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

RADIO 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

of Citizenship



\$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.

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 entirely 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 care-

ing 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, Chicago.

cago.
Only two more weeks. Hurry!

RADIO TEACHES ALIENS

(Continued from page 1)

(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.

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 clitzenship 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 air 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 filing of first papers two years prior to admission.

The citing 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 citizens. The two cabinet 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

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 Naturalization are located. This means locations where aliens are numerous. Included in this list of cities are New York, Brooklyn, Newark, Boston, Springfield, Philadelphla,

\$1,000 GOLD AWARD SET CONTEST RULES

This contest opens at once and will close on Saturday, January 17, 1925, at midnight. All sets re-ceived up to that time will be

17, 1925, at midnight. All sets received up to that time will be entered.

The thousand dollars in gold will be divided into the follow-ling prizes First, \$500.00; Second, \$250.00; Third, \$100.00; Fourth to Ninth inclusive, \$25.00 each. In the event of a tie, the full amount of the prize tied for, will be awarded to each tying contestant.

Contest is open to all Radiophaus, whether or not subscribers to Radio Digest Illustrated. A neatly drawn hook-up diagram and short description (200 words) of the salient features of the set should be enclosed in separate letter advising set is being shipped. Entrants do not need to be authors or writers.

Sets must be sent insured prepaid express or insured parcel post. All sets, including winners, will be returned insured collect to entrants.

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.

Freak or novelty sets are not desired. Sets enclosed in or

built around dolls, finger rings, hats, etc., will not be considered. Sets desired are those based on an original circuit or part of circuit that functions better than circuits commonly in use. Originality is one of the prime considerations. Entrants who are not awarded prizes, but whose sets are considered worthy of constructional description in Radio Digest, will be paid at regular manuscript rates. 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. 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. 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, Cincinnati, St. Louis, Atlanta, New Orleans, Dallas, Fort Worth, Denver, Salt Lake City, Seattle, Portland, San Fran-first papers for citizenship.

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Radio Digest, Hlustrated, Volume XI, Number 13, published Chicago, Illinois, January 3, 1925. Published weekly by Radio Digest Publishing Company, 510 N. Dearborn Street, Chicago, Illinois. Subscription rates, yearly, Five Doliars; Foreign Postage One Dollar additional; single copies Ten Cents. Entered as second class matter at the postoffice at Chicago, Illinois, under the Act of March 3, 1879.

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.

Newsstands Don't Always Have One Left

WHEN YOU WANT

Radio Digest

BE SURE OF YOUR WEEKLY COPY BY SUBSCRIBING NOW

SEND IN THE BLANK TODAY

Please find enclosed check M. O. Jer Five Deliars (Six. Fereign) for One Year's Subscription to Radio Digest, Illustrated.





Tapped Loop . . \$8.00 Center-tapped Loop, \$6.50

If your dealer cannot supply you, order direct giving your dealer's name.

Record Breaking

Collapsible Loop Aerials

Lincoln Collapsible Loop Aerlals are breaking sales records everywhere. As one fan tells another of Lincoln Loop performance Lincoln is daily growing in popularity. Quality reception greater selectivity....simplicity....and beauty of finish....these are the reasons for Lincoln Loop leadership.

Built by radio engineers...Lincoln Loops are scientifically correct. Fine for all Neutrodyne and other radio frequency sets. The 4-point tapped loop will improve your superheterodyne. Sold by leading dealers.

Write for Catalog



Send your name and your dealer's name for the Lincoln Catalog, De-scribes Lincoln Loops, Lincoln Low-Loss

Condenser, Lincoln
"Long 45" Tuner,
Lincoln Kit, and
Lincoln Oscillascope.
Shows 6 interesting

Lincoln Radio Corporation 224 North Wells Street, Chicago



The Ford of Loud Speakers

Fultone has been thoroughly tested on regenerative, reflex, tuned radio frequency and super-heterodyne receivers and has proven its ability to handle both faint programs from distant stations and the roaring volume of the locals. This it does without distortion, without blasting and with a pleasing absence of tinny or other metallic noises.



If your dealer cannot supply you, send meney order or check for \$9.50

HALL & WELLS, Inc.

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 planist 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.

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 pianist 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 endurable this winter with a Radio set, the board of county revenue announces. In fog or darkness.

GALLI-CURCI WITH BLIND PIANIST



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

INSTALL RECEIVER

TO AMUSE HOBOES

Movie and Still Cameras Make Film Record of Visiting Celebrities

LOS ANGELES .- One of the most in-

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 evenings.

He gives a chart review

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.

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

By W. E. Johnson

For the first time in the history of 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, Strawbridge 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 headquarters 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 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, round laughing song, Mr. Browne had one of the guards jump on the top of her



Retain Amplifier Set

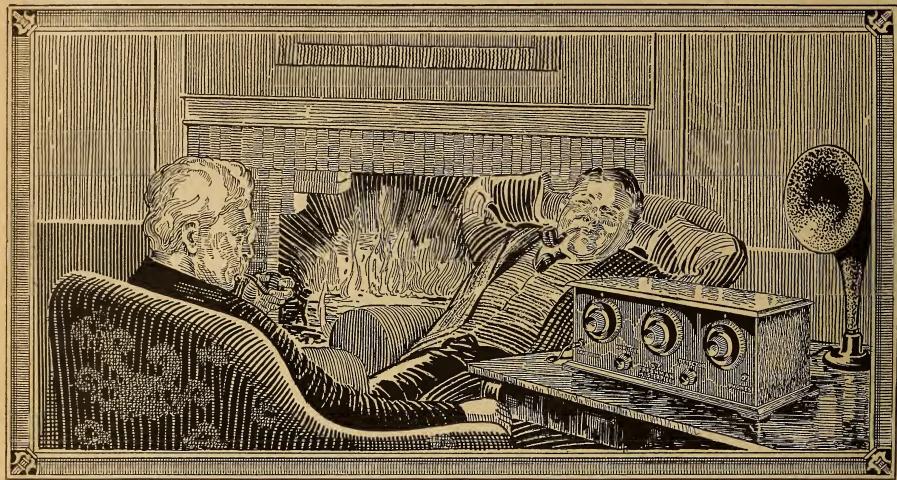
WASHINGTON, D. C.—Because members of the House of Representatives refused to make an appropriation for retaining the broadcasting and loud speaking apparatus insta'led a couple of years ago in the main hall of the House the apparatus has been dismantled.

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 criticism 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-meter wave length.



When Winter Winds Blow Cold



FRESHMAN MASTERPIECE

The Greatest Value Ever Offered In A Radio Receiving Set!

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.

Combines all points essential to the perfect receiver. Real distance reception without that squealing and howling. So selective that once a station is picked up—it can be brought in again on the same points on the dials, whenever you want it. And what's more,

It Is Mighty Easy to Operate



Tuned Radio Frequency Kit

It's Easy to Build

a five tube radio frequency receiver when you use the Freshman Masterpiece Kit. The result will be a receiver that will bring in even the most distant stations with the volume and clarity of locals. The equal of any 5 tube set in selectivity, simplicity of operation and all around efficiency. Write for interesting literature.

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Have Your Dealer Install One in Your Home!

All genuine Freshman Masterpiece Sets have a serial number and trademark riveted on the sub-panel. The Receiver is not guaranteed if number has been removed or tampered with.

Chas. Freshman Co. Inc. Radio & Condenser Products

Write for interesting literature.

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Counterfeits.

Freshman Building, 240-248 W. 40th St., New York

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)

OW 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 destination 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

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.

Mr. Rigg sees the station in somewhat the same role as that of a great newspaper with a

gigantic country-wide circulation, carrying a well-balanced 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 announcer; 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

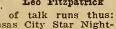
KANSAS CITY, Mo.—Anybody can talk over the Radio now! A recent plan, in-stituted by WDAF, and perfected by the Kansas City Tele-

Kansas Čity 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

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.

The general line of talk runs thus: "WDAF, the Kansas City Star Nighthawks."



hawks."
"Hello, Merry Old Chief!"

"Hello, Merry Old Chief!"
"Yes."
"This is _____, at _____. We are enjoying your program fine and request your plano player to give us 'Red Hot Mamma."

The Chief then thanks the listener for calling in and the piano player plays the request. Oftentimes when the planist 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 a new tune which he had composed, and wishing to try it out on the air, he called the Star at Kansas City and asked to be connected with the Merry Old Chief. His song was broadcast over the telephone line and both his voice and his banjo accompaniment came over great.

Thus the listener is not only able to Thus the list one on loud speaker and to place the loud speaker in front of the microphone. In the present plan no microphone is used, and the calls are run directly into the amplifier and transmitter.

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 station to be located on the roof of the Congress hotel—on the shores of Lake

Michigan.

This will be a new KYW. The antenna will embrace science's latest innovations. Likewise, the studio, which will be in the Florentine Annex of the hotel, will also be constructed in the most modern fashion, with accoustics best adapted for Radio uses.

with accoustics best adapted for Radio uses.

The equipment to be used, is of the 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 improvement will be obtained over its present station which already is one of the best in the country.

Programs from the various studios will be broadcast by special wire to the station 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.

and night.

WGR—"KEY CITY OF INDUSTRY"

(Continued from page 5)

(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 towers on top the Hotel Statler. He had plenty of time, as one sometimes does on jury duty, to think about other things and he made up his mind he would go to the station at the noon recess and see what a Radio station looked like.

When he went up to the station at noon, he ran into M. A. R., himself. Maybe their souls vibrate on the same plane or something. WGR wanted an announcer at that time. Becker was sick of the stocks and bonds game. And there you are.

stocks and bonds game. And there you are.

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 is the sort that' people usually impose upon. That is to say, he has the very devil of a time trying to say "no" to even the most impossible favor that a friend may ask of him.

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 composition.

as a vehicle which will help costs along the road to musical composition.

When Edward Stanko first came to WGR he was in the same class in that respect as "Bob." But he isn't any more. Stanko is the chief operator. He is the chap that makes the wheels go round. He has done wonders with the apparatus at WGR. Ask him anything about Radio, except how he got into the game, and he will hold up his end of a complicated discussion. But when you ask him how he got into the game, he can't tell you. In fact, he admits that he can scarcely remember the time when he was not interested in Radio and the things connected thereto

There was a time when WGR, like a lot of other stations, had to hustle to get programs, but that passed way back about the student of voice. 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 of KDQZ, the S. 'S. 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 hc 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.

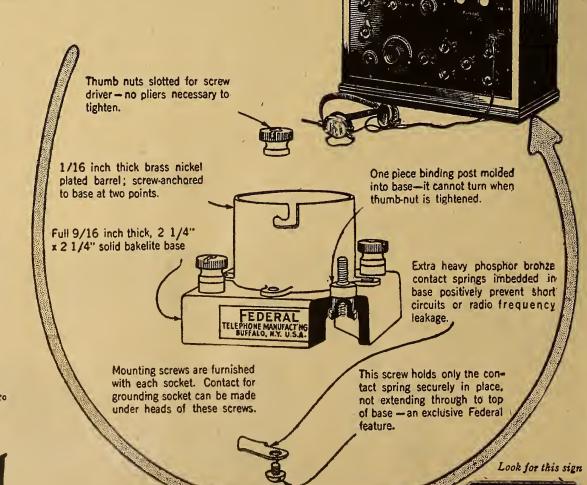
Harriet Shire is another entertainer who has found a great deal of favor with WGR listeners. This lady of the lyric soprano voice of a colorature quality is tall, dark and energetic. She admits that her chief sport is "housekeeping" which is just another way of saying that she does not have time for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

Then there is Bertha Drescher, who made such a stir at WGR, following her appearance before the resemblements.

nave time for the usual run of outdoor sports.

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.

Rederal RADIO





THE picture tells the storyseven practical, sensible reasons why Federal sockets should be in your "pet" hook-

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

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

FEDERAL TELEPHONE & TELEGRAPH COMPANY BUFFALO, N. Y.

Boston New York Philadelphia Pittsburgh Chicago San Francisco Bridgeburg, Canada



CARING FOR YOUR NEW CHRISTMAS SET

Part I-Ground and Batteries

By Harold O. Totten

By Harold O. Totten

Now 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

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



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 near a perfect ground as it is possible to get.

Batteries Should Be Watched

One of the most important places to watch for trouble in a Radio set is at the batteries. If you are using a storage A battery, buy a syringe hydrometer—this will cost about \$1.50—with which to test the battery. This hydrometer will 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 near a perfect ground as it is possible to get.

tell you whether or not your battery is fully charged, and also how far it is discharged at any time.

