condensers have recently been placed at the public's disposal, these units having been so designed that losses due to uncontrolled actions of the electrostatic lines of force may be minimized.

In the aerial, grid and plate circuits shown in figure 1, different pieces of apparatus may be used, the different pieces giving different results. In figure 2 is listed a number of the most important types of apparatus which may be used in the different circuits. To illustrate how a circuit may be developed from figure 1, if a coupling device such as figure 2e (a vario, loose, or fixed coupler) is placed at ?a and ?b, and a variometer, figure 2b, and a pair of headphones, figure 2l, are placed at ?d, ?c being omitted (or it may represent the electrostatic field within the tube that causes the feedback

PLATE, GRID, OR AERIAL CIRCUITS TUBE COUPLING PLATE CIRCUIT DEVICES ONLY.

Figure 2

ceiver of figure 3. Of course, in any de- the voltage on the grid. To get a single tector tube circuit, with the present type circuit receiver, ?a and ?b may be reof tubes, a grid leak and grid condenser must be used for purposes of regulating

(Continued on page 18)

INTERMEDIATE



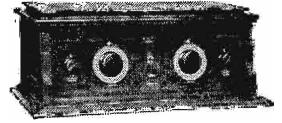
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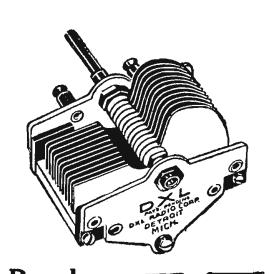
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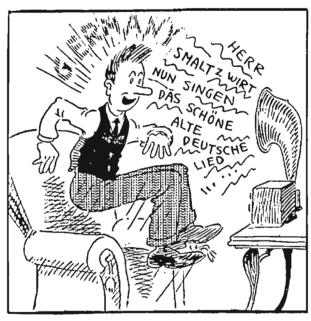


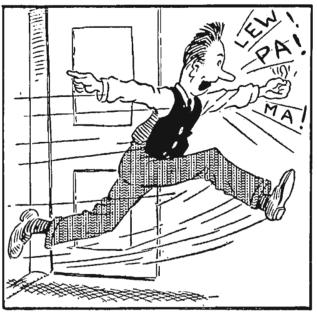
set manufacturers.

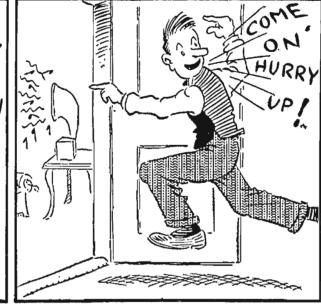
THE ANTENNA BROTHERS

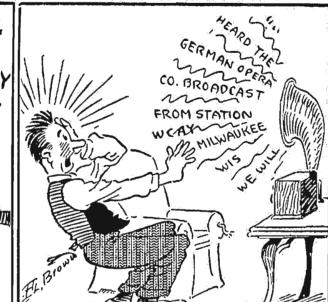
Spir L. and Lew P.

So Far and Yet So Near









(Continued from page 17)

placed with either a, b, or d, ?c representing the electrostatic or magnetic feedback circuits between the grid and the plate portions of the receiver. If any of the inter-tube coupling devices of figure 2 are used in the plate and grid circuits, an amplifier may be obtained, the form of amplification depending on the type of coupling used.

#### Values of Inductances

The experimenter who builds sets of his own design should have some idea of what values of inductance and capacity must be used in the various circuits. Fortunately, most of this is already solved by the manufacturers of Radio apparatus. The distributing agent will usually know approximately the wave lengths, for example, that may be covered with his particular piece of apparatus. For the experimenter who builds his own units, the problem is not so simple. He has one advantage, however, over those who buy their coils, condensers, and the like, already adjusted for certain values. He can use a variable unit, determine exactly the value he wants, and adjust his permanent units to this particular value. For example, in winding a coil, he can put on taps and taps. Second, the relations of inductance experiment to see just what position of the and capacity should be such that a mini-

upon for maximum amplification and

faithful tone reproduction. Set builders

who know radio do not experiment—

they specify ALL-AMERICANS, with full assurance that they will consistently

Precision-Made

ALL-AMERICAN reliability is a natural result or highly developed precision manufacture. Each part is

scientifically designed and accurately built to exact standards Special machinery and testing equipment

assist in achieving perfection. 3 to 1 Ratio, \$4.50. 5 to 1 Ratio \$4.75. 10 to 1 Ratio, \$4.75.

The Radio Key Book is the most valuable hook of radio facts

ever published Sent for 10 cents, coin or stamps.

RAULAND MANUFACTURING COMPANY

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perform with highest efficiency.

except that it will be necessary, of course,

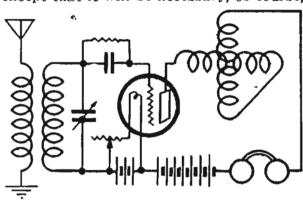


Figure 3

to stop the winding at the position found to give the best results when the first coil was used.

In selecting a relation of coils and condensers for use in a particular portion of from distortion, and selectivity. a set, there are two ideals towards which one should work. First, the coil should be so arranged that the entire wave length band may be covered without taking off

He then has two possible methods of scale of the condenser dial should be used He can either cut off the in all cases. It is often necessary to reexcess winding on this coil, or he can move plates from a condenser in order to wind another the same shape and size reduce its capacity to the value that will allow the use of the full 180 degrees. Reducing this capacity, however, has a twofold effect. First, it aids tuning by separating the stations farther on the dial, and second, it increases the efficiency of the condenser.

Standards of Reception

After a set is designed, it is often possible to judge its possibilities merely from the circuit diagram. This is a study that will pay the potential Radio builder to investigate. Its mastery, however, comes only after long experience. To the beginner, especially, there appears to be a great maze and mass of Radio circuits, the relative values of which it is impossible to determine. There are certain standards of reception, however, that will cnable one to judge these circuits at first sight. Some of the requisites for good reception are: Clearness, distance, DX volume, stability, ease of control, freedom

In examining any kind of set, examine the form of amplification used and the types of apparatus used in order to get this amplification. The problem of Radio is amplification, it being desirable to get maximum amplification with a minimum

DEMONSTRATING RADIO | coil connection will give the best results. | mum condenser capacity is used. The full | distortion and a minimum introduction of undesirable noises. Different forms of amplification give different efficiencies and different output qualities. The amplification per tube is not at all constant with different sets, the most efficient being, probably, a one tube regenerative—or possibly, a one tube super-regenerative.

Regenerative Circuit If a regenerative circuit is used, the type regenerative and the type control over the incoming signal is important since the selectivity of the sct often depends on these factors. A high degree of selectivity, when obtained, is usually obtained at a sacrifice of volume, and conversely, the balance of these factors depending on the amount of interference under the existing conditions of reception. In determining the efficiency of a regenerative set, it should, if possible, be tested under widely different conditions of rcception. Some of the most important tests to put to the receiver involve the following:

Is the control over regeneration satisfac-(Continued on page 20)



Since the inception of radio, the results obtained with Armstrong Regenerative Receivers have been the goal of comparison for all others. Trick circuits have been designed to get around the Armstrong Patent, hoping to obtain results "just as good." This has resulted in the use of more tubes, necessary without, but unnecessary with regeneration.

The Crosley Trirdyn, because it employs Armstrong Regeneration and tuned radio frequency amplification, needs only three tubes. The results obtained in selectivity, volume, ease of tuning and logging cannot be excelled.

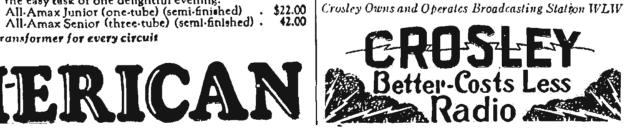
### Before You Buy—Compare Your Choice Will Be a Crosley For Sale by Good Dealers Everywhere

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Powel Crosley, Jr., President 1491 Sassafras St. Cincinnati, Ohio Crosley Owns and Operates Broadcasting Station WLW



# Three Circuit Tuner Fully Adjustable Coils THIS COIL IS ADJUSTABLE TO SUIT YOUR TUBE, PLATE VOLTAGE, AND WIRING, PRECISELY. THIS PREVENTS SQUEALING & RERADIATION

THE HEART OF THE SET

JUSTABLE TO SUIT YOUR

ANTENNA AND GROUND.

NOT A COMPROMISE.

REDUCES

STATIC TO A

MINIMUM BE CAUSE OF ITS

TIVITY

#### **Bill Robinson** says: "I'll guarantee better results on

any receiver with my Supercoil"

"I designed and am building the Supercoil. I know what it will do, and am willing to guarantee that it will satisfy you in every respect. You, or your set builder, can build a low-loss Supercoil receiver for very little more than the ordinary kind costs. Supercoil brings in those stubborn stations that fans say are hard to get. Briefly-here are the reasons.

It is the only fully adjustable coil on the market. You can "set" it to meet the precise needs of your antenna, ground, tube, plate voltage and wiring.

It is self-supporting—has no dope or varnish—no metal parts, to reduce signal strength.

It has less than 1/2 oz. pure hard rub-ber and bakelite-a minimum of energy absorption.

