

Expose WTAM Coo Coo Club Ritual

Radio Digest

EVERY
WEEK

PROGRAMS
Illustrated

TEN
CENTS

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

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JANUARY 2, 1926

No. 13



*Experiences of "Harmony Girls"; Old Hand Saw Is New Radio Star; KWKH in Photos;
Index to Women's Programs; Wiring "Straight-8"; How to Operate the Christmas Set*

DEAF "HEAR" JAZZ OF PAUL ASH BAND

FAMOUS CHICAGO AURIST MAKING INVESTIGATION

Fans Unable to Receive Other Programs Can Enjoy Syncopation of McVicker's Orchestra

CHICAGO.—"Jazz music for the deaf!" Will this be an announcement on radio programs of the future? Is it possible that those without hearing are to have the pleasures of music?

These questions are raised by a unique investigation being conducted by a famous Chicago aurist in cooperation with Paul Ash, noted jazz leader and radio star of Westinghouse Station KYW here. The renowned ear specialist—who forbids use of his name until his experiments are completed—became interested in the subject when shown a number of letters received by Paul Ash from his "fans" who attend his jazz shows at McVicker's theater.

Hears Ash But Not Opera

Miss Mabel M. Bedford, 2129 W. Twenty-first street, Chicago, one of the writers, said that although she is deaf she "hears" Paul Ash's jazz band at the theater. She explained that it is the only sound she could hear. Opera performances fail to reach her.

Confirming this phenomenon there came another letter from Miss Ellen Carlson, 4659 Sheridan road, Chicago, in which she also tells of enjoying Ash's jazz music although deaf. Several other similar reports have been received and ushers at the theater say that a score or more of apparently deaf persons are seen there every day.

Ash is of the opinion that there are certain jazz strains which set up vibrations which are "felt" by the deaf.

HOLLYWOOD USES MOBILE STATIONS

Three Main Broadcasters Have Portable Short Wave Sets for Unique Programs

HOLLYWOOD, Calif.—The three main Hollywood broadcasters, KPWB, KNX and KMTR, are now each equipped with a portable short wave broadcast set. KPWB owns and operates mobile station 6XBR, operating with 250 watts power on 108 meters. This transmitter is mounted in a regular bus chassis and body and is about the most complete installation of its kind that has been attempted anywhere.

KNX was the first station on the air in these parts with 6XA doing the short wave broadcasting on 110 meters, 100 watts power, and KMTR is now supplying entertainment from various points in conjunction with its 6XAB, on 106 meters, 100 watts. Both 6XA and 6XAB are mounted in passenger automobiles.

6XA and KNX have broadcast all the major football games from the Los Angeles Coliseum this fall and winter while 6XBR will soon be on the air with many novel stunts of the kind that only a movie studio can furnish.

WEAF Is Swamped by Requests for Pictures

Photographs of Capitol Family Are in Big Demand

NEW YORK.—Since Major Edward Bowes announced recently that photographs of the Capitol "family" would be available, thousands of requests have been pouring in through the mail. As it is impossible to comply with the great number of requests on hand immediately, the major assures his enthusiastic fans that their requests will be taken care of within the next few weeks. Requests are being filed in the order of their receipt and additional clerical help has been engaged to facilitate the mailing of the photographs.

Husbands Can Now Check Up on Their Brides' Biscuits

CINCINNATI.—A cooking school via radio has been inaugurated by the Crosley WLW broadcasting station under the direction of Mrs. Ralph H. Arch, dietitian. Hints on the art of cooking and some recipes are broadcast every Wednesday afternoon at 3:30 o'clock. Letters have been received from men as well as women, which shows there are a lot of the male sex interested in the culinary art. Perhaps some of the husbands are checking up their brides' stories of food preparation.

MYSTERY MAID OF HOOT OWL FROLICS



PORTLAND, Ore.—The smiling lady with the laughing eyes under her foreboding mask is none other than "Enigma," the Hoot Owl Mystery Maid.

ANITA NIETO, COVER GIRL, STAR AT KYW

COY, mischievous Anita Nieto graces the cover of Radio Digest this week. Like her? Who wouldn't? Besides being a microphone habitue of Westinghouse Station KYW, Chicago, Anita is starring in "The Daughter of Rosie O'Grady," a light musical comedy now placing the S.R.O. sign in front of the box office most every evening. In the show she is one of the four specialty girls, and it is her job to show the public the "Charleston," as it is supposed to be done.

"Enigma" has thousands of KGW listeners trying to guess her identity, and so far she has completely baffled the best of them. But her secret will soon be disclosed.

"Enigma" will cease to be mysterious after the annual Hoot Owl Hungari, next Friday night, January 3, which will take the form of a dinner and a sample Hoot Owl frolic. During the course of the Hungari, "Enigma" will be unmasked and the listener who has guessed her identity will receive a handsome and appropriate prize.

Anyone who listens in on the Hoot Owl frolic each Friday night will affirm that "Enigma" is an exceptional singer. She has that low, musical, well-enunciated type of voice that is admirably adapted to radio broadcasting, and when she starts singing there is really something in the air.

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Looking Ahead

Swarthy Muscovites Patrol the Streets and Highways of the Little Republic Called Georgia, just below the red border line of Russia. But patriots keep in touch with their president through secret radio receiving stations always in contact with the temporary capital in Paris. See the next Radio Digest.

All the Long Horns in Texas Do Not Belong to Cattle. Some of them belong to people and some of the best of them are heard through the ether ranges of KPRC, at Houston. Texas, the Lone Star state, is not limited in the number of stars who may be heard on the air, as you may discover in the next Radio Digest.

"Now I Lay Me Down to Sleep"—but first set the dials for the bedtime story. Whoever can begin to estimate the full importance of the dream daddies, the uncles, the big brothers and the story ladies in the lives of the little folks of today? It's the subject of a feature in the next issue of this magazine.

"Enigma," Mystery Maid of the KGW Hoot Owls, will be stripped of her mask and shown face to face with the readers of next week's Radio Digest. The great revelation and unveiling will take place at the annual Hungari in the KGW studio in Portland next Friday night. Other secrets of the order, fully illustrated, will also be published in these pages.

Dr. J. Harris Rogers of Hyattsville, Md., writes in the next issue of Radio Digest. He will tell of his work with underground aerials for reception and transmission. He is the pioneer in this field of research and, Radio Digest being the sponsor of these aerials for B. C. L. use, is most glad to have the eminent doctor contribute.

A New ABC Series for Beginners will start next week. The articles are written by Milo Gurney, famous in the Radio world for his Milopex receivers and his series last summer on tuned bridge hook-ups. In this remarkable series the public was given its first insight into the developments now found in many of our standard sets. Read Gurney's ABC's!

Newsstands Don't Always Have One Left

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SILENT NIGHT FIGHT ON IN LOS ANGELES

STATION KFI OPPOSES ANY SPECIAL DX PERIOD

Question Becomes Live Dispute Between Fans and Broadcasters; Agitation Is Growing in Detroit

LOS ANGELES.—The silent night question for Los Angeles is again a live one. Several of the stations observe silent night but not two of them the same night, while four stations do not observe silent nights or silent periods.

After long and careful consideration, KFI finally made public their attitude on the question when they announced that KFI was against a silent night. At the same time, in a news release, KFI tipped its "microphone hat" to WJBO, Chicago, in recognition of that latter station advising Chicago fans when KFI was coming in good. Many of the fans feel that KFI is delighted to have a silent night in other parts of the country but unwilling to sacrifice anything for the local fans, a line of reasoning that is hard to follow.

Many feel that KFI should occasionally doff its aerial derby to the local listeners, who outnumber all the distant listeners two to one, instead of following a "public be damned" policy as it has been accused of doing in the past.

Los Angeles needs a local silent period just as Chicago, or any other congested place does. At any rate the agitation for a silent night refuses to die and it may result in a boycott of those stations who refuse to accede to the demands of the listeners.

Three Detroit Stations Keep Busy

DETROIT.—Advocation for a silent night in Detroit is growing here among the radio listeners, to add them in getting distant stations without local interference. At the present time three stations, WCX, WJR and WGHF, do not observe silent night at least once a week. WCX and WJR use the same transmitting station, a 5,000-watt equipment, but have the separate calls.

SHORT WAVES

By Marcella

Well, well, here we are again. How did you like our first appearance? Several of the ladies have written already. You'd be surprised to learn what they wanted to know. Maybe the notes below will give you an idea. Some of them were asked. Others I just added to make it interesting.

D. R. P. Coats, the most popular announcer in Canada, need not receive love notes. Cross him off the list, girl friends, for he's married, and say, the stork visited the Coats family just recently and left the cutest baby boy. Yes, Junior is broadcasting, but in a less pleasant voice than that of his genial father.

Of course you Quaker mothers (and maybe a few misses, too) remember "Sunny Jim" of WFI, Philadelphia? Not long ago, a year or thereabouts, he traveled west to Hollywood. To the movies? Yes, but to write scenarios—not to act. Then he became "fired up" on Hollywood and went back to Philly. Home wasn't just the same, so back to sunny California went Sunny Jim. KNX now claims him and his children's stories.

Which one of you sent the Gold Dust Twins of WEAF that box of paper roses? And you put a note in the box, saying, "With love." Well, it was a kind thought, anyway, for the two boys tell me that they wore the roses in their hair the night the box arrived. Did you see the roses?

Nate Caldwell, Eddie Squires, Jacques Cartier, J. Andrew White and Norman Brokenshire are still firm and footloose. All are eligible. Think Harold Hough of WEAF is, too, but he may be fooling me. George Hay, Graham McNamee, Joseph Barnett, Bob Emery, G. C. Arnoux and Gene Rouse are in double harness. Write 'em, anyway. Their wives don't care much!

Funny how I can't help but think of good looking men. Take Paul Greene of WSAI, Cincinnati, for example. Good looking, well dressed, nice voice, pleasant manners—and look at the wonderful education in auction bridge he's getting. Why, all that experience ought to make it so that Mrs. Greene would take home the bridge prize every time.

What deep secret would you like to know about your favorite broadcast star? Drop me a note, girls, and I'll do my best to answer it here. MARCELLA.

IMPLORE CONGRESS TO AID RADIO

OLD COUNTRY MUSIC TO FLOOD AMERICA

SET INTERNATIONAL WEEK
JAN. 24-30 FOR TESTS

Distant Station Hunters to Satisfy Appetites Searching for London, Paris, Berlin and Madrid

It is safe to predict that quiet will reign in 5,000,000 American homes during the week starting January 24 when America will be listening in for European programs and millions of people in Europe will be straining their ears to hear American broadcasts during international Radio week, at which time the stations of two continents will conduct tests on overseas reception and transmission.

According to the plans made by 400 broadcasters in conference at Washington, all American and Canadian stations and those of Mexico and Cuba will be silent each night of the week from 11 to 12 p. m. eastern time, 10 to 11 p. m. central time, 9 to 10 p. m. mountain time and 8 to 9 p. m. pacific time. This will enable listeners on this continent to tune in, perhaps, European programs that will be broadcast from England between 4 and 5 a. m., and from other foreign countries at similar hours. Darkness will reign between Europe and the listeners on the Pacific coast.

Great Achievements Forecast

Complete arrangements have been made between the broadcasters of America and the broadcasters of twenty foreign countries who will unite and cooperate in the tests. According to predictions, the 1926 international tests will far surpass those of previous years in both achievements and quality of programs offered.

Capt. P. F. Eckersley of the British Broadcasting company, operators of stations in England, has announced that programs of exceptional excellence will be presented. Despite the fact that British stations will go on the air at 4 a. m. their time, the most popular Radio stars of the country will be assembled to appear on the programs. American artists who are in England at the time will be asked to go before the microphone for the entertainment of their fellow countrymen.

Excellent Programs on Schedule

American and Canadian stations are arranging for the greatest programs of their existence, and undoubtedly every leading star in the United States and Canada will broadcast some time during the week.

In its effort to serve the Radio audience, Radio Digest will carry the complete advance programs of the European stations as well as those of the United States and Canada for the test week, so that all listeners will be able to select what stations they desire to tune in. The call letters, wave lengths and detailed programs of the stations will also be given, so that any station picked up can be identified. Special items of interest and pictures of European stars and stations will be featured as well in that week's issue.

Observations will be made of the results obtained in all parts of the world in an effort to improve a regular international exchange of programs, and it is thought probable that in the future similar concerted efforts will be made at more frequent intervals than once each year.

'Blanketing' Still Is Puzzle to Scientists

Bureau and Stations Search for Cause of Dead Spaces

WASHINGTON.—Recent complaints from listeners in different parts of New York state that various distant stations were shut out for several nights has led to renewed activity by the bureau of standards and the bureau of navigation in their efforts to solve the mysteries of such blanketing. As yet no satisfactory explanation of these dead spots, which are found all over the country, has been advanced. Some of the larger stations, notably WGY, Schenectady, are cooperating with the government agencies in this search.

Due, perhaps, to mineral deposits in the ground, holes in the air, or magnetic influences, the Radio waves are frequently shut off from certain sections of the country, sometimes permanently, sometimes temporarily and intermittently. Washington, D. C. listeners cannot get Baltimore, although they hear Philadelphia beyond with ease, and the same situation exists in other parts of the country, although it is rare at sea.

International Test Programs

COMPLETE, exclusive and special programs for the week of January 24 to 30, inclusive, for every European broadcasting station participating in the international tests, will appear in advance in Radio Digest, edition of January 23. Pictures and stories relating to European stations will appear as well in this special issue. Radio Digest staff correspondents in Great Britain and Continental Europe will give American listeners the best information obtainable anywhere on the international tests.

Wave lengths, hours, descriptions in detail of each number to be broadcast by European stations—all this and more will be found in the January 23 issue of Radio Digest. Be sure to reserve a copy at your newsstand. The special International Week issue will be in great demand.

OPERATES 5,000-WATT STATION



The very attractive young lady shown above is not operating a telephone switchboard, but is manipulating the control board of the Los Angeles broadcasting station, KFI. She is Miss Norma Shearer, probably the first woman in the world to run the controls of a 5,000-watt station, and from the transmission obtained it is evident "she knows her circuits." Miss Shearer has a capable competitor in Miss Petronella Trimbur, organist at Station WJLW, who is taking quite an interest and is becoming very proficient in the mechanics of the control panel of the Crosley studio at Cincinnati.

Radio Detective Car Finds Odd Interference Causes

WASHINGTON, D. C.—The new "detective" motor car in the service of the Radio section of the department of commerce, which was designed to look into various causes of interference, has found some interesting cases, according to reports received. One cause of interference was found to be the motor in an ice machine. Another was a bell-ringing machine at the telephone exchange and a third the poor bonding of electric rails.

Test Direction Finder

PORT ARTHUR, Ont.—The first test of Radio direction finding on the Great Lakes was completed recently. Equipment was installed on the steamer Glenaeles, of the Great Lakes Transportation company, as a test.

Make Several Changes in Station WEAF Personnel

NEW YORK.—J. A. Holman, formerly manager of broadcasting for the American Telephone and Telegraph company, has taken an appointment on the staff of the commercial engineer of the same organization. G. F. McClelland, formerly manager of programs, becomes manager of broadcasting and F. S. Spring, formerly in charge of office management, becomes assistant manager of broadcasting.

Navy Spurs Communication

WASHINGTON.—To insure an increase in the efficiency of aircraft communications, orders have been issued by the navy department to all Radio-equipped aircraft that they must attempt communication with ships, shore or other aircraft at least once during each flight.

DIRE NEED OF CONTROL FOR AIR INDUSTRY

Necessity for Legislation to Govern Ether Traffic Is Strongly Emphasized

Hard Battle Is Promised

Attitude of Congress in Past Years Holds Little Hope Without Help of Radio Fans

WASHINGTON.—Following the many recommendations of the fourth national Radio conference for the administration of broadcasting, the need for legislation giving the secretary of commerce authority to regulate Radio has been greatly emphasized by developments throughout the country by stations already operating and prospective broadcasters who wish to be on solid ground before the industry is placed under rigid control.

Senator C. C. Dill of Washington and Representative Wallace White, Jr., of Maine have recently introduced Radio regulation bills in the upper and lower houses of congress, but it is evident that the enactment of legislation along this line will not be as easy as most people expect and predict.

Would Give Hoover More Power

There is little doubt, however, that legislation of some form or other extending the power of the secretary of commerce in regulating Radio will be adopted. Whether it will be the kind of legislation desired by Secretary Hoover and the Radio industry is another matter, although the bills recently introduced follow in a general way the recommendations of the conference.

The bills also correspond in the main to bills introduced in congress last year, but not much encouragement can be derived by the users of Radio from the manner in which the law-makers received and disposed of the measures at that time. How extensive and far-reaching the regulation will be has not been indicated, but one thing for certain is that the Radio industry itself as well as the fans has recognized the necessity for, and sought legislation providing for, its own regulation.

Definite Control Crying Need

The announcement that no additional stations would be licensed except under unusual conditions has led several disappointed applicants to purchase small stations of ten and fifty watts power with the intention of remodeling them later and increasing their power. This will not be permitted. A number of small stations have applied for permission to increase their power with the intent in some cases of selling the higher power stations. Other moves of broadcasters, evidently designed to side-step or circumvent the policy of the commerce department and the conference recommendations adopted, have come to light. This activity has clearly demonstrated that centralized cooperation in the industry is needed and that a definite control must be established.

Dill Bill Gives Power and Appeal

The bill introduced by Senator Dill gives the secretary of commerce complete and absolute power over the establishment of Radio stations in the United States, but prohibits him from exercising right of censorship. It provides for the formation of a commission of five members to which the secretary of commerce may refer questions for report or for final action. It also prohibits broadcasting by one station of the program of another station without the permission of the station from which the broadcast originated.

All actions of the secretary or the commission would be subject to appeal in the courts within the District of Columbia or the district in which the aggrieved party resides.

White Bill Differs Somewhat

Representative White's bill is in form and substance similar to the bill of last year but has been modified in that it does not contain a provision for fees, does not authorize the establishment of an advisory committee, and contains a section dealing with monopoly.

(Continued on page 27)

"Harmony Girls" on KYW Staff Five Years

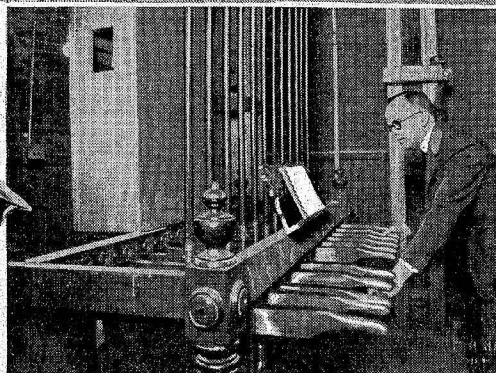
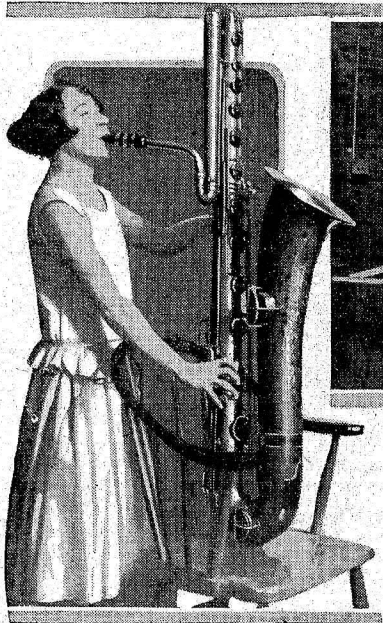


"SMILE for the birdie," coaxed Edith, chucking Grace under the chin and giving her a sly dig between the knuckles. So Grace smiled, which wasn't hard at all, and here is the result after the photographer had winked the camera's eye at the whole proceedings. Of course, everybody knows they are Grace Ingram and Edith Carpenter, the famous Harmony Girls of KYW, Chicago.