The hydrometer is a glass tube open at one end with a rubber bulb at the other end. Inside this glass tube is another tube called the float, one end of 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 battery. The electrolyte in the battery should come about one-half inch over the tops of the plates. Take the hydrometer in one hand, insert the open 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 float to rise. Lift the hydrometer out of the battery—being careful that no drops of electrolyte get on the carpet or floor—and read the scale at the point where it is at the surface of the solution.

When fully charged, and also how far it is discharged, and also how far it is discharged at any time.

Avever lay tools on top of a battery as they may short circuit it, causing a complete discharge of the battery. Acid should not be added to a battery unless some has obec applied accidentally. Add nothing but 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 grade voltmeter reading 0-50 volts, which will cost about \$5.00 for checking the figure 2).

When a 22½-volt battery drops to 17 volts, or a 45-volt battery with an old one as the new battery with an old one about one-talf inch over the voltage in the batteries (see figure 2).

Be batteries are always connected in series; this means that the positive terminal of one battery is connected to the negative terminal of the tubes, terminals are provided

Top of Battery is "Live"

ceptionally 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 serewdriver and touching it to the positive and negative posts in order to see "how big 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 depreciate the battery.

Charging Storage "Bs"

Charging Storage "Bs"

The larger Radio sets using from three to eight tubes have become increasingly popular due to their wide range, power and receiving qualities. When a number of tubes are used, the drain on the B batteries becomes proportionately greater. For this reason the storage type of B batteries which can be recharged are now

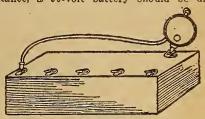
This series of articles is for the fan who has been given or has bought a receiver for Christmas. It will also be of interest to the listener who has had a set, but who does not know how to give it proper care. tell you whether or not your battery is fully charged, and also how far it is discharged at any time.

The hydrometer is a glass tube open at one end with a rubber bulb at the other end. Inside this glass tube is another tube called the float, one end of 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 battery. The electrolyte in the battery should come about one-half inch over the tops of the plates. Take the hydrometer in one hand, insert the open end in the battery solution and squeeze the hydrometer, which will cause the load.

When a 22½-volt battery drops to 34 to the listener to the hydrometer, which will cause the loat to rise. Lift the hydrometer, which will cause the loat to rise. Lift the hydrometer, which will cause the loat to rise. Lift the hydrometer out of a storage the loat to rise. Lift the hydrometer out of a storage to the list that the open load, insert the open load in the battery solution and squeeze the hydrometer, which will cause the load to rise the hydrometer, which will cause the load to the distinction of its liable to explode, the statery 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 best open had, insert the open load a storage battery and the negative tungar lead is not used and should be kept apart from the battery while charged at 0.1 ampere. Higher vo



vided in half and the two negative terminals connected to the negative tungar lead. 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 details may be obtained from the battery manufacturers' instructions.

Editor's Note—In Part II Mr. Totten will outline for the new Radiophans some of the troubles that even the best sets will have and give methods of determining just where the trouble lies.) vided in half and the two negative termi-



Write for descriptive circular

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

Tables: Five.

Batteries: Storage or dry-cells.

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Wave Lengths: 200 to 600 meters, with uniform efficiency of reception.

Panel: Aluminum. Crystal black

nnish.

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Sockers: Suspended on cushion

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DETROIT

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AN EVENING AT HOME WITH THE LISTENER IN

(SEE INSTRUCTIONS FOR USE BELOW)

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		Silent 8:00-10:00 8:00-12:00 8:00-11:00	Silent 3:00- 4:00 7:30- 9:15	Silent 10:00-12:00 8:00-12:00 7:00-9:00 6:00-12:30	7:00-10:00 8:00-12:00	Silent 10:45-12:00	Sijent 10:00-12:00 8:00-12:00	Silent Silent 8:00-12:00
WSB, Atlanta, Ga	429 390 286 283	6:00-12:30	Silent 6:00-12:30 Silent	7:00- 9:00 6:00-12:30 Silent	Silent 7:00-10:00 8:00-12:00 Silent 6:00-12:30 6:45-11:15 6:00-7:00	7:00- 9:00 6:00-12:30 6:45-11:15	Silent 6:00-1:30 6:45-11:15 6:00-7:00	Silent 6:00-12:30 6:45-11:15
WWJ, Detroit, Mich	513	6:00-11:15 6:00- 9:00	Silent	6:00- 7:00	6:00- 7:00	6:00- 7:00	6:00-7:00	6:45-11:15

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 Me	ters Call	Meters	Call	Meters	Call	Mete	rs Call	Mete	ers Call
238 KF	'QX 278	WJJD	316 V	VGBS	360	WOI	410	CKCD	469	KFI
	BN 278	WLBL	319	WGR	360	WRL	411	WDAF	469	WCAP
	3BG 278	WNAC		KDKA		WSAC	411	WHB	469	WRC
	AQ 278	WRBC	330	CYX	370	CYB	417	wcco	476	WBAP
	NF 283	KFMX		KFAE		VEBH	423	KPO	476	WFAA
	3CN 283	WABL	337	KNX	370	WGN	423	WBAV	480	CYL
	BK 283	WHK	337	WBZ		KTHS	423	WLW	484	WHAA
	AU 286	WEMC		$\frac{\text{CHYC}}{\text{KSAC}}$		WGY	429	CFAC	484	WOC KGW
	BF 286	WJAS		WCBD		WOAI	435	AT9	492	WEAF
	KB 286		345	WLS		WJAX	435	CNRO	506	WMC
	BR 286			KJS		VTAM	435	NAA	509	KLX
	EBJ 288		360	КОВ	395	KHJ	437	CKAC	509	WIP
	BH 291	KFKX	360	WBT		WDAR	440	CFCN	509	Woo
	[AK] 294			WÇAL	395	WFI	441	wos	513	WCX
	RW 303			VEAY	400	CFCA	448	woj	513	WWJ
	MQ 306	KFDM		WGI	400	PWX	448	WMAQ	526	WHO
	[AD] 309			WHA		WHAS	450	CKY	526	WNYC
	CQV 309	WSAI		WHN	405	KTW	455	KFOA	526	WOAW
278 WA.				WJAR	405	WJY	455	WJZ		KYW
210 WC	CAU 316	WAHG	OU V	VKAQ	405	WOR	462	WCAE	046	KSD



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SUPE	R-REINA Heard L	ARTZ. 2L	O MODE	rings of the L TUNER stamp	-The S
Name					

(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

stories in French and English; 7:30, Windsor hotel concert; 8:30, La Presse studio; 10:30, Windsor hotel dance program.

KDKA, E. Pittsburgh, Pa. (Eastern, 326), 1:30 p. m., concert, Daugherty's orchestra; 6, dinner concert, Westinghouse band, T. J. Vastline, 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.

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

KGO, Oakland, Calif. (Pacific, 312), 4-5:30 p. m., concert orchestra, Hotel St. Francis; 8, "Dutcy," 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, Multnomph hotel strollers.



Rose Mountain is one of the popular con-traltos of WGY, Schenectady. She was heard recently on the Christmas Eve pro-gram 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; 8-1 and the state of the state of

clals, artist-pupils, studios of Anna S. Veverka, WCAL, N-rthfield, Minn. (Central, 360), 12 nidnight, musicale.

WCCO, M., neapolis-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 McClintock; 9:30, Paul Davin's Hotel Rudisson 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, Hotel Muehlebach 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., dally simanae; 12:02 n. m., Stanley theater organ recital; Areadia cafe concert orchestra; 2. Areadia cafe concert Orchestra ance orchestra; 7:30, Areadia cafe concert orchestra.

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

J. Turner; 8-8:30, Eddio Foy Family, Singers; 8:30-9, authors' program, Amorican Merchant Marine Ilbrary; 0-9:43, Waldorf-Astoria orchestra. Joseph Knecht, director; 11-12, Vincent Lopez and bis Hotel Pennsylvania orchestra. FAA, Dallas, Tex. (Central, 476), 12:30-1 p. m., address, Espps G. Knight; 8:30-9:30, Blue Bonnet FI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Believue Stratford concert orchestra: 3:05, Leonard Zupb and sons, zithar players; "Develoohg the Mind and Body in the Classroom," Mary C. Desmond; 4, Columbians dance orchestra; 6:30, Meyer Davis Believue Etratford concert orchestra; 7, Sunny Jim, the kiddles' pal; 8, Mrs. Hose Boyle, soprano; Jonetta Kerk, planist. GN, Chicago, Ill. (Central, 370), 1:40 p. m., luncheon concert; 2:30, Lyon & Heoly artist series; 3, rocking chalt time; 5:30, Skeezis time; 6, organ recital. Lyon & Healy; 6:30, dinner concert; 8:9, classical period; 10-11, donog numbers, Dun Bustor Drake steastra.

Headliners of the Week

IF 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.

nitaries 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 of KGO Monday by

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.

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 musle, 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 Roffes, violinist; Mercedes Voss. planist; 9:15, Bicycle mixed quartet; Bicycle male quartet; 12, popular songs; 12:30, Freda Sanker's New Toadstool orchestra.
WTAS, Elpin, Ill. (Central, 286), 6 p. m. Terraco Garden dance program, Fred Hamm and his orchestra; 9:30, Klmbali studio hour; Lee Sims, 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 Loyaux, soprano; 9-10, Ray Kroc, planist; Hugb B. Myr, Defroit, Mich. (Eastern, 513), 3 p. m., tbe Detroit News orchestra.

Sunday, January 4

WRG. WSAI, WNTAY.

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, Ia. (Central, 266), 3 p. m., religious services, Rev. Hort; 6:30, regular seedhouso-chapei services.

KGO, Oakland, Calif. (Pacific, 312), 11 a. m., service, Carligious services, Rev. Hort; 6:30, regular seedhouso-chapei services.

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 services, First Presbyterian church services, Chauncey Little, Pacific Richard, Robert St., 11-12:30 p. m., First Presbyterian church services, Chauncey Meyer Davis orchestra.

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

WBZ, Springfield, Mass. (Eastern, 273), 10:45 a. m., church services; 8:30-10 p. m., concert.

WGAE, Pittsburgh, Pa. (Eastern, 425), 10:45 a. m., services, Rodef Shalom temple; 3 p. m., People's Radlo church services; 4. Prof. Otto Kalteis, planist; 6:30, dinner concert, William Penn hotel.

WCAL, Philadelphia, Pa. (Eastern, 4278), 5 p. m., talk; 6, Hotel Pennsylvania orchestra, Louis Baer, director.

WCBD, Zion, Ill. (Central, 345), brass quartet, mixed quariet: Wiedman Sisters. Erms Revnolds, soorano.

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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 Amons Home Folks;" readings, Courier-Journal, Louisville Times; 7:30-9, concert, ausplees Arthur Findling.

WHN, New York, N. Y. (Eastern, 360), 6:30-7:30 p. m., vincent Catanese and his Hotel Alamac orchestra; 7:30-8, Hotel Carlton Terrace orchestra; 8-8:15, Arthur Stone, blind jazz planist; 8:30-9, Strand Roof entrainers; 10-10:30, Jimmy Clarke and his entertainers; 11:130-12, Roseland dance orchestra; 8-8:15, Arthur Bonawitz, organist; 3, Dal Ruch and his Areadlans dance orchestra; "Me and the Boy Friend," "The Golbre and the Boy Friend," "The Golbre and the Boy Friend," "The Golbre and Stage Art, "When Other Day," "No One Knows What Its All About," "Tell Me December of the Way," "Somebody Loves My Baby," "Follow the Swallow," "Too Tired, "Two, Fish, School of Expression and Stage Art, "When the Whitvind Blows," "He Said and She Said; 9, "In Fairyland," Kurtz Studio concert quartet, Isabolia Guthrle, soprano, Edna Loreaux, contraito, Waiter Start, tenor and Paul Grant, bartione; 10:05, Art Coogan and his Club Madrid dance orchestra; 11:05, Karl Bonawitz, organist.

WIJ, New York, N. Y. (Eastern, 455), 7-8 p. m., Mooseheart theater orchestra; 10:30-11:30, Hotel University of the Walderf-Astoria dance orchestra; 10:30-11:30, Hotel Walderf-Astoria dance orchestra; 10:30-11:30, Hotel Williams and his Rainbo Garden orchestra; 10:30-11:30, Hotel Williams, and orchestra; 10:30-11:30, Hotel Williams, and his Club Madrid dance orchestra; 10:30-11:30, Hotel Williams, and his Rainbo Gar

Mooseneart theater orthestra; 9-12, dance music, Log Cabin.