A Number 18 wire used-large, but not too large-to insure low resistance."

#### SEND NO MONEY

Just send us your name and address, and that of your dealer's, and we will send you FREE our ensy to read hook-ups, and our newly printed bulletin—"The Why of Low-Loss Design." If you want a Supercoil, if you dealer cannot supply you, pay the postman \$7 00, plus the parcel postage, when ho delivers your Supercoil. Please write plainly

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REFLEX RECEIVERS

Complete receiving sets with tange, volume and selec-

tivity unequaled in receivers of this type. All instruments are mounted on panel and baseboard ready to be

wired. Clear photographs and blueprints make wiring the easy task of one delightful evening.

# Tubeless Crystal Set Operates Loud Speaker

French Use Mechanical Amplifier

By Frederick M. Delano

THE superior clearness of the reception on a crystal detector has never been questioned-no tube detector has yet been able to approach it, but, unless one adds tubes and their necessary current supplies, a loud speaker could not be used. A loud speaker crystal set, known as the Crystavox, has just been perfected and placed on the Parisian market that will allow broadcast listeners to receive clear sharp programs without the need of storage batteries and tubes.

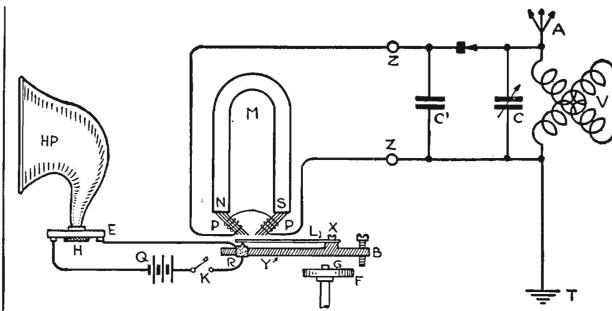
Crystavox is unique and is making a well-deserved hit with French listeners as now they can listen in on the concerts of the great French stations on a loud speaker. The range is very good and with a small indoor antenna with a good, tested crystal many enjoy the concerts 20 miles out: frequently, connections with the water and gas pipes have given splendid results. Listeners located 12 and 15 miles away using but a 4-foot vertical wire antenna pick up time and weather reports regu-

The Circuit Used

the mechano-electrical amplifier are shown good dry cells can be used for a period The rotation of F causes a displacement in the illustrations. While the inductance of several months without need of re- of G and determines infinitesimal variaand condensers used are such as to cover 200 to 2,700 meters, any good American current when the user is through as the crystal set will function with equal satisfaction. The antenna is A, ground is T and the variometer is V, while the variable uselessly. There is a loud speaker unit air-spaced condenser is C. This variometer is of the syntonic variety and, with a variable condenser of .001 mfd. capacity, shunted by the fixed capacity of .002 mfd.. it covers the range mentioned. This much of the apparatus is in one cabinet with the output at posts ZZ.

Instead of the usual head receivers or loud speaker being connected at this point, a special magnetic receiver is used, composed of a powerful magnet M terminating in PP, with windings similar to those in headphones. These windings are connected to the receiving set at ZZ and cause a semi-rigid metal strip L to vibrate. While L is firmly secured at one end to the base Y by the screw X, the free end vibrates rapidly and sets up variable electric currents in a small micro-

This section of the apparatus is called the primary amplifier system, or the primary relay. The varying frequencies set up in the microphone R correspond with surprising faithfulness to the blade L, and with far greater intensity than is found in the circuit ZPZP, due to the



placement. The switch K turns off the unit and microphone form a closed circuit which otherwise would waste current of the usual type in HP which is adjusted by the special knurled screw H. This receiver is composed of a vibrating cone of the Brown type. Many of the better grade American speakers would work excellently in this set.

#### Few Adjustments Needed

The adjustments of this apparatus are first that of the blade L by means of the screw B which raises or lowers the assembly on Y, and second, that of the speaker unit by the screw H. The sensitivity of the receiver is ascertained by means of the usual test buzzer before the speaker is thrown in.

The real secret of the success of this apparatus is, however, found in the parts marked G and F. The part G is an iron

local source of power Q, four dry cells. | disk secured, at an eccentric axis, to shaft Current consumption by the microphone | F, and fine adjustments are made by the The circuit and the essential details of and unit E is very slight and a set of rotation of an external dial secured to F. tions in the polar field, allowing extremely sharp adjustments for clarity to be made. Suggestions for Fans

American Radiophans wishing to try this device may find the following sug- those presented .- Editor's Note.)

gestions of some value. For the magnet use one of the large U-shaped magnets found in magnetos and small generators or construct one from laminations of silicon steel with small extensions to take the coils PP. If the solid magnet is used, the laminated extension pieces can be fastened to it with a machine screw.

It makes no difference whether M and PP are adjusted to be at varying distances from Y and L, or whether Y and L are varied and M made fixed. The latter arrangement may prove slightly better as then there is no change in distance between G and M. It is the effect of the polar field existing between the extensions of M that the metal piece G deflects.

Piece L should be of very fine spring steel, since it must vibrate at audio frequencies ranging from 16 to 5,000 per second. Microphone buttons may be difficult to obtain in certain localities, but the writer understands they can be had in many larger cities and from mail order houses. It is essential that the loud speaker be adjustable by a screw such

(This article is not intended as a howto-make and is presented only as a basis on which American experimenters can work. No details are available other than



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The HILCO MULTIFORMER is an inductance of multiple uses, involving a new idea and principle in radio frequency transformer design. When used as a replacement coil in Neutrodyne, Reflex and all other tuned radio frequency receivers, no potentiometer or neutralizing condensers are required

and stations can be logged with unfailing accuracy. It also makes an unequaled wave trap and replaces variocouplers and similar instruments for tuning the antenna circuit. Ask your dealer or write Dept. 10 for descriptive, literature.

TYPE "O", Price \$2.50

For use with a .00025 mfd. capacity variable condenser. This type is designed to cover all wave lengths from 260 to TYPE "M", Price \$2.25

For use with a .0005 mfd. capacity variable condenser. This type is designed to cover all wave lengths from 240 to 550 meters.

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Users of Effarsee Portable Antennae say they get stations from coast to coast. Used on all kinds of sets from Crystals to Superhetrodynes. You hang it anywhere in the house, or put it under a rug. There is no more trouble about installing an aerial.

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found the big capacity 5 ampere GOLD SEAL HOMCHARGER ideal for keeping their Radio batteries fully charged and operating at top efficiency. Connects to any lamp socket and charges all Radio "A" and "B" and Auto Storage Batteries over night for a nickel.

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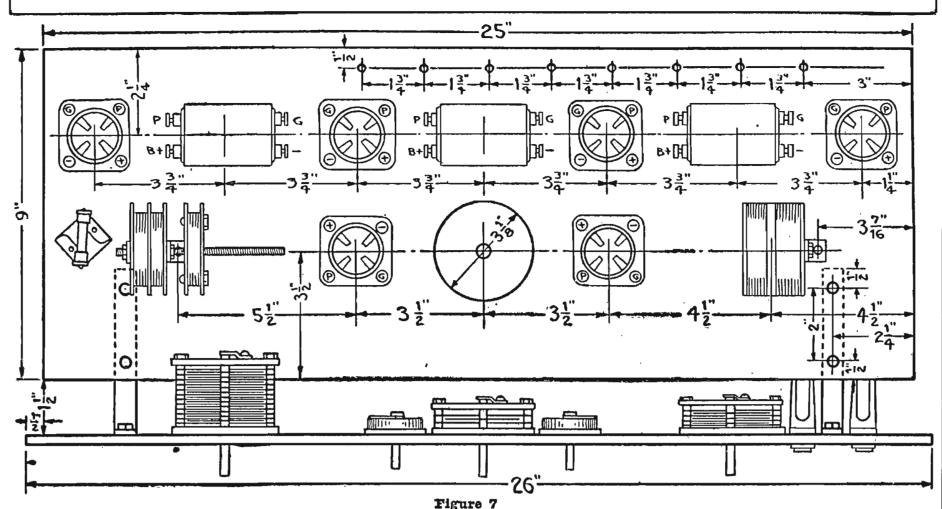
Absolutely safe—no danger of shock or fire. Approved by Insurance Underwriters everywhere. Beautifully finished in mahogany and gold. May be used right in the finest living room. Price, \$18.50 complete for all currents.

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Lorgest Manufacturers' vibrating rectifiers in the world. Write for booklet, "The Secret of Distance and Volume in Radio," containing information on this subject and fully describing the GOLD SEAL HOMCHARGER.

#### SUB PANEL DRILLING LAYOUT FOR HET-DUO-GEN



(Continued from page 15)

nearest to you) notch on the left hand end of the tube, while the outside end of wire of the same winding is placed in the notch directly behind the other, on the same end of the tube. Similarly, the inside end of the right hand winding goes in the nearest notch of the right hand of tube, while the outside end goes in the notch directly behind this, on the same end of the tube.

