

Last Minute Schedules of Football and World's Series Play-by-Play Broadcasts; Bringing Your Old Set Up-to-Date; WCAH, Columbus, a Strictly Home Station

Radio Digest

EVERY WEEK **Illustrated** PROGRAMS TEN CENTS

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

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HOOVER MAY LIMIT RADIO

WBAP NOW TO ENTER HIGH-POWER GROUP

FT. WORTH STATION GOES ON 5,000 WATTS OCT. 5

Has Large Reserve Power Also; Tests Show Reception in Every State, Canada and Mexico

PORT WORTH, TEXAS.—WBAP, the Star-Telegram station here and the latest to make the change to superpower, announces the opening of their new 5,000-watt plant Monday night, October 5, with a program beginning at 7:30 p. m. and running until 6 o'clock in the morning. Already test programs broadcast with the new equipment have been heard in every state in the Union, Canada and South America. The apparatus used represents the last word in radio and is a radical departure from anything hitherto used. The entire transmitter was designed and built under the supervision of Engineer W. E. Branch of WBAP's staff. The total power available is 10,000 watts.

(Continued on page 2)



WILL DEBATE RESTRICTION OF STATIONS

Ether Confab to Decide

Secretary Sees Way to Relieve Congestion—Asks Opinion of All Concerned

WASHINGTON, D. C.—One of the outstanding features of the forthcoming Radio conference to be held in this city under the auspices of the department of commerce will be the development of ideas as to the number of broadcasting stations which should be licensed, according to Secretary Herbert Hoover. Mr. Hoover is anxious to get the reaction of

(Continued on page 2)

This space is far too small to tell all about the wonderful voice, pleasing personality, unusual complexion, and general loveliness of Jean LaDonne, KYW soprano, below.



"Receiving Studio" Is Newest KTHS Stunt

Ten Receivers Installed to Receive Other Stations

HOT SPRINGS, Ark.—A "Receiving Studio," complete to the last refinement of luxury is the latest addition of Station KTHS, the New Arlington hotel here, for the comfort and convenience of its Radio listener guests, Director G. C. Arnoux has announced.

The studio is in one of the towers of the hotel and will be an adjunct of the broadcasting station. Ten antenna wires serve ten of the finest receivers on the market and each is equipped with wave trap devices so that it may be operated even while KTHS is broadcasting on the same frequency. Each receiver has head phone equipment so that at each listening station different programs can be tuned in.

Drusilla Taggart, center, was the first American to broadcast from the Eiffel tower station. She has appeared at various stations in this country and on the continent and is a well-known dancer besides. When it comes to vocal-syncopated jazz, Helen Armstrong, WQCF, the little lady in the orange wrap, is hard to beat.



GAY PAREE RADIO IS NOT QUITE SO GOOD

SMITH FINDS 4 STATIONS JEALOUS OF ONE ANOTHER

Lack of Funds Makes Broadcasting System Only Objectionable Feature in City

Article VIII by Fred Smith, WJWR Director

THE broadcasting situation in Paris is a strange one. There are four stations, each operating under a very different plan from all others. The Eiffel tower is really a military post, but it is rented for broadcasting to M. Privat who operates it with a daily program of music and news for one hour each evening. He obtains funds from a group of Radio listeners, called "Friends of the Tower," who each pay ten francs a year.



M. Vinot

Radio-Paris is a commercial station in the sense that it is owned and operated by a company representative of the French Radio industry. Third, there is a newspaper station owned and operated by Le Petit Parisien. And finally, the station of the State, L'Ecole Supérieure, generally known as PTT.

Obstacles Impede Progress

With regard to the entire situation in France, one becomes immediately conscious of the tremendous obstacles which impede the natural progress of the art of broadcasting. The government has taken no definite stand about taxing the listeners. Theoretically, users of receiving sets are supposed to pay one franc a year for licenses. But nobody pays. Therefore, there is no definite income. An astonishing amount of jealousy exists between stations.

The PTT of the Post, Telephone and Telegraph, is operated by government employees. M. Lucien Chanton, at the head of PTT broadcasting in Paris, is ambitious to perform a beautiful and worthy service which would demand about a million francs a year. But the government will make no provision for funds, and so the director does not know how, in the world he will obtain the money.

Commercial broadcasting as we know it in America is not permitted in France. Chanton cannot get his money in that manner. Taxation, such as exists in England, Germany and Switzerland, is not favored, so he has no hope in that direction. For the present he must be content with programs furnished by l'Association Generale des Auditeurs. This organization, a national club of Radio listeners, pays the PTT four thousand francs a month for the use of the station. A committee of the club prepares the programs, submits them to M. Chanton, who reviews, cuts and completes the entire arrangement for performance. As a result of this method, the work of the performers is gratis and they are practically all amateurs.

The PTT is endeavoring to build up a system of stations throughout the country. Already 500-watt stations are being operated at Lyon, Toulouse and Marseilles, with Angers, Strassbourg and Lille to be opened before January 1. All of these are to be connected with Paris by means of telephone lines, an easy matter for the department of the government.

PTT Controls Telephone Lines

One of the chief causes of the existing unfriendliness between stations in Paris is the monopoly of telephone lines by the PTT. Radio-Paris cannot obtain lines for remote control work. As a result, this station does a great deal of retransmission, picking up programs from other stations.

Radio-Paris is managed by a group of energetic and intelligent business men. Secretary General Tabouis represents France at the international conference at Geneva. The director, M. Vinot, who does much of the planning of the programs, introduced me to his friends, Pierre Cusy and Gabriel Germinet, who have written a book which is just ready for publication, called "Theatre Radiophonique." These gentlemen have ambitious plans to develop the Radiario and thematic performances for Radio. Already they have staged several. Their ideal of the Radio program, already known and certain of growth in America, is the performance written both in speech and music expressly for the Radio stage.

It is with regret that one must point

out this unfortunate condition of Radio broadcasting in Paris. For where in Europe is there so delightful a place to live? Oh, you may travel with high hopes to other cities on the continent, believing that you will encounter a more pleasing life. But not so. You come back to Paris eventually with the thrill of the wanderer returning to his native land. Paris with its boulevards, its cafes, parks, cathedrals, great avenues and twisting streets, its theaters, cabarets, art galleries, shops and hotels, its trams, busses, river boats and honking taxis; Paris with its good food, freedom and historic atmosphere; Paris the city of eternal charm and fascination.

And when the noble steamer "America" pulls away from Cherbourg and your memory flies back over all the scenes of the continental tour, it is Paris that calls you to come back. When the land is lost to sight and you wander about the decks in search of something to do, you enter by chance the reading room, and find upon the shelves the works of Balzac. Eagerly you take down two or three volumes and then spend the spare hours of the days that follow reading his graphic descriptions of his beloved city—Paris.