There isn't a better known duo on the air than these two. They sang on the third program of KYW which was the pioneer broadcasting station west of Pittsburgh back in 1921. They still sing every Tuesday and Thursday night at ten o'clock at the same station. They have received letters and tokens from almost everybody but the king of Timbuctoo and the queen of Fiji. And the more they sing the sweeter their voices harmonize. When the authors' and composers' imbroglia threatened to throttle Radio music through the organized demand for a rakeoff on every broadcast of their stuff, the Harmony Girls made themselves more famous by composing and singing their own airs.

A church minister in Reading, Pa., wrote for a copy of one of their songs and used it later as a theme for a sermon. A prisoner in the penitentiary at Jefferson City, Mo., softened by their tender songs of childhood, sent them a jewel box, beautifully hand carved and inlaid, over which he had labored many months. A lady from Shrewsbury, Mass., sent them each (Continued on page 29)

Hand Saw and Pitchfork Join Radio Chorus



It takes a lot of wind to heave that Big Bertha sax (extreme left) but Helen McGreny is the gal who can do it as they do in Cleveland. Allen P. MacManigal (center) clinking the WEAO chimes at Cozumbus. Preston Graves (right) at the Trianon celeste, Chicago.



By H. P. Brown

THESE are the busy days for the goddess Muse. Never before was the whole world so deeply seethed in her art. Children of men are hard put to devise new and unusual modes of producing the songs and harmonies demanded by Radio. The music of the spheres is depending on the planet Earth to carry the air—and she's doing it. The air vibrates and throbs from Greenwich east to Greenwich west.

What is it all coming to? Nobody even dares guess. Everything is employed that can be turned into a semblance of musical rhythm. Give the orchestra leader a corn cob and tomorrow he will have it made into a flute and you will be charmed by the music he will get out of it.

Immortal Shakespeare wrote it in a book for all time that one cannot make a silk purse of a sow's ear. He reckoned not with the versatility of these modern times. Turn the synthetic experts

loose on the job and woe to the mamma pig's auditory appendages. Milady in every land would soon be wearing them suspended by slender gold chains from her elbow.

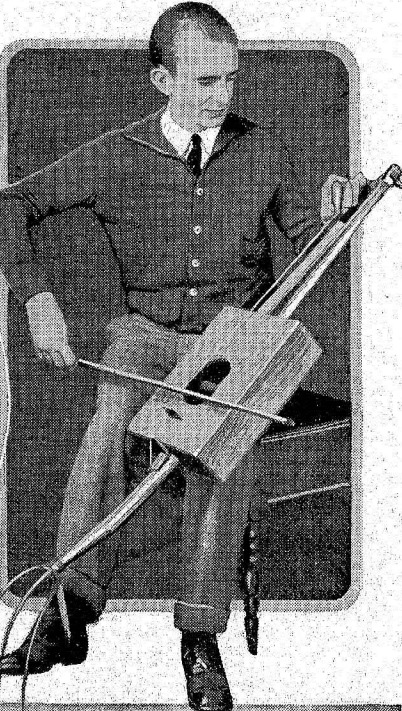
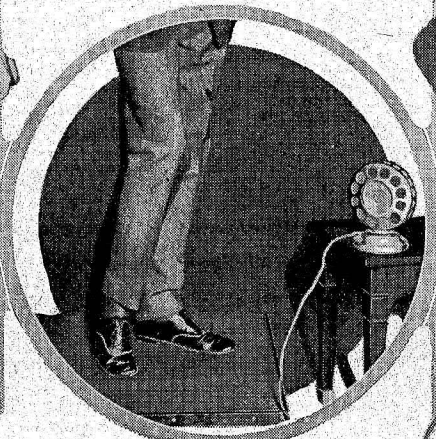
Some lesser person than Shakespeare created the lasting phrase that one cannot make a whistle from the same porcine's tail. But it has been done. Yes, indeed, it has been done. Radio did it. Fred Rochester, press agent de luxe of one of the famous packing house firms in Chicago, snapped his fingers when a visitor quoted the phrase to him as one of the impossibilities of the great Union stock yards. In a few hours a porker had given up its nice curly fly swatter and the ivory joints had been converted into a tooter with vents capable of emitting a scale of notes and that very night ten thousand listeners over KYW heard it over the air.

Imagine how shocked the great bard of Avon would have been if any one had suggested that his incomparable Romeo and Juliet ever could by any manner of means have found expression through so menial an implement as a three-tined pitchfork! Well, that's been done, too. It took Charles Gounod, the great composer, to convert the romantic tragedy to opera, and it took Arben Sime of Beardstown, Wis., to make a fiddle of a three-tined pitchfork—a fiddle capable of rendering selections from the opera. And Arben Sime did it over WLS, the Sears-Roebuck station, Chicago.

You would be interested in Mr. Sime's development of the idea, as the story goes:

Sime, it seems, in his usual happy manner was whistling away as he hustled about the namber duties for the family cow. Suddenly Bossy switched her tail at a buzzing fly, missed and the terminal strands of her antenna tangled around the tines of Mr. Sime's pitchfork. Mr. Sime never ceased his whistling as he pulled the pitchfork taut to release it. The friction of the sliding strands over the tines emitted a sound resembling the lush notes of a bull fiddle. The cow gazed around with a murmur of surprise. It sounded like a bovine duet with a whistling. (Continued on page 29)

When Toufic Moaubaid strikes "Oud," his Syrian harp (right center), you get the real Oriental music. Arben Sime (right), and his pitchfork fiddle with which he first entertained Wisconsin farmers and later played over WLS, Chicago. Paul McKinstry and his soprano saw, often saw at KTHS, Hot Springs, Ark-can-SAW.



At last we have real sole music over a special sounding board as arranged at WMBB, Chicago, for Tom Shee. (Tom is too long so we just show his "dogs" in the picture).

WTAM Coo Coo Club Candidates Sign Here—



“COO COO-oo-oo.”
Present sets! Thumbs on dials! On your marks! Go! Whoa! Hold that 389.4 meters! Listen! You are now within the sacred precincts of the Coo Coo club, Radio Station WTAM, Cleveland, Ohio. It is Saturday night and the Royal Coo Coo calls the hour of nine o'clock. Honorable Ev Jones, High Cockalorum of the Coo Coo Coop, is on the air. All Coo Coo eggs will scramble together when he speaks. Attention, you initiates. Sever yourselves from all surroundings. Let no rational thought disturb your minds for you are about to join the ancient and honorable order of Coo Coos. Harken only to the little electrons as they leap and play over the WTAM antenna at the command of the High Cockalorum.

Are you sufficiently dizzy? Then let the Coo Coo Intelligence Test be Applied. Answer this in six words, either “yes” or “no.”

Assuming it to be an axiom that no matter how hard he hits them, Babe Ruth can always smash a row of vacuum tubes with a sledge hammer, how long would it take Red Grange to run 90 yards of white and blue bunting to make an American flag?

If the answer is wrong it is quite correct for even if it should be right it would be entirely wrong. This is true because no matter how far Red Grange would run the American flag never runs.

Now that you have mastered this perfect example of Coo Coherency you are hatched. You are no longer eggs but little Coo Coos with pin feathers which you will use judiciously to stick around for the next degree and to fight off the great dangers that now surround you.

Do not move. Genevieve is near. She will protect you from her seven Chesterland Cave Women. You can hear them. You can see them—at the top of this page and there, there about eight inches below the upraised club of the cave woman on the left is Ev Himself, calm and serene, as you should always strive to be in the face of danger. Control yourself. Do not shake and tremble at that saxophone barrage. Big Bertha is not here tonight. She is on page five.

Sit down. The danger is past. Genevieve and her cave women have gone back to their weird caves in Chesterland. You may rest in repose as the memories of the syncopation still patter on your ear drums. Ev is going to read. He has telegrams, cablegrams. Here is one from London, England:

“Dear Coo Coos—
“Baron Top and I were just trying out our new crystal set here in Windsor castle when suddenly Joe Ferte of the Coo Coo club, WTAM, Cleveland, came banging in like a house afire. It was wonderful. We got every word of it and I

“Genevieve’s Cave Women,” Coo Coo syncopators who prow through the air from the Willard Battery company station, WTAM, at Cleveland, O. Their native haunts are the Chesterland Caves, near that city. Below is Ev Jones, Chief Cockalorum of the Coo Coo club, which convenes at the WTAM coop every Saturday night at the hour of the bath. Any Radio listener who can demonstrate his coocoohility is eligible to join and must start in as a Coo Coo Egg.

could even hear it all the way upstairs when I ran to get the queen to listen in. Please ask Joe to sing that old favorite ‘Comin’ for the Rye.’ The boys in the back room have asked for it. Regards.”

“King of Spades.”

That might seem a little previous as Joe hasn’t been on the air yet tonight. But it all goes to show how fast these ether waves travel. Isn’t it—well and it’s just in its

infancy too! Everybody wants to know if Joe isn’t the silver-masked tenor. But you must not tell. That is one of the deepest secrets of the Coo Coo club. Guard it as you would guard your very life. He may be and again he may not be. You will never be able to find out as long as you live.

Catherine Townley plays his accompaniments. Ask her. Maybe she can find out from Joe when he isn’t looking just like Art Herske, the announcer did. But don’t ask Art for art’s sake because a broadcast announcer is always a clam and knows how to keep his mouth shut.

You must be tired standing. Sit down for you are almost Coo Coo. Look where the little pin feathers were just a short time ago. They are all gone now.

You must be cold. Here is an ether wave. Put it on. It will help keep you warm and you will look more respectable and besides you are about to pass through another ordeal. But after it is over you will find yourself richer by sixty, a hundred, maybe a thousand plunks. It’s the Dixie Banjo Trio. You know who they are, Jack Marvin, Charles Davies and George Czarnitzki, Czarnitzki? Well, you see Jack and Charley do the plunking and they take George along to get the czar-nitz-ki out of the banjosephs.

After all, what is a Coo Coo? Is it not a canary? Jean, Owen and Raymond Ronbury of Madison, Wisconsin have a line of evidence. Here is a letter which they wrote to Ev just recently:

“We have a canary which stopped singing sometime ago, following its tenth birthday anniversary. Last Saturday, while you were broadcasting your regular Saturday night Coo Coo program, he startled us by beginning to sing with the orchestra and continuing until you signed off. He waited patiently during all announcements.”

There is nothing in the dictionary to answer the proposition of the Madison children which is all the more remarkable because there is nothing in the encyclopedia about it either. It becomes more complicated as you consider it from the various angles. Something should be and very likely will be done when Ev seeks the complete solution by turning on both the hot and cold for a tepid medium at the close of this evening’s ablation.

Thus, it may appear that in spite of everything that you are or are not and notwithstanding everything that you ought not to be and after all that you have gone through from the beginning to Zion City, Ill., you may never, never be a Coo Coo, but a canary.

Your only hope may be your despair and that is that you may become a Coo Coo canary. And now we are signing off—just slightly off. COO COO.



“Iron Man of the South” Maintains KWKH



These fingers (above) make “Dizzy Fingers” dizzier at KWKH. They belong to Miss Louise Strong. Happy Mattie Mae Rudy and her peppy uke (center) and Fernand Braud (right) whose hands and feet never rest while near a piano. The dainty danseuse at lower right is Miss Mary Gillespie.

WE HAVE been having a lot of fun with the big butter and egg men. Maybe we have been spreading it on a little too thick and boiling them a little too hard. What would we do without them? What would the people around Council Bluffs do without the big oil man who put in Radio Station KOHL? It's the big men who are always doing the big things for their communities.

When the first music laden waves began to flood over the country and the people, great and small, began to stick up their aerials like straws in the ice cream soda glass to such the music out of the air, folks around Shreveport, La., licked their ears, so to speak, and looked around hungrily for some big butter and egg man to come forward.

A local newspaper, first to notice these symptoms and fired with zeal to perform a community service, volunteered to fill the role. But printer's ink is not butter and some rolls take a lot of butter. So it was rather a strain, perhaps, to pay salaries, buy paper and ink, keep up the interest on the bonds and maintain a Radio station on the pennies from the news stands, subscriptions and advertising revenue.

Just at the climax of this rather delicate situation, there loomed on the horizon one of those big community men. He was not a butter and egg man. Hardly; he was of much more durable substance. Indeed, he was none other than the Big Iron Man of the South, Mr. W. K. Henderson, president of the W. K. Henderson Iron Works and Supply company, Shreveport, La.

Did you ever try financing a broadcasting station?

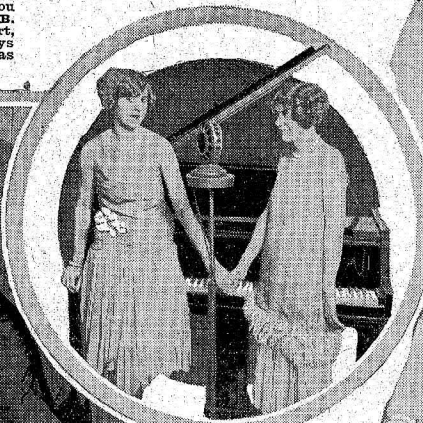
Syncooperation had its birth in the South and when it comes to generating it through the human voice you can't beat Phil Frierson (seated, below) and T. B. McGehee who broadcast from KWKH at Shreveport, La. Mrs. Sylvan Turner, at left in circle, plays while Mrs. Charles Cockrell, beside her, sings as the fans make the programs for them.

It takes a plenty. But Mr. Henderson has made a conspicuous success at transmutation. He is the modern outstanding alchemist who knows how to change iron to gold and gold keeps the home fires burning in the transmitting tubes.

Great towers were erected on the beautiful Henderson estate at Kennonwood. New units were added to the power station so that the generators pumped 500 watts or better instead of 250, as formerly. A new pennant unfurled from the masthead and Shreveport broadcasting danced out over the ether waves under the name KWKH, instead of WGAQ, and the wave length changed from 273 meters to 261 meters.

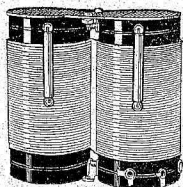
W. G. Patterson is the announcer and director. About him he has assembled a staff that scarcely could be excelled anywhere for talent and loyalty. One of the alluring features is the ukulele queen, Miss Mattie Mae Rudy. She sings as she plays and you can almost see her dimples as she radiates happiness into the microphone.

For pianist he has Miss Louise Strong of Henderson, Texas, and it's Louise who knows how to make “dizzy fingers” dizzier. Jazz is ABC for her or she can produce the most difficult classic selections to please the critic's taste. She and Fernand Braud, one of the favorites at KWKH, can make a (Continued on page 29)

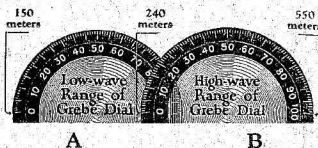


Imitation

—the Sincerest Flattery



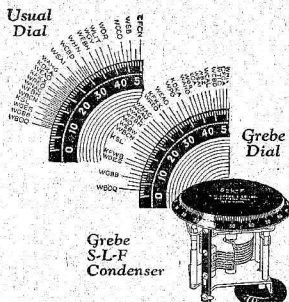
Grebe
Binocular Coils
Reg. U. S. Pat. Off.
and
Low-Wave
Extension
Circuits



The high-wave reception range of the Grebe dial (B)—from 550 down to 240 meters—equals the practical tuning range of the usual receiver. The low-wave range of the Grebe dial (A) provides additional reception down to 150 meters.



Grebe "Coloritone"



Flexible Unit Control



"Take the lead and set an example of diligent toil."

—Confucius

Much toil and great diligence have made the Synchronphase worthy of first rank in radio receivers.

Doctor Mu



TRADE MARK
REG. U. S. PAT. OFF.
All Grebe apparatus
is covered by pat-
ents granted and
pending.

LAST year Grebe developed the fieldless *Binocular Coils* and *S-L-F* (straight line frequency) *Condensers*.

These Grebe developments have now been adopted on a number of other receivers.

This year Grebe has devised the *Low-Wave Extension Circuits*, "*Colortone*," and *Flexible Unit Control*. It will be interesting to see how soon these, too, are added to other sets.

In buying a Grebe Synchronphase now, you will have advances in radio construction, such as other receivers will probably show next season.

Ask your dealer to demonstrate
all these Grebe developments.

A. H. Grebe & Co., Inc., 109 West 57th Street, New York

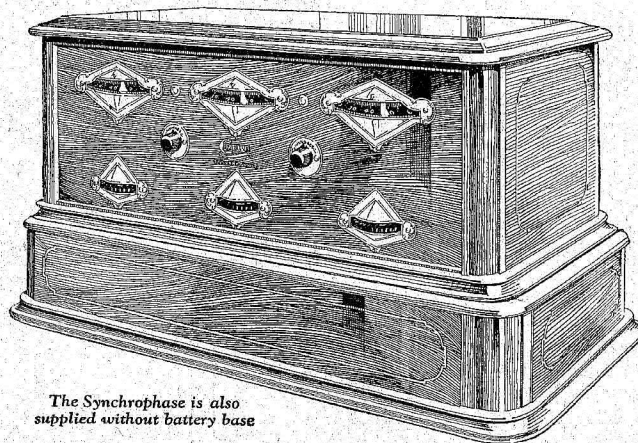
Factory: Richmond Hill, N. Y.

Western Branch: 443 So. San Pedro Street, Los Angeles, Cal.

This company owns and operates
stations WAHG and WBOQ; also
low-wave rebroadcasting stations
mobile WGMU and marine WRMU

The GREBE SYNCHROPHASE

TRADE MARK REG. U. S. PAT. OFF.



The Synchronphase is also
supplied without battery base

NEWS BRIEFS FROM THE BROADCASTERS

VENETIAN TRIO IS FEATURE WEDNESDAY AT WLW

Foreign Students of Palmer School WOC to Broadcast During International Week Test

Starting with the first Saturday in January, WBZ, Springfield, will be on the air regularly every Saturday evening from 8:30 until 10 p. m. eastern time.