Now, holding these ends in their proper notches, place one of the discs at the

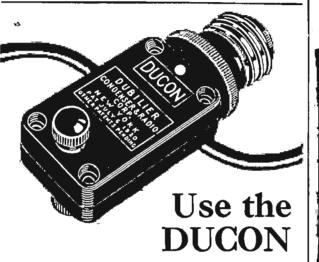
SIX TUBE HET-DUO-GEN through the disc and tube, and then place wire carrying high potential current loose the second disc at the right hand side of and touch a filament lead, thereby burnthe tube, keeping all four ends of wire in ling out the tubes and running down the their proper places. Then take the standard and slip it on the bolt at the right hand side, and turn on the nut to hold everything in place. You will now have a good looking piece of apparatus, ready to mount (see figure 6).

(The next article gives complete details on the filter coupler.—Editor's Note.)

#### Don't Make a Jolt Test

Never strike the cabinet to test for left hand end of the tube. This will hold poor connections. A sharp blow is liable the two ends of wire on that side of the to destroy the filament of one of the tube in place. Now put the 8-32 bolt tubes in the set, or it may even knock a

batteries.



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 vour set.

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All the qualities of a battery. Operates Loud Speaker on Local Stations. Four times the volume obtained from ordinary crystals. Only crystal that does double duty—Excites transformer as well as being a detector. A refinement never before reached in reflex work.

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#### DEMONSTRATING RADIO

(Continued from page 18)

tory? Does oscillation occur over the enliancy of the filament? Arc there few wave length controls? Is the amplification tire wave length range at the normal brilfairly constant over the whole scale of wave lengths? Is the set sclective?

Here is an excellent test for selectivity that may be applied to anything from a one tube set to a super-heterodyne. It is often noticed that when two stations are on approximately the same wave lengths, there is a hum in the receiving unit, this hum depending on the difference in the frequencies of these stations. For example, if one of these stations shifts its wave length so the difference in their frequencies is increased, the pitch of the hum will be increased, but also the volume of the hum will be decreased. Consequently, if two stations are found that are the proper distance apart in their frequencies, one receiver being troubled by the resulting hum and another not being troubled by this same hum, it being understood that approximately the same conditions of receptions exist when the two receivers are compared, the second receiver is more selective than the first.

(A modified ultra audion set using aerial, counterpoise and ground will be presented under the head of Presenting the Experimenter Sr. in the next chapter by Mr. J. E. Owen in his demonstrating series.—Editor's Note.)

An antique gray finish can be put on an open-grained Radio cabinet by rubbing the wood with linseed oil, cleaning it off and rubbing a "filler," made of white lead and lampblack.



Because many people have had good results with the STAR-ITE CRYSTAL used as a detector with non-regenerative tube sets, 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 seli 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 CRYS-TAL Set, and as a detector in many nongenerative tube sets, and are giad to support our belief by making it extremely easy to try for yourself.

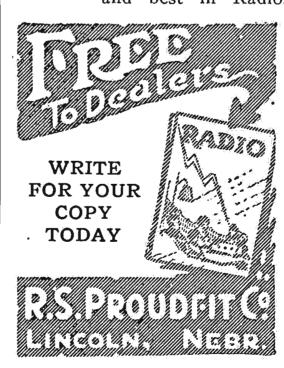
As this crystal is a new one put out by an old firm in the crystal business your dealer may not have it, but try to get him to order one for you, on our money back guarantee. If he does not wish to do so send us his name with a \$1.00 biti at our risk, and we will send you one with the understanding that you may return it, and we will refund you the \$1.00 at any time within 30 days.

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interesting items in our new catalog, just off the press. Featuring all that is new and best in Radio.



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# How to Build a Loud Speaker Horn

## Sound Board in Throat Secret of Tone Quality

With the use of the loud speaker illustrated I have had good results and the tone is exceptionally fine. It is rectangular in shape and tapering from end to

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

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

as shown by A and of the dimensions given. These sides are fastened together

The sounding board B is cut from card-board 5 inches square. The edges are cut out on the dotted lines as shown. The amount cut out can be determined by Usually about 1/2-inch will work with this horn .- Sylvan Cromer, Home-

Never begin repairs on a set or make a change in the hook-up until all tubes are removed and laid carefully away. A fairly heavy tap with a screwdriver or other tool will break the glass bulb of a



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Type 499-3-4 Volts. .06 Ampere Amplifier and Detector

Type 499A—3.4 Volts, .06 Ampere with Standard Base Amplifier and Detector.

Type 412—1½ Volts, .25 Ampere Platinum Filament Amplifier and Detector.

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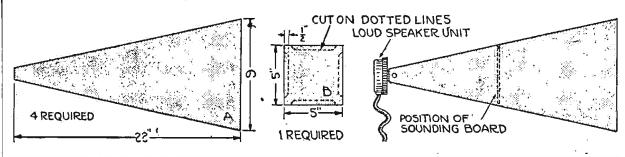
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### PARTS MADE OF WALL BOARD



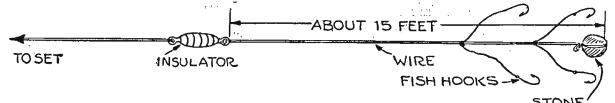
Putting up an Aerial

For a long time I got along with a small aerial, but I had a great desire for a better and longer one up in a tree across the road from my residence. The trouble lay in the fact that the tree was one of the original limbless kind until the tinfoil glued to the inside of it must one got about 30 feet from the ground and not touch any piece of apparatus. Cut not having a ladder long enough to reach the holes in it considerably larger than

where it has stayed for some months. The free end, of course, goes to the set .-M. Daugard, Syracuse, N. Y.

Shield Carefully

When shielding a panel, remember that



until I hit on the following idea.

I took my aerial wire, placed an inthat it would be far enough from the post only. tree not to touch it and then tied a stone and some fish-hooks to the end of the wire and threw it into the top of the tree,

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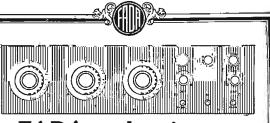
Bremer-Tully

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Accuratune

for all the latest circuits.

end. Four sides are cut from wall board the first limb it was certainly a sticker those where the shafts and screws pass through, so that there is no danger of having them touch. Make sure this tinfoil sulator about 15 feet from the end so shield is connected to the ground binding



#### FADA makes it easy to build a 5-tube Neutrodyne

With the new FADA set of knock-down parts and the new FADA book you can build a 5-tube Neutrodyne receiver that will beat anything you ever had. Outfit No. 169-A sells for \$72. It contains everything necessary. The new enlarged FADA book of 76 pages makes every detail of assembling clear. 30 pages of trouble shooting. Large picture wiring diagram. At your dealer's, 75c.

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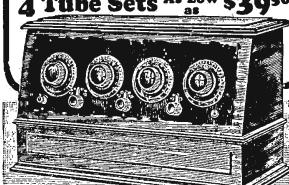
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Ozarka representatives make real money because they give real values and deliver a real service. For instance, there is a 4-tube Ozarka Instrument for loud speaker operation, giving wide range of reception at \$39.50. Our men demonstrate Ozarka Instruments and Install.

The Instrument makes the sale easy by its performance. We train you to know radio and our methods, make you worthy to wear the Ozarka button as our accredited representative. Previous experience is not necessary. In fact we prefer to do our own educating. If you have a clean record, are industrions, and have saved up a little cash, here's a real opportunity, if you can qualify for an exclusive territory. We already have 2247 representatives. Territory going fast.





## Placing Loud Speaker to Relieve Distortion

Distortion in a loud speaker, if not traceable to the wiring of the audio frequency unit or its transformers, may be reduced to a minimum by facing the loud speaker to the wall of the room at a distance of about 6 inches. This distance varies with the type of loud speaker to be used and can be determined only by experiment. Of course, adjusting the diaphragm of the loud speaker unit may help, but there are loud speakers in which the diaphragm cannot be adjusted. If the transformers are at fault, distortion may be eliminated almost entirely by shunting .001 or .002 mfd. fixed condensers across the primaries, the secondaries, or across both primaries and secondaries. A .005 fixed condenser in series with the G post of the transformer and the ground terminal may also help. One of these combinations is right for your particular unit, and this combination, of course, must also be determined by experiment. Reduction of the B battery voltage will help reduce distortion.

A vernier attachment or condenser is often necessary for sharp tuning.

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Economical and Powerful CUT your tube expenses in HALF. Here's "Roice," an efficient and durable tube that efficient and durable tube that gives longer service and greater satisfaction. Powerful; increases range and volume with maximum clearness. We sell direct only. You save by this plan; that enables us to sell "Roice" at this low price.

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Type 00—5 Volts, I Ampere Detector Tube

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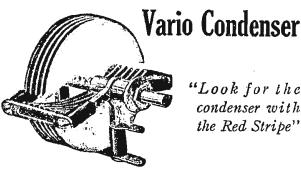
and Super-heterodyne sets. When Ordering Mention Types

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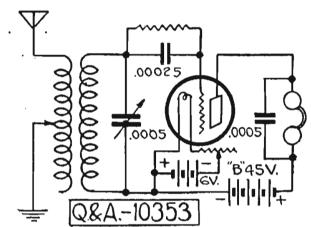
FAHNESTOCK ELEC. CO. LONG ISLAND CITY NEW YORK

# **Questions and Answers**

Best One Tube Hook-Up

(10353) IDW, Buffalo, N. Y.