WIZ, New York, N. Y. (Eastern, 455), 7-8 p. m. Waldgrf-Astoria dance orchestra; 10:30-11:30, Hotel Astor dance orchestra.

WLBL, Stevens Point, Wis. (Central, 278), 12 midnight, frolic.

frolic.

WLS, Chicago, III. (Central, 345), 7 p. m., iuitaby time,

"Big" Ford and "Little" Glenn; 7:15-12, Saturday
miduite revue, Filddiln" Tom Danduran, Gloomy
Gus Whitlock; Ralph Emerson, organist; Isham Jones
and his College Inn orchestra; Carpenter and Ingram.

"The Marmony Girls!" Word and Glemm: Waiter

"He Said and She Said."
tta Studio concert quartet,
Edna Loreaux, contraite,
Edna Starte, 115- Vesars, "Dr. Frederick W.
Collins,
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Collins, "Other Later, 12 Pa. p. m., contraite, W.
Collins, "Other Later, 12 Pa. p. m., contraite, W.
Collins, "Other Later, 12 Pa. p. m., contraite, W.
Collins, "Other Later, 150 Years," Dr. Frederick W.
Collins, "Other Later, 12 Pa. p. m., contraite, W.
Collins, "Other Later, 150 Years," Dr. Frederick W.
Collins, "Ot



Edna La Verne Friebe 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 case concert orchestra, direction Feri Sarkozdi; 7:30, Round Table forum; 8:30, Sevon Arts Club Carter and talk. N. Y. (Eastern, 492), 7:20-9:15. p. m., Roxy and his Gang, Capitol theater; 9:15-10:15. Skinner organ reelta!
WEAL, Boston, Mass. (Eastern, 303), 3:45-5:30 p. m., men's conference, Bedford Branch, Y. M. C. A. WEMC, Berrlen 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; 10:55-11:20, studio chapel sermon, Pastor W. R. French; 8:15-8:20 p. m., organ prelude; 8:26-8:46, Radio Ligbibouse choir; 8:40-8:50, Gertrude Sellards, soprano; 8:50-9, Charles Garber, saxophonist; 9:9:10, Sermon, Pastor W. R. French; 9:10-9:30, sermon, Pastor W. R. French, WFAA, Dallas, Tex. (Central, 476), 6-7 p. m., Radle 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)

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

foxtrottars.

WFI, Philadelphia, Pa. (Eastern. 395). 1:30 p. m., changl services, auspires Central Y. M. C. A.; talk,

chaps services, auspices Central V. M. C. A.; talk, Dr. C. A. Barbour. WGN, Chicago, III. (Central, 370), II a. m., Uncle Walt reads comies to the children; 11:15, twin organ recital, Chicago theatsr; 2 p. m., Lyon & Healy organ recital; 2:30, Tribuno Master artists concert; 3, Chicago Musical collecte; 9, "An Evening with the Greaco Musical collecte; 9, "An Evening with the Greacomposers," Charles II. Gabriel, Jr.; Drako concertions on the concept of the concept of

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

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

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

W. Anthony; 9, Symphony orchestra; 10, selections, Hampton Institute quartet.
WHAS, Louisville, Ky. (Central, 400), 9:57 a. m., organ music; 10, church scrvice, Fourth Avenue Presbyterian church, Rev. Dr. Charles W. Welch, pastor; Esther Metz, soprano; Mrs. Viginia S. Herrick, contraito; Williams Layne Vick, tenor; William E. Conen, organist; 4, organ recital, George Latimer, organist; 4:30, choral evensong service, Christ Church cathedral; Ernest Arthur Simon, organist.

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, Roseland dance orchestra; 5:30-6, Olcott Vali



Marie Kelly, reader, is heard Wednesday and Saturday nights at WEBH, Chicago. 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, Alia and hia Club Madrid orchestra with Lee Kent; 12-12:30 a. m., Harry Richman and his entertainers; Eddle Elkins and his orchestra.

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

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

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 ordestrat 10-10:15, "Reminiscences of a Reporter," William H. Crawford.

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., Radlo Bible class, auspices of Federation of churches; 3:30-4, "Practical Religion," Itev. 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, Nathan Abas' Hotel Pennsylvania orchestra; 10-11, Hampton institute quartet.
WKBF, Providence, R. I. (Eastern, 286), 10 a. m., chimes; 5 p. m., orcan recitál.
WLS, Chicago, Ill. (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; Carl Wunderle, zither soloist.

crn orchestra, William Ropp, director, 2ther soloist.

WMO, 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 services, Bethany temple; 2:30, Sunday school services, Bethany temple; 2:30, Services, Bethany temple, Rev. Gordon A. Modernan, minister.

MacLennan, minister.

whee, varparaiso, Ind. (Central, 278), 7:30 p. m., musle.

WSAI, Cincinnati, Ohio (Central, 309), 3 p. m. chlmes concert; 3:10, sermonetto.

WTAS, Elgin, III, Central, 286), 2 p. m., Villa Oliva Star Sunday concert; 6, Fred Ham and his Terrace Garden orchestra; 9:30, Klmball studio hour; Lec Sims; 10:30, Terrace Garden supper-dance program; 11:30, Jay Gould, Maxine Brown, Jimmy Eggert, Jack Little, Paul Small, Lew Butter, Joey Stoole, Lindsey Coons, Betty Holioce, Bahe June.

WWJ, Oetroit, Mich. (Eastern, 513), 11 a. m., aervices of the St. Paul's Episcopal eathedral; 2 p. m., the Detroit News orchestra.

Monday January 5

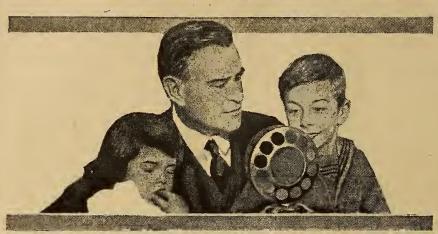
Monday, silent night lor: CKAC, KYW, WBAV, WCAL WEAO, WEHB, WEBJ, WFI, WHAS, WIP, WIY, WLS, WKBF, WMAK, WMAQ, WNJ, WQJ, WRC, WTAY.

CKAC, Montreal, Can. (Eastern, 437), 1:45 p. m., Windsor trie; 4:30, Ho lessons.
KFAE, Pullman, Wash. (Pacific, 330), 7:30 p. m., Catherine Hunt, soprano, singing, "Les Pappillon," Little Slippers of the Rain," Butterflies," Come Down Laughing Streamlet;" Margery Segessenmann, planist, playing "Humoresque," "Etude in D Flat," "Schetzo;" "Important Points in Poultry Raising, "Prof. J. S. Carver; "Control of the Sorious Hot Bod Disease," George L. Zaudci; "Psychology in Industry," Dr. Carl I. Erickson; book chat, Alice L. Webb. KFMF, Shenandoah, la. (Central, 266), 6:30 p. m., concert, seedhouso people and their friends.
KFOA, Seattle, Wash. (Pacific, 455), 5-6 p. m., Seattle Post-Intelligeneer; 6-6:30, Post-Intelligeneer concert; 6:45-8:15, Sherman, Clay & company; 8:30-10, Seattle Post-Intelligeneer concert.
KFOX, Seattle, Wash. (Pacific, 238), 7:15-7:45 p. m., Aunt Vitien'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, 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 Duo-Art; address, C. H. Cheney, seventh of a series of talks on banking; the Tell-Me-a-Story Lady; music, Hotel Muehlebach Trianon ensemble; 8-9:15. "Around the Town with WDAF;" 11:45-1 a. m., nighthawk frolic, the "Merry Old Chief" and the Plantation players.

WOAR, Philadelphia, Pa. (Eastarn, 395), 11:45 a. m., daily almanae: 12:02 p. m., Stanley theator organ recital; Arcadia cafe concert orchestra; Marcella North, planist; 4:30, Isabella Sgarra, planist; 7:30. Dream Daddy; 9:30, Stanley theater symphony orchestra; 10:03, Arcadia cafe dance orchestra; vaudsville features from Fay's theater.



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 storles and KGO Kiddles' klub; 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 p. m., Arlet trio, Mrs. Ailce B. Marshall, director. KSAC, Manhattan, Kan. (Central, 341), 12:30 p. m., tuning in piano selection, Osecola 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.

KSO, St. Louis, Mo. (Central, 375), 8:30-10 p. m., down on the farm program, including old-time hoe-down tunes; French harp selections and songs, Luke Hignight; banjo, harp, and Mack Hignight, fiddler; 10:30-11:30, Chilcago serenade dance program.

KYM, Chicago, Ill. (Central, 356), 6:30 a. m., morning exercises, Paul Leonhardt; 11:35, table talk, Mrs. Anna J. Peterson; 6:35-7, children's bedtime story, Uncle Bob.

WAHG, Richmond Hill, L. I. (Eastern, 316), 8-8:15 n. m. Emory Deutsch, violinist: 8:15-8:30. Thomas

KYW, Chicago, III. (Central, 585), 6:30 a. m. morning exercises, Paul Leonhardt; 11:35, table talk, Mrs. Anna J. Peterson; 6:35-7, children's bedtime story, 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 Llebowttz, planist; 8:45-9, Elsie Edwards, soprano; 8-9:15, Irving Firatemberg, pianist; 9:15-9:30, Harold Pratt, tenor; 9:30-9:45, Emory Deutsch; 9:45-10, Thomas Stevens; 10-10-15, Besse Llebowttz; 10:15-10:30, Elsie Edwards; 10:30-10:45, Asciutto Brothers dance orchestra.

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

WBBG, Mattapoisett, Mass. (Eastern, 248), 8 p. m., Watch tower string quartet; 8:10, Carl Park, violinist; 8:20, world news digest, Editor Golden Age; 8:40, Carl Park, violinist; 8:20, world news digest, Editor Golden Age; 8:40, Carl Park, violinist; 8:50, watchtower string quartet.

M a rcell a North, pianist, will be heard again at WDAR, Phila-delphia, Tues-day, January 6.

Prof. Leroy Arnold, Columbia university; 6-7, dinner music, Waldorf-Astoria orchestra; 7:10-8:30, Strand theater program; 8:45-9, Leslie Joy, barltone; 9-10, A and P Gypsies; 10:15-10:30, Richard McClanahan, pianist; 10:30-11:30, Midnight Sons orchestra. WEEI, Boston, Mass. (Eastern, 303), 6:30 p. m., Boston Edison Big Brothers club; 7, Dok-Bisenbourg and bis Sinfornians; 7:30, talk, Edwin E. Tumer, Jr.; 7:40, Dok-Eisenbourg and his Sinfornians; 7:30, talk, Edwin E. Tumer, Jr.; 7:40, Dok-Eisenbourg and his Sinfornians; 8, program, courtesy, C. F. Hathaway & Sons, wholesale bakers; 8:30, Courtney Bird and his "Uke;" 8:45, Buddy's Bostonians; 9:30, Getrrude La Puri Drisko, dramatic soprano; Lillian Breslin, soprano; Alice Walsh Hutchinson, accompanist; 10, musicale; 10:30, Dok-Eisenbourg and his Sinfornians.

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; 9:05-91; 5, Cyril Keilman, 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, Paul E. Ashley, director.

WFI, 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, the kiddles' pal.

WGN, Chicago, Ill. (Central, 370), 1:40-2:30 p. m., luncheon music, Drake concert ensemble, Blackstone string quintet; 2:30-3, rectital, Lyon and Healy concert hall; 3-3:30, rocking chair time.

WGR, Buffalo, N. V. (Eastern, 391), 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; 9-10, musical program, Buffalo Trust company, Cecile Kertz, director; 11:30, supper-dance music, Vincent Lopez Hotel Statler dance orchestra; Harold Gieser, director; 9-10, musical program, Buffalo Trust company



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; 7:39, 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-Kaybee and orchestral concert.

concert, quarter, the concert.

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

WCBO, Zion, Ill. (Central, 345), 8 p. m., Junior choir, Fred Faassen organist; trombone quartet; Arthur Rendall, clarinetist; E. B. Paxton, bartione: Mrs. Esther Cook Rendall, soprano; L. J. Hire, violalst; Eleanor Pihl, planist; Mrs. S. H. DePew, reader, WCCO, Minneapolis-St. Paul, Minn. (Central, 417), 10:45 a. m., "Reelpe 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. H. G. Cargill; 8, sport talk; 8, "Curron Events," W. P. Lemon; 8:30, Fort Snelling Third Infantry hand; travelogue, "Hawali, Guam, Philippines," Capt. Raymond C. Wolfe: 10, Dick Long's Nankin Cafe orchestra; Mrs. W. H. Grinden, mczzo-soprano.