The Venetian trio, an instrumental group composed of three attractive young women, Ann MacDonald, pianist; Verona Ziebler, violinist, and Genevieve Mead, cellist, will make its Radio debut from WLW, Cincinnati, Wednesday evening, January 6, at 10 p. m. central time.

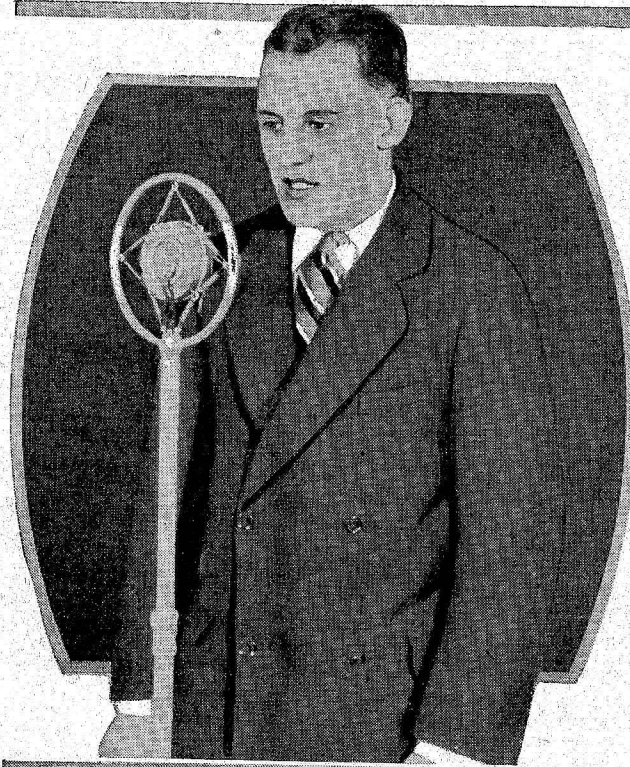
During the international tests this month foreign students attending the Palmer School of Chiropractic will send brief messages to their countrymen through WOC, Davenport. These one-minute talks will be given in French, Flemish, German, Polish, Danish, Norwegian, Spanish, Marathi and Japanese.

The use of Radio as an agent to reach children with the message of safety will be inaugurated January 2 at 7:30 p. m. central time through station WLW, Cincinnati. John Fry, chairman of the pedestrian committee of the Cincinnati Automobile club, is arranging for the talks.

The Rochester Little Symphony orchestra was broadcast recently by WGY, Schenectady, and WHAM, Rochester, in a new hook-up between these two stations. Radio artists of Rochester will now be able to reach a greater audience.

Monday afternoons are set aside for the broadcasting of Oreste's Queensland or (Continued on page 24)

"RED" HAS CHAT WITH "MIKE"



"Red Grange," football's greatest hero, present idol of the sport world, and envy of finance, is not only the gridiron's greatest performer but recently proved he has a natural microphone voice when he talked for the Near East Relief. He spoke over WEAJ and was heard clearly from six or more stations on the chain, spreading his voice distinctly to nearly every part of the continent. His voice is said to carry a vivid impression of his personality.

VENEZUELA FANS TO HAVE RADIO STATION

SOUTH AMERICAN COUNTRY WILL COPY U. S. STYLE

Caracas to Broadcast on 400 Meters Daily Programs of Native Music and Jazz

CARACAS, Venezuela.—Venezuela, one of the progressive South American republics that have had to depend upon other countries, notably the United States, for their Radio entertainment, is to have its own broadcasting station. The Venezuelan Radio company, a specially formed operating organization similar to the British Broadcasting company, is to have full charge of the erection and operation of the new plant. Caracas is the capital of this South American republic, and is also acknowledged to be the center of the musical and news circles.

U. S. Will Hear

It is planned to have the station in operation toward the beginning of February, 1926. A wave length of 400 meters has been chosen, which is advantageous to American fans as well, since they, too, may hear the broadcasts from Caracas, as they pick up those of Mexico City, and of Porto Rico.

From the studios of the station, specially prepared programs, which will include classical and dance music, orchestras and bands, and concerts and solos, will be broadcast daily.

Retransmission Also

Besides the musical programs, news items and market reports, other information of interest to Venezuelans will be included. However, so as to provide as great a variety as possible, selected programs from the leading broadcasting stations in the United States will be picked up and rebroadcast by the Caracas station. In this manner, even the smallest receiving sets will get the benefit of long-distance receptions from the North American stations.

TALLEST CORN IS IN IOWA, CLAIMS WOC



Station WOC, Palmer School at Davenport, Iowa, broadcasts regularly to the whole listening world that Iowa is the state "Where the Tall Corn Grows." Some aspersions were cast at this boast. So the station put on a national contest and now claims Iowa is the state where the "Tallest" corn grows. This 18-foot stalk was grown near Davenport, last year. Dr. B. J. Palmer, owner of WOC, top of ladder; Miss Evangeline Boettger, hostess, center; and "Aunt Jane" at the foot.

THEN PROHIBITION IS NOT HEALTHY?

And Contortionist Should Live Longer Life Than Tight-Rope Walker

SAN FRANCISCO.—A man staggering up the street, hands flapping, with a wild look in his eye, may not be the victim of a bootlegger; for times have changed since broadcasting came.

On the contrary he may only be a tired business man following the advice of Hugh Barrett Dobbs, Radio health talker over KGO, here.

"Stagger like a drunk once in a while!" advised Dobbs in a recent talk to Pacific Coast listeners. "Too many of us are forgetting how to relax," he continued. "We are living with tight muscles. We grab and hang onto everything—food, street cars, money, life. Knotted muscles and tense nerves keep us from relaxing.

"The drunken man and the baby are perfect examples of relaxation. The former staggers around, knees and elbows loose, muscles flapping. However unpleasant the sight, he is giving his body a chance to rest and his nerves to quiet."

Station Changes

Three new stations have been admitted to the broadcasting circle. These are: WJAX, Jacksonville, Florida, 1,000 watts, 336.9 meters; WJPB, Buffalo, N. Y., 50 watts, 218.8 meters, and WJRO, Lewisburg, Pa., 100 watts, 211.1 meters.

San Diego, California, hopes to get a license for the 500-watt station being erected in this city. The new station, which is located on the roof of the Grant hotel, will be one of the best equipped broadcasters on the coast.

A new call has been heard from Wichita, Kansas, recently. The letters KPH have taken the place of WEAH. The 500-watt station at Cedar Rapids, Iowa, originally WKAA, now uses the call letters KWOC. The Haverford College Radio club station, WABQ, of Haverford, Pa., goes on the air this month with a new 750-watt equipment.

Hockey Broadcasts Are Popular with Listeners

Summary of Each Period Is Put on Air in French

BOSTON.—Frank Ryan, the hockey voice of Westinghouse Station WEZ heard weekly from the Boston Arena, was again on the air recently when he broadcast a running description of the Boston Bruins and St. Patricks (of Toronto) hockey game direct from Boston's famous ice palace.

Next on the schedule is the Boston Bruins versus the Pittsburghs, on January 5. This also will be broadcast via WEZ. The game is called at 8 p. m., eastern time.

The performances of the professional puck chasers as described on the WEZ wave by this well-known sports writer are attracting interest in all parts of the country, particularly in Canada, the home of this fine winter sport.

SYDNEY TRADES HALL ERECTS OWN STATION

Build Set at Lowest Cost of Any On Southern Island

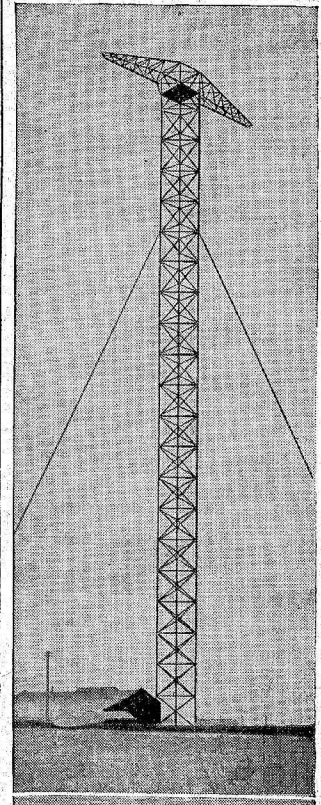
WASHINGTON, D. C.—The first organization of its kind to possess a broadcasting station, the Sydney Trades hall, has just had its set completed by local builders, at what is claimed to be materially below the cost of any other station in Australia, says Trade Commissioner E. G. Babbitt of Sydney, Australia.

The builders claim that the saving effected is the result of the use of locally manufactured material. Licensed for an input power of 1,500 watts on a wave length of 280 meters, the circuit used was a "driver" system, so as to reduce interference as much as possible. The maximum possible power of the station is about 4,000 watts.

Police to Use Radio

VICTORIA, B. C.—The police of this city, plan to install a Radio transmitting station at police headquarters and to equip two new patrol cars with transmitters. This would provide for direct communication in case of emergency.

WILL HELP BRITAIN IN OVERSEAS TESTS



The Marconi Beam Radio station at Dorchester is completed and will get its first real tests during the international broadcast week, starting January 24. Great cast steel masts, as shown above, with cross-arms at the top on which the station's aerial and counterpoise are strung, are placed at intervals of 600 feet for a distance of more than a mile from the station. Building at base houses both the transmitting equipment and studio.

RADIO 'RITHMETIC



QUESTION:

What's the Difference Between Good and Poor Radio Reception?

ANSWER:

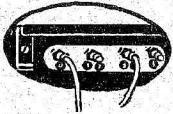
A RECTIGON!

NO storage-battery radio is complete without a

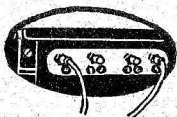
RECTIGON



TO recharge three or six-cell radio "A" or automobile batteries merely adjust "snap" terminals as shown above. Very simple.

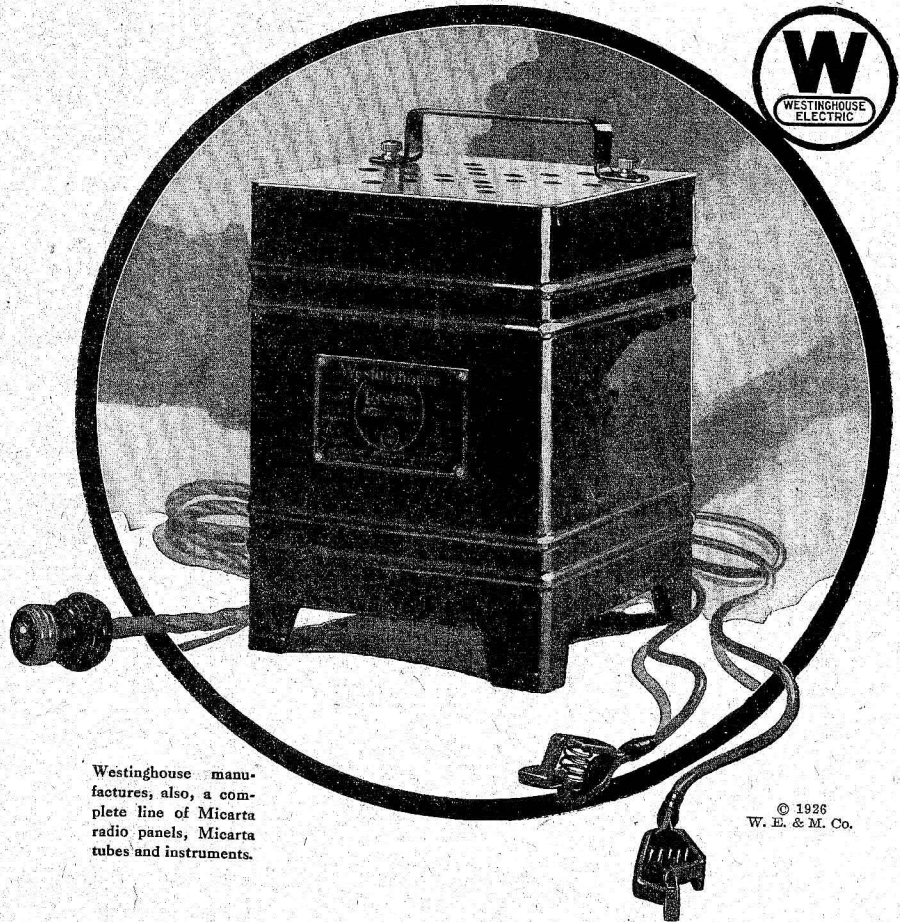


TO recharge one or two-cell radio "A" batteries with a Rectigon, merely adjust "snap" terminals as shown above. Takes but a moment.



TO recharge eleven to forty-eight-cell "B" batteries merely adjust "snap" terminals as shown here. (An instruction sheet packed with every Rectigon.)

THERE'S no muss or fuss with a Rectigon. No acids, no chemicals, no moving parts and no noise.



Westinghouse manufactures, also, a complete line of Micarta radio panels, Micarta tubes and instruments.

© 1926 W. E. & M. Co.

THAT'S a real answer to the oft-repeated question, "What's the matter with my set?" Ask any owner of a Westinghouse Rectigon. There are radio fans by the thousands to tell you there's no better, surer way to keep your batteries full of pep *than with a Rectigon.*

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
SOUTH BEND, INDIANA

The Westinghouse Rectigon Battery Charger

TELLS WOMEN HOW TO MAKE ROLY POLY

BETTY CROCKER DESCRIBES VARIETY OF DESSERTS

Cranberry Steamed Pudding and Other Fruit Dishes Discussed by Famous Food Specialist

By Betty Crocker

Have you heard, and do you regularly listen for Betty Crocker's Radio talks? Miss Crocker is nationally known as a home food specialist who is broadcasting from a dozen of the country's largest stations. By special arrangement Radio Digest has secured a series of exclusive articles by Miss Crocker dealing with her current Radio talks. These broadcasts are made through WEAR, WCAP, WCAE, WGR, WEAR, WJW, WDAF, WFT, WFL, KSD, KFI and WED, the Gold Medal station at Minneapolis-St. Paul. All of Miss Crocker's recipes and discussions are based upon investigations and work of herself and her assistants in model kitchens. —Editor's Note.

THE proof of the pudding is in the eating, but it is seldom difficult to persuade anyone to eat desserts. The cranberry roly poly is a good, substantial dessert and one that will fit in well with various dishes to make a perfect meal.

We are all fond of sweets. Sometimes too much so. It is often a temptation to the housewife to make many pies and rich, heavy desserts just because she is sure of the welcome they will receive. It is nice to please everybody, but the housewife has other things to think of when she is preparing desserts. She must consider the food value and the cost. We need some sweets in our diet. In the five food groups from which we should select the foods to make up balanced meals, we have one group of sweets.

Dessert Has Food Value

Because the dessert is agreeable and pleasing to the taste, it is often considered as an extra and not as real food. Many times the dessert is made up of eggs, milk, gelatin, nuts, sugar and whipped cream. In such a dessert we have body building food equivalent to a serving of steak, and more calories than a whole lunch would count. Such a heavy dessert on top of a big meal taxes the digestive organs. If expensive meats and vegetables have been used in the meal, the dessert should be a simple one. However, the simple, cheap dessert need not be plain and unattractive. It is often more appetizing than expensive sweets.

Roly Poly Recipe

Cranberry roly poly is an inexpensive pudding, is not very rich, is easily and quickly made and may be served with many different kinds of meals. Here is the recipe:

Two cups Gold Medal flour, 4 teaspoons baking powder, one-half teaspoon salt, 2 tablespoons butter, three-quarter cup milk, 4 cups cranberries, 2½ cups sugar, 1 cup water.

Method: 1. Cook together the cranberries, sugar and water. 2. Make a biscuit dough of the other ingredients. 3. Roll the dough to three-quarter inch in thickness. 4. Spread three-fourths cup of the cooked cranberries on the dough. Do not use the juice. 5. Roll up into a roll. 6. Place in a pan and steam one-half hour. 7. When done, slice and serve with a hot sauce.

How to Make Sauce

For the sauce, measure the cooked cranberries not used in the pudding. Combine one cup of juice and one cup of cranberries with 1 tablespoon flour. Cook until slightly thickened. Serve hot over the pudding. This amount will serve ten.

Roly poly is an old, old-fashioned pudding. Our grandmothers made more steamed puddings than we do. This particular roly poly may be made with almost any kind of fruit. Canned peaches or apricots are delicious in place of the cranberries. A sauce may be made out of syrup in which the fruit was canned, or the pudding may be served with whipped cream. Stewed dried apricots also make a good filling. Grapes, canned berries, apples or apple sauce may be used for the filling, with a plain vanilla or lemon sauce, if there is no extra fruit juice. Very often I find a bit of left-over cooked or canned fruit that is just enough to make into a good roly poly. In the spring a cherry roly poly made of fresh cherries is delicious. In that case, do not cook the cherries that are used in the pudding, but cook enough for the sauce.

Dowager Queen Alexandra Was Early Wireless User

With the recent death of Dowager Queen Alexandra, Radio lost one of its first and most loyal supporters.

D. Mazotto, an Italian writer, in an early book on wireless mentions that in 1898, Alexandra, then Queen of England, kept in communication from her residence, Osborne House, with the then Prince of Wales, now King of England, while he was aboard the royal yacht "Osborne," when it was anchored in Cowes Bay close by, or when it was in the open sea on excursions.

GIVES ADVICE TO YOUNG WOMEN



Assistant Attorney General Mrs. Mabel Willebrandt, leading woman barrister of the United States, is shown above as she gave a short Radio talk over Station WGLA, Washington, D. C., on the work of the national Y. W. C. A. She told how young women could fit themselves for higher things in public life by making use of the teachings afforded by that institution.

WOMAN IS DIRECTOR OF TOURIST BUREAU

MISS NINA BAKER TO GIVE RADIO TRAVEL SERVICE

Up-to-the-Minute Information on Roads and Tours to be Broadcast Over Station WBBM

CHICAGO.—So far has woman traveled from having her place be the home that now she has even become dictator of the open highway! Miss Nina Baker is only 25 years old, but she is a recognized authority on motor travel information anywhere in the United States. Radio appealed to Miss Baker as the most satisfactory and comprehensive way of conducting an up-to-the-minute travel service and accordingly she is now directing the only Radio tourist bureau in the world.

This clearing house of automobile travel information is the Stewart-Warner tourist bureau and will be broadcast over WBBM, Chicago. WBBM operates on a 266 meter wave length. Branch stations of the bureau will be established in 52 cities.

Radio talks will be given over WBBM several times a week by Miss Baker and other authoritative speakers. The shortest route to Florida, the best way to California, how to drive to Quebec and Montreal for winter sports and similar trips will be given in helpful detail over the air. Every phase of motor traveling will be considered; how to dress, keeping physically fit while motoring, traffic laws in the different states, weather forecasts, where to camp and how to estimate the cost of your trip.

More than this, the bureau broadcasts an invitation for all their listeners who plan trips to send in for free road maps and charts and any special information which they may want. No charge is made for any phase of the bureau's service. Miss Baker is relying partly on her audience to give the benefit of their motor experience and tell of any unusual or particularly successful trips they have made.