In reference to a certain one tube reflex hook-up, I notice you mention a 201A tube. I am using dry cell tubes WD-12. Kindly let me know what results



if any could be expected from a WD-12 instead of the 201A, and what plate voltage to use with it? Can you get as distant stations with this as with a regenerative one tube set? Also, can you add two or more stages of amplification?

I would also like to know what you

Log Books, Maps, best out. Space for 300 stations, 25c each. Roy Stacy, Rock-

Men to build radio sets in spare time. Leon Lambert, 501-11 Kaufman Bldg., Wichita, Kansas.

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#### PATENTS

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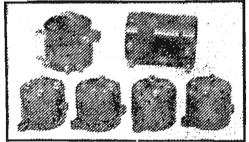
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Delivered postpaid ...... WM. ROSENBLOOM CO., 11 Deering Road, Mattapan, Mass. using ouc 23-plate condenser one variocoupler and WI)-12 tube? The coupler has taps every ten turns. Am using a .00025 grid condenser and variable grid leak. Have no room to add anything to these instruments except a few fixed condensers if they would improve it. What does winding coils clockwise mean?

A.—The circuit submitted was sent in by a correspondent and published upon his authority for its effectiveness in the usual spirit of our Kinks department. A closer analysis shows that it has limitations and we therefore offered a diagram

#### **PATENT ATTORNEYS**

PATENTS. Booklet free. Highest references. Best results. WATSON E. COLEMAN, Patent Lawyer, 644 G Street, Washington, D. C.

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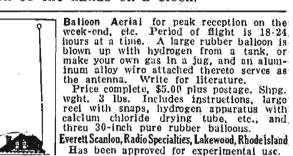
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# Radiophone Broadcasting Stations

# Corrected Every Week-Part II

#### FIND MISTAKES AND YOU'LL GET DOLLAR

NE DOLLAR will be paid to the Radiophan reader of Radio Digest submitting the most errors in any one station's listing in the Directory of Radiophone Stations, which appears in five parts, serially continuously on the next to last page. Letters must reach Radio Digest's office not later than one week from date of issue corrected. Readers are not limited to correcting one station, but such corrections must be verified by the stations themselves, and NOT by comparison to other so-called accurate Radio directories or lists. Turn in corrections for as many stations as you can find—if you can find errors! Use separate sheet of paper for each station submitted and place name and address on each sheet. In case of tie, duplicate awards will be made.

United States (Cont'd)

KFRZ, Hartington, Nebr. 222 meters. 15 watts. The Electric Shop.

Electric Shop.

KFSG, Los Angeles, Callf. 278 meters. 500 watts.

Angelus Temple. Tues, Thurs, Frl, Sat, 3:30-4:30 pm. Tues, 6:30-7:30 pm. Wed, 2:30-4:30 pm; 6:30-7:30. Thurs, Fri, Sat, 7:30-11 pm. Sun, 10:30-12:30 pm; 2:30-4:30, 7-9:30. Mon silent. Pacific.

KFSY, Helena, Mont. 248 meters. 10 watts. The Van Blaricom company. Announcer, George C. Stocking. Wed, 7:30 pm, music, talks. Sun, 10 am, 8 pm, church services. Mountain.

KFUL. Galveston, Tex. 258 meters. 10 watts. Thomas Goggan & Bros.

Goggan & Bros.

KFUM, Colorado Springs, Colo. 242 meters. 100 watts.

W. D. Corley.

KFUM, Colorado Springs, Colo. 242 meters. 100 watts. W. D. Corley.
KFUO, St. Louis, Mo. 545 meters. 500 watts. Concordia Theological Seminary.
KGB, Tacoma, Wash. 252 meters. 50 watts. Tacoma Dally Ledger. Announcer, Alvin Stenso. Slogan, "This is KGB in Tacoma, Washington, the Lumber Capital of America and the Gateway to Mount Tacoma." Mon, Wed, Fri, 7-9 pm. Pacific.
KGO, Oakland, Calif. 312 meters. 1,000 watts. Gen. Elec. Co. Announcer, Howard I. Milholland. Dally ex Sat. Sun, 1:30 pm; Sat, 12:30, markets, weather; Mon, Wed, Fri, 3 pm, music. Mon, 4-5:30 pm, concert orchestra. Daily ex Sun, Mon, 4-5:30 pm, concert orchestra. Daily ex Sun, Mon, 4-5:30 pm, concert orchestra. Daily ex Sun, 6:45 pm, reports, news. Mon, Tues, Thurs, Sat, 8 pm, lectures, music. Mon, Tues, Thurs, Sat, 10-1 am. dance music. Mon, 5:30-6 pm, children's balf hour. Fri, 5-5:30 pm. girls' half hour. Sun, 11-12 m, 7:45-9 pm, church services; 3:30-5 pm, concert. Pacific.
KGU, Honolulu, Hawaii. 360 meters. 100 watts. Marion A. Mulrony. The Honolulu Advertiser. Announcer, M. A. Mulrony. Daily, 7:30-9 pm. Tues, Thurs, Sat, special program. 150 meridian. 2½ hours later than Pacific.

than Pacific.
KGW, Portland, Ore. 492 meters. 500 watts. Port-KGW, Portland, Ore. 492 meters. 500 watts. Portland Morning Oregonian. Announcer, Dick Haller. Siogsn. "KGW, Keep Growing Wiser." Daily ex Sun, 11:30 am, weather; Tues, Wed, Thurs. Fri, 12:30 pm, concert. Daily ex Sat, Sun, 5 pm, children's stories; 7:15, police, markets, weather, news. Mon, Wed, 8 pm, concert. Tues, 8 pm, lecture; 8:30, concert. Fri, 8 pm, lecture; 10:30, Hoot Owls. Mon, Tues, Wed, Sat, 10-12, midnight dance. Sun, 3 pm, concert: 6, church service; 7, concert. Pacific.

KGY, Lacey, Wash. 246 meters. 10 watts. St. Martins College. Announcer, Sebastian Ruth. Slogan, "Out Where the Cedars Meet the Sea." Tues, Fri, Sun, 8:30-9:30 pm, news, concert, lecture. Pacific.

KHJ, Los Angeles, Callf. 395 meters. 500 watts. Los Angeles Times. Announcer, John S. Daggett. Slogan, "Kindness, Happiness, Joy." Daily ex Sun, Mon, 12:30-1:30 pm, 2:30-3:30, 6-7:30, 8-10. Sun, 10-12:30 pm, 6:30-7:30, 8-10. Mon, 12:30-1:30 pm. Pacific.

KHQ, Seattle, Wash. 360 meters. 100 watts. Louis Wasmer.

KIAF, Sihtipoc, Minn. 421 meters. 500 watts. Steele

Wasmer.

KIAF, Sintipoc, Minn. 421 meters. 500 watts. Steele
Co. Program irregular.

KJQ, Stockton, Calif. 273 meters. 5 watts. Gould.
The Light Man. Daily ex Sun, 5-6 pm, concert.
Wed, Sat, 9-11 pm, dance musio. Mon, 9-10 pm.
Sun, 10-11 am, church. Pacific.

KJR, Seattle, Wash. 283 meters. 100 watts. Northwest
Radio Service Co. Announcer, Vincent I. Kraft.
Slogan, "Radio Headquarters." Daily ex Sun, 5:306:30 pm, dinner hour program. Daily Sat and Sun,
8-10:30 pm, etudio programs; 10-11, orchestra. Sat,
9-10 pm, orchestra. Pacific.

KJS. Los Angeles, Calif. 252 meters. 750 watts.
Bible Inst. of Los Angeles. Announcer, M. E. Carrier.
Slogan, "King Jesus Saves." Tues, Thurs, 8-9 pm,
sacred music, lectures, etc. Sun, 10:45-12:30 pm,
6-6:45, 7:15-9:30, church services. Pacific.

KLS, Oakland, Calif. 360 meters. 250 watts. Warner
Bros. Radio Supplies. Announcer, S. Warner. Slogan,
"The City of Golden Opportunity." Daily 11:30-1
pm. Sun, 10-11 am. Pacific.

KLX, Oakland, Calif. 509 meters. 500 watts. Oakland
Tribuine. Announcer, Seth T. Bailey. Slogan, "Where
Rall and Water meet." Daily ex Sun, 7, news; 7:30,
weather. Mon, Wed, Fri, 8-10 pm, talks; entertainment. Pacific.

KLZ, Denver Colo. 283 meters. 250 watts. Rey-

Rall and Water meet." Daily ex Sun, 7, news; 7:30, weather. Mon, Wed, Fri, 8-10 pm, talks; entertainment. Pacific.

KLZ, Denver Colo. 283 meters. 250 watts. Reynolds Radio Co. Announcer. Mrs. William D. Reynolds. Slogan, "Its a Privilege to Live in Colorado." Daily ex Sun, 8:30 am, 10:15, 12:15. Daily ex Sun, Wed, 7:30-8 pm, news, markets. Thursday, 8:15-9:30 pm. Mon, Sun, 9-10:30 pm. Mountain.

KMJ. Fresno. Calif. 248 meters. 50 watts. San

KMJ. Fresno, Calif. 248 meters. 50 watts. San Joaquin Lt. Pr. Cofp. Announcer S. W. Green. Siogan, "Home of the Rsisin." Irregular sched-

ule.