In the meanwhile you have obtained from that excellent captain, W. Rind, permission to visit the Radio room of the "America." You go there evening after evening with Chief Operator Cohen. In the beginning you hear English and continental music. And then the journey nears completion. American stations roll in, full of pep and variety. There comes a morning when you are awakened very early because—because Miss Liberty is waiting there with her torch to welcome you home. You go on deck, and the big thrill comes—home at last!

(CONCLUSION)

DEBATE STATION QUOTA

(Continued from page 1)

Radio fans, broadcasters, and manufacturers on this point. The secretary is not sure; he has stated, whether legislation will be needed along these lines or whether a cooperative plan can be worked out such as has been in effect during the past two or three years.

At the present time there are close to 600 Radio broadcasting stations in this country and more than 100 are in prospect.

Secretary Hoover, following the recent high-power tests of WCY, has expressed himself as feeling that there was a great improvement in the broadcasting and that no harm had been done. He gave this as the result of his own experience and that of many who have sent letters to his department about the tests.

Radio experts reported to the secretary that there was no great improvement in the fading. Mr. Hoover said that the majority of the communications received by the department showed that the increased power allowed a wider range of distribution and no reports of interference were made.

The changed attitude of the department of commerce is reflected in the fact that several applications have been received and granted recently for the material increasing of broadcasting power to from 3,500 to 5,000 watts.

A year or so ago officials of the department were not at all anxious to grant applications for high-powered stations. In light, however, of the experiments which have been carried on during the past few months and that fact that little if any local interference resulted, has made the officials realize that the high-powered stations will be beneficial in the long run to the listener.

"MERRY OLD CHIEF" NOW AT WJR "MIKE"

NIGHTHAWK FOUNDER TO GO TO DETROIT PLANT

Dean Fitzner Succeeds Fitzpatrick as Head of Kansas City Star Radio Department

KANSAS CITY, Mo.—Leo Fitzpatrick, the "Merry Old Chief" of the Nighthawks has left WDAF to accept a position as program director and announcer of the new station of the Jewett Radio and Phonograph company, WJR, at Detroit.

The Jewett station is a 5,000-watt transmitter with studio and offices in the Book-Cadillac hotel and is operated in conjunction with WCX, the Detroit Free Press, who share WJR's new transmitter.

Mr. Fitzpatrick was a pioneer broadcaster and has been identified with WDAF, the broadcasting station of the Kansas City Star since early in 1922.



Leo Fitzpatrick

Previous to that he was a feature writer for The Star. He was given the position of Radio editor and announcer when The Star first broadcast through the small transmitter of the Western Radio company, December 5, 1922, he established the Nighthawks, now one of the largest and most popular Radio fan organizations in the country. It is estimated that there are now 250,000 persons who have received membership cards bearing his signature.

His informality in conducting the Nighthawk frolics attracted thousands who tuned in nightly at midnight to be entertained by the "chief." He has a ready wit which serves him in good stead at all times and his humorous and timely comments upon messages of application are so entertaining that many have expressed the opinion that they would rather listen to his bantering than to the popular dance music of the Nighthawk orchestra.

Dean Fitzner Succeeds "Chief"

The "Merry Old Chief" is a singer of popular songs and many are the songs which he has popularized by broadcasting them each night on the Nighthawk frolics.

Mr. Fitzpatrick has expressed regret at leaving The Star, an institution with which he has been connected for many years, but the opportunities open to him in Detroit were sufficient to induce him to change location. Mr. Dean Fitzner will take Mr. Fitzpatrick's place as Radio editor of The Star and chief announcer of WDAF.

Mr. Fitzpatrick was a runner-up in the Radio Digest 1935 Gold Cup Award contest and was fourth in the first award conducted by Radio Digest in 1924.

WBAP IS SUPERSTATION

(Continued from page 1)

However, this great surplus of power will not be used on the opening night.

The Star-Telegram entered the ranks of the broadcasters early, being one of the first newspapers in the field. The first transmitter was a small, 10-watt affair which was put on the air in March, 1922. During September of the same year WBAP took the air with a new set of the then powerful 500-watt type.

Wish Better Reception of WBAP

It is in line with the advancement of the art and the desire to reach the Radio audience with programs that are as nearly free from interference as possible that this last increase in power has been made.

The artists and organizations to be presented on the opening night are those who have been identified with WBAP from the first and are well known to fans.

The program follows (Central time): 7:30-8:30 p. m., Wagner Hawaiian trio; 8:30-9:30 p. m., Holy Roller service; 9:30-10:30 p. m., Ward's "Trail Blazers"; 10:30-11:30 p. m., Geo. Orman's Palace theater orchestra; 11:30-12:30 a. m., Stars from the Majestic theater; 12:30-1:30 a. m., Sam S. Losh and assisting artists; 1:30-2:30 a. m., Will Foster, organist; 2:30-4 a. m., Panthor Hawaiian trio; 4-6 a. m., Bluebonnet Serenaders.

Put up the edge of a panel or any other similar piece, use a common wood plate that has been set for fine cutting.

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Looking Ahead

All the Latest News in Sports broadcasting will be found on the sporting page next week and every week following. Baseball will soon be over but there will be plenty of other events milked to keep the fans close to the loud speaker all winter long.

Away Up at the Top of the Dials is KSD, the station of the St. Louis Post Dispatch broadcasting from the "Show Me!" state. You can't miss it if you turn up in the high nineties and you must not miss the description of it on the feature page in next week's Radio Digest.

"The Traveler," a Five Tube Tuned Radio Frequency Receiver will be described in full constructional detail beginning in the next issue. A new style of presentation which will, we are sure, make it easier for Radio Digest readers to follow instructions, is to be used by John G. Ryan, author of the articles. There have been articles on four tube sets and super-heterodynes but we preferred to wait until we had a five tube set of unusual merit before presenting one of this type.

The Erection of Outdoor Antennas which is the second chapter of the series by William Fenwick on antenna construction, is most timely in next week's issue, as those who have just purchased a receiver with the coming of better weather for Radio reception, can learn of the various types of antenna possible and how they are put up.

Uses of Oscillators in Radio Receivers is the subject of the next article by Prof. D. P. Moreton in his A. B. C. series for beginners. While most of us are trying to prevent continuous oscillation in our five tube outfits, there are many places in Radio where a tube generating continuous oscillation is essential. The experimenter will do well to follow this subject closely.