Affiliations have been established with more than 2,000 motor clubs, chambers of commerce, garages, hotels, resorts and other travel information bureaus, whose resources will be available for tourists applying to the bureau.

Club Women Will Hear Minnesota Federation

Music, Art and Literature to Feature WCCO Programs

MINNEAPOLIS.—On Thursday, January 8, and the second Thursday of each month thereafter, 3,000,000 club women of America will tune in the Gold Medal station, WCCO, Minneapolis-St. Paul, through which the Fine Arts department of the Minnesota Federation of Women's Clubs will broadcast a series of programs. The programs will commence at 4:30 p. m. central time, and January 8 art will be the feature topic. February 19 the program will pertain to literature, and on March 12 a correlated program of music, art and literature will be broadcast.

This series of broadcasts, the first ever attempted by the Minnesota Federation of Women's Clubs, has been arranged by Mrs. Harry S. Godfrey of Minneapolis, vice-chairman of the General Federation of Women's Clubs, and Mrs. A. A. Passer of Olivia, Minn., chairman of the Fine Arts department of the Minnesota Federation.

Mrs. Max Obendorfer of Chicago, chairman of the Musical committee of the General Federation, is urging that club women all over the nation make it a point to hear the programs, and is hoping that similar ones will be arranged at a later date by other state federations.

The Minnesota series will probably lead to the cooperating of different federations for the exchange of programs.

Woman Saved by Radio in Northern Part of Canada

OTTAWA, Canada.—"Woman Saved by Radio" is the headline in Canadian newspapers which recently caught the public eye. The woman, living far from civilization, in Canada's northland, had fallen seriously ill. The priest of the small community, unable to cope with the case himself, hurried to Edmonton, Alberta. There a doctor was procured and told the symptoms as found by the priest. The method of treatment was broadcast through a local station.

The message was picked up by two receivers in the wilderness where the woman lay near death's door. The doctor's instructions were followed and the patient is reported to be recovering rapidly.

Index to Women's Programs

Saturday, January 2				Monday, January 4				Thursday, January 7			
Eastern	Central	Mountain	Pacific	Eastern	Central	Mountain	Pacific	Eastern	Central	Mountain	Pacific
9:30 a.m.	8:30 a.m.	7:30 a.m.	6:30 a.m.	9:30 a.m.	8:30 a.m.	7:30 a.m.	6:30 a.m.	9:30 a.m.	8:30 a.m.	7:30 a.m.	6:30 a.m.
WWJ (352.7) Tonight's dinner.	10	9	8	WWJ (352.7) Tonight's dinner.	10	9	8	WWJ (352.7) Tonight's dinner.	10	9	8
WEAR (389.4) Home service talk.	11	10	9	WEAR (389.4) Home service talk.	11	10	9	WEAR (389.4) Home service talk.	11	10	9
WFT (458.8) Women's club.	12	11	10	WFT (458.8) Women's club.	12	11	10	WFT (458.8) Women's club.	12	11	10
WGN (302.8) Household hints.	12:30	11:30	10:30	WGN (302.8) Household hints.	12:30	11:30	10:30	WGN (302.8) Household hints.	12:30	11:30	10:30
WGLA (447.5) Friday fish dinner menu.	1 p.m.	12 n.	11	WGLA (447.5) Friday fish dinner menu.	1 p.m.	12 n.	11	WGLA (447.5) Friday fish dinner menu.	1 p.m.	12 n.	11
KMA (252) Domestic science topics.	12:30	11:30	10:30	KMA (252) Domestic science topics.	12:30	11:30	10:30	KMA (252) Domestic science topics.	12:30	11:30	10:30
WGN (302.8) Discussion of fashions.	12:35	11:35	10:35	WGN (302.8) Discussion of fashions.	12:35	11:35	10:35	WGN (302.8) Discussion of fashions.	12:35	11:35	10:35
KYW (536) Table talk.	4	3	2	KYW (536) Table talk.	4	3	2	KYW (536) Table talk.	4	3	2
KJR (384.4) Tonight's dinner.	10	9	8	KJR (384.4) Tonight's dinner.	10	9	8	KJR (384.4) Tonight's dinner.	10	9	8
WFT (458.8) Women's club.	11	10	9	WFT (458.8) Women's club.	11	10	9	WFT (458.8) Women's club.	11	10	9
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WFT (458.8) Women's club.	11	10	9	WFT (458.8) Women's club.	11	10	9	WFT (458.8) Women's club.	11	10	9
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Photogravures of Your Favorite Artists

GALLERY OF RADIO STARS

Suitable for Framing or Placing in Your Album

BY SPECIAL arrangement, Radio Digest is able to offer its readers a great opportunity to secure fine photogravures of their favorite Radio stars at practically no cost.

Radio fans will be able now, by this very special offer, to have pictures of their favorite artists and announcers before them when they listen in.

All that is necessary to secure photogravures from the Gallery of Radio Stars is to send the coupon published each week in Radio Digest, accompanied by ten cents to cover the cost of mailing and postage. Where a series of three photogravures is desired, it will only be necessary to send twenty-five cents and three consecutively numbered coupons clipped from Radio Digest.

with coupons

Only 10c Each

3 for 25c

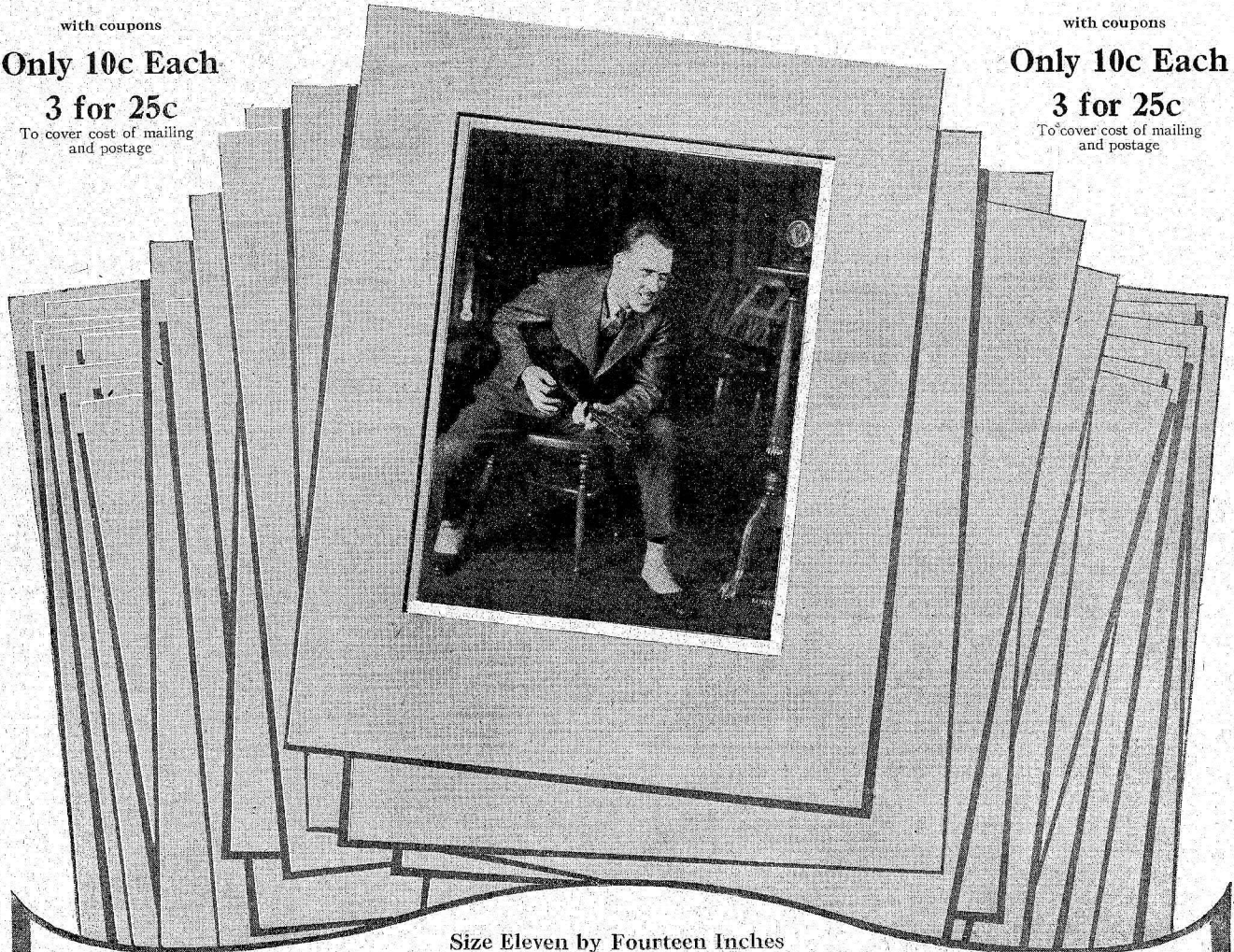
To cover cost of mailing
and postage

with coupons

Only 10c Each

3 for 25c

To cover cost of mailing
and postage



Size Eleven by Fourteen Inches

Select Your Favorites from the Gallery of Radio Stars

CHECK YOUR CHOICE

- Wendell Hall, king of ukulele ditties
- Graham McNamee, 1925 Gold Cup announcer
- Jack Little, popular wandering balladist
- Paul Small, who won fame through Radio
- Coon-Sanders "Nighthawks" at KYW
- George Hay, 1924 Gold Cup announcer
- Harmony Girls, Edith Carpenter, Grace Ingram
- Ford and Glenn, Lullaby Boys of WLS
- "Roxy" Rothafel of WEAF chain fame
- The Hired Hand, famous "Substitute Announcer" of WEAF
- Britt and Finch, popular songsters
- Bob Emery, Big Brother of WEEI
- "Bill" W. G. Hay, ex-KFKX, now of WLIB
- Happiness Boys, jovial singers of WEAF
- Lambdin Kay, "Little Colonel" of WSE
- Leo Fitzpatrick, "Merry Old Chief," WJR
- Henry Field, 1925 Gold Cup runner-up
- Al Carney, organ favorite at WHT
- Aunt Jane, Ladies' adviser at WOC
- Vincent Lopez, No. 1 Pennsylvania orchestra

CHECK YOUR CHOICE

- E. L. Tyson, pleasing voice of WWJ
- S. W. Barnett, ex-WOC, now WBAL
- Art Gillham, "The Whispering Pianist"
- Paul Greene, announcer at WSAI, "bridge voice"
- Harry Ehrhart, "Dream Daddy" of WLIT
- Correll and Gosden of "Kinky Kids Parade" fame, at WEBB and other stations
- Norman Brokenshire, popular at WRC, WJZ
- Indiana Male Quartet, popular at WEBB
- Jane Novak, Blues Singer of Twin Cities, WCCO
- Jean Sargent, the original, now at WHT
- Ralph Emerson, popular organist at WLS
- Edna Adams, "Sweetheart of the Air" at KPRC
- Pat Barnes, vaudeville announcer at WHT
- R. V. Haller of KGW Hoot Owls fame
- Henry L. Dixon, ukulele wizard of KYW
- Quin Ryan, WGN's Uncle Walt and sports announcer
- "Willie the Weeper," Ernest Rogers, WSB
- Walter Wilson, "Uncle Bob" of KYW

CHECK YOUR CHOICE

- Jack Chapman of Drake hotel repute
- Ray-O-Vac Twins, known country-wide
- Art Linick, KYW's Mrs. Schlagenhauer
- Fred Hamm, of WTAS, now WLIB fame
- Meyer Davis' Le Paradis orchestra of WRC
- "Senator" Schultz, WLW's illiterate comic
- "Uncle John" Daggert of KHJ
- D. R. P. Coats, 1925 Silver Cup announcer
- Gene Rouse, WOAW's popular announcer
- Freda Sanker, WKRC jazz orchestra director
- Irish Ruth Pavey, KOA's invisible stage beauty
- Queen Titanic, star of KHJ Fairyland

If your favorites are not in this list send in a request to have them included in the Gallery of Radio Stars.

COUPON No. 2.

This coupon entitles the holder to one photogravure selected from the Radio Digest Gallery of Radio Stars when accompanied by ten cents to pay the cost of mailing and postage.

Three consecutively numbered coupons entitles the holder to three photogravures when accompanied by twenty-five cents.

RADIO DIGEST PUBLISHING CO.

Thursday, January 7

Headliners Today

Table with 4 columns: Eastern, Central, Mountain, Pacific. Lists radio stations and their broadcast times.

Thursday, silent night for: CHIC, KJNC, CNRA, CNRM, CNRD, CNRT, CNRV, CNRW, CNRF, CNRA, CNRM, CNRD, CNRT, CNRV, CNRW, CNRF.

Eastern Time Stations

Extensive list of radio stations in the Eastern Time zone, including call letters, frequencies, and broadcast schedules.

AN EVENING AT HOME WITH THE LISTENER IN EASTERN TIME

Main program schedule table with columns for Call, Location, M. Saturday, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday. Lists various radio programs and their times.

Extensive list of radio stations in the Central Time zone, including call letters, frequencies, and broadcast schedules.

Central Time Stations

Extensive list of radio stations in the Central Time zone, including call letters, frequencies, and broadcast schedules.

Radio Digest

Illustrated

Reg. U. S. Pat. Off. & Dom. of Canada

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Vol. XV Saturday, January 2, 1926 No. 13

We Resolve

IT IS the beginning of a new year. We ponder over our misdeeds and mistakes of 1925 and wonder what we can do to improve ourselves for the untarnished span of twelve months about to begin. Let us think. Ah, we have it!

We shall be more careful to write applause to stations when their programs have been especially pleasing. Last year, we know, we were a little unresponsive. Pure carelessness on our part. But we shall endeavor to do better. In fact, we shall place a stack of penny postcards right in the drawer of our console cabinet. Then when a pleasing number has been rendered we shall listen for the name of the artist or organization having given it, and immediately scribble off a few lines complimenting the individual or group for whatever it was we liked. Even a scribble is better than nothing.

And another one! We thought we were fairly good members of the invisible audience, but upon reviewing ourselves, perhaps there are a few deficiencies. We haven't sent a telegram to a station or its artists for better than six months. And that is the best form of applause we can give them, waiting there in the sound-proof studios. We shall remember that when our fancy is particularly pleased, to dash off a telegram to the pleasing parties.

And we hereby resolve not to use the phrase "Program coming in fine." That's rather trite nowadays, so we'll attempt to get a little more originality.

Of course, we never allow OUR set to radiate and cause trouble for our neighbors who are also enthusiastic listeners, but then we'll be a little more careful during 1926. It may have been that a few times during the past year we have allowed our set to oscillate a trifle too lustily. We shall stop this nuisance by beginning right at home. Maybe John Doe, across the street, will make the same resolution.

Well, well! We aren't so criticism-proof ourselves. We were just about to begin discussing the terrible announcing and soprano evils, coupled with the disgraceful interstation interference and harmonic emission, but we guess we will do a little reforming ourselves first of all.

The Day of Real Radio Dawns

THE day of real Radio entertainment dawns. This statement may seem surprising to many of us who have enjoyed broadcasting thoroughly for several years or more, but let us explain. The character of program talent is not up for discussion. The romance of Radio may lie in searching for distant stations and hearing announcers thousands of miles away give their stations' call letters, but the primary and fundamental reason for broadcasting's existence is in the entertainment and service it renders.

Does your receiver function so reliably that you can set your dials to previously logged numbers, turn on the filament switch and hear the program you desire?

That is what we are coming to. Progressive set manufacturers are building their sets with that purpose in mind. Broadcasting stations are increasing their power and the department of commerce is doing all it can to clear the ether so that this goal may be reached.

Read over the programs, pick the station whose announced entertainment or service is what you want to hear, adjust the set and stay there. Of course you may want to shift around a bit and hear bits of several stations' programs. There may be a number of things you desire to hear. Then you can arrange your evening's tuning to suit your individual taste.

One stumbling block in the path of completing the picture is the lack of punctuality of broadcasting stations. If artists were made to appear at their scheduled times and sing their scheduled songs, the advance programs of the stations would be worth ten times their present value. However, we all know that there aren't ten stations in North America that hold rigidly to their previously announced schedules. There is lack of punctuality and lack of care in adhering to their obligation to the public.

But regardless, 1925 has made advances. The romance of Radio is succumbing to the day of real Radio entertainment.

RADIO INDI-GEST

The Raving

(I'm sorry—I apologize)

Once upon a midnight dreary
As I wandered, weak and weary,
O'er the dials and the switches
of my super-heterodyne—
Suddenly there came a rapping
As of someone gently tapping—
Gently tapping on a boiler
in the bottom of a mine.

Then it gathered up impetus,
And I said, "I'll have to get this—
It may be Butte, or Colorado,
or far-off Singapore."
Then the rheostats I twisted,
While the aerial insisted
It was bringing in a station
that I had not had before.

While I listened so intently
To a sound that evidently
Was traveling through the ether
just to make the listeners sore,
I came to the conclusion
That the terrible confusion
Was god darn hectic static—
only that and nothing more.

The Night Herd.

Do It Some More

Dear Indi: Dumb Dick came over to our house last night to hear his first Radio concert. He clapped his hands quite vigorously after the first selection and went home peeved because they wouldn't play an encore for him.

EDDIE'S SON.

I think I heard him last night. But he has changed his manner of applause. When the music was at its best he would give a long shrill whistle and at times he sounded like he was spinning a creaker.

Ace High?

The following clipping was taken from a pamphlet issued by one of the Pacific coast stations, giving the names of the contestants in an auction bridge game on the wire:

Miss Annie B. Shelby of Portland, Oregon—who stands high in bridge circles in Portland, and who is widely known in the profession on the Pacific coast."

Shades of '49 and thereabouts! And echoes of a number of shots that sang out through the night and over the Mississippi river from old side-wheelers, following somebody standing high in a game with an extra ace. None of those thousand-and-one "Colonels" would have wanted to be widely known as a professional, but, of course, that was poker.

Listen to the Birdie

Dear Indi: Two chattering macaws, whose sense of propriety is not all that could be desired, have been responsible for the broadcasting by Station WRC of a picturesque flow of profanity on several occasions during the past year, along with the Latin-American concerts from the patio of the Pan-American Union building. Fortunately, however, for the listeners in the United States, the birds know but one language, Portuguese, and confine their swearing to their native tongue.

MIKE.

You know, Mike, Portuguese is a very beautiful language, and the powers of expression are unlimited. WRC may be vying with KOA's series in conversational Spanish, and as the cuss words of a foreign language are easiest to learn, they are starting at the absolute zero.

Keep Your Ear on 'Em

Dear Indi: Maybe you noticed that some learned professor up at WSU in Iowa City the other night remarked, "As I stand in front of this wonderful microphone tonight....." What will they broadcast with next?

W. K.

With such a close guard it will probably be with fear and trembling.