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

WHN, New York, N. Y. (Eastern, 360), 8:20-7:10, p. m., Vincent Catanese and his Hotel Alamae orchestra; 7:10-7:30, fashion chats. Mms. Belle; 7:30-8. Hotel Carlion Terrace orchestra: 8-8:05, "Storage Batter-tes," H. D. Shontz: 8:05-8; Ros, and dance orchestra; 8:50-9-20, Liliman's Employees orcheatra; 8:20-9:30, Richard B. Gilbert with his teopatch; 9:30-135, "How to Storage What York M. M. Carling Pelace Behrend; 9:35-10, Dan Gregory and H. Crystal Palace orchestra; 10-11. Jack Shack orchestra; 12-12:30, Lou Gold and his orcestion of the true wigward Palace orchestra; 12-12:30, Lou WHO are of Teeth: "Enderther Storage Pelace or Migward and Country of the Storage of Teeth: "Enderther Storage of Teeth: "

10:50, "Diet and Hoalth," Dr. Lulu Hunt Petars; 1-2 p. m., Henry Vander Zanden's Hotel Ambassador Trio; 4-4:30 Bert Dixon, baritono; Elmer 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 wrchestra; Clark's Hawailans.
WLS, Ghicago, ill. (Contral, 345), 3:43-4:45 p. m.. "Music in the Homo," Miss Streator; "Faderal Constitution and Child Labor," Mrs. Florence Bennett. WLW, Cincinnati, Ohio Central, 423), 6 p. m., dinner hour concert, Cincinnati Pots; 8-10, Times Star program: Times Star orchestra; Howard Hafford, tenor; Karl Kirksmith, Collist; Senstor Schultz in monologues. WMC, Memphis, Tenn. (Central, 501), 12 m., musical program, O. K. Houck Plano company; 8 p. m., beddimo story, Uncle Percy; 8:30, concert, Hotel Gayose orchestra.
WNVC, 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. Riesenfeld's Risito program, Raito theater; 9:45-10, talk, Fred A. Wallis, commissioner, department of correction; 10-10:30, dance program; 10:30-10:45, holics alarms and official weather forseasts. WOC, Oavenport, Iowa (Central, 484), 9 p. m., Mrs. Frank W. Biliott, planist; Mrs. Grace Huber-Londing, One-act comedy, dramatic club, W. Roy Van Adn., director.
WOC, Davenport, iowa (Central, 484), 9 p. m., collego chimes; "The Need of Planning the Year's Farm Business;" 10 program, popular music.
WOO, Ohihadelphia, Pa. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogt; organist; 10:30, Vincert Program of the Control of Planning the Year's Farm Business;" 10 program, popular music.
WOO, Davengort, iowa (Central, 380), 12:30 p. m., collego chimes; "The Need of Planning the Year's Farm Business;" 10, program, popular music.
WOO, Ohihadelphia, Pa. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogt; organist; 10





3-3:15, Mildred, J. Pfumen; 3:15-3:30, talk, Charm magazine; 6:15-7:15, "Music While You Dine," Dave Harmon's Cinderella orchestra; 7:15-7:30, resume of day's sports, Joily 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, Jeffrson Gity, 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," Stering Bryan McDonald; "Yeast for Health," J. Schinkel; 3-4 p. m., "Iodine 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, tea music, Meyer Davis' New Willard hotel trie; 6, children's hour, Pergy Albion.
WSAI, Gincinnati, Ohio (Central, 309), 10 p. m., Doe Howard's Cuvier entertainers.
WIAS, Elgin, III. (Central, 286), 8-12 midnight, Villa Olivia Monday night program.
WM, Oetroit, Mich. (Eastern, 513), 3 p. m., The Detroit News orchestra; 7, The Detroit News orchestra; Ina M. Lockart, contraito; T. Stanley Perry, tenor.

Tuesday, January 6

WO1, WO5, 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 midnight, 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 cencert.

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 orchestra

6-6:30, Seattle P. I. concert; 6:45-8:15, Rhodes Department Store studio program; 8:30-10, Seattle P. I. musical program; 10:05-11, Eddie Harkness' Jazz orchestra; 9-10, Aunt Vivien; 8-9, Earl Gray and bis orchestra; 9-10, concert hour; 10-11, Earl Gray and his Butler Hotel orchestra.

KGO, Oakland, Calif. (Pacifie, 312), 4-5:30 p. m. concert orchestra, Hotel St. Francia; 8, Adelphian club: Mrs. Floyd J. Collar, soprano; Mabel Mellia Shires, contraito; Mme. Mabrice Couchot, soprano; Mrs. Pblilip Eberhart, planist; program, "D" Radio company; mixed quartet selections, Metropolitan Four, Thelma Werli, soprano; Sylvia Hashpao Spaulding, contraito; Harold Snaulding, 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, Oscola Hall Burr; "Harvesting and Storing Ice," W. G. Ward; "Green Feeds for Poultry," D. J. Taylor; 7:20, college bell and opening exercises; 7:30, "Place of Alfalfa in Kanasa 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 Athletle association; 9 program, concert, Arthur Platz Vocal studio; Natalie Brigham, concert, Arthur Platz Vocal studio; Natalie Brigham, folic, 6:35-7, children's bedtime story, Oncle Bob; 7-7:30, dinner concert, Congress botel; 7:20-7:45, Around the Town with KWW in Chicago: 18-20, musical program: 10-11:30, evening at home."

SOUTH AFRICAN PROGRAM AT WEMC

Tuesday, January 6

(Continued from page 10)

WBAV. Columbus, Ohio (Eastern, 423), 8 p. m., program of nonular and semi-classical numbers, WBAV orches

of popular and semi-classical numbers, WBAV orchestra, Frances Handibeau, director.

BZ. 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, Natlonal Carbon company's Eveready entertainers; 10, concert, Goodrich Silvertown Cord orchestra; 11, concert, artists and orchestra, Nixon restaurant. ránt.: 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 Davis Bellevuc Stratford concert orchestra; Loretta Kerk, pianlst; 6:30, Meyer Davis Bellevuc Stratford concert orchestra; 7. Sunny Jim. the kiddles' pal; 9, Everyeady Hour from WEAF; 10. Goodrich Silvertown Cord orchestra from WEAF.

WGM, 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, 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, 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, dinnor

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, 6:30, Stephen, 6:30, Stephen, 7:45, Mrs. W. E. Fribley, 6:30, Ralph Emerson, organist, 6:50, specialties, 6:30, Stephen, 7:45, Grand Glern, 7:15, Miriam Worrell, conrato; Alfred Stoddard, tenor; 7:30, Isham Joules and its College Inn orbesta; 7:45, Freasure Islad," Anthony Wons; 8-9, evening R. F. Breasure Islad, "Anthony Wons; 8-9, evening R. Farm Bureau Has Done and is Doing to Solve the Farmer, Transportation Problems." 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 Glern time; 11, "A Nite Among the Heatber," Scoteb program, Jessie and Nan Mulr; 12, midnite review, Ralph Emrson, organist.

WLW, Gincinnati, Ohlo (Central 423), 12:15, p. m., program, Delta Omicron sorority; talk on automobiles, Henry Schlensker; dance numbers, Woody Meyer's orchestra; 4, Mab Jongs lecture, Lucy Bleckburn; ecital, pupils William Kyle; "What Is Evolution." M. V. Whitzaere; 6, dimer hour concert, courtesy Circinnati Post; 10, Keefer-Kecker orchestra; 10:30, concert, courtesy Radio division, Ohle Rubber and Textile company; quartet; speedal numbers, Pat Berryman, banjoist; Leonard Henkel, saxphonist; Forrest Bradford, planist; Paul Speeth'a Rosophonist; Forrest Bradford, planist; Paul Speeth'a Post Lodge orchestra; 11:10, Jimmy Clark and his Broadway entertainers; 11:30-12, Original Division of program, 11, medicine froile.

WM, Newark, D. Frank Daily and his Meadowbrook orchestra; 11:11:00, Himmy Clark and his Broadway entertainers; 11:30-12, Original Division, 5:25-7:45, s

11:30-12, Original Dixleland jazz band; 12-12:30 a. m.. dance music, Frank Daily and his Meadowbrook dance ornestra.

WYC, 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 necital; 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, Philadelahia, Pa. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. in., Waamaaker crystal ten 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; 6. Canary Cottage Inn orchestra; 6:30-7, man in the moon stories for children, Josephine Lawrence and Wm. P. 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;
WCC, Dattine and Logger Company and Louis Baer;
WCC, Dattine and Logger Company and Louis Baer;
WCC, Dattine All, William and Logger Company and Louis Baer;
WCC, Dattine Logger Company and Logger Company and

Evelyn Sparlin, violinist, playing "Meditation from Thais," "Serenade," "Berceuse from Jocelyn," "Concerto in E. Minor; Norma Sparlin, planist, playing "Minuet in G;" Margarete MacLachlan, violinist, playing "Oid 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. Ellington; Ritchen arrangements, Gladys Gallup; book chat, Allce L. Wobb.

KFNF, Shenandoah, Ia. (Central, 266), 6:30 p. m., concert, Elk's band, Harry Day, director.

KFOA, Seattie, Wash. (Pacific, 455), 12:30-F30 p. m., Seattle Rotary club weekly luncheon program; 5-6, Seattle P. 1; 6-6:30, Seattle P. 1, concert; 6:15-8:15.

Hopper-Kelly Music company; 8:30-10, Seattle Times studio concert.

KFOX, Seattie, Wash. (Pacific, 238), 7:15-7:45 p. m., beditime story, Aunt Vivien; 8-9, Earl Gray and his orchestra; 9-10, concert hour; 10-11, Earl Gray and his Buller hotel orchestra.

KGO Oakland, Calif. (Pacific, 312), 3 p. m., musical program and speaker, Cora L. Williams Institute; 4-5:33 tm. College, N. M. (Mountain, 360), 2:30-8:30 p. m. College, N. M. (Mountain, 360), 2:30-8:30 p. m. College, N. M. (Mountain, 360), 3:00-8:30 p. m. College, N. M. (Mountain, 360), 3:00-8:30 p. m. College, N. M. (Mountain, 360), 3:00-8:30 p. m. College, N. M. (Mountain, 360), 1:30-8:30 p.

Frank Wood, flutist.

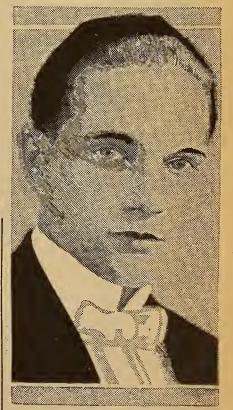
WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m., dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 7:45, special feature; 8:30, concert, artists and orchestra, Nixon restaurant.

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. m., woman's hour; 2:30, matinee musical; 4, "Transfiguration of Miss Philury;" 5:30, children's hour, Alpha Stalson; 7, St. Olaf's Lutheran church, Rev. O. H. Sietten, pastor; 9, classical concert; 10, Arnold Frank's Casino orchestra.

WCX, Detroit, Mich. (Eastern, 513), 4:15 p. m., rausical program; 6, dinner concert, Book-Cadillae hotel; 8:30, 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; muslo, Hotel Muehlebach Trianon ensemble; 8-9:15, classical pro-



gram, the Trianon ensemble and soloists; 11:45-1 a. m., nighthawk frolie, the 'Merry Old Chief' and the Plantation players. VDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., daily almanac; 12:02 p. m., Stanley theater organ recitai; 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 danco orchestra.

orchestral fenditions by various close of the direction Rotary club; 10:05, Arcadia cafe damo 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 servies, Columbia university; 6-7, dinner music, 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 Society orchestra; 11-12, Club Lido Venice orchestra.

WEAO, Columbus, Obio (Eastern, 294), 8 p. m., chimes concort, Prof. A. P. McManigai; miscalianeous 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, WCAE, WFI, WHN, WLS, WQJ; 7:15, WIP, WLS; 7:30, CKAC, KDKA, WBZ, WCAE, WHAS, WRC; 7:45, WBBR; 8, KHJ, KSD, KYW, WBZ, WGO, WMC, WNYC; 8:45, WSAI; KTHS, WBZ, WCOO, 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, WEMC; 8:30, KTHS, WCAL, WLW; 8:50, WEMC; 9, WBBR, WFAA, WGN, WGY, WJZ; 9:15, WCCO, WEAF; 9:30, WOC.