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NEWS BRIEFS FROM THE BROADCASTERS

KOA TO GIVE ANOTHER BILL OF 1-ACT PLAYLETS

Alaskan Steamers Get KFOA News Service; Wisconsin University Plant Is on Schedule Again

Another program devoted exclusively to dramatics will be heard Wednesday evening, October 7, over KOA. General Electric broadcasting station at Denver. Presentations include "The Rector," a one-act comedy, the scene of which is laid in a country parsonage; a dramatic scene from "Romeo and Juliet," and a one-act fantasy, "New-or-theless." These plays will be given by the KOA players under direction of Miss Ruth Pavay. Instrumental numbers by the KOA orchestra will be featured between plays.

The steamers running to Alaska have as their principal source of news Station KFOA at Seattle. A news bulletin published on board the S.S. Alaska every morning contains news items obtained by the Radio operator.

Station WHA, University of Wisconsin, which has been silent since the close of the summer session during the first week in August, broadcast its first autumn program recently, on a wave length of 553.4 meters. The Monday, Wednesday and Friday evening programs will be continued throughout the year.

In the future, the Thursday night concert of hand music will be furnished by the United States army band, playing in Washington and brought to New York by land wire and broadcast by WJZ at 8:30, Eastern time. The first of this new series of concerts was given on Thursday, September 24, and will continue indefinitely.

The WGES News is the name of a monthly four-page paper now being distributed free of charge to members of the audience of WGES, Coyne Electrical school station, Oak Park, Ill. The paper contains interesting articles pertaining to the WGES artists and staff.

Song biographies have been inaugurated as a special weekly feature of the "Little Brown Church in the Vale" over WLS, the Sears-Roebuck Agricultural Foundation station, Sunday evenings. These are in charge of Harry W. Rundy, Canadian lyric tenor and exclusive WLS artist. He illustrates his stories by lyric interpretations of the various hymns.

Charlie Garland, song writer, baritone and pianist, has been made both program and studio director of station WBBM, Chicago.

The statement is made locally in Rome, Italy, that listeners in outnumber householders ten to one. While this statement bears marks of exaggeration, Consul Ramillard at Rome advises that favorable progress in broadcasting has been evident in Rome since early in 1924.

The Burroughs Adding Machine company of Detroit has entered the field of Radio broadcasting and is giving programs every Wednesday evening from 9 to 10 o'clock, Eastern time, from WJR.

A birthday party was held at Westinghouse Station KVV on a recent Thursday when Father Claude J. Fernin, S.J., the man behind KVV's regular Thursday evening feature, "Twenty Minutes of Good Reading," completed his third year of Radio reading.

Eight singers and Vinton La Ferrara and his concert orchestra will present "The Chimes of Normandy," by Robert Planquette, over KGO, October 3, from San Francisco.

The first Pacific coast program to be broadcast by a Chicago Radio station was given recently by Station WOK, broadcasting on 217.5 meters. Hereafter this program will be a regular weekly feature of WOK.

The noonday organ recitals presented daily by WRC, Washington, from the First Congregational church constitute one of the most popular features added to the programs of the Radio corporation station this summer, and arrangements have been made to continue these recitals through the cooler months.

One of the most unique and widely popular Radio organizations in the country is the Pat Barnes Your Host League, an association formed by Pat Barnes at WHT, Chicago, to spread happiness and cheer into the homes of the nation.

MANY WOULD SAW TUNE ON WOOD SAW

CHICAGO.—The musical saw made known to the world by Radio has developed a following and a desire for instruction. Harlan Merrill, perhaps the best known exponent of the musical saw, whose gift on this unique instrument is being made known to the Radio audience over WHT every Friday night, reports that a manufacturer in Wisconsin has gone into the business of manufacturing musical saws and that the demand is sufficient to keep his small factory operating continually.

WOMEN EQUAL MEN IN RADIO TEST VOTE

DENVER.—Women as Radio enthusiasts held their own in a recent competition waged with their male contenders during a pretentious broadcasting meet at KOA, Denver. This was the popular expression from broadcast listeners, based upon early returns from twenty-three states and three Canadian provinces. For every 100 letters and post cards sent to Denver in response to the unique Radio presentation, thirty were "strictly neutral," and the remaining seventy votes were split evenly, for and against.

KNOWN TO ALL THE FANS IN DIXIE



When WSM, the new 1,000-watt plant of the National Life and Accident Insurance company, Nashville, Tenn., goes on the air this week, it will be unique in that one of the few women program directors will be in charge. She is Miss Bonnie Barnhardt, for over three years program editor, Radio editor, and bedtime story teller of WSB, the Atlanta Journal. Miss Bonnie is beloved of thousands of little folk and grownups all over Dixie.

Zenith Plant Reaches Greenland on Try-out

WJAZ Heard by McDonald in Far North

MOUNT PROSPECT, III.—WJAZ, the new superpower broadcasting station here of the Zenith Radio corporation, was heard on its first test program near Godthaab Harbor, Greenland, by E. F. McDonald, Jr., president of the Zenith company, who is now returning from the Arctic. The new broadcaster was only transmitting with 1,750 watts power when the record was established.

J. Elliot Jenkins, Chicago Radio engineer who designed and built the equipment for WJAZ, was pleased to learn of the splendid initial performance of the plant. Godthaab Harbor is on the middle portion of the south coast of Greenland at about 46 degrees latitude and 50 degrees longitude.

The new Zenith station transmits on a wave length of 322.6 meters, dividing time with KOA, at Denver. Announcement of the official opening program has not been made.

When space is to be conserved when constructing a multi-tube receiver, use a gang socket.

New Stations

The Fort Sill, Okla., army station, KFRM, has not gone off the air after all. This station has renewed its license and is now using a wave of 242 meters and 50 watts power. Chicago boasts another portable station in WBSZ. This 50-watt outfit, operating on 215.7 meters, will broadcast from various of the smaller theaters of the middle west.

KFAE, the State College of Washington's call for over two years, has given place to KWSC. Many of the familiar calls have been changed this summer in accordance with the popular plan of using the initials of the broadcasting organization.

Station WOK has just received authority from the government to increase its power to 5,000 watts. There are only eight 5,000-watt stations licensed in the country, and the Chicago group now includes three of the eight.

The department of commerce has granted the application of three more stations to increase their power. This raises the Willard Storage Battery company at Cleveland, Ohio, WTAM, from 2,500 to 3,500 watts; Nebraska Buick Auto-

CKY ANNOUNCER TO RECEIVE SILVER CUP

D. R. P. COATS HEADS CANADIAN GROUP IN AWARD

Gene Rouse Congratulates McNamee and Field—Contest This Year Larger than Last

The Gold Cup Award of 1925 has one more announcement to make. D. R. P. Coats, chief announcer for CKY, Manitoba Telephone System station at Winnipeg, Canada, is to be presented with a silver token cup in honor of his leading all other Canadian announcers in the final standing.