A Letter About Bees and Sees

Dear Indi—Th dealer frum whicht i bot mi bee baterys now sais comma they are short but that whicht i wanted to no is why coodent he hav of just as laid solde tew me th rite length when i tolde him th sise of mi rader or whicht whicht i do about cusin him out an evrythin i cood say tew him if henev his outis whicht is a sayin, i use meanin he has zero coupelin arithmetic period anser in ur colom soas marie can no tharya are a hog fer runin, enythin whicht a hie clas riter like me send tew u fer nuthin soas u dont haf tew think up nuthin that will be a wow.

KING.

George, Bhea, Third Trombone, et al, just see what we must fall back on when you don't come through with your weekly work-savers. Glad you had to read this. Serves you right. To King, we must answer that bee baterys may be lengthened by the use of a see batery or by putting them in front of a steam roller. Distorted, flat notes come from the set if the latter method is used.

Not a Mint Spy

Dear Sir: An article on the kinks page not long ago described a "Pie Pan Antenna." What kind of pie is that, custard or just plain raspberries? I. M. AIR.

Trying to get through locals using this antenna, we came to the conclusion that the pie was full of "jam."

News of the Week



Condensed

BY DIELECTRIC

Some of the finest programs, so far as musical entertainment is concerned, comprise the dinner hour concerts. There is usually a variety of selections within the range of classic or semi-classic compositions. WWJ, Detroit, provided a pleasing program to be enjoyed at the time easterners were seated at their dinners, but it had a discordant note in it in the shape of jazzing a really exquisite number—Kamenno-Ostrow, by Rubenstein. Is this the result of a paucity of ideas in jazz composers, or a deliberate attempt to attain the impossible: transform sublime melodies to mere syncopation?

Turning to WOAW, Omaha, the other evening, listeners were given a program of orchestral music chosen from the lighter repertoire, and rendered with good intonation, which left a very favorable impression. So far, I have found no reason to complain in the slightest degree of the announcing from this station; it follows the numbers without delay and lacks nothing in distinctness. Wish all were so.

In many of the programs arranged by Station WBBM, Chicago, there is much to applaud, both in text and presentation. Of especial interest was the playing of Miriam Hadley, violinist, whose work bore evidences of training and inherent musicianship. One of Miss Hadley's numbers was composed by that king of violinists, Fritz Kreisler, and not even he could have criticized her interpretation. Encore.

When you come to reconsider the offerings of music by the masters, performed by leading artists, that are obtainable this winter as compared with any previous year in broadcasting, you must admit our good fortune. Station WJZ, New York, is the medium through which Radio audiences are permitted to listen to one of the best cultural features now on the air in the Lewisohn chamber music series. These artists need no apologies. Listeners are informed of the salient musical features of each composition and composer preceding each number, which is so interestingly and clearly given as to impress even the most casual listener. Classical music is thus securing new adherents.

There is still a lure to Florida for those who can never expect to go there and reap a fortune, and it is in the Radio programs broadcast by several stations that this exists. Station WJAX, located in Jacksonville, presented one of Arthur Hammerstein's stars in a group of numbers that proved his wisdom in selecting singers. The playing of "Dixie Ditties" by the Gage orchestra was another number of merit.

One did not have to be from Ireland to appreciate a program broadcast from WGN, Chicago, recently when Quin Ryan, the popular announcer, took the Radio audience over the Emerald Isle on "Mother Machree's Magic Carpet." It was beyond doubt, the most interesting travelogue that we have heard on the air. Ryan's description of the quaint and picturesque spots was superb. During the speaking, a musical background was provided by an orchestra playing "Mother Machree." The tour was interspersed with vocal selections of old Irish melodies, and altogether provided one of the most delightful hours we have spent before the dials. We would like to have some more.

In its first public concert of the season, the United States Marine band carried pleasure to a much greater audience, however big that may have been, than sat in Washington to hear it. That concert was broadcast by Station WRC of the capital city. One never tires of listening to these players.

Installation and Care of the Christmas Set

Part II—Loud Speakers and Accessory Connections

By John G. Ryan

AT THIS time there are two types of loud speakers: one being the familiar variety with a horn, and the other being a comparatively new type called the cone speaker. There is very little to choose between these two models, as the horn type has been developed to a high stage of perfection, while the cone type is still in the development stage. The cone type will probably be better than the horn eventually, but this season the purchaser finds little to choose between them.

If a loud speaker did not accompany

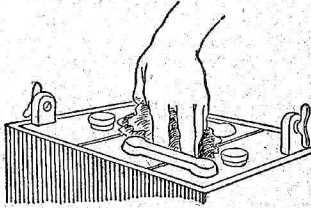


Figure 3—Top of storage battery should be cleaned occasionally with cloth dipped in ammonia water.

the receiving set given you for Christmas, the writer would suggest that in purchasing a loud speaker you do not try to go by price alone, as the speaker is probably more important than the receiver from the standpoint of perfect reproduction. No matter how good the set, if the speaker is a poor one the voice and music cannot come out with anything like true fidelity to the original rendition into the microphone. If you have a large receiver, such as the super-heterodyne, it would be most advisable to get a type of speaker with a large reproducing unit, so that it will be able to handle the unusually great volume of power which this type of receiver delivers. Smaller sets, such as the three tube regenerative

and the neutrodyne, do not deliver quite as much volume on local stations, and a medium size speaker will do.

B Battery Eliminator

It may be that you would prefer to use the B battery eliminator instead of B batteries of the usual kind, and you will find that there are about twenty makes on the market from which to choose. The point of most importance in connection with the purchase of a B battery eliminator is that it be able to furnish sufficient power for the set which you have. Unfortunately, there are far too many eliminators which cannot under any circumstances supply more than enough current for about three tubes. The manufacturers of these units do not tell you this in their advertising, and it is only when one has connected up such a unit, and finds that it will not work, and then calls in a Radio man, that the truth is learned. If possible, get your local dealer to demonstrate the B eliminator which he carries, on a set which contains the same number of tubes as your set, and have him tune in various stations, so that you can be sure that the tone quality will be satisfactory.

Make Connections Right

Having discussed all the accessories, we now come to the connection of these accessories to the receiver. As was stated in the last article, all receivers, with the exception of the super, use an aerial and a ground, so binding posts will be found on these sets labeled ANT and GND. All receivers must have batteries, or their equivalent in the way of a B eliminator, so there will be binding posts labeled A plus, A minus, B minus, B plus 45 and B plus 90. If your set uses tubes of the 201-A type, a storage battery will be used to light the filament. The plus terminal on the storage battery can be identified either by the letters POS, which will be stamped into the case close to one of the terminals, or the terminal will be painted red. The binding post on the receiver identified as A plus is connected to this

terminal; the other terminal is, of course, connected to the binding post on the receiver which is labeled A minus.

Presuming that you have two B battery units of 45 volts, which may be either dry cell or storage battery, the minus terminal on one of them is to be connected to the binding post on the set, B minus. The other terminal on this

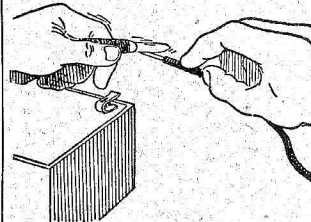


Figure 4—Battery and antenna connections are made by cutting off insulation and scraping the wire bright.

B battery unit, which is the plus, is to be connected to the minus terminal on the second, and is also to be connected to the receiver binding post B plus 45. The remaining terminal on the second B battery goes to the binding post B plus 90. It is probable that the receiver will have two more binding posts for a C battery, in which case the minus terminal of the battery goes to the binding post identified as C minus on the set, and the second terminal on the battery is to be connected to the C plus binding post.

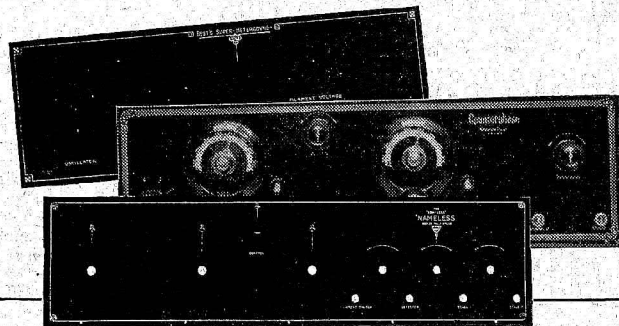
Three Speaker Connections

There are three possible ways in which the loud speaker can be connected to the receiver. In the majority of cases there are one or two jacks in the front panel of the set, and the loud speaker cord must be provided with a small unit called a phone plug. You will notice that one of the two wires in the loud speaker cord has a tracer thread woven into the covering. The manufacturer of the loud speaker has marked one of the cords in this way as he knows it will be better that his speaker is so connected that the cord with the tracer thread connects to the battery instead of to the last tube.

Of course you have no way of telling which speaker terminal is to be connected to which side of the phone plug so that it will be correct, but it is probable that the manufacturer of your set has included this point in the instruction book. If there is no paragraph covering this point, it will be necessary to connect these speaker terminals and try it, and then try reversing them to see whether the reproduction is better the other way.

A number of manufacturers have given up the jack idea on the front panel, and now provide two small jacks inside the set into which the terminals of the speaker cord can be inserted. One of these is usually labeled so that you can tell which is to receive the terminal with the tracer thread. The third possible method is to provide binding posts within the set and, close to the binding posts for connection to the batteries, and here, also, the manufacturer has probably labeled the speaker binding posts, so that you will not go wrong when connecting this accessory.

(Continued on page 24)



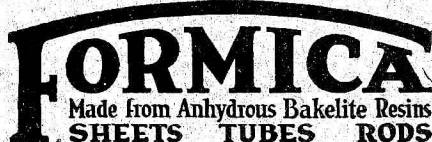
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Double Strength, Better Quality, No Fading, Some Results of 50 Kw. Tests

G. E. Engineer Tells of Reports on Power Tests Conducted by Broadcaster to Aid Department of Commerce in Furthering the Cause of Good Radio

By C. J. Young
Radio Engineer of General Electric Co.

Now that several schedules of super-power broadcasting have been transmitted the following statement by the Radio engineers of the General Electric company, will be of considerable interest to those who are following this recent development. Careful conclusions are given based on the first tests which were carried out at the request of the United States department of commerce. The data on the more recent transmissions is not yet sufficiently digested to be included now.

How Letters Were Classified

Fifteen hundred letters selected at random have been carefully recorded by dividing them into groups following the method suggested by the department of commerce. All statements of signal strength, for example, were separated into three groups according to whether they reported the 50 kw. equal to the 2.5 kw., the 50 kw. twice the 2.5 kw., or the 50 kw. signal more than twice the 2.5 kw. Quality reports were grouped so as to separate those reporting the 50 kw. better, those reporting the 2.5 kw. quality better, and those reporting equal quality. Fading, sharpness of tuning, and the answers to the other questions were divided in a similar way. Then all the letters in each group were counted and averages taken to show the true general feeling of the public in each case.

In drawing conclusions from such a test it must be remembered that there are naturally many conflicting reports. Some

listeners may have peculiarly bad locations and others good ones, so that their observations conflict with the average. But the average is, nevertheless, the best index of the general satisfaction with the transmission.

Most of the letters state that the super-power was more than twice as loud as the ordinary power and a number have been received where the increase was ten to one.

Thirty per cent of the reports say that there is no choice between the two in quality, and the remainder are fairly evenly split in favor of one or the other transmission.

Fading is shown to have had much less effect on high power.

Reports on the sharpness of tuning are practically unanimous in showing that it was just as easy to tune out the high power as the regular set, only a very few of the letters complaining of any "blanking effect" due to the high power.

Results Prove Advance in Art

In general the superpower produced the desired effect of increasing the signals at a distance without unduly preventing reception of other stations near the transmitter. This represents an advance in the art of broadcasting. And the quality of high power as shown by the last two nights of the test can be made perfect by skilled design of transmitters.

We look forward to the further cooperation of the public in sending us reports of our transmission so that we may make the best use of our extensive development facilities at the South Schenectady laboratory.

BRIEFS FROM STATIONS

(Continued from page 9)
chestra at WOR, Newark. The genial dance impresario promises to include in this program every request that reaches him from WOR listeners.

Detroit's evening high schools contributed to the Friday program of WWJ last week. Bands, orchestras, glee clubs, male quartets and soloists revealed new Detroit talent.

One hundred and fifty voices were heard recently at WTAM when Handel's "Messiah" was given by Cleveland's Welsh choir. This large broadcast undertaking was directed by W. A. Hughes.

WHAD, Milwaukee, has planned a series of "You Can't Stump Us" programs, with Bill Benning's orchestra furnishing the music. The programs include anything in instrumental music that the audience may call for.

The children's features of WBAL, Baltimore, will be directed by Hazel Knox who is a well-known singer and children's entertainer. On New Year's Day she arranged a special program of children's stories for the New Year.

Mary Ann Dentler, leading lady, and Harry C. Bannister, leading man, of the stage success, "Aloma of the South Seas," now playing in Philadelphia, accompanied by their Hawaiian orchestra of six pieces, recently paid a visit to studio WLIT.

Movie fans all over the United States within range of WBZ's signals are having sport in tuning in the series of motion picture talks being broadcast through the Westinghouse New England station by George M. A. Feeke, president of the Motion Picture corporation and a well-qualified expert. Mr. Feeke tells how pictures are made and produced, together with describing "on location" work.

The return to the air of H. V. Kallenborn of the Brooklyn Daily Eagle, whose weekly talks are scheduled at WOR every Monday evening at 8 p. m., eastern time, has brought forth a wave of approval. Mr. Kallenborn is especially well known to Radio listeners, thousands of whom deem his current topic lecture vitally interesting and a liberal education on world events interpreted into every-day English.

YOUR CHRISTMAS SET

(Continued from page 23)

The filament switch on the front panel should now be turned to the "off" position, and the tubes can be inserted in their sockets. The next step is to turn the switch to the "on" position and the tubes should light. If they do not, it is probable that there is a small knot on the front of the set which must be turned to the right, which will cause the fila-

ments to light up, and will also provide a control over the filament brilliancy.

Tuning a receiver is something on which the writer can make but few suggestions, as every receiver has a different combination of knobs and dials, and what one manufacturer may call a "filament control" another may call a "rheostat." One manufacturer may call the first dial a "selector" while another may call it an "antenna tuner." It will be an excellent idea in any type of set to try switching the tubes around in the sockets, as tubes vary a great deal in their internal construction and characteristics, and, if you have a five tube receiver, it is highly probable that one pair of tubes will work a great deal better in the first two sockets than will any other pair. If you have a super-heterodyne type of set, this switching around of tubes is highly important, as the super is most critical as to the tubes it uses.

If you have trouble in the matter of selectivity, the instruction book should be read very carefully, first, to see if the manufacturer has provided some means of varying the selectivity to suit local conditions. If the maker said nothing on this point, the only way to increase the ability to separate stations is to shorten the antenna. The effective length can be cut down by inserting a small unit called a fixed condenser in the lead-in wire from your antenna to the set. Your dealer can tell you the best size condenser to use for this purpose. If you still have trouble after trying this method, it will be necessary to take off 10 or 20 feet from the length of wire which you have suspended on the rods. It is most likely that you will have trouble in the receiver itself, because most of the sets on the market are nearly fool-proof by this time and the usual difficulties the new user has will come from the accessories. The storage battery must be tested frequently, as described in the first article, and the B-battery should be tested with a meter about once a month to be sure it is supplying sufficient pressure or voltage.

(CONCLUSION)

ADVANCE PROGRAMS

(Continued from page 21)

Friday, January 8

time music, Marshall Field tea room orchestra; 4:30-5, organ recital, Edward Benedict; 5:20-5:57, Skeezi time; 6:30-7, dinner concert, Drake concert ensemble and Blackstone string quintet; 8-9, hour of music, Drake concert and vocal artist; 9-10, program, popular artist; 10-11, dance program, Jack Chapman and Blackstone dance orchestra.
WBB, Kansas City, Mo. (365.6), 2-3 p. m., lullaby hour program, Sweeney Radio trio; 7-8, Sweeney Radio orchestra, Glenn Durrell, director; dance music, Milo Finley trio, Watty Watkins; popular songs, Ramona Payne, pianist.
WHAD, Milwaukee, Wis. (275), 11 a. m., pianologue, Andy Hettel; Chas. R. Allen, harmonica; 6:15-7 p. m., Arthur Richter, organist; 7, Bill Juhre's Radio cartoon game; 8:30-10 Wisconsin dance revue.
WHAS, Louisville, Ky. (399.8), 1-2, concert, Royal Peacock orchestra; 8-8:30, organ recital, Mrs. Myrtle Fulkus Zahn; 4-5, musical selections, Harry S. Currie,

director; readings; 7:50-9, concert, Louisville Music and Radio company, Gene Klingman, director; Sara King, solo pianist; Civil Service talk, O. A. Beckman.
WIO, Des Moines, Iowa (526), 7:30-9 p. m., 15 Cavalry band, C. C. Rouch, director; National Assembly, Capt. Phillips; 11-12, Bankers Life-Corn Sugar
WHT, Chicago, Ill. (399.8), 10 a. m., Jean Sargent's program, women's club, Jello Good Luck Girl, studio features; 10:45, Betty Crocker home service; 11, special studio features; 12 p. m., Al Carney's complimentary organ hour; 1-2, special studio program, Grayling's string trio; 6, classical program, dinner organ; Grayling's string trio; Bob York, tenor; Berneice Taylor, soprano; Mina Smith, violinist; Leola Albano, soprano; 7:45 (258), musical features; 9:30, Dutch Masters; Lotis hall hour of music, Freddie Whitmer, pianist; Samuel G. Rowe, tenor; Oscar Heister, tenor; Pat Barnes, tenor; Helen Raab, pianist; Husk O'Hare's orchestra; 10, Pat Barnes and Al Carney.

WIBO, Chicago, Ill. (226), 2-4 p. m., shut-in program; Jack Sprat and the Carl Sulzer orchestra; Red Florio, pianist; Victor Young, Dan Russo, violinist; Vernon Hayes, saxophonist; "Home Economics," Grace Viola Gray; 6-8, Walter Preston, popular songs; Otis Pike Jester, soprano; Mary Thrash House, pianist; Joe North, baritone; Shepherd Levine, tenor; Florence Osterman; Ray McKay, baritone; 10-11, Special Old Henry night, "Special Show."
WICF, Philadelphia, Pa. (681), 10-11 p. m., Spencer Reuter, baritone; Michael Swedish, tenor; Mrs. El Dressen, pianist-composer; Albert Nitz, tenor; Cannon club.

WLIB, Chicago, Ill. (302.8), 7-8 p. m., dinner concert; 11-12, program, Fred Hamon and his Liberty orchestra, Cornell Carter; 12-12:30, m., dance program, Jack Chapman's and Blackstone hotel dance orchestras.
WLS, Chicago, Ill. (344.6), 12 p. m., Ford and Glenn; 1 p. m., Ralph Emerson, organist; 7, lullaby time, Ford and Glenn; 7:15 WLS studio trio; 7:45, Wallace Bruce Amberg; 8, Doris Olson, vocalist; 9, Chicago Little Symphony; 10:10-11, Ford and Glenn trio.
WLW, Cincinnati, Ohio (422.3), 7:30 a. m., health exercises, William Stradman, Y. M. C. A.; 8, morning broadcast, sunrise of the Parkway, Y. M. C. A.; 12:30 p. m., concert, Hotel Gibson, Robert Visconti directed.