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, WYC, 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, 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.



Wednesday, January 7

(Continued from page 11)

odison Big Brother club; 7-8, musicale; 8, program, ourtesy, C. F. Hathaway & Sons; 8:30, concert, fadrigal quartet; 9, program, Jack O'Brien; 11, loyd G. Del Castilio, organist. Mc, Berrien Springs, Mich. (Central, 286), 8:15-9:15, m., miscellaneous program, Spanish Department, Immanuel Missionary college.

"AA, Dallas, Tex. (Central, 476), 12:30-1 p. m., muclal program, Dallas theater.

"I, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3:10, oretta Kerk, planist; 6:30, Meyer Davis Bellevue stratford concert orchestra; 7, Sunny Jim, the kliddies' al.

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

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., Canadian National Railways concert.

CNRC, Calgary, Can. (Mountain, 430), 9-11 p. m., bedtime travel tale; Mme. Mamie Gardiner, contraito; instrumental party.

CNRW, Winnipeg, Can. (Central, 450), 8-11 p. m., bedtime travel talk; program, Winnipeg Chapter Order of Demolay for Boys; Vermor 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, xylophonist; Frank Wright's Country club dance orchestra. KFKX, Hastings, Nebr. (Central, 291), 9:30-11 p. m., Hastings dance orchestra.

KFNF, Shenandoah, la. (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 Debt. 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., uncheon concert; 4-5:30, concert orchestra, Hotel St. Francis; 8, "Lady Windermere's Fan," KGO players; 10-1 a. m., dance music program, Henry Halstead'e 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, 536), 4 p. m., home hour. KYHS, Hot Springs, Ark. (Central, 375), 8:30-10 p. m., concert, thirty-piece violin ensemble, Oscar Rust studio.

KYW, Chicago, Ill. (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. Permin; 8:20-9:05, prog

AL MIDNIGHT PROGRAM TUESDAY



WIZ, 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 Lineus," editor of Needle Art; 1-2 p. m. Nathan Abas' Hotel Pennsylvania orhestra; 4:30-5:30, Bernhard Levitow's Hotel Commodore tea orchestra; 7-8, Bernhard Levitow's Hotel Commodore orchestra; 2:5-9, 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.

ton Fisher; 7:33-8, "Timely Johnes, E. F. Breit, 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, lowa (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, 1a. (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; 6:15-8:30 p. m., "Radio for the Layman," Albert E. Sonn; 6:30-7:15, Jimmy Lent's Famous Stoclety orchestra; 7:15-7:30, resume of the day's aports, Jolly Bill Stelnar, Fam Bertrams; "A Frock for the Holidays," Eleanor Chalmers; "Authority on Horticulture," C. P. Binner; 3-4 p. m., "Gauginn Meals by the Weather," Josephine Naylor; "Household Refrigeration and Frozen Desserts," Mrs. George M. Shirk; 7-8, dinner concert, Ralph Williams and his Rainbo garden orchestra; Maule Robriguez, Spanish tenor; Lydla Lochner, contralto; Marion Henry, planist; Jo-2 a. m., Ralph Williams and his Rainbo geomary Hughes, soprano; Will Rosslerd, addy of them all.

WRC, Washington, D. C. (Eastern, 469), 6:45 p. m.,"

Friday, January 9

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

WMAK. WOI, WOS, WRG.

CKAC. Montreal, Can. (Eastern, 437), 1:45 p. m., Windsor hotel luncheon concert; 4:30. Ho lessous.

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 Romaneili and his King Holel concert orchestra; 8:30-10, studio program, Hambourg Conservatory of Music; Rachelle string quartet, Rachelle Copeland Stephenson, first violinist; Nellie MeGhie, second violinist; Ruby Dennison, violaist; Gertrude McKeown, violonecilist; Carmoletta Sheridan, soprano; Ada Lingham Wagner, accompanist; 9, address; 10:30-12, Luigi Romaneili and his King Edward Hotel dance orchestra KFAE, Pullman, 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," 'Sarasaste,' 'Concerto in G Minor;' 'Essentials of Successful Farm Monagement,' Prof. Georg Severance: 'Getting Ready for tho New Crop,'' Leonard Hegnauer; 'Retation between Banker and Farmer,'' F. C. Forrest.

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 luttler hotel orchestra. (RGO, Oakland, Calif. Graying, 3 p. m., studio musical program; 4-5:30, concert orchestra, Hotel St. Francis; 5:30-6, The Girls' Half Hour, Esther Wood Schnelder.

GU, Jeans and Jean Golden Gold

Sanders Original Nighthawks; W. Remington Welch, 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 Waisb, baritone; 9:15-9:30, Bennett and Marsh, songs; 9:30-9:45, Arthur Nelson; 9:45-10, Chas. VanCles; 10-10:15, Helen Kuck; 10:15-10:30, Norman Grayson; 10:30-10:45, Harry Waish; 11-12, George Walter and his orchestra.

WBAV, Columbus, Ohlo (Eastern, 423), 8 p. m., coneert, Dispatch Little Symphony orchestra; John Clark, director; Mrs. T. C. Tussey, reader.

WBA, 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.

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, WCG, 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. Uncie Kay-bee; 8:30, muscial program; Oswald Johns Welsh,

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

WCAL, Northfield, Minn. (Central, 360), 9 p. m. "Points of View," "Dear Cornella," 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, rectl, 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; Rongmonson 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, Munneapolis Athletic Club orchestra, Georga, Greene, one stringed violin solost; Mrs. Georga, Greene, accompanis; Dieanor Potar. "Dorance, a Greene, accompanis; Dieanor Potar." "Innortance of a Strong Business Fersonuc; J. Henry Todd; 8:30, program; 8, X. Tar. H. Kamily."

"Not Total H. Kamily." "Montenance of a Strong Business Fersonuc; 1, Henry Todd; 8:30, program; 6, dinner concert, Book-Caddila hotel; 8:30, mustcal program; 10, dance program.

"Work Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., the Star's string trio; 6-7, school of the air, plano tuning-in number on the Du-Art; address, speaker, auspices Kansas City Children's Bureau; the Tell-Mea-Story Lady; music, Hotel Muehlebach Trianon ensemble; 8-9:15, popular program; 11:45-1 a. m., nighthawk froile, 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 rectiat; Arcadia cafe ocneert orchestra; play, students National School of Elocution and Oratory; 7:30, Dream Daddy's bedtime stories; 8, play by WDAR players; weekly treasure lutur; 10:03, Arcadia cafe dance orchestra; Morning Glory club concert; sougs by Hersche; and Zoehrns.

WAF, 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. Kin

clarinetist; 10:30, program, Buedro danser '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; readints, 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 entertainers, with Eddie Elkins and his orchestra; 10-10:10, fashlon chats, Mmo. Belle; 10:25-10:30, "Storage Batterles," H. B. Shonts; 10:30-11, Roseland dance orthestra; 11-11:30, Vanity club revue; 11:30-12, Sam Wooding and his orchestra from Alabam elub; 12-12:30, Ted Lewis and his Symphonic Clown.

WHO. Oes Moinos, lowa (Central, 526), 7:30-9 p. m. Williamson brothers; Y. M. C. A. male quartet, W. A. D. Parko, first tenor, Frank Shiploy, first tenor, George Parks, barlione, Hibbard Cleveland, bass; Dr. Charles Sitzer, planist; Richard Hyde, 11-year-old soprano; Mrs. R. C. Hyde, accompanist.

WIP, Philadelphia, Pa. (Eastorn, 509), 1 p. (limbel tea room orchestra, Ray Steen, director; 3, "Food for Anaomics," Mrs. Anna B. Scott; 3:15, M. Dorothy Deacon, soprano; Millon J. Demon, tenor; 4:16, "Abnormal Children," Dr. F. H. Leavitt; talk, Laura Belle Staley; 6:05, Art Coogan and his Club Madrid orchestra; 7, Uncle Wip's bedtime storles.

WJO, Mooscheart ill. (Central, 278), 3:30-4:30 p. m. music, Mooscheart (Lidren, 278), 3:30-4:30 p. m. music, Mooscheart (Lidren, 278), Mooscheart children; Mooscheart (Lidren, 278), Mooscheart children; Mooscheart (Novelty orchostra; talk, M. P. Auspan, Manaman, M. Scott, 2003, Alleria (Mooscheart Children), Mooscheart (Lidren), Mooscheart (Lidre

WIY, 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 Cub. Y. (Eastern, 455), 1-2 p. m.
Henry Cando Cub. Y. (Eastern, 455), 1-2 p. m.
Henry Vander Zanden's Hotel Ambassador tric; 7-8,
Savarin ensemble, 8:15-9, "State Legislative Review, Julius S. Berg; 10-11, Ace Brigade and his
Ourteen Virginians, direct from Monte Carlo club,
WLS, Chicago, Ill. (Gentral, 345), 12-1 p. m. R. F. D.
program; George Simons, tenor; "Handing the Farmers' Legal Problems," Donald Kirkpatrick; 3:45-4:15
homemakers' hour; "1s Your Sweet Tooth Healthy?"
Louise Flizgerald; "The Busy Woman of Today,"
Helen Bennett; 6:30, Ralph Emerson, organist; 6:50,
specialities, Senate theater studios; 7, Iullaby time,
Ford and Glenn; 7:15, Ida Miller, contraito; 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 Senate
theater Theater symphony orchestra; 9:15, WLS theater;
9:30, Isham Jones and his Collego Inn orchestra;
19:43, Roblinson and Bernard, 10, Marshall High
School Glee club; 10:30, Isham Jones and his Collego
Inn orchestra; 10:40, Ford and Glenn time.
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
program, O. K. Houck Plane company; 8, p. m., bedtime story, Uncle Percy; 8:30, concert, Brillings
Novelty orchestra, Frank Bracelante, director; 11,
midnight frolic.
WNI, Nowark, N. J. (Eastorn, 233), 10:30-11 p. m.
dance music, Frank Dally and his Meadowbrook orchestra; 11-11:30, Wolfe Gilbert and company; 11:30rdance music, Frank Dally and his Meadowbrook orchestra; 11-11:30, Wolfe Gilbert and company; 11:30rdance music, Fronk Dally and his Meadowbrook orchestra; 11-11:30, Wolfe Gilbert and company; 11:30rdance music, Fronk Dally and h

dance music, Fronk Dally and his Meadowbrook orchestra.

WNVC, 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; 8:30-8:45, talk on sports, Fred G. Lieb; 8:45-9:45, danco program by Irving Bloom and his Club Tokic orchestra; 9:45-10, song recital; 10:30-10:35, police alarms and weather foreast; 10:35-12, Ben Bernle's Hotel Roosevelt orchestra.

Roosevelt orchestra.

WOL, Oavenport, lowa (Central, 484), 9 p. m., Wrixen's Capitol Harmony Kings orchestra.

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

WOC. 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, 12:30 p. m., collego chimes; "How Keeping Farm Records Affects Profits," Dr. C. L. Holmes, 12:30 p. m., Wanamaker Woo, Philadelphia, Pa. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogt; 12:09 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 control orchestra; 8:30, Erm Rapee and his Radio gang from Pox theater; 9:30, WOO orchestra, Robert E. Golden, director; 10:03, A. Candelori and his dance orchestra; 10:30, 'Vincent Rizza and his Antel Sylvania dance orchestra. WOR. Meark, N. et Sylvania dance orchestra. Alla, WOR. Meark, N. et Sylvania dance orchestra; 6:30-7, man in the moon sories for children, Josephine Lawrence and Wm. F. B. McNeary; 7-7:15. Blucbird orchestra? 7:15-7:30, resume of the day's sports, Jolly Bill Steinke. B. McNeary; 7-7:15. Blucbird orchestra? 7:15-7:30, resume of the day's sports, Jolly Bill Steinke, M. Grant Dickens; "Touring Europe, Mrs. Harry T. Sanger, 7-8, dinner concert, Sheppard Levine, tenor; Efflo Overson, accompanist; Europe, Mrs. Harry T. Sanger, 7-8, dinner concert, Sheppard Levine, tenor; Efflo Overson, accompanist; Dorothe Schubert, Jugo-Slav soprano; 10-2, Ralph Williams and his Rainbo Sklyarks; the Rogers boys, Larry and Billy; Nubs Allen, contralto; James J. Whalen, tenor; Wost brothers; Monogram trio. WRC, Washington, D. C. (Eastern, 459, 4 p. m., fashion developments of the moment, Eleanor Gunn; 4:10, Eleanor Glymn, planist; 4:20, "Beauty and Personality," Elsie Pierce; 4:30, tea mustic, Meyer Davis' New Williard hotel trio; 6, children's hour.