The precedent thus established by Radio Digest will be continued annually.

The order in which the placing Canadian announcers finished is as follows:

| PLACE AND NAME | STATION | VOTES |
|-------------------|---------|-------|
| 1. D. R. P. Coats | CKY | 4,815 |
| 2. J. H. Cartier | CKAC | 2,437 |
| 3. H. W. Grant | CFPN | 2,236 |
| 4. R. H. Combs | CHNC | 857 |
| 5. G. A. Wright | CNRA | 856 |
| 6. Walter Darling | CFPF | 844 |
| 7. A. W. Ryan | CNRO | 518 |
| 8. D. J. Powers | CFCA | 511 |
| 9. Rud Weese | CHIC | 197 |
| 10. Fred Carlton | CFAC | 88 |
| 11. A. L. Hooper | CKCK | 87 |

Rouse Congratulates Winner
Gene Rouse, announcer for Woodmen of the World Station WOAV at Omaha, upon learning the final results of the Gold Cup Award for 1925 in which he placed third, was quick to congratulate Graham McNamee of WEAJ as winner, and Henry Field of KFNJ as runner-up.

His telegram to Mr. McNamee read: "I congratulate you upon the meritorious decision of the readers of Radio Digest in proclaiming you the world's greatest Radio announcer. It is my hope that this distinction of which you are most deserving, will continue to be yours."

Study of Past Two Years' Standings

The count shows 317,990 more votes were cast in the 1925 Gold Cup Award than in 1924. The winner last year, George D. Hay, polled 129,851 votes this year to the 189,470 credited to Graham McNamee who topped the list in the 1925 contest. Last year McNamee had but 14,673 counters to his credit when he finished seventh. Sen Kaney who was last among those awarded certificates of merit last year had 7,338 votes, while Norman Brokenshire holder of the sixteenth position in the recent contest had 10,543.

Henry Field this year's runner-up was forty-second in the 1924 finals. Frank S. Lunc is a newcomer to Radio and was not in last year's contest. N. Dean Cole finished thirty-second last year. Jerry Sullivan was twenty-second. Robert Emery held the thirty-third billet just below Charles Erbsstein who was in thirty. Norman Brokenshire was not entered in the 1924 race. The others not mentioned were in the list of leaders last year as they are now.

Original Ether College Opens for Second Year

Iowa State Will Again Give Radio Credits for Courses

IOWA CITY, Ia.—The world's first college of the air will open its second year at the University of Iowa October 5, according to Edward H. Lauer, director of the extension division and ex-officio dean of the college. An enlarged faculty and a more complete course than that offered last spring has been provided. Courses will be broadcast Monday and Wednesday evenings for twelve weeks from WSUI on 434 meters.

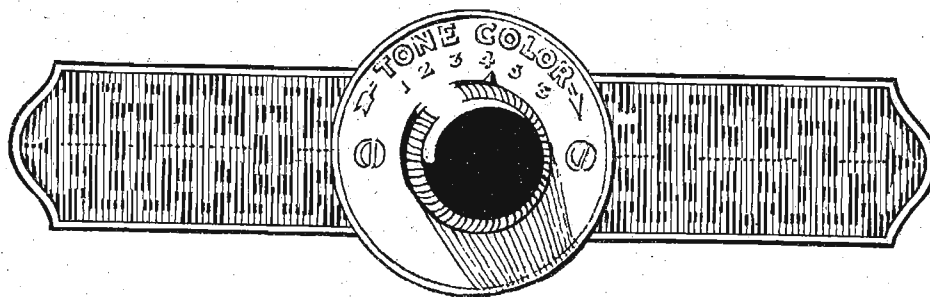
Registration for the new courses will commence immediately and should be completed by the opening lecture in order that students may be provided with the syllabus which outlines the work in each course.

The following courses will be offered: "Early Iowa History," "American Literature," "Iowa Flora," "Problems of Population," "The Teaching of English," Prof. Kirk H. Porter, "Political Parties in the United States," and Prof. Christian A. Ruckmick, "Elementary Psychology."

An enrollment fee of \$2 is charged and \$4 thereafter per semester hour of credit granted. Thus the entire course would entail a charge of but \$66 and the student given university credit which costs the average college attendant from \$200 to \$600.

mobile company, Lincoln Neb., KFAB, from 500 to 1,000, and the General Electric company, Schenectady, N. Y., WGY, from 3,000 to 3,500.

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Ask your dealer to demonstrate this as well as the many other exclusive Grebe features; then compare with other sets

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

THE GREBE SYNCHROPHASE

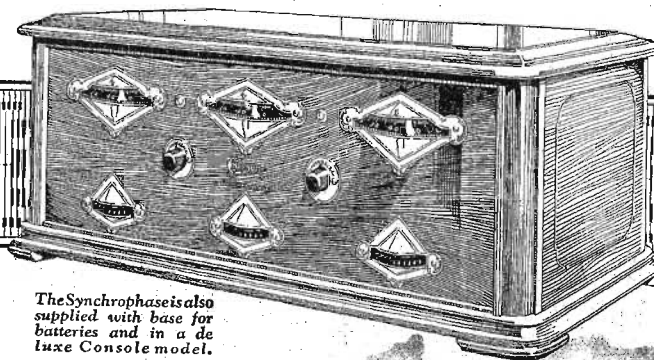
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This company owns and operates stations WAHG and WBOQ; also low-wave rebroadcasting stations, mobile WGMU and marine WRMU.

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—Confucius

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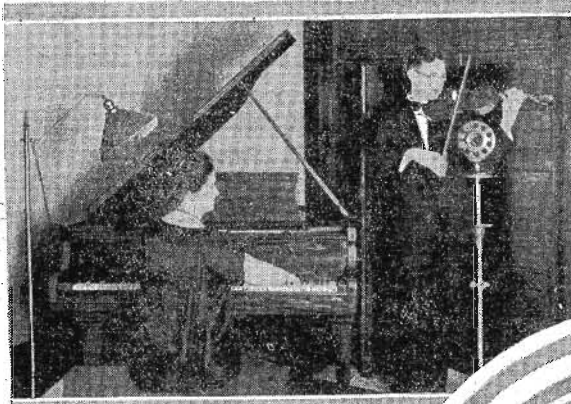
All Grebe apparatus is covered by patents granted and pending.

WCAH, at "Columbus, The Heart of Ohio"



Margaret C. Entrekin, 1/2 of WCAH staff, is studio manager and program director.

William Steinhauer, violinist, and Bessie Speasmaker Parkins, accompanist, playing in the Entrekin residence studio, are shown below.



Carl A. Entrekin, the other 1/2, is manager, engineer, operator and announcer.