WMAQ, Chicago, Ill. (447.5), 12:25 p. m., Y. M. C. A. Forum; 1, Radio farm school; 2, Shut-in program; 4, "Treebush Club"; 4:15, "News of the Shops," Mildred Graham; 4:30, "Fables of the Moment," Mrs. Graham Aldis; 4:45 Child-life stories; 6, organ; 6:30, Wide-Awake club; 8, musical features, Mr. and Mrs. M. E. Oberdorfer; 8:30, Whitney trio; 9, lecture, U. of Chicago; 9:25, announced.

WMB, Chicago, Ill. (250), 7-8 p. m., Trianon duo, Frank Gardner, baritone program, J. Edelwald Lampe, director; 9-11, Trianon orchestra, Dell Lampe, Woodlawn theater orchestra, Grace Walls, Walter Duffy, Scotty Walsh and Madison sisters, Babbe and Barr, popular program.

WOMA, Omaha, Neb. (526), 12:45 p. m., Sunshine Sunny dinner and radio service; 3, Randall's Royal Fontenelle orchestra; 6, music review, Hester, Bronson Comber; 6:30, Jaffy's string quintet; 9, classical program; 10:30, Frank Hodek and his Nightingale orchestra.

WOC, Davenport, Iowa (483.6), 12:15-12:25 p. m., farm service day; 3-3:30, Aunt Jane; 5:45-6, chimes; 6:30-6:50, sunbeam; 8-9, artists from Fulton, Ill.; Bell Snyder Drury, director.

WOL, Ames, Iowa (270), 12:45 p. m., "Agricultural Economics," Prof. C. L. Holman; 7-8, Drake-Lans basketball game.

WOK, Chicago, Ill. (217.3), 5-7 p. m., Capitol theater organ; Ben Carlson, soprano; Bob Mokreis, pianist; George Allen, tenor; 10-10:30, Bernice Cummings Town receives individual and PERSONAL instruction, under CAPTAIN THEATER program; Arnold B. Steinhilber, musical saw soloist; Harriet Lee, contralto; Hermina, violinist; George Allen, tenor; Bob Mokreis, pianist.

(Continued on page 28)

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Straight-8: Outside Aerial Tuned R.F. Super

Part III—The Wiring

By A. Christen and Jacques Fournier

BEFORE starting the description of the actual wiring of this receiver, we wish to call your attention to two small errors which have occurred in the previous articles on this set, so that you can correct them before proceeding further.

On page 26 of the December 19 issue, the coil L-5 was listed as having 25 turns, whereas it should have but 12. While this value is not critical and vacuum tube 2 oscillates just as well with 25 turns, wind on but 12, if you have not already made your coils. As these coils are shipped by McConnell and the Sickles company, the number of turns will be correct.

On figure 5, which appeared on page 25 of the December 26 issue, the holes for the bracket mounting screws are shown as being 1 13/16 inches apart, and should be 1 1/4 inches. Blue print templates, which are available, are correct on this point, and need not be changed.

Wiring the Set

As a preliminary operation to the actual wiring, solder a 4-inch piece of flexible wire to each of the four terminals on each of the three Victoreen coils that are under the sub base.

1. A long wire is put in from the right front terminal of socket 5, across to left, down through hole in front of 2, to the left to the hole to left of 7 and forward to left front terminal on 8.
2. Where this wire passes the right front terminals on 2, 3 and 4, connect to those terminals, and where it passes the left front post on 7, connect it to that post.
3. The rear right post on 6 must be connected to wire at the point where lead is taken off to socket 4.
4. A wire is run from left front post on 1, down through sub base and back to —B binding post. Where it crosses wire 1, solder to that wire. Connect —B binding post and —A.
5. The potentiometers are just inside the brackets on the front panel and the right terminal of one is to be connected

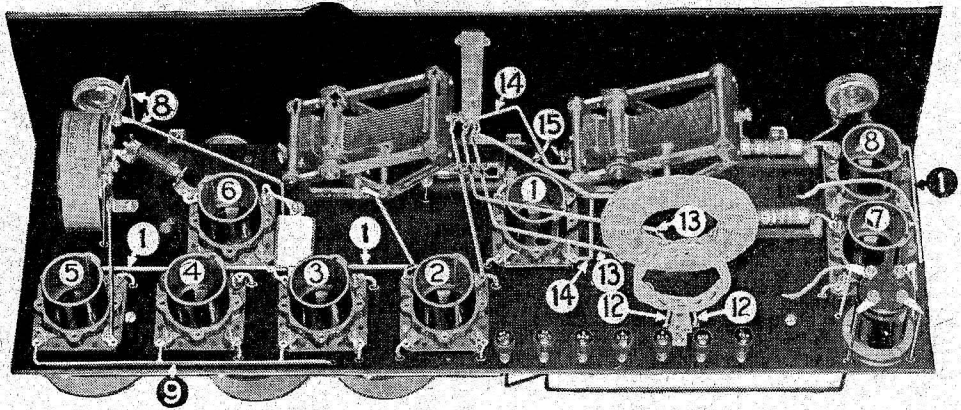


Figure 10

- to the right terminal of the other. Where wire 4 comes down through sub base, connect a wire going forward and down to this wire connecting potentiometers. Connect in a wire from front terminal of Potter 5 mfd. condenser to this first wire of operation 5.
6. From the right terminal of the rheostat above the filament switch, run a wire down and to left through bracket to left terminal of potentiometer and continue it across to left to left terminal of 10-ohm rheostat in center, further across to left terminal of second potentiometer and up through bracket to left terminal of the 20-ohm rheostat above jacks. Run a wire across to left and then back from left terminal of switch to A-binding post.
7. Drop a wire from right terminal of rheostat above switch to right terminal

- of switch. From right terminal of Amperite between condensers drop wire through and down to wire 6. From left terminal of potentiometer to left, run wire up and back to rear Amperite, its right terminal, and where this passes under right terminal of front Amperite, run wire up through sub base to it.
8. From the left terminal of rheostat above switch at right end, run a wire back and to the left to the rear left post on socket 6. From this same point run a wire up and then back to the F terminal on the Victoreen coil at front right corner of sub base.
9. A wire is to be put in from rear right corner post of socket 5, across to left and down through hole behind socket 3, then forward and down to the right terminal of the 10-ohm rheostat at lower center of front panel. Where this wire passes rear right posts of sockets 3 and 4, connect to those posts.
10. From right terminal of rheostat above jacks run a wire diagonally across under sub base to rear right post on socket 2.
11. Connect left terminal of Amperite in center to right front post on socket 1;

- in center to right front post on socket 1; (Continued on page 26)

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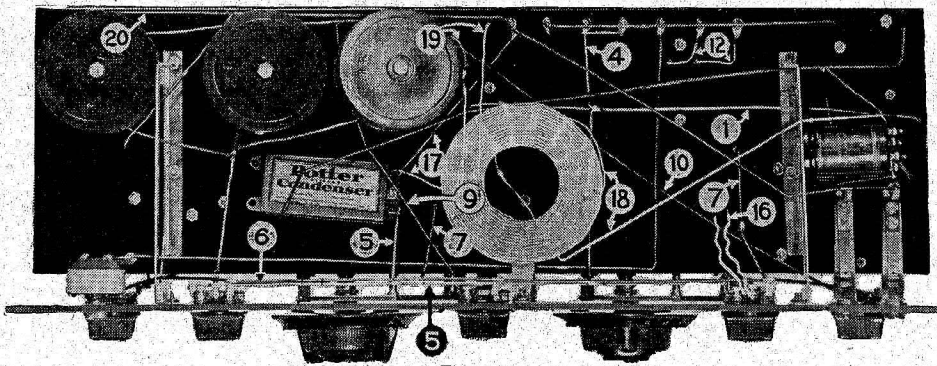


Figure 11

STRAIGHT-8 SUPER-HET

(Continued from page 25)

connect left terminal of Amperite by socket 8 to right front post of that socket and rear Amperite's left terminal to right front post on socket 7.

12. The outer end of the 10-turn coil (L-1) mounted close to the binding posts is to drop through sub base to the ground binding post and the inner end goes to the antenna post.

13. Considering now the jack mounted close to the top of the panel, and mounted frame upwards, run a wire from the second terminal, down and back, and then to left to outer end of coil L-2, mounted in front of L-1. Another wire is to connect the inner end to the third terminal from top.

14. The condenser in front of L-1 and L-2 is C-1 in diagram, figure 4. The top terminal on the jack is to be connected to the stator terminal at lower right side of this condenser. Another wire from this stator terminal goes back to rear left post on socket 1.

15. The bottom terminal of jack connects, by wire going downward and to left, to rotor post of condenser C-1, on rear frame, and wire continues to left and forward, then down between front edge of sub base and front panel. Just below edge of sub base connect a piece of flexible wire for making connection to a C battery.

16. To the center post of potentiometer below C-1, attach another piece of flexible wire. The use of this C battery was not shown in figure 4, as it is optional, but most desirable for both clearness and B battery economy. Wire 15 could connect directly to potentiometer.

17. The rear right terminal on socket 1 connects through sub base to the outer end of the upper coil of 25 turns. The inner end of coil connects to the rear terminal of the .5 mfd. condenser. From this same terminal of the condenser put in a wire to rear and left to the B+90 binding post.

18. The front left post on socket 2 goes to outer end of the outer winding on the double coil. The inner end of this winding goes across to left to the F terminal of the audio transformer on the bracket.

19. The outer end of the inner winding goes to the P terminal on the Victoreen coil below socket 2. The innermost end goes to the rear left terminal of socket 2.

20. Connect G post of this Victoreen coil to front left post on socket 3. Connect G post of the next Victoreen coil to front left terminal on socket 4. Connect G post of third Victoreen coil below socket 5 to front left post on that socket. 21. Connect P post on second Victoreen coil to rear left post on socket 3. Connect P post on third Victoreen coil to rear left terminal on socket 4. Connect

P post of Victoreen coil on top of sub base, by wire going down and back to rear left post on socket 5.

22. Run wire from flexible lead on -1 post of third Victoreen coil (below socket 5) to B+90 binding post. Connect the flexible leads from the -1 posts of Victoreen coils 1 and 2 to this wire. From the + post of Victoreen unit on sub base, drop a wire down through sub base and back to this longer wire.

23. The flexible wire from F post on second Victoreen goes straight forward and down to center terminal of right potentiometer. Connect the flexible leads of F posts on Victoreens 1 and 3 to this wire.

24. Connect G post of Victoreen on sub base to the right end of Daven Leakandenser and then connect left end of Leakandenser to right front corner post of socket 6.

25. Left front corner post of 6 is to be connected by a long wire below sub base and then up through it to the P terminal and Meloformer on sub base. The small Erla fixed condenser is to be connected from this same post on socket 6 to right front post on socket 3.

26. The variable condenser to right is C-2 and its rotor terminal on rear connects to right front post on socket 2. Its stator post at upper left side connects to front left post on socket 2.

27. Then put in a wire from B+ post on Meloformer on sub base, down through

hole and across to right to B+45 binding post.

28. The G terminal on this Meloformer connects to G post (rear left) on socket 7. The F— post on Meloformer connects by wire through sub base to F— on Meloformer underneath and a short length of flexible wire is also to be soldered to F— of upper Meloformer to connect to C battery minus.

29. Through sub base connect rear right post on socket 7 to upper terminal of four spring jack, which, incidentally, is mounted frame upwards.

30. The second terminal of this jack connects to P of Meloformer on bracket and third terminal goes to B+ of Meloformer.

31. Connect rear right post on socket 8 to frame terminal of single spring jack.

(Continued on page 28)

Televocal

QUALITY TUBES

A Technical Triumph Fully Guaranteed

Televocal Corp
614 FIFTH AVE. — NEW YORK

Used by John G. Ryan in the "Simplest Possible" Super

ONLY
\$22⁵⁰
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Qualitone Super Kit

USING the Qualitone Kit in the Simplest Possible Super heterodyne described in Radio Digest, makes unnecessary any changes in the diagram and insures perfect operation on completion of the wiring. Each part fits into place as shown in Mr. Ryan's layouts.

Kit includes three long wave transformers, one filter coupler and one oscillator coupler, with complete set of blueprint instructions, all packed in sturdy SEALED carton. Genuine Bakelite and silk covered wire employed throughout.

Mail orders filled promptly on receipt of check or money order.

Can be used in 7 or 8 tube supers and the Heteroflex described in Radio Digest of August 1st.

QUALITONE RADIO CORP.
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KARAS Parts Are Intended Only for the Few Who Demand Finest Quality and Workmanship

IT takes many manufacturers to supply the tremendous demand for condensers and transformers in this vast radio market of ours. If all home set builders were ready to pay the price which real quality commands, a big proportion of them would necessarily be disappointed—the Karas factory could not begin to take care of all. Karas parts are designed and built for the select few—you builders who want the utmost in quality, in quiet operation, in appearance. You who take pride in your workmanship—whose sets have that "professional" appearance which is the envy of all your radio friends.

Just as water quickly finds its level, so did Karas Harmonik Transformers and Orthometric Condensers quickly find the exclusive market for which they were intended.



THE KARAS HARMONIK "ALL-STAGE" RATIO AUDIO FREQUENCY TRANSFORMER Price \$7 each. Shipped direct where dealers cannot supply, post plus a few cents postage paid to postman on receipt. Parcel post is preferred where postage accompanies order. Our 30-day Money Back Guarantee applies, wherever and whenever purchased.

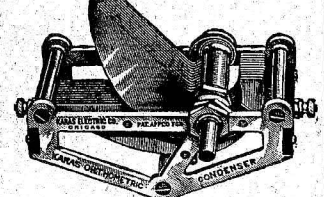
The most skillful radio set builders the country over discovered Karas Harmonik Transformers soon after they were placed on the market in 1924. When Karas Orthometric Condensers appeared a year later, they were snapped up far too quickly for our own comfort. Perhaps it was because they were the first to meet the demand for a Straight Frequency Line tuning instrument. More likely it was because of the enviable reputation created the year before by Karas Harmonik Transformers. At any rate, it was months before we could fully supply the insistent, clamorous demand that came to us from all sides.

KARAS ELECTRIC COMPANY

WE begin to think now that the number of set builders who want the very "Best that Money Can Buy" is far greater than we first imagined. Our production has been greatly increased to provide for the growing numbers who demand Karas parts and will accept nothing else.

In many places, good dealers who wanted a stock of Karas products could not be supplied. If you are still unable to find them in your local stores, tell your dealer that we are now able to take care of his requirements. Or if you wish to get Karas parts in the quickest possible time, we will be glad to send them to you, direct.

23 plate, .0005 Mfd.,	\$7.00
17 plate, .00037 Mfd.,	6.75
11 plate, .00025 Mfd.,	6.50
5 plate, .000072 Mfd.,	6.50



THE KARAS ORTHOMETRIC (STRAIGHT FREQUENCY LINE) CONDENSER

Prices and sizes above. Shipped direct where dealers cannot supply. No money in advance. Pay the postman price plus a few cents postage. Or send cash with order and we prepay parcel post. 30-day Money Back Guarantee.

However, you buy Karas Harmonik Transformers or Orthometric Condensers, you do not run the least risk of their not performing up to your highest expectations. If there is the slightest cause for disappointment during a thirty days' test, you are invited to return the parts to the dealer from whom you bought them, or to us if you buy direct. Your money will be promptly refunded without question or quibble.

Karas radio parts are the pride of an organization that has been making precision electrical apparatus for more than thirty years. We believe we are making the finest transformers and condensers possible to produce and we are glad to back them up with this, the strongest guarantee we know how to write.

4048 North Rockwell Street
CHICAGO, ILLINOIS

Applied A B C Principles of Radio Receivers

Part III—Increasing the Volume

By Carl Patterson

WHETHER your set is of the tuned radio frequency type or super-heterodyne, the incoming program must eventually get to the tube known as the detector. It is the sole purpose of this detector tube to unload the voice and music from the carrier wave, which is used to bring it into your receiver. Presuming that the first two tubes of a tuned radio frequency set are being operated correctly, and that the switching arrangements provided have been adjusted so that the proper train gets in without interference, we are ready to unload the cargo of entertainment. The detector accomplishes this by separating the carrier wave from the sound waves, and then losing the carrier wave, as it is no longer of any importance. The sound waves or variations, which we now have at the output binding posts of our receiver, are very faint, and while they could be heard with a pair of head receivers, they are not of sufficient strength to actuate a loud speaker.

Must Strengthen Variations

The last two tubes of the average five tube set are used for the purpose of strengthening or modifying these faint variations. The writer calls them variations because as sounds vary in the wires, they constitute only electrical impulses of varying strength according to the number of times per second that the corresponding sound wave will vibrate in the air. This operation of strengthening the program itself has no counterpart in rail-roading, so at this point the writer will have to lapse into radio terms.

From the output of our detector or unloading platform the musical variations are fed into a device which the Radio man calls an audio frequency transformer. It is the purpose of this unit to raise the pressure behind the actual electricity itself, which is called current, although in so doing the current itself may be somewhat decreased.

From this point, the signals go into the first of the two audio amplifier tubes, where they are greatly increased in

strength. Many sets provide a jack on the panel so that a loud speaker can be connected into the circuit at this point and the output of this fourth tube used on the speaker. This jack is so constructed that the insertion of the phone plug connects the plug terminals to the proper points in the circuit, but when the plug is withdrawn, connections are automatically made so that the output of the fourth tube goes to a second transformer.

Presuming that the phone plug is not in the jack, the transformer raises the pressure while slightly decreasing the current itself, and then passes the program into the second amplifier tube. Since the variations are now tremendously greater, due to their having passed through the first amplifier, their effect in the second tube is, of course, much greater and the variations in the electrical current in the output of our last tube will be very strong.

If the loud speaker is plugged into the jack which is provided for our last tube, the volume will be all that anyone could desire, and on local stations would be far too great. It is for this reason that most manufacturers and the majority of home builders put in the first jack after the fourth tube, so they can plug in the speaker and get pleasant volume on the locals.

A number of manufacturers this season have adopted a different method of control to vary the volume, and instead of two jacks, they equip their sets with a variable resistance unit which is labeled either "volume control" or "modulator." This takes the form of a knob on the front of the panel which can be turned to the right or left, and will give a soft whisper at one end of its rotation or roaring volume at the other. Thus you can choose any degree of volume that you desire.

It is the sole purpose of a loud speaker to change varying electrical impulses into sound waves such as we are accustomed to. The efficiency of a speaker is

determined by its ability to handle either very low notes of a frequency of but 16 to 20 per second or the high notes of a piano which have a variation rate of 9,000 per second. This is far from easy, and very few speakers will handle notes with a frequency below 200 anywhere near as well as they do those notes around 1,000.