Additional Programs

(Received Too Late for Classification)

Saturday, January 3

KFi, Los Angelos, Calif. (Pacific, 469), 5-5-30 u. u.,
Evening Herald, table talk and news; 5:30-6, Examiner's musical half hour; 6:45-7:30, dauc orchestro; 7:30-8, song rectal; 8-9, vocal and instrumental; 9-10, Examiner, varied program; 10-11, Packard Radio club, Examiner, varied program; 10-11, Packard Radio club, Examiner, varied program; 10-11, Packard Radio club, Examiner, varied program; 230-4:30 p. m., impromptus studio program, Gladwyn Nichols, cornetist; 7:30-9:30, auditorium service, sermon on Divine Healing, Almee Semple McPherson, pastor.

(Cleutiqued on vage 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, providing you dial correctly and read the programs carefully, everything from jazz to opera.

Friday, January 9

idey, elleni nighi fer: CKAC, CKNC, KFKX, KOO, WCBO, WEAO, WFI, WNAZ, WIP, WKBF, WLW, WMAK, WOI, WOS, WRC,

Where to Hear Talks

Central Standard Time

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

Additional Programs Received Too Late for Classificatio

Wednesday, January 7

(Continued from page 11)

Thursday, January 8

DANCING (Central Time)

WFI, USAC, 7:45, WJZ: 9:25,

VGY; 6:35, 7:15, KGO, NRT, 9:20,

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

direct from

1-2 p. m.,
r trio; 7-8, Islative Roide and his Carlo ctub.
1. R. F. D.
2. the Farmk; 3:45-4:45
7 anist; 6:50,
ullaby time,
traite; Hans
College Inn
ram: Irving
lentury Coahn's Senate
VLS theater;
rshall High
his Collego
me
(1)5.

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

0-11 p. m., lowbrook er-pany; 11:30-2:30 a. m., Meadowbrook

7:30-7:35 of meeting igram; 8:30--9:45, danco oklo orches-olice alarms mlc's Hotel

a., Wrixen's

m., college ets Profits,"

5. Bluebird
iy's sports,
Fred Mann's
1. "'A Club
"Touring ner concert,
1 orchestra;
accompanist;
0-2. Raiph
logers boys,
1 dames J.
trio.
oop), 4 p. m.
4:20, "Beauty and
Davis' New Willard hotel trio; 6, children's hour.
WTAS, Elgin, III. (Central, 286), 12:30-1:30 p. m.
Kimball hall classical concert; 6, Terrace Garden
dance program, Jimmy Eggert, Jack Little,
Paul Small, Lindsey Coons, Lee Sims; 11:30, Jay
WTAY, Oak Park, III. (Central, 283), 6:45-7:45 p. m.
Ray Kroc and Harry Sosnik, the Melody boys; Biack
Cat orchestra; 9-10, George H. Clark, organist.
WWJ, Detroit, Mich, (Eastern, 5:13), 5 p. m., The
Detroit News orchestra; 7, The Detroit News orchestra; 3-n.
The Detroit News orchestra; 7, The Detroit News orchestra; 4nne Campbell, The Dotroit News orchestra;

Additional Programs

(Received Too Late for Classification)

Saturday, January 3

KFI, Los Angeles, Calif. (Pacific, 460), 5-5:30 p. m., Evening Herald, table talk and news; 5:30-6, Examiner's musical half hour; 6:45-7:30, dance orchestra; 7:30-8, song rectlat; 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; 3:30-4:30 p. m. (mpromptu atudio program, Gladwyn Nichols, cornetist; 7:30-9:30, auditorium service, sermon on Divine Hoaling, Almee Sompio McPherson, pastor, (Cituatiqued on 1985 14)

Borough of Queens program.

WOC, Davenport, lowa (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., college chimes; "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 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., "Radlo 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 Rainbo ekylstras. Jerry Sullivan; Poggy McGuire; Rick, Whalen, Gardner, Rosemary Hughos, coprano; Will Rossiler, daddo of them all.

WRC, Washington, D. C. (Eastern, 469), 8:45 p. m., children's bour, Peggy Albon; 7, dinner concert, Lee House trio; 10:30, dance program, Waldorf-Astoria orchestra.

WOL Striangels. Smithsonlan 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 Girls' Half Mour, 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 Bountless', A. E. Oman; 7:20 collego bell; 7:30, lectures on music, Ira Pratt.

KSD, St. music, 'H. Central, 3460, S. p. m., program, Busic, Ira Pratt.

KSD, St. music, 'H. Central, 3460, S. p. m., program, R. Eimer Quenther, Central, 3460, S. p. m., program, Princess theater; Mcyer Davis orchestra.

KTHS, Hot Springs, Ark. (Central, 375, 85:57, children's bedtilms story, Uncle Bot; 7-7:30, dinner concert, Congress hotel; S. speeches, American Farm bureau; 9-10, midnight revue; 1-2:30 a. m., midnight revue; 1-2:30 a. m., midnight revue; Congress hotel; S. speeches, American Farm bureau; 9-10, midnight revue; 1-2:30 a. m., midnight revue; Congress hotel; S. speeches, American Farm bureau; 9-10, midnight revue; 1-2:30 a. m., midnight revue; Congress hotel; S. speeches, American Farm bureau; 9-10, midnight revue; 1-2:30 a. m., midnight revue; Congress hotel; S. speeches, American Farm bureau; 9-10, midnight revue; 1-2:30 a. m., midnight revue; 1-2:30 a. m., tollow the speeches of the speech

Additional Programs

(Received too late for Classification)

(Continued from page 13)

KH1. Los Angeles, Calif. (Pacific, 395), 12:30-1:30 n.m., HI Moulton and his orchestra; 2:30-5; Charlie Wellman's Saturday afternoon frolle; 6-6:30, Arl Hickman's concert orchestra, Edward Fitzpatrick, director 6:30-7:30, stories, American history, Prof. Walter Sylvester Herizog; bayld Durand and Unele John Fornwell Street School glee club; 7:45, "Care of Body," Dr. Lovell; 8-10, program, Dr. A. Zhungerman; 40-11, Earl Burtnett's Biltmore hotel dance orchestra.

Fort Worth, Tex. (Central, 476), 7 p. m., ro-interdenominational Sunday school losson, Mrs

W. F. Baruum.

Sunday, January 4

KFI, Los Angeles, Calif. (Pacific, 469), 10 a. m., L. A. Church Federation service; 4-5 p. m., vesper service, Annie Mottrau Craig, director; 6:45-7, misical approciation talk; 7-8, stago acts, speciaties and concert orchestra from Metropolitan theater; 8-9, son recital; 9-10. Examiner, dance music; 10-11, Thereon Bennett and ono of his dance orchestras.

KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-12:30 p. m., morning service of Angelus temple, broadcast from pulpit, 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, angeles Celif. (Pacific, 2081), 10 c. p. P. Co.

organist.

KHJ, Los Angeles, Calif. (Pacific, 395), 10 a. m., Rev. Renj. Urcuidl, pastor, El Salvador Mexican 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; 8-10, program, Julio Kellar, harpist and assisting artists.

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

keyer service and sermon. (Pacific. 337), 7-7:45 p. m., tesper service, International Bible Students' association; 8-9. Ambassador hotel concert orchestra, Jos. Rosenfeld, director; 9-11, program, El Encanto Apart-

ments.
WBAP, Fort Worth, Tex. (Central, 476), 11 a. m.,
services, First Methodist church, Rev. J. W. Bergin;
Will Foster, organist; 11-12, midnight frolies, 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.

sic.

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

Plerly Wiggly Girls trio.

Hollywood Calif. (Pacific, 337), 8 a. m., mornprayer; 9, Town Crier, news; 10:30, Mrs. Kate
ew Vaughn, home economics; 11, Dr. Richard M.
bit, talk on pets; 5 p. m., closing markets; 5:30-6,
wm Crier and Village Urchins; 8-10, program, WestAuto Supply company; 10-11, Juno Purcell, the

The set for the masses as well as the classes

"不好你就就你你就我

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

WBAP, Fort Worth, Tex. (Central, 476), 7:30-8:30 p. m., popular nusle, Frensley Moore Bluck and Gold Scremaders; 9:30-10:45, musical program, Montgomery Ward's contentainers

p. m., popular nusle, Frensley Moore Bluck and C Serenaders; 9:30-10:45, muslcaf program, Montgon Ward's entertainers. WMAQ, Chicago, III. (Central, 447.5), 4 p. m., moti in council, Mrs. Frances M. Ford; 4:30, talk on E lish, Mrs. J. Elliott Jenkins; 6, Chicago thouter or recital: 6:30, Milan Lusk, violinist.

Tuesday, January 6

Tuesday, January 6

KFI, Les Angeles, Callf. (Pacific, 469), 5-5:30 p. m.. Evening Herald, table talk und news; 5:30-6. Examiner's musical half hour; 6:45-8. Acolfan residence pipe organ recital, Dam McGarland, organist; 8-9, ececlian quartot; 9-10, Examiner, program presented by Jane of the Examiner; 10-11, Packard ballad hour, KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-11:30 a. m., sunshine hour; 3:30-4:30, organ recital, Esther Fricke Green and assisting artists; 6:30-7:30, children's hour with "Cousin Jim" and associates. (HH, Los Angeles, Calif. (Pacific, 395), 12:30-1:20 p. m., news and music; 6-6:30, Art Hickman's Biltuoro hotel concert orchostra, Edw. Fitzpatrick, director; 6:30-7:30, 1'rof. Walter Sylvester Hertzog, stories, American history; weekly visit of Queen Titania and the Sandman of Farjand, Uncle John; 3-10, program, Associated General Contractors' association; 10-11, Earl Burtnett's Biltmore hotel dance orchostra.

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

KNX, Hollowood, Calif. (Pacific, 337), 8 a. m., 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 filmland celebrities.

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

Wednesday, January 7

Wednesday, January 7

KF1. Los Angeles, Calif. (Pacific, 469), 5-5;30 p. m., Evening Herald, table talk and news; 5:30-6, Examiner's musical half hour; 6:45-7:30. Nick Harrls, detective stories; 7:30-8, Carison trio; 8-9, Evening Herald, Ken Smith's Kentueky Colonels, Sophie Cooper, mezzo-soprano; 9-10, Examiner, "Mampus" night presenting movieland; 10-11, vocal recital.

KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-11:30 g. m., sunshine hour; 2:30-4:30 p. m., auditorium service, 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 Biltmore hotel concert orchostra, Edw. Filtpatrick, 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; Sully Balano, violinist; Gladys Blackwell Plekering, soprano; Bill Graves, xylophonist; Mort Stuart, baritone; 10-11, Earl Burtnett's Biltmore 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, Hollywoodiand dance orchestra.

WBAP, Fort Worth, Tex. (Central, 476), 7:30-8:30 p. m., Alvarado string orchestra, Ila Grigs, director; 9:30-10:45, dance program, Jim Riley's Texas hotel orchestra, tunder of the Association of Compresse of weekly Unphon of the Association of Compresse of weekly Unphon of the Association of Compresse of

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

storiee from Child Life; 4:30, program, McLean school; 6, Chicago theater organ recital; 6:30, stories for children, Georgene Faulkner; 8, weckly lecture, Northwestern university; 8:30, music; 9, musicale.

Thursday, January 8
F1. 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 Baltroon orchestra; 7:20, Y. M. C. A. speaker: 7:30-8 one act play; 8-9, instrumental quartet; 9-10, Examiner, varled program; 10-11, program by John Smallman.

Green, organist; 9:15:40, studio program, Shver Band and Temple choir; 10-11, organ recital, Esther Fricko Greon.

(H.], 4,08 Angelos, Calif. (Paoific, 395), 12:30-1:30 p. m., news and music; 6-6:30, Art Hickman's Biltmoro hotel concert orchestra, Edw. Filzpatrick, director; 6:30-7:30, children's hour, stories, American history, Prof. Walter Sylvester Hertzor; Dickle Brandon, sereen juvenife; Uncte John; 7:45, "Care of Body." Dr. Lovelt; 8-10, Atwater-Kent program arranged by Unclo Remus; 10-11, Earl Burtnett's Biltmore hotel dance orchestra.