By Alton D. Spencer

ONE, two, three, four. One, two, three, four. This is the Entrekin Electric company station, 321 West Tenth avenue, Columbus, Ohio, testing.

This was a small group of Columbus' early Radio fans introduced to what a few days later became WCAH, the first regular broadcasting station in the Buckeye capital. I happened to be one of the few listening in that afternoon. It was at about 4:30 o'clock, April 27, 1922. It was indeed a thrill to hear such loud signals on my little one-tube bopper. The testing announcement was followed by several phonograph selections and others agreed with me the next morning that the selections sounded far better than ever issued from a phonograph horn. Announcements and records were alternated for an hour or so, then came a brief silence. This was broken by a woman's voice, saying: "This is the Entrekin Electric company, 321 West Tenth avenue, Columbus, Ohio, signing off!"

Although I never was bold enough to ask, I always have suspected that the feminine voice was that of Mrs. Entrekin; that dinner was ready, and the only way she could get "G. A." as Mr. Entrekin is called by his friends, to leave his new plaything was to sign off and thus end the entertainment.

The original transmitter at WCAH had a power rated at only 15 watts, but local listeners considered it a whale of a station. Up to this time they had been limited to hearing half a dozen or so distant stations, such as KDKA, WWJ, WBZ, KYW and WJZ, then located at Newark, N. J.

The first regular program was presented the evening of May 9, 1922, including talks by prominent citizens, classical selections by local musicians and the reading of several news bulletins. Soon afterward, WCAH established a twice-a-day news service, at noon and at 7 p. m. The broadcasting of baseball

Operating room on the second floor of the shop in rear of the house. At the immediate right of Mr. Entrekin is the original 15-watt transmitter.

scores each evening, as a part of this news service, was relished by those baseball fans who, up to then had waited for the morning paper to learn the results of the previous day's contests.

Just a year after the surprise opening of the station, the power was increased to 100 watts and the anniversary program went out to points that never had heard of WCAH. Six months later, the power was raised to 150 watts and on the next anniversary it went to 200. With each increase in power, the WCAH family of listeners grew in size. Coast-to-coast reception was reported and the country became intimately acquainted with the Entrekin Electric company, which, before WCAH was born, was known to comparatively few buyers of electrical goods.

The latest increase in power came on April 25, this year, although the formal opening of the newest broadcaster was not held until June 2. The station is now transmitting inter-



This is the Entrekin residence, 321 West Tenth avenue, where the plant of Station WCAH is located in "Columbus, the Heart of Ohio."

mittently on 500 watts, but will be on a regular schedule very soon again.

The unique feature of WCAH is the fact that only two persons are included in the staff—Mr. and Mrs. C. A. Entrekin. They are the owners of the station. Mr. Entrekin is the manager, engineer, operator and announcer, in addition to being a licensed code operator. Margaret C. Entrekin, his wife, is the program director, studio manager and hostess.

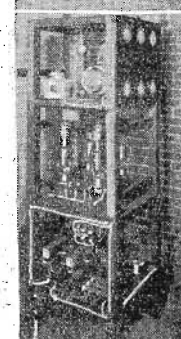
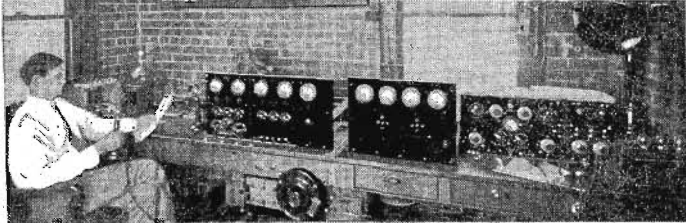
500-watt set built by C. A. Entrekin.

Much credit must be given to Mrs. Entrekin for the high type programs which she has assembled. She declines to permit any but classical programs at the regular broadcasting hours, from 8 to 10 o'clock, but upon occasion allows, popular or jazz entertainments at midnight. No doubt she realizes that at such an hour, listeners would soon be lulled to unconsciousness by the classics. It requires zippy numbers at midnight to hold the listener and keep him awake.

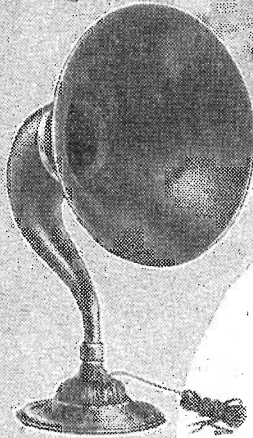
Antenna masts. Building with chimney is shop containing operating room.

The task confronting Mrs. Entrekin is more difficult than a similar task in . . . (Continued on page 7)

THE ENTREKIN ELECTRIC CO.
321 W. 10th AVE.
COLUMBUS O.
CITIZEN 16394 BELL N. 1333



Music Master
Resonant Wood
Lustrous Natural
Fame Quality



Model VI, \$30
14" Wood Bell

Model VII, \$35
21" Wood Bell



Radio too is No Longer an Experiment

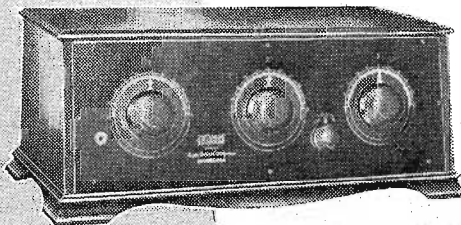
PIONEER owners of automobiles had to buy larger magnets, different carburetors, more accurate timers and what not else, to get some degree of motoring satisfaction!

Today—how smoothly motor cars purr their way over the roads! Pioneer owners of radio experimented with different tubes, more powerful batteries, condensers and all sorts of "loud speakers," trying to balance the power of the set with the quality of the amplifier.

And now—there is no need of "trying out" experimental radio combinations, for MUSIC MASTER Receivers assure radio reception equal in power and efficiency to the supreme quality of reproduction made internationally famous by MUSIC MASTER Reproducer.

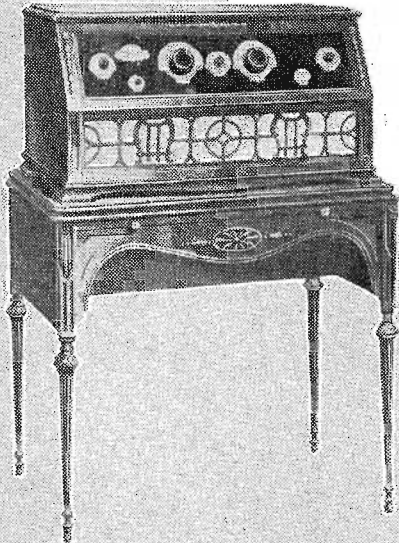
An authorized MUSIC MASTER dealer will demonstrate—in your home if you wish—MUSIC MASTER'S power of distance, clarity and volume, ease of operation—and above all, its faithful reproduction and superb musical tone quality.