With but one or two exceptions, all of the speakers on the market attempt to accomplish their purpose by providing one or two small iron cores wound with fine wire which are called magnets with a flat disk of metal very close to one end of these cores called the diaphragm. This diaphragm must vibrate to any frequency over the range mentioned above in accordance with the frequency of the impulses passing through the coils or magnets, which are connected to the output of our receiver.

Types of Speakers

At this point the manufacturer of the loud speaker has his choice of placing a horn in front of the diaphragm or connecting the diaphragm to a large, nearly flat, disk of paper or thin composition which is called a cone. The horn has the advantage that it will increase or amplify the strength of the sound waves, but there is the possibility of the horn strengthening the lower ones much more than it does the higher ones. The cone speaker will amplify all the tones equally, but it is difficult to construct it so that it will not introduce other types of distortion, and it is difficult to find a material for the cone which will not vary with the weather.

There are a few types of speakers which do not use a diaphragm, but you can take it for granted that 98 per cent of them do. While a speaker may handle notes of practically any frequency very well, provided they are not too strong, there are a great many that will not handle a great volume of energy. The purchaser of a speaker must, therefore, look out for both tone quality and the speaker's ability to handle great volume. It was stated that the storage A bat-

tery was comparable to the operating expenses of a railroad, and the small knobs on the front of a panel, which operate the rheostats, give you a control over the operating expense. These knobs should be so adjusted that the filaments of the tubes receive sufficient current for good volume and clearness but should not be turned too far so that more current will be drawn than is necessary, as nothing will be gained by so doing. Vacuum tubes have a certain operating point, in this respect, at which they work best and, if they are burned any lower, it decreases the efficiency of the set, while, if they are burned higher, it materially shortens the life of the tubes.

RADIO LAW DIRE NEED

(Continued from page 3)

His bill is based on the theory that the right to use the air for Radio transmission is not an absolute right, but is rather a qualified or conditional right only to be granted to an applicant if public convenience, interest and necessity will be served by the granting of the authority. It also places a heavy responsibility upon the secretary of commerce in that it requires him to allocate wave lengths, divide time and act in many other respects. Mr. White has also included in his bill a provision for the formation of a national commission, but it does not designate that the body shall act in an advisory capacity.

Radio Must Have Law Immediately

No doubt, before the present session has adjourned many more bills will be introduced in the house of representatives and the senate with a view of controlling and regulating the Radio industry. The imperative need of congressional action is known to those interested in and those who know the present conditions. Whether the fastest-growing industry in the United States is given sufficient attention, and whether that attention provides for the needs of the industry, remains to be seen.

Coast to Coast on a Loop with a VICTOREEN Super Heterodyne



That is real radio reception. No oscillations, howls or squeals—no matching of tubes. That means satisfaction and enjoyment for you.

Build your own 'Victoreen'

You can secure complete parts to build the "Victoreen" from your dealer for between \$50.00 and \$75.00, depending on the quality of material selected.

Victoreen Air Core Transformers are more than matched—they are actually tuned to guaranteed precision of 1/3 of 1%—a Victoreen feature.

Either UV 199 or 201A tubes may be used—another Victoreen feature.

"B" Battery consumption is remarkably low—8-10 Milliamps, with Potentiometer at negative side—less than some three tube sets consume.

Range—clarity—volume—selectivity—ease of operation—that's what you get in a Victoreen Super Heterodyne.

Ask your dealer for a free folder and hook-up of the Victoreen set or write directly to us. Your dealer can supply you with all necessary parts.

The Heart of the circuit

4 No. 170 R.F. Transformers at \$7.00 each.

1 No. 150 Oscillator Coil at \$5.50.

Should use of aerial be preferred to loop, the Victoreen No. 160 Antenna Coupler is required at \$3.50 extra.

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BRANCHES IN PRINCIPAL CITIES

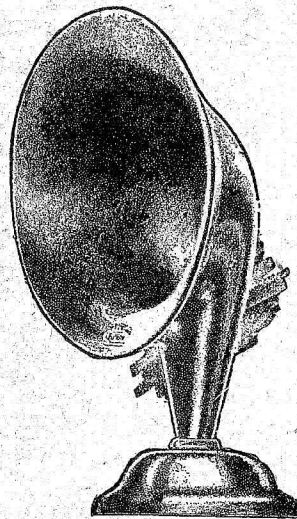
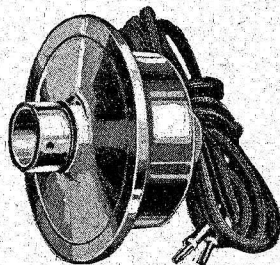
BIG PRICE REDUCTION

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Trade Mark

THE FORD OF LOUD SPEAKERS
\$6.50

Fultone Loud Speaker has conclusively proven to the radio world that a reproducer could be made and sold at \$6.50 which would handle music or speech in volume as perfectly as any speaker at any price. The horn is solid, non-ringing and wide-throated enough to handle the powerful reproduction from super-heterodyne or reflex. The adjustable diaphragm permits matching Fultone to any receiver and "B" battery voltage.

Either speaker or unit will be shipped on a satisfaction or money back basis on receipt of price in money order or currency. The coupon is provided for your convenience in ordering if your dealer cannot supply you.



Fultone
Trade Mark
LOUD SPEAKER UNIT
\$3.00

Its large diaphragm and bobbins of fine heavy nickel-plated case through the means of a special key. The pole pieces are not made from a solid piece of iron but are assembled from 15 laminations of carefully chosen steel.

Use on Your Phonograph
Edison Adapter.....25c
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This unit is the secret behind the unparalleled success of Fultone Speaker.

Enclosed is \$..... for which ship me ()
Fultone Speaker..... () Fultone Unit at once,
my money to be refunded if I am not satisfied and
return this merchandise within 5 days.

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HALL & WELLS, Inc. 128 N. Wells Street, CHICAGO, ILL.

NAME.....
ADDRESS.....
CITY AND STATE.....

STRAIGHT-8 SUPER-HET

(Continued from page 26)

Connect rear left post to G on Melformer underneath.

32. Connect bottom terminals of both jacks together and continue wire through bracket to right, and back to B-90 binding post.

33. Solder one end of a 5-inch piece of flexible wire to the front left post on socket 7 for connection to + post of a C battery.

(CONTINUED NEXT ISSUE)

ADVANCE PROGRAMS

(Continued from page 24)

Friday, January 8

- WORD, Bavia, Ill. (275)**, 7-8 p. m., Webster hotel trio and Radio study club; 9-9:45, recital, Rudolph Magnus, tenor; 9:45, a talk to young men, Alexander H. Revel.
- WOL, Chicago, Ill. (447.5)**, 11-12 m., Sunday dinner menu, Ted Wilmes; 3-4 p. m., "How Often Do You Bake?" Helen Harrington, singing; "Selling the General," Walter Meek; 7-8, dinner concert, Ralph Williams and his Rainbo Gardens orchestra; 8:15, "The Night Garden," Margaret Gado, coloratura soprano; Clement Laska, ski, tenor; song biography, H. W. Bundy; "Come Ye Disciples," "Fidelity," "Piper, accompanist; 10-11, Ralph Williams and his Rainbo Skyarks; Dr. H. Lucille Long, harmonica playing; Rainbo Glories; Melodians; Dean's band; "The Night Garden," bandleader; Romo Vincent, baritone; Anita Chellis, comedian; artists; 1-2 a. m. Ginger hour, Ralph Williams, the singing trio and the Skyark band.
- WSB, Atlanta, Ga. (428.3)**, 8 p. m., entertainment; 10:15, entertainment.
- WSM, Nashville, Tenn. (282.8)**, 6:30 p. m., Deasley Smith and his orchestra; 7, bedtime story; 8, Men's Bible class, Woodland Street Presbyterian church; 10, Dutch Eastland and his orchestra.
- WSU, Iowa City, Iowa (483.5)**, 12:30 m., piano recital, Dr. Jacob Kvalwasser.

Mountain Time Stations

- CFAC, Calgary, Canada (435.8)**, 7-8 p. m., special salon, Gladys Webb Foster, director.
- CHRE, Edmonton, Canada (515.9)**, 7:50-8 p. m., children's half-hour with the farm; 8:30-10:30, Erna Duxey, pianist; 10:30-11:30, John Bowman and his orchestra.
- KFWA, Ogden, Utah (261)**, 4-5 p. m., organ recital, Paramount theater; 5-6, Ogden Radio dealers program.
- KGAN, Denver, Colo. (822.4)**, 12:15 p. m., Rialto theater musicale; 2:15, exercises; 3:30, matinee for housewives; 4, culinary hints; 4:15, fashion reviews; 6:30, dinner concert, Brown Palace string orchestra, Howard Tillotson, director; 7:30, Sunday school lesson recital; 8, program; 9, W. C. Brown, First Congregational church, conductor; Mrs. Bernice W. Doughty, soprano; Jane Ballantyne, contralto; Royden Massey, tenor and Dr. Cornelius Deley, bandleader; accompanist, Boyce H. Mintzer; instrumental program, KOA orchestra; Sidney Shepherd, violinist; talk, "Our Twentieth Century Girl."

Pacific Time Stations

- KFI, Los Angeles, Calif. (457)**, 6:30 p. m., Los Angeles Examiner matinee program; 8:30, Vest Pocket concert; 7, L. A. Examiner program; 8, Aeolian organ, Dan L. McFarland; 9, All American string quartet, 9:30, program, Mutual Motors; joke contest; 10, Ray West's Alexandria hotel orchestra, John Te Groen, director.
- KFOA, Seattle, Wash. (454.3)**, 12:30-1:30 p. m., program; 4-5:15, Wynne F. Hoffman's orchestra, talk and recipe; 6-6:45, Hoffman concert orchestra; 6:46-8:15, program; 8:30-10, Times studio program.
- KFON, Long Beach, Calif. (282.4)**, 6:30 p. m., organ recital, Baytree's theater; 6:40-7, Captain's inn orchestra, Seal beach; 8-9, Press-Telegram program; 10-11, Long Beach Elks Lodge No. 888 midnight frolic.
- KFWB, Hollywood, Calif. (252)**, 7:10, safety first talk, Sgt. E. G. Boyce of L. A. Police department; 7:30, Jack Boaz, fishing scout; 7:30, "Eye-o-logus," Dr. S. Marshutz; 7:40, microphone brevities; 8-9, program, John Wright, the right tailor; Royal Nieto, coloratura soprano; California Blue Boys; 9-10, program, Western's Super-service garage, Frank Stever, baritone; J. K. Frank dance orchestra; 10-11, Walter Brothers frolic, direction Charlie Wellman; 11-12, Hollywood Roof ballroom orchestra.
- KGO, Oakland, Calif. (381.2)**, 11:30-1 p. m., luncheon concert; 3-4, Ross Florens, director; Stanton E. Moses, Jr., bass; Lenore Kethillo, soprano; Irma Harris Vogt, accompanist; Sigmond Aukon, violinist; George Krueger pianist; Pearl Hossack Whitcomb, vocalist; 4-5:30, concert orchestra, Hotel St. Francis; 6-7, dinner concert, Hakolei Hano ensemble.
- KGW, Portland, Ore. (491.5)**, 7:15 p. m., physical culture exercises; 12:30-1:30 p. m., Rose City trio; 6-7, dinner concert; 7, Annual Hot Owl "Hungari" celebration.
- KHI, Los Angeles, Calif. (405.2)**, 8-8:30 p. m., Laighton's Arcade cafeteria orchestra, Jack Cronshaw, leader; 6:30-7:30, history story, Prof. Bertzow; Richard Headrick and Vyrona Yaw, screen actresses; Uncle John's story; 7:30, "Romance of Santa Fe Trail," Gladys De Wit; 8:30, program, Western Auto Supply company; 10-11, D. A. Glenn's Billmore hotel dance orchestra.
- KJR, Seattle, Wash. (364.4)**, 10:30-11:30 a. m., "What You Should Have in Your Emerson Radio," W. P. Scitely; Bachelor trio; 1-2:30 p. m., Post Intelligence program, organ recital; "What to Prepare for Tonight's Dinner," Bernice Redington; 10:30, Post Intelligence program; 10-11, Gordon Kilbourne and his orchestra.
- KWTR, Hollywood, Calif. (238)**, 5-6 p. m., home hour, conducted by Mammy Simmons; 7, "Color Photog," raphy; 8, W. Dean; 7:30, "Wonders of Nature," Prof. Alfred Coulman; 8-10, Turner orchestra, Loren Powell, director; Georgia Starke, soprano; 10-11, Star Piano company studio.
- KNX, Hollywood, Calif. (336.9)**, 10:30 a. m., household talk; 11, home talk; 12-1, organ; I. Village gossip; 5-5:30 p. m., Song Jim's talk; 6:15, 6:30, 6:45, 5:30-6:15, Wurlitzer pipe organ studio; Town Tattler; 6:15, travel talk, W. P. Alder; 6:30-7, Atwater Kent concert orchestra; 7-7:30, El Patio ballroom orchestra; 7:30-8, program, Eastern Outfitting company; 8-9, West Coast Theaters; 9-10, Order of Optimistic Dancers; 10-11, program, Walter G. Schenk company, presenting dance music; 11-12, Ray West's Coconut Grove dance orchestra from Ambassador Hotel.
- KOAC, Gervault, Ore. (280.2)**, 7:30 p. m., musical selections; 7:30, book chat, Gertrude C. Olds; 7:35, "Cold Weather Suggestions for the Automobile Driver," Prof. W. D. Gilmore; 7:45, "Picturables of Landscape Layouts for Small Properties and Farm Home Grounds," Prof. A. L. Peck; 8-9, musical program.
- KPS, San Francisco, Calif. (428.3)**, 7, 7:30, 8, a. m., exercises; 12:05-12:45 p. m., program, Hamlin Bunker Hunt school orchestra numbers, vocal and violin solos; 12:45, talk; 1:30-3, Rudy Seliger's Fairmont hotel orchestra; 3:30-6, special entertainment for children; 6:30-7, Waldemar Lind and the States restaurant orchestra; 7-7:10, talk; 8-11, Palms hotel dance orchestra, Gene James, director; Maurice Gunkley, tenor; Merton Barles, pianist; Al Jacobs, pianist.
- KTAB, Oakland, Calif. (240)**, 9-9:30 a. m., prayer service, Rev. E. L. Spaulding; 8-10, program by Bremer's.
- KWSO, Pullman, Wash. (348.6)**, 7:30-9 p. m., Danse Lively; pianist, Olga Kean; violinist, Louise Fletcher, vocalist; "Physics of Everyday Life," Dr. R. O. Hutchinson; "Broader Homes and Equipment for Young Children," W. D. Buchanan; "General Accounting," H. J. Behn.

The Reader's View

Less Classical Music

I think that less classical music would improve broadcasting about 75 per cent. Popular music and old-time music is best by far. Not necessarily jazz, but music that everyone likes. When a station broadcasts old-time music or music that is good, they receive more applause from Radio fans than when they broadcast classical music.

As to sopranos singing classical music, I would rather hear coyotes howling, and baritone classical is not much better. It doesn't matter what station is broadcasting or what kind of a set you are using, you cannot understand more than half of the classical singing. All of the classical songs have names that have no meaning, most of them are French or Spanish names.—L. F. W., Conway Springs, Kan.

Friend of Small Stations

In your number of December 19, I note the complaint of F. W. K., Portland, Ore., in the column headed, "The Reader's View." What kind of a set must he have to say that it is freak reception for a station of 100 watts or less to reach far?

I have three sets and I consistently pick up 100-watt stations and less at a distance of from 100 miles to over 1,000 miles. Some of the programs broadcast by these small-town stations have it all over some of the large ones and are worth going after. Station WREC of Coldwater, Miss-

issippi, is but 10 watts and 1,300 miles from me. I have received them many times and they are good. Their slogan is, "The Most Powerful 10-Watt Station in the World."

I make it my business to try every night for small stations in Wisconsin and Michigan, because the spirit in those community programs is great; the clubby feeling and the desire to always put over the best that is in them is characteristic of the small station.—C. E. J., Boston, Mass.

Agrees With E. L. S.

I have noticed, and so have a number of my friends, that a station will broadcast four or five numbers before the announcer will give the station's call letters. One would think it was a secret. I do not mean that this is true of all announcers, for some of them are very good, but I do believe that about 75 per cent of them could improve in this manner. I want to say that I heartily agree with E. L. S. of St. Louis, on what he has to say in regard to this matter in your issue of December 19.—O. F. Jr., Dallas, Texas.

Challenges E. S. L.'s Remark

In reply to your issue of December 19, where E. S. L., St. Louis, suggested that the announcer simply give the call letters and city.

In reply to this, I wish to say that I wonder if E. S. L., thinks Radio broadcasting stations can be maintained and continue to operate just for fun.

Let me suggest that if all persons who are of the same opinion as E. S. L. do not want to give the station any method of

compensating itself for the pleasure, entertainment and instruction it gives the Radio public free of charge or don't want to hear the announcer identify himself and his employers, they can tune in somewhere else.

E. S. L. should, with equal consistency, suggest that all of the newspapers and magazines dispense with advertisement.—V. O. B. Little Rock, Ark.

A Treat to Hear Call Letters

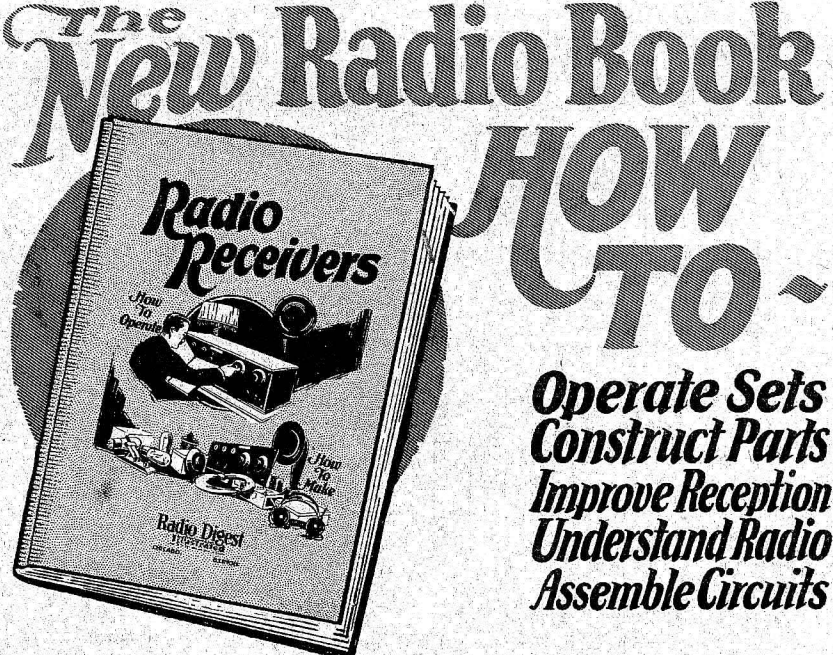
We have noticed that many times the announcers do not give their station between numbers. In one instance, this evening we waited six numbers, and finally gave up and listened to someone else.