KMO, Tacoma, Wash. 360 meters. 10 watts. Association Station. (Love Electric Co.) Mon, Wed, Fri, 6-7 pm, popular program; 9-10, artist's program. Pacific.

KNT, Kukak Bay, Alaska. 263 meters. 100 watts. Walter Hemrich.

KNX, Hollywood, Calif. 337 meters. 500 watts. Los Angeles Evening Express. Announcer, Wm. Van Why. Daily ex Sun, 10 am and every hour, Town Crier; 12 m, time; 6-7:30, dinner concert; 8-10, feature program; 10-11, dance music. Sun, 8-10 pm, feature program. Pacific.

KOA, Denver, Colo. 323 meters. 1500 watts. General

Elec. Co.

KOB, State Collego, N. M. 360 meters. 500 watts. N. M. College of Agri. & Mech. Arts. Announcer, Frank Morrison. Siegan, "The Sunshine State of America." Daily 11:15-12 m, 9:55-10 pm, time, reports. Mon. Wed, Fri. 7:30-8:30 pm, concert. Mountain.

KOP, Detroit, Mich. 277.8 meters. 500 watts. Detroit Poilce-Dept. Announcer, Elmer C. Reich. Siegan, "Safety First." Daily ex Sun, 1 pm, 6:30; reports, police information, emergency. Safety taiks. Eastern.

KPO, San Francisco, Caiif. 423 meters. 500 watts. Hale Bros., Inc. Announcer, Clair E. Morrison. Siegan, "The City by the Golden Gate." Daily ex. Sun, 12 m, reading. Daily ex Sat, Sun, 1-2 pm, 4:30-5:30 pm, music, Fri, 12:45-1:30 pm, talks. Sat, 1-2 pm, 3:30-5:30 pm, music. Mon, Tues, Wed,

Thurs, 5:30 pm, childron's heur; 7-7:30, dinner music; 8-11, concert, lectures. Sat, 8-12 midnight, music. Sun, 11-12:15 pm, church services, 8:30-10, music.

day-Hill Elec. Co. Dally ex Sun, 10:30-11:30 am, music; 3 pm. Mon, Wed, Fri, 8-10 pm. Eastern.

KQW, San Jose, Calif. 240 meters. 50 watts. Chas. D. Herrold. Daily ex Sun, 1-1:30 pm. Wed, 8-9 pm, concert. Pacific.

KRE, Berkeley, Calif. 275 meters, 50 watts. Daily Gazette. Announcer, J. E. Wiggins, Sat, 8-12 midnight dense music.

KRE, Berkeley, Calif. 275 meters, 50 watts. Daily Gazette. Announcer, J. E. Wiggins, Sat, 8-12 midnight, dance music.
KSAC, Manhattan, Kan. 341 meters. 500 watts. Kansas State Agricultural College. Announcer San Pickard.
KSD, St. Louls, Mo. 546 meters. 500 watts. St. Louls Post Dispatch. Daily ex Sun, 9:40 am, 10:40, 11:40, 12:40 pm, 1:40, 2:40, 3:40. Mon, 7 pm, 9, 11. Wed, 6:45 pm, 11. Fri, 8 pm. Sat, 8 pm; 11:30. Tues, 4 pm, 6:9. Thurs, 4 pm. Sun, silent night. Central.
KTHS, Hot Springs, Ark. 375 meters. 500 watts. The New Arlington Hotel. Announcer, G. C. Arnoux. Daily ex Sun, 12:30-1:30 pm, weather, markets, orchestra; 8:30-10 pm, concert. Mon, Wed, Sat, 10:30-11:30 pm, dance concert. Sun, 11 am, church services;

Daily ex Sun, 12:30-1:30 pm, weather, markets, orchestra; 8:30-10 pm, concert. Mon, Wed, Sat, 10:30-11:30 pm, dance concert. Sun, 11 am, church services; 8:30-10 pm, concert. Central.

KTW, Seattle, Wash. 405 meters. 1000 watts. First Presbyterian church. Announcer, J. G. Priestly. Slogan, "Hear Ye, hear ye, the Gospel." Sun, 11-12:30 pm, 3-4:30, 7-9:30, church service. Pacific.

KUO, San Francisco, Calif. 360 meters. 150 watts. San Francisco Examiner. Slogan, "The Voice of the West." Temporarily off the air.

KWG, Stockton, Calif. 360 meters. 50 watts. Portable Wireless Telephone Co. Announcer, E. R. Garrow, Slogan, "Voice of the San Joaquin Valley." Daily ex Sun, 4-5 pm, news, concert, markets. Tues and Fri, 8-9 pm, concert. Sun, 2-3 pm, concert. Pacific.

KYQ, Honolulu, H. T. 270 metera. 100 watts. Elec. Shop, Teves & Joaquin Co., Ltd.

KYW, Chicago, Ill. 536 meters. 1500 watts. Westinghouse Elc. & Mfg. Co. Announcer, Edward Borroff. Daily ex Sun, Sat, aft, 9:30 am, 10, 10:30, 11, markets; 10:55, time; 11:05, weather; 11:30, news; 11:35, table talk; 12 m, 12:30 pm, 1, 1:20, 2:15, 2:30, markets; 3, 3:30, 4, news; 4:15, markets; 4:30, 5, news; 6:30, markets. Daily ex Sun, Mon, 6:35-7 pm, bedtime story; 7-7:30 pm, dinner concert; 8, concert; 9, special. Tues, Thurs, 2:30-4 pm, musical frolic. Wed, Fri, 10-2, midnight revue. Tues, Thurs, 10-11:30 pm, "at home" program. Sat, 10-11:30 pm, classical program; 12-2, carnival. Sun, 11 am, Central church; 2:30 pm, chapei; 7, Chicago Sunday Evening club. World Crier every half hour. Central.

KZKZ, Maniia, P. I. 270 meters. 100 watts. Western Religion of the concert in the concert. Sun, 2 and 2 and

Supply Co.

KZM, Oakland, Calif. 360 meters. 100 watts. Western Radio Institute (Hotel Oakland). Announcer, Roswell S. Smith. Daily ex Sun, 6:30-7 pm, entertainment.

NAA, Radio, Va. 435 meters. United States Navy Dept. NAA, Radio, Va. 435 meters. United Statea Navy Dept. Daily ex Sun, 9:45-10:40 am, 12:25-12:40 pm, 1:45-2:20, marketa, weather; 2:45-3 (Tuee oniy), Dept. Interior; 3:25-4:40, 5:05-5:20. markets, weather 10:05-10:20, weather. Wed, 7:25-7:40 pm, Civ. Ser. Daily ex Sat. Sun, 7:45-8 pm, dept. programs. Mon, 8:25-8:40 pm, Dept. of Interior. Eastern.

PWX, Havana, Cuba. 400 metera. 500 watts. International Tel. & Teleg. Corp. Announcer, R. O. Farrill. Slogan, "If you hear the tick of a clock you are in time with PWX, at Havana, Cuba." Wed, Sat, 8:30-11 pm, music. Eastern.

WAAB, New Orleana, La. 268 meters. 100 watts. Valdemar Jeneen.

Valdemar Jeneen.

WAAB, New Orleana, La. 268 meters. 100 watts. Valdemar Jeneen.

WAAC, New Orleans, La. 360 meters. 400 watte. Tuiane Univ. Announcer, D. Elliott. Fri, 7:15-7:30 pm, reports; S-9:30, educational and entertainment program. Central.

WAAD, Cincinnati, O. 258.6 meters. 25 watts. Ohio Mechanica Inet. No regular schedule.

WAAF, Chicago, Ill. 278 meters. 200 watts. Chicago Daily Drovers Journal. Announcer, Carl Ulrich. Daily ex Sun, 8:40 am, 10:30, 10:45, 12:30 pm. Daily ex Sun, Sat, 12:45, 3, 4:30, live stock and weather reports. Central.

WAAM, Newark, N. J. 263 meters. 250 watts. I. R. Nelson Co. Announcer, J. B. Bayley. Slogan, "Electrical Repairing and Manufacturing." Daily ex Sun, 11-12 m, music, talks, markets. Mon, Tues, Wed, Fri, 8-11 pm. Eastern.

WAAN, Columbia, Mo. 254 meters. 80 watts. Univ. of Mo. Announcer, Otto S. McDaniel.

WAAW, Omaha, Neb. 278 meters. 500 watts. Omaha Grain Exchange. Slogan, "Where Agriculture Accumulates Wealth." Daily ex Sun, 9:45, 10:45, 11:45, 12:45-1:15 pm, 8, market reports. Mon, 7:30-9 pm, music. Thurs, 7:30 pm, bridge taik; 8, program. Central.

music. Thurs, 7:30 pm, pringe tain, 0, Central.

WABA, Lake Forest, Ill. 266 meters. 100 watts. Lake Forest university. Wed, 8-9 pm, music, taiks. Central.

WABB, Harrieburg, Pa. 266 meters, 10 watts. Harrieburg Sporting Goods Co. Announcer, Frank B. Gaucher. Tues, Fri, 8 pm, sports, music. Sun, 9 pm, church services. Eastern.

WABD, Dayton, O. 283 meters. 5 watts. Parker High School. Announcer, A. H. Schroy.