See MUSIC MASTER—hear—compare—before you buy any radio set.

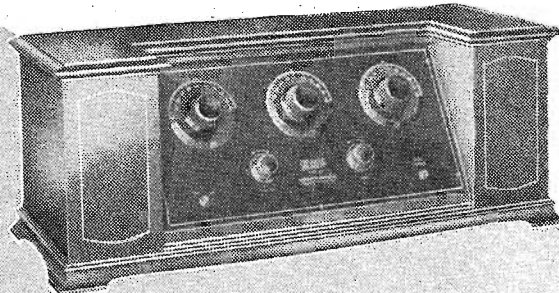


TYPE 60
Five tubes. Special Music Master design. Full, round, natural tone. Three selectors for precise tuning. Without equipment \$60

Ten Models—\$50 to \$460
Guaranteed Unconditionally



TYPE 215
Remarkable for range, clarity, mellowness. Six tubes, built-in Music Master Reproducer. Beautiful Mahogany cabinet and table. Storage battery compartment concealing both batteries and charger. With out equipment—\$215



TYPE 100
Five tubes. Resonant reproduction, exceptional range. Massive mahogany console cabinet. "B" battery compartments in cabinet. With out equipment—\$100

(Canadian Prices, Slightly Higher)

Music Master

RADIO PRODUCTS

MORE PAID ARTISTS BRING BETTER BILLS

WEEI ADDS PROFESSIONALS TO IMPROVE PROGRAMS

Boston Station Maps Out Excellent Schedule of Acts for Winter's Entertainment

BOSTON.—Better broadcast programs assured through the addition of more paid artists is the plan for the coming season at WEEL, The Edison Electric Illuminating company's station of Boston.

WEEL will continue through the season featuring regular and special programs from WEAF, New York. By securing more paid professional talent, this station is certain to become even more popular during the coming year.

Already, contracts have been signed for broadcasting music by the Vannini ensemble of the Boston Symphony orchestra and the 18th Century Candlelight orchestra under the direction of Raffaele Martino.

Organize Dance Orchestra

Arrangements are also being made by Professor Martino to organize a real symphony dance orchestra of fifteen musicians. This dance orchestra, composed of symphony musicians, will be heard early in October in their first program.

Another group added for the season is the Boston Orchestral Players, under the direction of Joseph Boetje. Working with this orchestra will be artists well known to Radio fans, including Miss Helen Barr, who possesses one of the most charming soprano Radio voices on the air; Howard Reunig, tenor, whose voice blends wonderfully with that of Miss Barr in duet numbers; Miss Marjorie Posselt youthful violinist who has studied both here and abroad, and Mrs. Nina G. Del Castillo accompanist and solo pianist.

The local jazz dance programs from this station will be supplied for the most part by Duke Eisenburg's Sinfonians and Ed Andrews' Nautical Garden orchestra.

No Local Opera

Operas will not be stressed locally. The tuboid opera presented by WEAF Grand Opera company, which is broadcast from this station, seems to fill the bill for opera music.

Dinner speeches are not received any too favorably in New England. Lectures on important subjects will be heard occasionally however.

The World's series baseball games and the important college football games of the Big Four, and play by play description of the Davis cup tennis matches are to be featured during the fall.

Punkinville Program Unique

WEEL has not experimented to any extent with the average Radio drama but they have originated a Punkinville program that seems to have gone the Radio dramatists one better. In creating this broadcast, a program has been developed that is a combination of the old time rural comedy and the hick burlesque vaudeville act. The action is not only speedy but simple, uninvolved, and easy to follow. The characters in these programs, which have become so popular, are well known to the listeners as the voices are distinctive.

Every Radio listener in New England knows Punkinville.

WCAH, COLUMBUS, OHIO

(Continued from page 5)

the ordinary Radio studio, since the WCAH studio is located in the Entreklin residence. This means that on broadcast nights, she must entertain the artists just as if she were giving a party. Any woman would shrink from the task of giving from one to three parties a week in her home, but that's what broadcasting means in the Entreklin home.

On the other hand, the congenial atmosphere of the home is attractive to the artists and it never is difficult to obtain talent at WCAH.

Mr. Entreklin answers every communication to the studio whether it be post-card, letter, or telegram with a personal note.

When the slogan fever hit the broadcasters, Mr. Entreklin was among those who climbed onto the band wagon early.

"I'm going to announce like this," he told his wife: "WCAH, broadcasting from Columbus, the Heart of Ohio."

"They'll kid you to death," she told him.

"Let them kid," he replied. "I'm going to try it." And he's still broadcasting from "Columbus, the Heart of Ohio."

KTHS to Give Dixie Series

HOT SPRINGS, Ark.—The New Arlington hotel station here, (KTHS), has announced that it will broadcast the Dixie baseball league series play-by-play.

WORLD'S SERIES GAMES TAKE AIR

Thirteen Stations Sure to Carry Play-by-Play Results—WEAF Chain May

CHICAGO.—World's series broadcasts are the order of the day. During the past week eight more stations have announced their intention of carrying the baseball classic play-by-play, in addition to the five announced in these columns last week.

The eight are: KDKA, Pittsburgh; KFOA, Seattle; KTHS, Hot Springs National Park; KYW, Chicago; WBB, Springfield and Boston; WPEAR, Cleveland; WGY, Schenectady, and WMAQ, Chicago.

The five stations announced last week as to carry the games are: KOA, WDAQ, WJZ, WRC and WSB.

Although no further stations had made their plans public at the time of going to press, undoubtedly many more broad-

casters will give play-by-play descriptions of the national game's wind-up.

One of the most important groups of stations which may carry the games is the WEAF chain. It is understood that Graham McNamee will announce the games direct from the field as was done last year. This chain includes WEAF, WCAE, WCAP, WOO, WJAR, WEEL, WJWJ, WOC, WSAI, WCCO, WCTS, WVIC, WFI and WGT.

Honor Great Composers on Birthdays at Station WLW

CINCINNATI.—Radiophone Station WLW, of the Crosley Radio corporation here, has made plans to pay tribute to all the noted composers on their respective birthdays by broadcasting special programs of their music. Thus on October 9, one of St. Saens' compositions will be featured in his honor. On October 10, Giuseppe Verdi will be honored. Other composers' birthdays to be celebrated this month are Franz Liszt's on the twenty-second and Alex. Cesar Leopold Elzet's on the twenty-fifth.