Through your Radio Digest we thought perhaps this could be corrected, for, to us, it is as much of a treat to know the station as to hear a good program.—Mr. and Mrs. C. C. M., Kansas City, Mo.

Too Many Stations

What is to be done with so many broadcasting stations crowded together, butting in on each other's programs? It is very disgusting to try and listen to a program with the highest type of receiver, have a good program, and some other station break in and spoil it all. Don't you think if each state was allowed, say about three stations, then we could all enjoy ourselves? I know it is a pretty big problem to adjust at once, but it looks like something is going to have to be done.—M. S. R., Orchard, Colo.

A counterpoise should preferably be as long as, or a little longer than, the aerial.



FREE With One Year's Subscription to Radio Digest

THE greatest assemblage of facts and hints, from actual everyday practice, ever gotten together. Edited by the technical staff of Radio Digest it supplies the demand for a book covering every phase of Radio from a simple explanation of Radio reception to a technical explanation of the different parts of a set which leads to the best reception possible. The sections on selecting and making sets develops the different types of sets and circuits with diagrams to explain same. "How to Operate" gives detailed information on the operation of all the well-known sets. The section of general information contains a complete Radio map and schedule and a section of workshop kinks which save time and money. Now is the time to take advantage of the exceptional offer as listed in the coupon for your convenience.

This Handy Radio Reference Book Is Yours Today
Use the Coupon—Mail Today

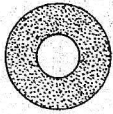
RADIO DIGEST, 1-2-26
510 N. Dearborn St., Chicago, Ill.

Enclosed find five dollars for one year's subscription to Radio Digest including FREE the New 124 Page Radio Book called "Radio Receivers—How to Operate and How to Make."

NAME.....
ADDRESS.....
CITY..... STATE.....

CORK WASHER WILL KEEP DIALS AS SET

The least jar caused by a passing truck will often cause a signal to fade out because a tuner, variometer or condenser turns too freely. To remedy this, make a cork washer by cutting a thin slice off



CORK WASHER THAT FITS BETWEEN DIAL & PANEL

DIAL REMOVED, FASTEN DIAL AGAINST CORK

of a cork and make a hole through the center about 1/4 inch in diameter. Take off the dial and slip the cork washer over the shaft and replace the dial so that it presses a bit against the cork washer. Of course the washer should be thin enough so that the dial almost touches the panel. The washer will now hold the dial so that it cannot turn too easily, yet still easily enough to permit of easy tuning.—Ben Inkman, West Allis, Wis.

KYW "HARMONY GIRLS"
(Continued from page 4)

week a beautifully worded letter of appreciation, signing herself as "Pearl Burton." An enamored young man from a village in Scotland sent them a letter asking for a picture after hearing them over the air. Thousands of letters have come to the Harmony Girls from every state in the Union, also Alaska and the Canadian provinces.

How did they meet? Well it was just about the time of their beginning on the KYW. Both happened to be in a Chicago music publisher's studio. They were trying out songs and by accident their voices were blended together. Everybody was astonished at their peculiar affinity of tone. It seemed that never in the world could there ever have been two voices more perfectly attuned to each other. Immediately they were christened the "Harmony Girls," guided by fate, it seemed, to this alliance. Miss Ingram was born and reared in Chicago and Miss Carpenter comes from Marietta, Ohio.

HAND SAW IS NEW STAR
(Continued from page 5)

accompaniment. Forthwith came the great idea.

Mr. Sime looked on his pitchfork with new respect. Around the middle of the handle he built a box ten by thirteen inches, the back of birch and the rest of it to fill. At the neck of the handle he cut a two inch slot through which he inserted a guitar tuning key. Then came the regular violin bridge and the attachment of a steel "B" string of a guitar. Simple, don't you think? And it has the built-in pitch.

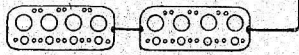
But all of these new instruments are not of the barnyard brand. The common hand saw has been discovered to possess musical talent. Feel its teeth and it will bite, tickle its back and it will sing. Nobody until recently ever credited the saw with any audible expression other than an infinite capacity to lead the grand chorus at a snorer's bawl.

But there is vibrant timbre in the voice

Cylinder Gasket Ground

Often times a person who wants a good ground for sending or receiving does not feel satisfied with results from the water pipe, and would like to use copper sheets. They can get a good substitute in this way. From a local garage get several brass or copper auto gaskets used in

AUTOMOBILE ENGINE GASKETS



packing between the cylinder head and the block.

Most garages are glad to get rid of old ones. Solder them together as shown and bury them deep in damp earth. There is far more surface and better conductivity on these than on ordinary water pipe. Twenty-five or thirty of these make an ideal ground for a transmitter.—Ver-non Jaynes, Parkersburg, Iowa.

of the saw. This has become so well recognized that today we can scarcely classify it as a novel musical instrument. In the picture you see Paul McKinstry at KTHS, Hot Springs, Ark., with a soprano saw, its hind foot clasped between his knees and its nose pinched between the fingers of his left hand. A musical saw always is happy in this position and sings at its best in response to the bow scratching its back. Seriously, the music is sweet and extremely flexible. Radio listeners have often mistaken it for the human voice.

Now we come to one of the most down-trodden aspirants to broadcasting fame. Underfoot and kicked around, it probably is the lowest of the tribe. But it is capable of a rhythmic staccato that can bring the crowds to its feet with cheers—for there is music in the sole and twice as much music in twin soles. At WMBB, the Trianon ballroom, Chicago, they have built a special sounding board for the microphone where Big Tom Sheehy's six feet can shake an Irish clog through two feet until they sound to a Radio listener like forty feet.

Musical instruments left at the post centuries back and so rare they seldom were seen outside of museums of antiquities have come galloping to front for the horseshoe of roses. In this class we have the celeste, great grandmother to the baby grand pride of the piano family. Little celeste—your love it. Angels and harps at heaven's gate. It's dulcet tones have come reverberating back from the dim ages when it lulled to sleep the drowsy heads of the Caesars of ancient Rome. A little shop in Paris is trying to supply the demand of all the broadcasting stations in the world for the little, old celeste is ideally adapted to Radio broadcasting.

And the chimes—another primitive form of music and sort of first cousin to the celeste—also have come into front row notice among the Radio listeners.

If there is one instrument that should be spanked more than the drum it is the saxophone—the naughty, naughty saxophone with its seductive, wicked wail. Good people with the best of intentions go to dances with no other thought than to Ford-step as decorous as the minuet. But like the snake in the Garden of Eden the tremulous sigh of the saxophone wriggles in and the next minute you are wriggling along with it with all dignity scattered to the seven winds. Soft and appealing with a sob in the throat, the saxophones, large and small, excite you to the wildest sorts of terpsichorean extravagances, whether it comes to you in the ballroom

or through the loud speaker in your parlor.

So the Muse with her eight sisters must keep busy. Be it the ten stringed Oud from Syria or Paul Spechts' newly invented vibraphone at WJY, the dance must go on with a fabric of sound that clothes the earth with music.

"IRON MAN OF SOUTH"
(Continued from page 7)

grand piano jump through a barre hoop forward and backward.

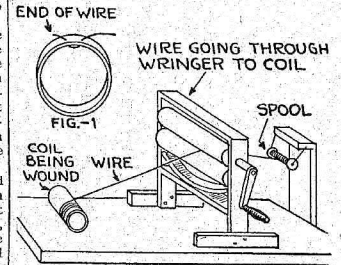
When it comes to toe broadcasting one of the classiest little Dixie dancers in the world makes the KWKH studio her home and her name is Miss Mary Gillespie. When she is not tripping daintily over airy nothings she finds self expression to the delight of others through the saxophone. Sometimes she takes her artistic tootsies on vaudeville tours and has been across the continent a couple of times.

The world craze over syncopation had its incubation in the South. The South still holds the crown and in Shreveport they have Phil Frierson and T. B. McGhee, who vocalize it 99.9 per cent pure. The one-tenth of one per cent is just as good as the rest. Requests for special numbers by Mrs. Charles F. Cockrell, one of the sweet singers of KWKH, keep her dated so far ahead she never has to worry about what she is going to sing. Her able accompanist is Mrs. Sylvan Turner.

All the people for hundreds of miles around are deeply grateful to the Big Iron Man of the South for maintaining so useful and entertaining a Radiophone station as KWKH. It provides them with what they want the way they want it and they do not have to depend on bringing in programs from a distance and possibly not precisely in line with their own community tastes. Furthermore that Louisiana station is a credit to the state, and there is no question it has stimulated a vast amount of interest in Shreveport, as evidenced by the mountains of applause letters that have been received.

WRINGER IS USED IN WINDING TIGHT COIL

The method shown in the drawing does not need much explanation. In one sketch is shown how to fasten the ends of the coils by putting two small holes in the tubing. Securing the wire this way prevents it from slipping. The other sketch



shows my use of a clothes wringer to keep the wire taut. When winding coils by hand, it is usually difficult to keep the wire at just the best tension from the spool.—Charles Otto, Lakeside, Ohio.

How to Avoid Body Capacity

A good general rule where the object is to avoid body capacity is to always make that terminal of the instrument to which your hand comes the closest when tuning, at or near ground potential. As most circuits are tuned by a variable condenser across a coil, the rotor plates should be the end connected to the filament circuit. The hand, in effect, comes closest to these plates since the rotor plates connect to the shaft and the shaft carries the dial.

CROSLEY

Powel Crosley, Junior

has always done the unexpected.

His Announcement of December 26th

was no exception to that rule.

RADIO

Steinite Low Loss Interference Eliminator
No Radio Set Complete Without It

Select stations at will. With music and voices crowding the air the average set fails to bring in the desired stations properly. The Steinite Interference Eliminator shuts out local and other interference. You get one station at a time, the one you want, and tune in loud and clear. Operates on any set—attach to aerial wire and to set—no changes—no extra tubes or batteries. Greatest Dollar Value in Radio Today. Over 150,000 Sold

Improved Results with Tube or Crystal

Try entirely at my risk the wonderful improvement this inexpensive little device will make in the reception of your set. Improves results on both crystal and tube sets that use any kind of aerial except loop antenna. Clears up reception wonderfully, increases volume, and partially absorbs static. Money-Back Guarantee.

Mrs. Famous 1,500 Mi. Steinite Tube Set, \$6; 1-Tube Set, complete, nothing to buy, \$12.50; Tube Set, \$12.50; 1-Tube Set, \$40; Long Distance Crystal Set, \$6; Deluxe Crystal Set, complete with headphones, aerial and ground, \$10. FREE descriptive literature on request.

Put this interference eliminator on your set and note amazing improvement. No tools needed—install in a moments time. Connect with set and follow simple instructions. Money back promptly if not delighted. \$1.00 postpaid anywhere in U. S. when cash with order. References: Exchange National Bank, Atchison Savings Bank. Order today—a dollar bill will do.

STEINITE LABORATORIES, 161 Radio Bldg., ATCHISON, KANSAS



Old Tubes Made Good As New

THIS latest Laboratory product will recondition any old, run-down, even worthless tubes, as long as the filament still lights. Makes them as good as new in a few minutes' time. Costs but a few cents more than new tubes! Simple, efficient, practical. Big money-saver. Operates on either A. C. or D. C.—110-120 Volts. Model No. 29 for UV-201A, 1C, 30, 2c, etc. and all similar types. Model No. 18 for UV-199 (C-299, etc.) and all similar types. Bound to do the work on our

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"THE CURE FOR RUN-DOWN TUBES"

For fine tone quality, volume, and distance, your tubes MUST be in perfect condition.

\$3.65

Questions and Answers

Western Electric Super-Hets
 WBM, Wyandotte, Mo.
 Can you give me the address of the parties from whom I might get information relative to the Western Electric super-heterodynes?

A.—The Northern Electric company (Montreal or Toronto, Canada) and the Western Electric company (New York, Chicago, etc.) manufacture this set, but it is not procurable in the United States. The Western super, however, is on sale to the public in Canada, and you might address your inquiry to the Toronto or Montreal offices of the Northern Electric company.

Making Freshman Regenerative
 HHP, Flint, Mich.
 I have a Freshman five-tube set. Would you please instruct me how to change it over to make it regenerative without radiating?

A.—All tuned radio frequency receivers are essentially regenerative, and it is only through inserting losses or intentional oscillation stopping devices that they are kept from radiating.

In the Freshman set, we believe a capacity effect is introduced through placing the inductances close to the variable condensers. If true, then moving them further away from the condensers would allow more regeneration to be in effect. However, we do not feel that this is wise as the manufacturers of the receiver no doubt have placed the coils at the most advantageous position.

Connection Breaks; Adds Volume
 ALW, Quantico, Va.

Enclosed find 50 cents. My ground wire broke recently and I found I could get along just as well without it. Why? Another one that puzzles me is the fact that the connection to the binding post on the first audio transformer broke away from the "P" (secondary) and I find the volume much greater than before. My set is a Freed Eismann neotrodyne which I assembled myself. Why do I get more volume?

A.—This result very often prevails wherein a poor ground connection is installed, if you will rebuild your ground connection, being certain that it is well made, we believe you will notice a decided improvement.

Your further question, regarding the elimination of the grid return upon your first audio is evidence that when connected you are overloading your tubes. This can occur through not using standard tubes—but primarily is caused through burning your audio tubes too bright.

Radiating Radiola Super-Hets
 DMK, Sheridan, Wyo.

I am writing you in regard to very poor Radio conditions in this city this fall. The writer has had an Atwater Kent set in use here for the past three seasons. The first season the conditions were excellent. Last fall and winter they were not quite so good, but were pleasing, but so far this winter the conditions have been extremely poor, so bad in fact that unless they change for the better, Radio will have become so that no one will care to listen in.

After reading the article, "How Badly Does Your Receiver Radiate?" and especially the paragraph concerning the use of an aerial in place of the conventional loop on the super-heterodyne, we have been inquiring around among owners of the Radiola super's and have found that the local dealer has been installing every super sold using an outdoor antenna. He

DIRECTIONS FOR REQUESTING INFORMATION

The Questions and Answers department offers service to Radio Digest subscribers without charge and, to those not subscribers, the same service with a charge of 50c for each letter requiring up to three answers or diagrams. We feel that this policy is necessary for the protection and best interests of our regular readers, as the volume of correspondence to this department has increased to such an extent that it is almost impossible to give our subscribers' letters adequate attention nor a complete answer. To those who have long been newsstand readers this may, at first, seem an injustice but a little thought on the matter will show that this is the only possible solution of what has been, to the technical department, a very perplexing and difficult problem. We ask that the following suggestions be read carefully before writing:

1—Search carefully the back issues which you have, as the point in question has probably been covered several times before.

2—The book, "Radio Receivers," given free with each yearly subscription (when received by Radio Digest direct with full remittance of \$5), contains the answers to the majority of the questions asked. If you have this book, go through it thoroughly and it is probable that you will find the solution of your problem.

3—Letters for this department should be kept separate from all correspondence to other departments and on other subjects.

4—Questions should be written on one side of paper only and each sheet should bear the sender's name and address. All letters should be accompanied by a self-addressed stamped envelope of standard business size.

5—Unsigned (or anonymous) letters cannot be answered, either in

Radio Digest or by letter, nor can those without address.

6—No comparative statements on advertised apparatus will be given except as to efficiency in some particular circuit.

7—Drawing diagrams on a separate sheet of paper will save time and enable us to give all questions more attention.

8—Write each question as a separate paragraph.

9—Keep a copy of your letter and diagrams, to which we can refer without re-drawing.

10—The names and addresses of the writers of letters published will not be released except with the writer's permission.

11—We want to be of assistance to you in your difficulties, but are sometimes limited because of the length and time required for the proper consideration of the questions asked. Therefore, please make your letters brief.

Kindly advise me if there is any way to cause the local super agency to install these sets as they are intended.

A.—Your letter is of unusual interest as it brings to the front an opportunity for Radio Digest to make the statement that, without exception, it is impossible (to date) to produce a Radio receiver which will not radiate, irrespective of type, kind, color or creed.

We do not mean by this statement that a receiver cannot be neutralized so that the amount of radiation will not annoy other listeners, but we do mean exactly that all receivers will in a greater or less degree radiate.

The reason for this was very clearly explained by Milo Gurney in a series of articles which were published in Radio Digest during April and June of 1925. It was further stated by Doctor Hull of the Radio Frequency Laboratories that total elimination of radiation was impossible.

Referring to the Radiola super-het in particular, it is true that antenna reception would provide greater signal strength, and likewise true that it would, in direct ratio, increase this receiver's ability to radiate. This is true because the nature of a super employs oscillation, while regeneration into the loop as they use it is but additive to the antenna when it is connected to the loop. A regenerative loop is not near the offender as an outdoor antenna.

Please understand that we are not interested in a controversy, but we are interested in promulgating some of Radio's fundamental truths. You may rest assured that all super-heterodynes connected to antennas, as you indicate, are radiating offenders.

We know of no way, except perhaps a "necktie" party, to make your local super agency install the Radiolas as they should be installed.

\$1.50 for Your Old Radio Tubes

regardless make or condition, toward purchase of each new standard \$2.50 tube. Positively guaranteed. We do not sell re-built or bootleg tubes. Agents Wanted.

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Enjoy perfect reception regardless of weather conditions. The Static Eliminator—the newest and most startling thing in Radio—cuts out practically all static without loss of volume. And in addition it will help increase selectivity, tune out local stations, sharpen signals, remove noises, lessen interference and prevent re-radiation!

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 SEND NO MONEY! Just state number of batteries to be received. Extra offer! 4 batteries in series (66 volts), \$10.00. Pay expressman after examining batteries. 6 per cent discount for cash with order. Mail your order now!
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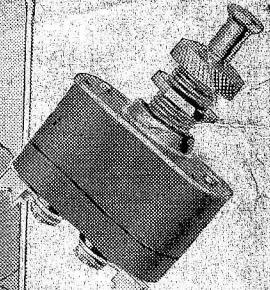
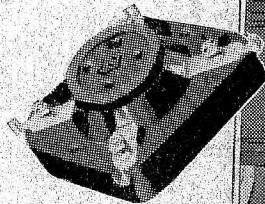
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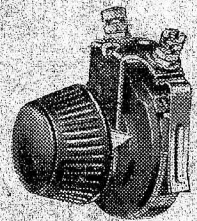
WHEN your radio set goes wrong, just as you are comfortably settled before the fireplace expecting to spend a great evening, it is annoying.

And ten to one, it's only some little wire or part that in itself is insignificant. Really, though, there's no excuse for such things happening.

GOOD parts of good material and carefully built are insurance against such annoyances.

Cutler-Hammer radio parts are GOOD parts. Both the amateur builder and the set manufacturer can attest that fact. They are designed by radio control experts, backed by 25 years' experience, built of the highest quality material and sold at a price you are glad to pay.

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