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 ceonomics; 11, Dr. Richard M. Scott, talk, on pets; 5 p. m., closing markets; 5:30-6. Town Crier and Villago Urchins; 6-7:30, dinner hour nusle; 8-10, feature program; 10-11, Abe Lyman's Coccanut Grove dance orchestra; 11-12, June Purcell. WBAP, Fort Worth, Tex. (Central, 476), 7:30-8:30 p. m., program, Texas Christlan univereity, Prof. H. D. Guellek, 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, Illinols 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, jecture, University of Chicago; 9:15, musical program.

Chicago; 9:15, musical program.

Friday, January 9

KFI, Los Angeles, Calif. (Pacific, 469), 5-5:30 p. m.,
Evening Heraid, table talk and newe; 5:30-6, Examiner's musical half hour; 6:35-8, Acollan residence
pipe organ recltal, Dan McFarland, organist; 8-9,
Evening Heraid, Owen Fallon's Californians, Mile.
Alexandria, vocalist; 9-10, Examiner, dance music;
10-11, Foothill Four quarts.
KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-11:30
a. m., sunshine hour; 3:30-4:30, p. m., organ recltal,
Roy Reid Brigmall and assisting artists; 7:30-9:15,
"Crusaders Rally," sermon and testimony of young
people; 9:15-10, band concert by Silver band Etchnical
Radio talk 10-11, organ recltal, Toy Reid
Etchnical
KH., pogram etchnical concert organical Etchnical
Radio talk 10-11, organ recltal, 150, Reid
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Radio talk 10-11, organical concert organical Etchnical
Radio talk 10-11, organical concert organical concert in the concert in

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, Estelie 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 Coccanut Grovo dance orchestra from Auhassador hotel.
WBAP, Fort Worth, Tex. (Central, 476), 7:30-8:30 p. m., music, K. P. Mandolin orchestra, Julia Struve, director; 9:30-10:35, program, Municipal band, Charles l'unstall, director.

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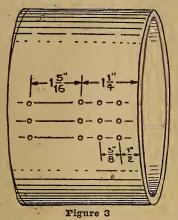
Dealer's Name .

Cvery word as clear as crystal

Construction of the Six Tube Het-Duo-Gen

Part II—How to Wind the Inductances

By C. E. Brush



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 Autenna Coupler

The Antenna Coupler

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 ¼ 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 ¼ inch apart. These holes will be anchoring for the beginning of the primary winding. Mark off a space ¾ inch from the holes just made and drill three others on a line with those already made.

The Antenna Coupler

The materials necessary for the tuning coil are one bakelite or hard rubber tube a inches in side diameter by 3 inches long, and ¼ pound of number 22 dsc. wire.

Figure 4

fully and smoothly you will find that the distances between the two windings will be ¾ inch. The manner of fastening this coil in the set will be taken up later, and we will now begin the oscillator coil.

Oscillator Windings

Materials necessary for the oscillator coil are one bakelite or hard rubber tube

In Constructing a Radio set, it is always best to have all of the parts of the primary winding.

These will be the anchoring for the ending assembly the date. In this way the parts assembly the date in this way the parts in the boiled right of the primary winding.

The secondary winding the secondary winding to the end of the winding shout a foot of the wire for connection to the first held, buy the most of the circuit. The end of the winding is wound in the secondary winding.

This holds true with Het-duo-gen, and as three of the units used in this set must.

The secondary winding is wound in the same as three of the units used in this set must.

The winding shoul a foot of wire for connection to other parts of the circuit. The end of the winding is wound in the same as three of the units used in this set must.

The secondary winding is wound in the same as three of the units used in this set must.

The winding shoul a foot of wire for connection to the the away from the end of the long and as three of the units used in this set must.

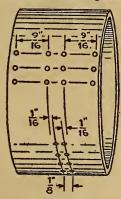
The secondary winding is wound in the same as three of the units used in this set must.

The winding is the winding is wound in the same dath of the winding is wound in the same dath of the winding is the winding of the colls.

The secondary winding is wound in the same direction and manner as the primary, and consists of 43 turns of the number 2 diving the winding is the winding in the winding in the winding in the winding in the winding is the winding in the winding is the winding in the winding is the winding in the win

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-



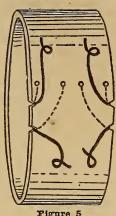


Figure 5

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 tube circuit.

At a point as near the edge of the tube as possible, say about ½ inch, drill a row of three small holes, as before, spaced ¼ 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 ½ 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 ¼ 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

The Pick-Up Coil

In the space between the two windings ust made, and at a point about one-

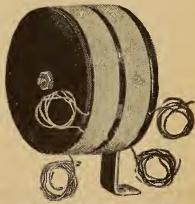


Figure 6-The Oscillator Unit.

done by filing a small notch for each of the four ends, two on either end of the tube, and about ½ inch to ¾ 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 should be placed in the forward (the



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Vol. XI. Chicago, Saturday, January 3, 1925.

Demand Hoover Live Long Or Else Pass Suitable Radio Legislation

Or Else Fass Suitable Radio Legislation

AN 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 leter 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 night 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 standard of the same proposition of the
secretary of commerce. There should be a power
of review, an appellate court, so to speak.

"Community, that if it is to stay in the hands
of the department of commerce that provision be
under for appealing from any decisio

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." Can you beat that?

RAY D. ATION.

The Lost Announcement

(Apologies to Adelaide Proctor)
Seated one day at the Radio,
Forgetting my former trials,
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!

That's All There Is, There Isn't Any More

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 program.

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 thousands 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

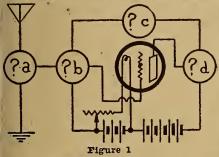
Radiophans inclined to experiment will find in this series of articles, directions for illustrating to their own satisfaction the underlying principles of Radio. They will be told how to set up the experimental apparatus, which will be simple and not so complicated as to require the equipment of a large 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 Experimenter Senior.

Chapter VI—Presenting the Experimenter Junior.

Chapter VII—Experimenting with Fush Pull Amplifiers.

ADIO is a science, but its application 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



the fundamentals of Radio and the inter-relations of electric, magnetic, and dielec-tric circuits within a complicated arrange-ment of apparatus.

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

Metropolitan

Electric

designing deals with what combinations to select 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

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 21, are placed at ?d, ?c being omitted (or it may represent the electrostatic field within the tube that causes the feedback of energy from the plate circuit, the result is the standard three circuit re-

PLATE, GRID, OR AERIAL CIRCUITS GRID TUBE COUPLING GRID (Y) M PLATE CIRCUIT DEVICES GRID (Y) GRID(Y) Figure 2

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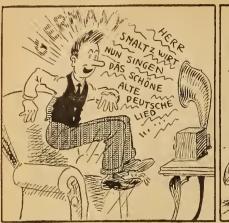
Detroit, Mich.



THE ANTENNA BROTHERS

Spir L. and Lew P.

So Far and Yet So Near









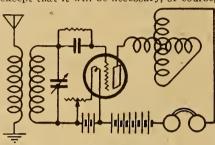
DEMONSTRATING RADIO

(Continued from page 17)

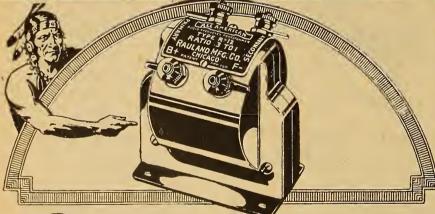
placed with either a, b, or d, 2 representing the electrostatic or magnetic feedback circuits between the grid and the plate portions of the receiver. If any of the inter-tube coupling devices of figure 2 are used in the plate portions of the receiver. If any of the inter-tube coupling devices of figure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

Values of Inductances

The experimenter who builds sets of his own design should have some idea of when the plate portions of the various circuits. Fortunately, most of this is already solved by the manufacturers of Radio apparatus. For the target maple, that may be covered with his particular piece of apparatus. For the caperimenter who builds his own unaily the problem is not so simple. He has one advantage, however, over those who be advantage, however, over those who will use a variable unit, determine exactly the same plate of the various circuits. For the sperimenter who builds his own unaily to the various circuits. For the caperiment with builds his own unaily to the various circuits and the plate of the various circuits. For the caperimenter who builds his own unaily to the various circuits and the plate of the



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ALL-AMERICAN Standard Audio Frequency Transformers in any radio receiving set mean but one thing—assured efficiency in amplification. Since 1919, ALL. AMERICAN Audios have answered the demand for an instrument that could be relied

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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.

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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.—

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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 regularly.

The Circuit Used

The circuit used

pick up time and weather reports regularly.

The Circuit Used

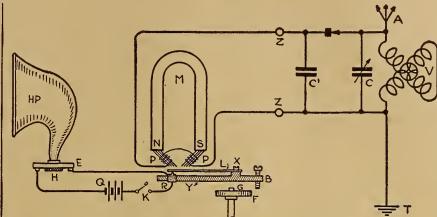
The circuit and the essential details of the mechano-electrical amplifier are shown in the illustrations. While the inductance and condensers used are such as to cover 200 to 2,700 meters, any good American crystal set will function with equal satisfaction. The antenna is A, ground is T and the variometer is V, while the variable 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 microphone R.

This section of the apparatus is called the primary amplifier system, or the primary relay. The varying frequencies set

phone R.

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



local source of power Q, four dry cells.
Current consumption by the microphone and unit E is very slight and a set of good dry cells can be used for a period of several months without need of replacement. The switch K turns off the current when the user is through as the unit and microphone form a closed circuit which otherwise would waste current uselessly. There is a loud speaker unit 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 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

The "Goode"

disk secured, at an eccentric axis, to shaft F, and fine adjustments are made by the rotation of an external dial secured to F. The rotation of F causes a displacement of G and determines infinitesimal variations 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-

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 as H.

(This article is not intended as a how-to-make and is presented only as a



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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 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 550 meters.

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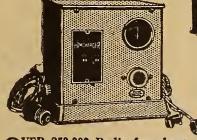
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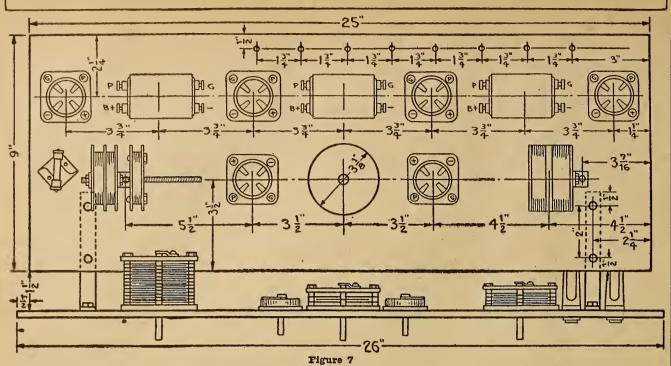
Absolutely safe—no danger of shock or fire. Approved by Insurance Underwriters everywhere. Beautifully finished in mahogany and gold. May be used right in the finest living room. Price, \$18.50 complete for all currents.

Sold by all good Radio dealers, or shipped charges prepaid upon re-ceipt of purchase price.

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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 left hand end of the, tube. This will hold the two ends of wire on that side of the tube in place. Now put the 8-32 bolt tubes in the second disc at the right hand side of the tube, keeping all four ends of wire in their proper places. Then take the standard and slip it on the bolt at the right hand side of 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 poor connections. A sharp blow is liable to destroy the filament of one of the tubes in the set, or it may even knock a

SIX TUBE HET-DUO-GEN (Continued from page 15)

nearest to you) notch on the left hand end of the tube, while the outside end of the tube, while the outside end of the tube. Similarly, the inside end of the tube. Similarly, the inside end of the tube. Similarly, the inside end of the right hand of tube, while the outside end goes in the notch directly behind this, on the same the nearest notch of the right hand of tube, while the outside end goes in the notch directly behind this. on the same the nearest notch of the right hand of tube, while the outside end goes in the notch directly behind this. on the same the nearest notch of the right hand of tube, while the outside end goes in the notch directly behind this. on the same the nearest notch of the right hand of tube, while the outside end goes in the notch directly behind this. on the same the disc and tube, and then place the second disc at the right hand side of the tube, keeping all four ends of wire in their proper places. Then take the standard and slip it on the bolt at the right hand side of the tube, keeping all four ends of wire in their proper places. Then take the standard and slip it on the bolt at the right hand side of the tube, well and touch a filament lead, thereby burning out the tubes and running down the batteries.