WABH, Sandusky, O. 240 meters. 20 watts. Lake Shore Tire Co.

School. Announcer, A. H. Schroy.

WABH, Sandusky, O. 240 meters. 20 watts. Lake Shore Tire Co.

WABI, Bangor, Me. 240 meters. 100 watts. Bangor Ry. & Elec. Co. Announcer, P. L. Sprague. Slogan, "The Pine Tree Wave." Wed evening, music.

WABI, Storrs, Conn. 283 meters. 500 watts. Connecticut Agri. College. Announcer, Danial E. Noble. Slogan, "From the Nutmeg State." Mon, Wed, Fri, 7-9 pm. Eastern.

WABM, Saginaw, Mich. 261 meters. 350 watts. &F. E. Doherty Automotive & Radio Equip. Co. Announcer, G. C. Hiatt. Daily ex Sun, 10:15 am, news, markets, 2:15 pm, weather, stocks; 6, news, stocks, sports, music. Daily ex Sun, Sat, 10 pm, dance, Sun, 10:30 am, 7:30 pm, church strvice. Eastern.

WABN, La Crosse, Wis. 244 meters. 500 watts. Ott Radio Inc. Announcer, W. C. Grover. Slogan, "The City Beautiful on the Old Mississippi," Club, Thirsty Knights. Mon, 8-10 pm. Thurs, 9-11 pm. Central, WABO, Rochester, N. Y, 283 meters. 10 watts. Lake Avenue Baptist church. Announcer, Laurence Hukson. Sun, 10:15-12 m, 7:15-9 pm. Eastern.

WABQ, Haverford, Pa. 261 meters, 50 watts. Haverford College Radio Club. Announcer, Dr. James McF. Carpenter. Tues, 8-9 pm, educational program. Thurs, 9-11 pm, music. Eastern.

WABR, Toledo, O. 270 metera. 50 watts. Scott High School. Fri, 8:15-9 pm, program by high school students. Eastern.

WABU, Camden, N. J. 226 meters. 50 watts. Victor Talking Machino Co.

WABW, Wooster, O. 234 metere. 100 watts. The Col-

Talking Machino Co.
WABW, Wooster, O. 234 metere. 100 watts. The Col-

lege of Wooster, Dept. of Phyeics. Announcer, Victor Andrew.

WABX, Mt. Clemens, Mich. 254 meters. 250 watts.

WABX, Mt. Clemens, Mich. 254 meters. 250 watts. Henry B. Joy.

WABY, Philadelphia, Pa. 242 meters. 50 watts. John Magaidi, Jr. Slogan, "Quaker City Sleep Dodgera" Club. "The American Broadcasting Club." Sun, 9 pm, music; 10:30, "Sleep Dodgers' Session." Eastern.

WABZ, New Orleans, La. 263 meters. 100 watts. The Coliseum Place Baptist church. Announcer, V. W. Bradbury. Slogan, "The Station with a Message." Wed, 9-10 pm, talks, music; Sun, 11-12:15 pm, 7:30-8:45. Central.

WAHG, Richmond Hill, N. Y. 316 meters. 500 watts. A. H. Grebe & Co. Mon. 7:30-2 am. Wed, Fri.

A. H. Grebe & Co. Mon. 7:30-2 am. Wed, Fri. 7:30-11:15 pm. Sat, 12-2 am. Eastern.

WAR, Sisiht, Wis. 406 meters. 500 watts. Kopp Radio Co. Indéfinite schedule.

WBAA, W. Lafsyette, Ind. 283 meters. 250 watts.
Purdue University. Announcer, J. W. Stafford. Dally
ex Sun, 9:50 am. stocks, markets. Mon, Fri, 7:15
pm, special programs. Central.
WBAK, Harrisburg, Pa. 400 meters. 500 watts. Penn-

sylvania State Police. Announcor, Frank P. Gaucher. Daily cx Sun, 10 am, 1:30 pm, 5:45, police reports, fire protection, markets; 12:30 am, police reports. Mon, Tues, Wed, 7:30 pm, special. Eastern.

WBAN, Patorson, N. J. 244 meters. 100 watts. Wireless Phone Corp. Announcer, H. W. Ryerson. Slogan, "The Silk City of America." Daily ex Sun, 9-11:30 am, 12:30-5:30 pm. Sat morning only. Sun, 10-12 am. 2-5 pm, 7:30-10:30. Eastern.

WBAO, Decatur, Iti. 275 meters. 50 watts. James Millikin Univ, University activities. No definite schedule.

schedule.

WBAP, Fort Worth, Tex. 476 meters. 1000 watts. Fort Worth Star-Telegram. Announcer, "The Hired Hand" Club, "Radio Truth League." Daily ex Sun, 10, 11, 12 m, 1 pm, 2, market reports, weather; 4. "Port of Missing Men." 6:30, sports. Mon., Tues, Wed, Thurs, Frl, 12:05-12:30 pm, 7:30-8:30, 9:30-10:45, concert. Sat, 7 pm, Bible tesson. Sun, 11 am, church: 4 pm, concert; 11, midnight frolte. Central.

WBAV, Columbus, O. 423 meters, 500 watts. The Erner and Hopkins Co. Announcer, H. E. Day, Slogan, "We Broadcast a Variety." Daily ox Sun, 12-1 pm. Tues, Fri, 8-10 pm. Sat, 9-11 pm. Eastern.

WBAX, Wilkes-Barre, Pa. 254 meters, 100 watts. John H. Stenger, Jr. Slogan, "In Wyoming Valicy, Home of the Anthracite." Daily ex Sun, 6-12 midnight, orchestra. Eastern.

or the Anthracite." Daily ex Sun, 6-12 midnight, orchestra. Eastern.

WBAY, New York, N Y. 492 meters. 500 watts. A, T. & T. Co. Experimental purposes enjy.

WBBB, Newark, Ohio. 240 meters. 20 watts. Plymouth Congregational church. Daily ex Sun, 6:30 pm, news. Fri, 7 pm, special Radio service. Sun, 11 am; 7:30 pm. Eastern.

WBBD, Reading, Pa. 234 meters. 50 watts. Barbey Battery Service. Wed, 10-11:30 pm. Sat, 10-11:30 pm. Eastern.

pm. Eaatern.

WBBF, Atlanta, Ga. 270 metera 500 watta. Georgia School of Technology. Announcer, J. H. Persons. Slogan, "The Southern National Beputation." Mon, 9 pm. Thurs, 7 pm.

Centrai.

WBBG, Mattapoisett, Mass. 248 meters. 500 watts.
Irving Vermilya. Announcer, Albert N. Labouef.
Mon, Wed, Fri. 8-10 pm, music. Sun, 10:45-12 m,
church service. Eastern.

WBBH, Port Huron, Mich. 246 meters. 50 watts, J.

WBBH, Port Huron, Mich. 246 meters. 50 watts, J. Irving Bell.

WBBJ, West Palm Beach, Fla. 258 metera, 50 watts. Neel Elec. Co. Announcer, R. C. Bender. Slogan, "Where Summer Spends the Winter." Tues, Thurs, Fri, 8-10 pm, band. Sun, 11-12 m, 7:30-9 pm, church services. Eastern.

WBBL, Richmond, Va. 229 meters. 100 watts. Grace Covenant Presbyterian church. Announcer, Herbert C. Taylor. Tues, 8 pm. Sun, 11 am, 8 pm, Eastern.

WBBM. Chicago, III. 226 meters. 200 watts. H. Leslie

WBBM, Chicago, Ili. 226 meters. 200 watts. H. Leslie

WBBM, Chicago, 111. 226 meters. 200 watts. H. Lesile Atlass.

WBBP, Petoskey, Mich. 214 meters. 100 watts. Petoskey High School. Announcer, Carl Bowman. Wed, 8-9 pm. Central.

WBBR, Staten Island, N. Y. City, N. Y. 273 meters. 500 watts. International Bible Studenta' Association. Mon, Wed, Sat, 8-9 pm. lectures music. Sun. Thurs, 9:10-10:30 pm. Eastern.

WBBS, New Orleans, La. 252 meters. 50 watts. First Baptist Church.

WBBT. Philadelphia. Pa. 234 meters. 5 watts. Geth-

WBBT, Philadelphia, Pa. 234 meters. 5 watts. Geth-

semane Baptist church.

WBBU, Monmouth, Ill. 224 meters. 10 watta, Jenks
Motor Sales Co.

WBBV, Johnstown, Pa. 248 meters. 5 watts. Johnstown,

WBBV, Johnstown, Pa. 248 meters, 5 watts. Johnstown, Radio Co.
WBBW, Norfolk, Va. 222 metera. 50 watta. Ruffner Junior High School. Announcer, Lee M. Klinefelter. Siogan, "We're Backed by Workers." Wed, 8:30 pm, music. Fri, 3:30 pm. Eastern.
WBBY, Charleston, S. C. 268 meters. 20 watts. Waehlerton Light Infantry. Announcer Hugh Easterly ington Light Infantry. Announcer, Hugh Easterly. Wed, 7:30-11 pm, talk, music. Sun, 6:30-9:30 pm, orchestra. Eastern.