Old Timers Assist at WBZ's Fourth Birthday

Westinghouse Station Celebrates with Four Hour Program

BOSTON.—Westinghouse Station WBZ, which went on the air along with the first broadcasters in the country on September 18, 1921 to be exact, celebrated its fourth anniversary Monday, September 21, with a program lasting four hours.

An all-star program of well-known Radio artists and orchestras were heard during the evening. Nearly every regular entertainer or group of entertainers that had broadcast from WBZ during the past year, was microphoned again during the four-hour celebration.

George H. Jaspert, incidentally, who is director of WBZ, is one of the first persons to act in this capacity. At the time of the opening of KVAV in Chicago, four years ago, he was director of the pioneer Chicago station and was later transferred to his present post.

Something Easy to Understand



The radio show season is on. You can go to the show without hopelessly bewildering yourself. Just keep certain basic things in mind:

You don't want any set of a passing type. You can tell very largely by the coils. Most coils "spray" energy all over a set, almost like short-circuiting the wiring! Such coils are also like little aerials in themselves, picking up signals uncontrollably.

There you have the chief causes of inter-coupling, scrambling, broad tuning, and loss of power, now defeated by Thorola Low-Loss Doughnut Coils. They are of a shape which literally "turns in upon itself." So there is no indiscriminate "spraying," no stray pick-up of signals. Selectivity is at last a positive thing, even in the most congested centers. Losses are overcome, increasing range and volume.

The coils that assure these results are to be found only in the 5-tube Thorola Islodyne receiver. It is one radio instrument at the show whose selectivity, range, volume, clearness, and uniformity of results have definite reasons behind them. You see the reasons when you see Thorola Low-Loss Doughnut Coils in this set. Here is superiority you can identify, understand and hear. For Thorola Islodyne tone is the tone which established Thorola as one of the permanently great names of radio.

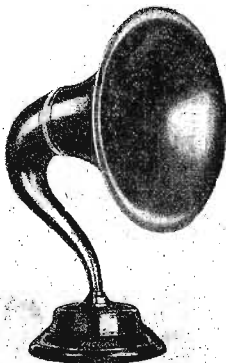
At the show, or at your dealer's, keep straight on the modern radio you want. Seek out the set with Thorola Low-Loss Doughnut Coils—Thorola Islodyne. Its entire construction and its appearance are promise of performance which cannot be measured by price.

REICHMANN COMPANY, 1725-39 West 74th Street CHICAGO

THOROLA SPEAKERS

With vital technical refinements including the self-harmonizing feature, Thorola Loud Speakers increase their margin of leadership. The new Bakelite bell is the largest Bakelite form ever produced. The ingenious throat construction and identifying gold throat-band lend inspiring grace and rugged strength.

- Thorola Loud Speaker Model 4.....\$25
- Thorola Jr. Loud Speaker.....\$15
- Thorola Islodyne (5-tube) Walnut Cabinet.....\$115
- Thorola Islodyne (5-tube) Thoroco Cabinet.....\$85
- Thorola Low-Loss Doughnut Coils—Set of 3.....\$12
- Per Coil \$4
- Thorola Low-Loss Straight Line Frequency Condensers.....\$5.50 and \$6
- Thorola Golden Audio Re-producing Transformers.....\$4.50



Thorola ISLODYNE

SUNDAY EVENING CLUB OPENS AT KYW

Saturday, October 3

Saturday silent night for: CFCB, CHNC, CNRC, CNRE, CNRM, CNRR, CNRT, CNRW, KFAB, KFDM, KFKA, KFMD, KFLS, WBPB, WBZ, WCAU, WCTS, WDX, WEEL, WEEI, WEEB, WEEC, WGAN, WJAB, WJAZ, WKAA, WLIT, WSM, WTIC, WWI.

Eastern Time Stations

CHIC, Toronto, Can. (357), 8 p. m., CHIC Symphony orchestra; Norman Wilson, conductor; Grace Sengue, vocal; conductor; J. Wilson Jardine and his Patric Male orchestra.
CNRO, Ottawa, Can. (438), 8 p. m., Chateau Laurier concert orchestra; M. Joseph Kendall, pianist; Fred McFarquhar, tenor; Bert Lloyd, reader; Helen M. Morris, soprano; H. Tazewell, leader; Alton Harris, conductor; Chateau Laurier dance orchestra.
KDKA, Philadelphia, Pa. (308.1), 7:30 p. m., children's party; Richmond employees band; Mountain City Male quartet.

WAGH, Richmond Hill, N. Y. (315.6), 12:15-12:35 p. m., musical program; 12-3 a. m., dance program.
WBBR, New York, N. Y. (272.6), 8 p. m., Malenia Caborn, clarinetist; Earl L. Marlowe, piano; soprano; 8:30, Bible questions and answers; Jodie Butterfield; 8:30, L. Marion Brown, soprano; 8:30, Malenia Caborn.
WCAE, Pittsburgh, Pa. (461.3), 6:30 p. m., dinner concert; William From hotel; 8:30, studio concert.
WCK, Detroit, Mich. (517), 8:15 p. m., The Detroit Symphony; 8:30, dinner concert; Book-Cadillac hotel.
WEAF, New York, N. Y. (491.5), 7:15-7:30 p. m., "Old Timey"; 7:30-8:00, George O'Hara, tenor; 8:00-8:30, Claude Leland, soprano; 8:30-9:00, Margaret O'Brien; 8:30, Ross Gorman and his Paul Carroll Varieties orchestra; 8:30-8:45, The Adelines; 8:45-9:15, Parranus string; 9:15-9:30, The Adelines; 9:30-10:00, James Hunt, tenor; 9:45-10, Leon Goldman, pianist; 10:00-10:15, Leon Goldman; 10:15-10:45, James Hunt; 10:45-11:15, Vincent Lopez and his orchestra.

WEAR, Cleveland, Ohio (388.4), 7 p. m., society dinner-concert.
WGBS, New York, N. Y. (315.6), 6-6:30 p. m., Uncle Corduroy; 6:30-7, Duetto-Garland orchestra; 7:30-8:45, "Two Hot Knights"; 8:45-9:15, Dick Owen, clarinetist; 9:30-10:30, Warner's theater program; 10:30-11:00, Approximate 3rd dance orchestra.
WGR, Buffalo, N. Y. (319), 8:30-4:30 p. m., WGR's afternoon program.
WGY, Schenectady, N. Y. (379.5), 6:30 p. m., Hotel Van Carter orchestra.
WHAH, Atlantic City, N. J. (275), 7:30 p. m., lecture hotel; 8:30-9:15, hotel orchestra.
WLIT, Philadelphia, Pa. (384.5), 4:30 p. m., dance orchestra; 7:30, America club concert orchestra; 8:30, "Viva string orchestra"; 9:15, Bronis Golden and his Hotel Metropole orchestra.