Wire carrying high potential current loose and touch a filament lead, thereby burning out the tubes and running down the 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

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DEMONSTRATING RADIO

DEMONSTRATING RADIO

(Continued from page 18)

tory? Does oscillation occur over the enliancy of the filament? Are 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

(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 lamphlack





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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

WORKSHOP KINKS EARN A DOLLAR-

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

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

end. Four sides are cut from wall board as shown by A and of the dimensions given. These sides are fastened together

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

The sounding board B is cut from cardboard 5 inches square. The edges are cut out on the dotted lines as shown. The amount cut out can be determined by trial. Usually about ½-inch will work with this horn.—Sylvan Cromer, Homestead, Fla.

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 tube.



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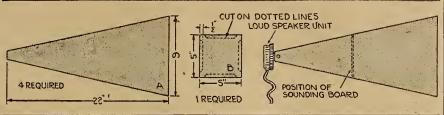
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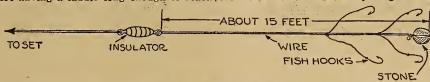
200 Broadway

NEW YORK CITY

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 one got about 30 feet from the ground and not having a ladder long enough to reach



the first limb it was certainly a sticker until I hit on the following idea.

I took my aerial wire, placed an insulator about 15 feet from the end so that it would be far enough from the 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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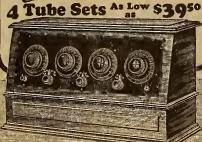
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Ozarka representatives make real money because they give real values and deliver a real service. For instance, there is a 4-tube Ozarka Instrument for loud speaker operation, giving wide range of reception at \$39.50. Our men demonstrate Ozarka Instruments 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 doour own educating. If you have a clean record, are industrious, and have saved up a little cash, here's a real opportunity, if you can qualify for an exclusive territory. We already





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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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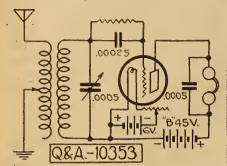
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Ouestions and Answers

(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, Rockford, Ill.

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

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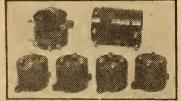
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consider to be the best one tube hook-up, using one 23-plate condenser one variocoupler and WD-12 tube? The coupler has taps every ten turns. Am using a 0.0025 grid condenser and variable grid leak, Have no room to add anything to these instruments except a few fixed condensers if they would improve it. What does winding coils clockwise mean?

A.—The circuit submitted war 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

of an improved modification including an audio frequency transformer to perfect the reflex action.

Only fair results can be expected in using dry cell tubes in a reflex circuit.

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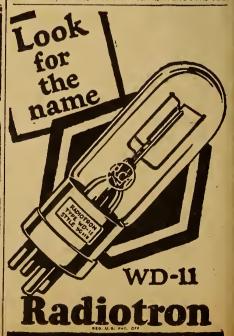
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Radiophone Broadcasting Stations

Corrected Every Week-Part II

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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) Hartington, Nebr. 222 meters. 15 watts. The

KFRZ, Hartington, Nebr. 222 meters. 15 watts. The Electric Shop.
KFSG, Los Angeles, Calif. 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, Frl. Sat, 7:30-11 pm. Sun, 10:30-12:30 pm, 2:30-4:30, 7-9:30. Mon stient. 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.
KFUM, Colorado Springs, Colo. 242 meters. 100 watts. W. D. Corley.

Wed, 7:30 pm, music, talks. Sun, 10 am, 8 pm, church services. Mountain.

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

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

W. D. Corley.

KFUO, St. Louis, Mo. 545 meters. 500 watts. Cóncordia Theological Seminary. 252 meters. 50 watts. Cóncordia Theological Seminary. 252 meters. 50 watts. Tacoma Daliy 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. Milholiand. 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. Dally ex Sat, Sun, 6:45 pm, reports, news. Mon, Tues, Thurs, Sat, 8 pm, lectures, music. Mon, Tues, Thurs, Sat, 8 pm, lectures, music. 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, griris half hour. Sun, 11-12 m, 7:35-9 pm, church services; 3:30-5 pm, concert. Pacific.

KGU, Honolulu, Hawali. 360 meters. 100 watts. Marion A. Mulrony. The Honolulu Advertiser. Announcer, M. A. Mulrony. Dally, 7:30-9 pm. Tues, Thurs, Sat, special program. 150 meridian. 2½ hours later than Pacific. Kep Meridian. Pacific. Kep Meridian. Pacific. Rep Sun, 11:30 am, weather; Tues, Wed, Thurs, Fri, 12:30 pm, concert. Dally ex Sat, Sun, 5 pm, children's solf 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. 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. KHQ, Seattle, Wash. 360 meters. 100 watts. Louis Marser.

KHAI, Los Angeles, Calif. 335 meters. 500 watts. Los Angeles Times. Announcer, John S. Dasgett. Slogan, "Out Washer." Daliy ex

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. Scattle, Wash. 360 meters. 100 watts. Louis Wasmer. KIAF, Sihtipoc, Minn. 421 meters. 500 watts. Steele Co. Program irregular. KIAF, Sihtipoc, Minn. 421 meters. 500 watts. Steele Co. Program irregular. KIQ. Stockton. Calif. 273 meters. 5 watts. Gould. The Light Man. Daily ex Sun, 5-6 pm, concert. Wed, Sat, 9-11 pm, dance muslo. Mon, 9-10 pm. Sun, 10-11 am, church. Pacific. KIR, Scattle, Wash. 283 meters. 100 watts. Northwest Radio Service Co. Announcer, Vincent I. Kraft. Slogan, "Radio Headquarters." Daily ex Sun, 5:30-6:30 pm, dinner hour program. Daily Sat and Sun, 8-10:30 pm, etudio programs; 10-11, orchestra. Sat, 9-10 pm, orchestra. Pacific. KIS. 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. LX, Oakland, Calif. 360 meters. 250 watts. Warner Rail and Water meet." Daily ex Sun, 7, news; 7:30, weather. Mon, Wed, Fr1, 8-10 pm, talks; entertainment. Pacific. KLZ, Denver Colo. 283 meters. 250 watts. Reynolds. Slogan, "Its a Privilege to Live in Colorado." Daily ex Sun, 8:30 am, 10:15, 12:15. Daily ex Sun, Wed, 7:1,30-8 pm, news, markets. Thursday, 8:15-9:30 pm. Mon, Sun, 9-10:30 pm. Mon, Int. 11. KMJ, Fresno, Calif. 248 meters. 50 watts. San Joaquin Lt. Pr. Cotp. Announcer S. W. Green.

Thurs, 5:39 pm, children's heur; 7-7:39, dinner music; 2-11, concert, betures Sat. 8-12 midnight, music, 12-12 midnight, 12-12 mid

iane Univ. Announcer, D. Elliott. Fri, 7:15-7:30 pm, reports; 8-9:30, educational and entertainment program. Centrai.

WAAD, Cincinnati, O. 258.6 meters. 25 watts. Ohio Mechanica Inct. No regular schedule.

WAAF, Chicago, Ill. 278 meters. 200 watts. Chicago Daily brovers Journal. Announcer, Carl Ulrich. Daily ex Sun, 8:40 am, 10:30, 10:45, 12:30 pm. 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 talk; 8, program. Central.

WABA, Lake Forest, Ill. 266 meters. 100 watts. Lake

sylvania State Police. Announcer, Frank P. Gaucher. Daily ex 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, 10-1:31 am, 2-5 pm, 7:30-10:30. Eastern.

**WBAO, Decatur, III. 275 meters. 50 watts. James Millikin Univ. University activitiea. No definite schedule.

Haylor, Chicago, II. 226 meters. 200 watts. H. Leslie 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 Raptist Church.

WBBT, Philadelphia, Pa. 234 meters. 5 watts. Gethseman Baptist church.

WBBU, Monmouth, Ill. 224 meters. 10 watta. Jenks Motor Saies Co.

WBBV, Johnstown, Pa. 248 meters. 5 watts. Jehnstown, Radio Co.

WBBW, Norfolk, Va. 222 metera. 50 watta. Ruffner Junior High School. Announcer, Lee M. Klinefelter. Slogan, "We're Backed by Workers." Wed, 8:30 pm, music. Fri, 3:30 pm. Eastern.

WBBY, Charleston, S. C. 268 meters, 20 watts. Wachington 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. Suthtown Economist.

WBR, Butler, Pa. 1599 meters. 250 watts. Pa. State.

Economist.

WBR, Butler, 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, II-12 m, music; 1-2:15 pm, reports, music. Tues, Thurs, Fri, 7:30-9:30 pm, program. Sun, 12:30-3 pm. Eastern.

AAA. Composed, particular and the control of the co

waukee Civic Broadcasting Station. Announcer, Billy Williams. Mon, Wed, Fri. 10:15 an. 12 m. weather, market reports; 3-4. Mon, Pri. 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 neters, 10 watts. Chas. W. Helmbach. Wed, 8:15-11 pm. Frl. 6:45-7:45 pm. bedtime stories, Bible lesson. Sun, 5-7 pm, church service. Eastern.

WCBC, Ann Arbor, Mich. 229 meters, 200 watts. U. of Mich.

WCBC, Inn Arbor, Mich. 229 meters, 200 watts. U. of Mich.

WCBC, Jon Ill. 345 meters, 500 watts. Wilbur Glenn Volva. Announcer, J. H. DePew. Slogan, "Where God Rules, Man Prospers," Mon, Thurs, 8-10:30 pm. 10:45 and 1hle School; 2:30-6, church services. Sun, 9-10:45 and 4th Sun, 8-10:30 pm. Central. WGBC, Mayfield, Sun, 8-10:30 pm. Central. WGBC, Mayfield, Sun, 9-10:40 pm. Central. WGBC, Williams, Slogan, "Will Christ B. G. Glorifled" (WGB), Jennings, La. 244 meters, 10 watts. Howard Sp. Williams, Slogan, "Will Christ B. G. Glorifled" (WGB), Jennings, La. 244 meters, 10 watts. U. of Mississippi. Announcer, W. L. Kennon. Mon, Wed, 8 pm. Central. WGBC, Sun, 9-10 pm. Eastern.

WCBL, Houlton, Me. 280 meters, 250 watts. U. of Mississippi. Announcer, 1 pm. Eastern.

WCBL, Houlton, Me. 280 meters, 250 watts. Hotel Chateau. Announcer, Hugh Sun, 9-45-11 pm. Eastern.

WCBC, Nahville, Tenn, 250 meters, 250 watts. Clark University, Collegiate Dept.

WCBC, Nahville, Tenn, 250 meters, 50 watts. Clark University, Collegiate Dept.

WCBC, Nahville, Tenn, 254 meters, 50 watts. Clark University, Collegiate Dept.

WCBC, Nahville, Tenn, 254 met

King, Slogan, "Where the Lincoln and Dixle Highways Meet." Mon, Fri, 8:30-10:30 pm, program. Central.

CCO, Minneapolls-St. Paul, Minn. 417 meters. 500 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; 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, dinner concert; 7:30, lecture; 10, music, Fri, 6:30 pm, dinner concert; 7:30, lecture; 3:30, mueic. Sat, 8 pm, lecture; 8:30, music, 11, dance. Sun, 10:20 am, 4:15 pm, 7:30, church services; 9:15, music. Central.

WEE, Eigin, III, 536 meters. 1,000 watts. Charles E. Erhstein.

WCK, St. Louis, Mo, 273 meters. 100 watts. Charles E. Erhstein.

WCK, St. Louis, Mo, 273 meters. 100 watts. The 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 & Warchouse Depts. Announcer, J. Austin Hunter. Daily ex Sun, 9:45 am, 11:45, 3:45 pm. Central.

WCX, Detroit, Mich. 517 meters. 500 watts. The De-

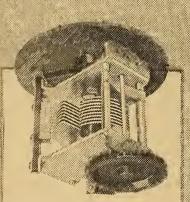


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No. 2 The S-L-F Condenser
(Straight line frequency)

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

The S-L-F Condenser makes the Synchrophase a receiver that is unrivalled in its simplicity and ease of dependable operation





Into this masterpiece of design and crafts-manship are built the knowledge and experience gained during fifteen years by the manufacturer who stands pre-eminent in the industry.

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.

Ask your dealer, or write us for literature.

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All Grebe apparatus is covered by patents granted and pending

THIS COMPANY OWNS AND OPERATES STATION WAHG