WBBZ, Indianapolis, Ind. 227 meters. 50 watts. Noble B. Watson. Robert Robbins. Mon, 8-9:30 pm. Central. WBCN, Chicago, Ill. 266 meters, 500 watts. Southtown Economist.

WBR, Butler, Pa. 1599 meters, 250 watts. Pa. State

WBR, Butter, Pa. 1599 meters, 250 watts. Pa. State
Police. Announcer, H. Nifong. Daily ex Sun, 9:30
am, 10, 10:30, 1 pm, 1:30, 2, 5:30, 5:45, 6:15, 12,
12:30 am, 1. Eastern.

WBS, Newark, N. J. 360 meters. 100 watts. D. W.
May, Inc. Announcer, C. A. Reberger. Daily, 11-12
m, music; 1-2:15 pm, reports, music. Tues, Thurs,
Fri, 7:30-9:30 pm, program. Sun, 12:30-3 pm.

Eastern.

WBT, Charlotte, N. C. 360 meters. 250 watts. Southern Radio Corp. Announcer, J. C. Fogarty. Slogan, "Queen City of the South." Daily ex Sun, 11 am, weather; 12:30-1:30, 7, music; 7:15, markets. Tues, Thurs, 9 pm, music. Mon, Wed, Sat, 10:45 pm, music. Sun, 11 am, 7:30 pm, church services. Eastern.

WBZ, Springfield, Mass. 337 meters 1500 watts. West-Inghouse Elec. & Mfg. Co. Announcer, A. E. Bach. Daily ex Sun, 6-7 pm, dinner concert; 7, market reports, talks, 7:10, bedtime stories; 9:15-7:30, lectures; 9:55-10:05, time, weather. Daily ex Mon, Fri, 8:30-10:30 pm, concert. Mon, Fri, 7:30-8 pm, extension course. Mon, 8-10:30 pm, concert; 11:30-12, orchestra. Tues, 11:30-12 pm, organ. Wed, 11-12 midnight, dance program. Fri, 10-11:30 pm, concert; 11:30-12, dance program. Fri, 10-11:30 pm, concert. Eastern.

Eastern.

WCAD, Canton, N. Y. 263 meters. 250 watts. St.
Lawrence Univ. Announcer, Ward C. Priest. Slogan,
"The Voice of the North Country." Daily, 11 am,
weather, reports, time. Wed, 8:30 pm, program.

WCAE, Pittsburgh, Pa. 462 meters, 500 watts. Kaufman & Baer Co., Pittsburgh Press. Announcer, Joseph Sartory. Daily ex Sun, 12:30 pm, news; 3:30, news, music; 4:30, reports; 6:30, music; 7:30, Uncle Kaybee, 8:30, music. Mon, Tues, 10:30 pm. Sun, 10:30 am, services; 3 pm, sermon; 4; 6:30, music. Eastern WCAG, New Orleans, La. 268 meters. 100 watts. Clyde

WCAG, New Orleans, La, 268 meters. 100 watts, Clyde R. Randall. Temporarily off the air.
WCAH, Columbus, O. 286 meters. 200 watts. Entrekin, Elec. Co. Announcer, C. A. Entrekin. Slogan, "The Heart of Ohio." Daily ex Sun, 11:30-12:30 am, music, news. Tues, 8-10:30 pm, Sun, 10-12:30 pm, 7:30-9, church services; 4, vespers. Eastern.
WCAJ, Univ. Place, Nebr. 280 meters. 300 watts. Nebr. Wesleyan Univ. Announcer, J. C. Jenson. Daily 10:20 am, weather. Tues, 7 pm, children's hour Friend.

Nebr. Wesleyan Univ. Announcer, J. C. Jenscn. Dally 10:30 am, weather. Tues, 7 pm, children's hour, Fri, 9 pm, music, lectures. Central.

WCAL, Northfield, Minn. 360 metera. 500 watts. Dept. of Physics, St. Olaf College. Announcer, Kenneth Onsgaard. Slogan: "The College on the Hill." Daily ex Sun, Mon, 9:45 am, chapel. Thurs, 9 pm, music. Fri, 8:30 pm, talk. Sat, 12 midnight, music. Sun, 8:30 pm. Central.

WCAO Baltimore Md. 275 meters. 50 watts. Sanders

8:30 pm. Central.

WCAO, Baltimore, Md. 275 meters. 50 watts. Sanders & Stayman Piano Co. Announcer, R. E. Brunner. Daily ex Sun, 11:55 am, tinie; 12 m, weather; 12:05-2:30 pm. dance music. Mon, Wed, 8-10 pm. Eastern.

WCAP, Waehington, D. C. 469 metera, 500 watts. Chesapeake & Potomac Tel. Co. Announcer, Wliliam T. Pierson. Mon, 7:30-10 pm. Wed, 7:45-10 pm. Fri, 7:30-12 midnight. Sun, 11 am, 4 pm, 7:20-10 pm, jointly with WEAF. Eastern.

WCAR, San Antonio, Tex. 263 meters. 200 watts. Southern Radio Corp. of Texas. Announcer, L. Tatom, Ciub, "Royai Order of Prevaricators." Mon, Thurs, Sat, 8:30-9:30 pm, concert. Wed, Sat, 11 pm. Cen-

Sat, 8:30-9:30 pm, concert. Wed, Sat, 11 pm. Cen-

tral.

WCAT, Rapid City, S. D. 240 meters. 100 watts. S. D.
State School of Mines. Announcer, J. O. Kammerman.
Dally ex Sun, 9:30 am, 12:30 pm, weather, reports.
Thurs, 7:30 pm, concert. Mountain.

WCAU, Philadelphia, Pa. 278 meters. 500 watts. Durham & Co. Daily ex Mon, Sat, 7-10 pm. Eastern.

WCAV, Little Rock, Ark. 263 meters. 20 watts. J. C.
Dice Elec. Co. Wed, Fri, 8:30 pm, lecture. music.
Sun, 9-10:30 pm, special musical concort. Central.

WCAY, Milwaukee, Wis. 266 meters. 250 watts. Mil-

wankee Civic Broadcasting Station. Announcer, Billy Williams. Mon, Wcd, Fri. 10:15 am. 12 m, weather, market reports; 3-4. Mon, Fri. 8-9 pm. Tues, 9:15-10:30 pm. Wed, 6:30-7:30 pm. Thurs, 10:30 pm. Central.

WCAZ, Carthage, Ill. 246 meters, 50 watts. Carthage College. Wed. 9-10 pm. Central.

WCBA, Allentown, Pa. 254 meters, 10 watts. Chas. W, Heimbach. Wed, 8:15-11 pm. Fri. 6:45-7:45 pm. bedtime storles, Bible lesson. Sun, 5-7 pm, church service. Eastern.

bedtime stories, Bible lesson. Sun, 5-7 pm, church service. Eastern.

WCBC, Ann Arbor, Mich. 229 mctcrs. 200 watts. U. of Mich.

WCBD, Zion Ill. 345 mcters. 500 watts. Wilbur Glenn Voliva. Announcer, J. H. DePew. Slogan, "Where God Rules, Man Prospers." Mon, Thurs, 8-10:30 pm, concert. Thurs, 2:30-3:45 pm, service. Sun, 9-10:45 am, Bible School; 2:30-6, church services. Every 2nd and 4th Sun, 8-10:30 pm. Central.

WCBE, New Orleans, La. 263 meters. 5 watts. Uhalt Brothers Radio Co. Announcer, Johnny Wilson. Slogan: "Second Port U. S. A." Sat. 9 pm, dance. Sun, 12:30-2 pm, dinner concert; 9, dance music. Central.

WCBG, Mayfield, Ky. 268 meters. 10 watts. Howard S. Williams. Slogan, "Willi Christ Bo Glorified?" WCBH, Oxford, Misa. 242 meters. 26 watts. U. of Mississippi. Announcer, W. L. Kennon. Mon, Wed, 8 pm. Central.

Mississippi. Announcer, W. L. Kennon. Mon, Wed, 8 pm. Central.

WCBJ, Jennings, La. 244 meters, 10 watts. J. C. Mans.

WCBJ, Jennings, La. 244 meters, 10 watts. J. C. Mans.

WCBL, St. Petersburg, Fla. 266 meters. 500 watts. E. Richard Hall. Mon, Thurs, 7-8 pm. Tues, 8-8:15 -pm. Sun, 8-10 pm. Eastern.

WCBL, Houlton, Me. 280 meters. 100 watts. Northern Radio Mfg. Co. Announcer, Lee J. Bell. Slogan, "Call of the North." Wed, 7:30-10 pm. Sun, 10:30 am, 7 pm. Eastern.

WCBM, Baltimore, Md. 229 meters. 250 watts. Hotel Chateau. Announcer, Harry J. Dobe. Tues, Thurs, 10 pm-1 am. Sat, 9:30-12 mid. Sun, 9:45-11 pm. Eastern.

10 pm-1 am. Sat, 9:30-12 mid. Sun, 9:45-11 pm. Eastern.

WCBO, Mempbis, Tenn. 250 metera. 20 watts. The Radio Shop, Inc. Wed, Sun, 8:30 pm. Central.

WCBQ, Naahville, Tenn. 236 meters. 100 watte. First Baptist church. Announcer, R. G. Monahan.

WCBR, Boston, Mass. 246 meters. 5 watts. Charles H. Messter. (Portahle.)

WCBT, Worcester, Mass. 238 meters. 250 watts. Clark University, Collegiate Dept.

WCBU, Arnold, Pa. 254 meters. 50 watts. Arnold Wireless Supply Co. Announcer, F. J. Ambrose. Slogan, "The Little 50 Watt Station in a 50 Kilowatt town." Wed, Sun, 9-10 pm. Sat, 10-11 pm. Eastern. Eastern. WCBV, Tullahoma, Tenn. 252 metera. 10 watts. Tulla-

WCBV, Tullanome, welli, 202 meters. 20 watts. Maitland Soloman and G. P. Rankin, Jr. Irregular schedule. WCBX, Newark, N. J. 233 meters. 100 watts. The Radio Shop. Tues, Wed, Fri, 6-6:30 pm; 7:30-10:30.

Eastern.

WCBY, Buck Hill Falls, Pa. 268 meters. 10 watts. Forks Electric Shop. Announcer, Hugh Kemper.

WCBZ, Chicago Heights, Ill. 248 meters. 50 watts.

Coopotelli Brothers Music House. Announcer, John King. Slogan, "Where the Lincoln and Dixie Highways Meet." Mon, Fri, 8:30-10:30 pm, program. Central

WCCO, Minneapolis-St. Paul, Minn. 417 meters. watts. Washburn Crosby Co. Announcer, Paul Johnson. Daily ex Sun, 9:40 am, reports, weather; 10, 10:30, markets; 10:45, home service; 11:30, markets; 1:30 pm, markets, weather; 2, woman's hour; 2:30, music; 4, magazine; 5:30, children's hour; 6:30, dinner concert. Mon, 8 pm, lecture; 8:30, music; 11, dance. Wed, 6:30 pm, markets; 7, vespers; 9, music; 11, dance. Thurs, 6:30 pm, dinner concert; 7:30, lecture; 10, music. Fri, 6:30 pm, dinner concert; 7:30, lecture; 8:30, music. Sat, 8 pm, lecture; 8:30, music; 11, dance. Sun, 10:20 am, 4:15 pm, 7:30, church services; 9:15, music. Central. WCEE, Eigin, Ill, 536 meters. 1,000 watts. Charles E. Ernstein.

WCEE, Elgin, III, 536 meters, 1,000 watts. Charles E. Erhstein, WCK, St. Louis, Mo. 273 meters. 100 watts. Stix, Baer & Fuller Dry Goods Co. Announcer, Helen G. Hatfield. Daily, 12-12:30 pm, 3-3:30. Mon, Tues, Wed, Fri, Sat, 8-9 pm. Mon, Fri, 11-1 am. Wed, 11:30-1 am. Sun, 7-8. Central. WCM, Austin, Tex. 268 meters. 250 watts. Texas Markets & Warehouse Depts. Announcer, J. Austin Hunter. Daily ex Sun, 9:45 am, 11:45, 3:45 pm. Central.

Hunter. Daily ex Sun, 5.45 and, 1.45, Central.

WCX, Detroit, Mich. 517 meters. 500 watts. The Detroit Free Press. Announcer, C. D. Tomy. Club, "Red Apple Club." Daily ex Sun, 2 pm, news; 2:15, stock reports; 2:50, weather, markets; 4:15, 6, music. Daily ex Sat. Sun, 8:30-10 pm, alternate weeks, concert. Tues, 10-12 pm, club. Sun, 10:30 am, 7:15 pm, church services. Eastern.

WDAE, Tampa, Fla. 273 meters. 250 watts. Tampa Daily Times. Announcer, McDonald Thompson. Daily,

wdae, Tampa, Fla. 273 meters. 250 watts. Tampa Daily Times. Announcer, McDonald Thompson. Daily, 5, 7:30. Thurs, 8-10 pm. Eastern.

Wdae, Kansaa City, Mo. 411 meters. 500 watts. Kansas City Star. Announcer, Leo Fitzpatrick. Club, "Nighthawks." Daily ex Sun, 3:30-4:30 pm, music; 5:50, markets, weather; 6-7, educational, bedtime story, music; 11:45, Nighthawks. Mon, Wed, Frl, 8-9:30 pm, concert. Sun, 4-5 pm, music. Central.

Wdae, Amarillo, Tex. 263 metera. 100 watts. J Laurence Martin. Siogan, "Where Doilars Always Grow." Tues, Thurs, 8-9:30 pm, music. Central.

Wdah, El Paso, Tex. 268 meters. 50 watts. Trinity Methodiat Church South. Mon, Wed, Thurs, Fri, 7:30 pm, concert. Sun, 11 am. Mountain.

Wdae, Philadelphia, Pa. 395 meters. 500 watts. Lit Bros. Announcer, Harry E. Ehrhart. Club, "Morning Glory." Daily ex Sun, 11:45-12:55 pm, music; 2-3 pm, 4:30-6, music, talks; 7:30-8 pm. Dream Daddy. Mon, Wed, 8-10 pm, entertainment. Fri, 8-10:50, entertainment; 1 am, Cluh. Eastern.

Wday, Fargo, N. D. 244 metera. 50 watts. Radio Equip. Corp. Announcer, K. M. Hance. Slogan: "The Biggest Little City in the World." Dally ex Sun, 10 am, 11-12:30 pm, markets, news; 2, markets; 5, music, news. Tues, Thurs, Sat, 7:30 pm, entertainment. Sun, 10:30 am, church service; 4 piu, concert. Central.

WDBB, Taunton, Mass. 229 meters. 10 watts. A. H. Waite & Co., Inc. Announcer, Albert H. Waite. WDBC, Lancaster, Pa. 258 metera. 50 watts. Kirk Johnson & Co., Inc. Mon, Tuea, Thurs, 8 pm. Eastern,

Eastern.

WDBD, Martinsburg, W. Va. 268 meters. 5 watts.
H. E. Burns. Announcer, R. W. Etris. Slogan: "We
Do Better Daily." Temporarily off the air.

WDBF, Youngstown, Ohio, 246 meters. 50 watts. Robert G. Philiips.

WDBH, Worcester, Msss. 268 meters. 100 watts.
C. T. Sherer Co. Announcer, Chester Gaylord. Slogan,
"The Voice from the Heart of the Commonwealth."
Daily ox Sun, 11:30-12:30 pm, music, reports; 4-4:30,
music, stocks. Mon, Wed, Fri, 7:15 pm. Tues, Thurs,
Sat, 5:30 pm. "The Twinkle-Twinkle Story Teller."
Mon, Wed, Fri, 8 pm, music. Eastern.

WDBI, St. Petersburg, Fia. 226-300 meters. 10 watts.
Radlo Specialty Co., Inc. Announcer, M. H. Bewik.
1rregular programs.

Radio, Specialty Co., Inc. Announcer, M. H. Bewik. 1rregular programs.

WDBJ, Roanoke, Va. 229 meters. 50 watts. Richardson Wayland Elec. Corp. Announcer, Charles E. Stone. Slogan, "Roanoke Down in Old Virginia." Daily ex Sun, 12-1 pm, music; 5:30-6:45, music, news, weather. Wed. Sat, 9 pm, concert. Eastern.

Wed. Sat. 9 pm, concert. Eastern.

WDBN, Bangor, Me. 254 meters. 10 watts. Maine Electric Light & Power Co. Announcer, Paul Watson. "Bangor Radio Club." Daily 3-5 pm, 8-10. Eastern.

WDBO, Winter Park, Fla. 240 meters. 50 watts. Rollins College, Inc. Slogan: "Rollins College, Maker of Thinkers."

WDBP, Superior, Wis. 261 meters. 50 watts. Superior State Normai School.

WDBQ, Salem, N. J. 234 meters. 20 watts. Morton Radio Supply Co. Announcer, Wm. T. Gallsway. Mon. 7:30-9 pm. Thurs, 8:15-8:45 pm, organ. Sun, 7:30 pm, church services. Eastern. (The third part of the directory of station schedules

Synchrophase with Battery-base

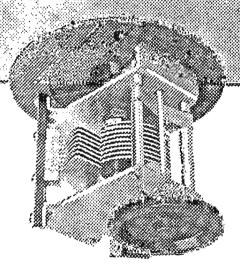


IT IS WRITTEN:

"A slight deviation leads to a great error."

There are no deviations, however slight, in the making of a Synchrophase; each is a masterpiece.





Synchrophase Secrets
No. 2 The S-L-F Condenser
(Straight line frequency)

This ingenious device eliminates the crowding of low wave stations toward the lower end of the dials; the settings for the various broadcast stations being spaced at equal intervals around the dials. The circuits are so arranged that the settings for a given station are identical on all three dials.

The S-L-F Condenser makes the Synchrophase a receiver that is unrivalled in its simplicity and ease of dependable operation





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Binocular Coils give the Synchrophase a degree of selectivity found in no other receiver. Two stages of balanced tuned radio frequency—the result of exhaustive research—are responsible for its unsurpassed sensitivity. Its thorough ease of operation is made possible by the S-L-F Condensers and a Volume Control giving an unbroken range of six variations of audio amplification.

To see the Synchrophase is to appreciate its charm; to operate it, is to realize its true excellence.

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