WYCA, New York, N. Y. (528), 7-7:30 p. m., Chateau Laurier; 7:30-8:30, Chateau Laurier; 8:30-9:30, instrumental program; 9:30-9:45, police quartet; 9:45-10:00, travel talk.
WOR, Newark, N. J. (310.2), 6:15-6:17 p. m., "Words Of Music"; 6:17-7, Hotel Shelton orchestra; 7:15-7:30, sports talk; Bill Wadby.
WRC, Washington, D. C. (468.5), 7 p. m., Hotel Washington orchestra; 8, Bible Institute; 8:30-9:00, Washington orchestra; 9:30, Grandall's Saturday Nighters.
WRO, Lansing, Mich. (285.5), 10-11 midnight, Speed-Vaux scientific show.

WJL, Detroit, Mich. (352.7), 12:05 p. m., Jules Kline's Hotel Statler orchestra; 3:00, O. M. Aldridge State football game.
Central Time Stations
KFAB, Lincoln, Neb. (340.7), 5:30-9:30 p. m., Bell-shaw's orchestra; 8:30-9:30, Schmeider and Mueller Tiano company.
KFNF, Shenandoah, Iowa (226), 7 p. m., Mrs. Paul Ledbetter; 8, Peters-Lewellen family.
KFVE, University City, Mo. (240), 6:30 p. m., amusement review; Rosanna Pledinger; 10, dance numbers, Gene Wittscho's orchestra.
KOLL, Council Bluffs, Iowa (278), 7:30-9 p. m., American Legion Hahn's Post No. 2, "The Convention Program"; "A Dark Secret"; 11-12, Horaz "Judy" hour.
KPRC, Houston, Texas (296.9), 7 p. m., Uncle Judd's kiddies' hour; 7:30, Bible class, Rev. Claude L. Jones; 8, light organ concert; Ross Lichten; 8:30, John Adams, mezzo-soprano; whistler; L. E. Sawyer, pianist; H. Frank Tillon, blind boy pianist.
KSD, St. Louis, Mo. (545.1), 7 p. m., orchestral program, stage specialties, Grand Central theater.
KTHS, Hot Springs National Park, Ark. (374.8), 6-11 p. m., football and baseball; 9:10-10:15, dance concert, Sauterhaus.

KYW, Chicago, Ill. (535.4), 6:35-7 p. m., children's bedtime story; 7:30, Concerto hotel; 8-8, Maria Johnson, soprano; Marie McKee, pianist; Art Lunick, humorist; Charlie Schultz, tenor.
WBMT, Chicago, Ill. (226), 5:30-6 p. m., kiddies' joy digger club; 6-11, Senator orchestra; Sunset hotel quartet, scenic bells, M. L. Jones, Eddies and Sara Jimmy Decker; 11-1, Stewart-Warner studio; Jim Gleason, Lew Russell, Paul Stahl, Marie Margot, Glen Day, Jimmy Ruffin, Joseph Hatoff, College trio, Harmony Girls; 1-2, Foster Tony hotel, Sunmar orchestra; Charlie Garland, Eddie Lottis, Nate Caldwell.
WCCO, Minneapolis-St. Paul, Minn. (416.4), 8:15 p. m., Gene Osburn's Nicellet hotel orchestra; S. Irvonia Philadelphia, Rev. Roy L. Smith; 8:15, musical program; 10, Willie Eckman's Coliseum orchestra.
WDAF, Kansas City, Mo. (365.6), 6-7 p. m., piano tuning-in number on the Dup-Art; address, Kansas City children's bureau; 7:01-7:05, Story Lady; 7:05-7:10, ensemble; 8-9:30, Mrs. B. H. H. orchestra; 11:05-11, a m. Merry Old Char, plantation players; Earl Coleman's orchestra; Eddie Ruit's Kansas City Athletic club orchestra.

Headliners of the Week

CRANDALL'S Saturday Nighters, the only troupe of broadcasting artists in the United States capital, will take over the microphone of WRC this Saturday night to present an unusual program in an original way. Nelson Bell, the Impresario of the group noted for his wit and humor, will direct the group. The surprise of the evening will be a talk by a popular New York screen star.

The Chicago Sunday Evening club opens October 4, Dr. Henry Howard, noted Australian evangelist, will be the principal speaker. Dr. Howard was discovered last summer when he delivered a series of lectures in Central Hall, London. Sunday also marks the return of Rev. S. Parker Cadman to the microphone of WEAF. Dr. Cadman has been absent attending international church conferences and will have many interesting experiences to relate. This service will also be broadcast by the link stations.

Monday is a gala night for WBPB, Port Worth. The twenty-four hour program, presided over by the Hired Hand himself, celebrates the opening of the new 5,000-watt equipment. This is also an important night for Nashville, Tenn. WSM, the new station directed by Bonnie Barnhardt, long famous at WSE, also opens this evening with a special program dedicating the city of Nashville to the broadcasting field.

The Veiled Prophet parade again

mystifies the Radio fan as he looks at the programs for Tuesday. The only way to find out what it is all about is to tune in for KDKA and let the sounds of revelry float in over the loud speaker. KDKA begins an interesting feature this evening, "The Round-the-World" cruise booked for every Tuesday for the rest of 1925 will take the listener to many queer and unusual places. Ross H. Skinner, cruise director for Cooks Tours, will give the talks and the KDKA symphony, music from many lands.

Radio has revealed the fact that America is producing many promising composers. Robert H. Whitecomb, who composes both for the voice and the piano, will present some of his compositions Wednesday night at WBZ, Springfield. Susan Heywood, soprano, will assist him.

October is a month when skies are clear and autumn stars may be studied carefully. Thursday WYIC will take fans into realms as yet not penetrated by Radio waves when Dr. Frederick Stocum, director of Van Vleck observatory talks on "The Heavens in October."

Friday night is a night when broadcast listeners come into their own. Radio stations should tune in for WLS and listen to the model program being put on by the Broadcasters' association. Frank H. McDonald, the president of the association, is directing the production.

Sunday, October 4

Sunday silent night for: CHIC CHNC, CNRC, CNRE, CNRM, CNRR, CNRT, CNRW, KFAB, KFDM, KFKA, KFMD, KFLS, WBPB, WBZ, WCAU, WCTS, WDX, WEEL, WEEI, WEEB, WEEC, WGAN, WJAB, WJAZ, WKAA, WLIT, WSM, WTIC, WWI.

Eastern Time Stations

KDKA, Pittsburgh, Pa. (309.1), 10:15 a. m., church services; 2:15 p. m., vesper services; Shady Side Presbyterian church; Rev. Hugh Thomson Kerr, pastor; 7:30, services.
WBZ, New York, N. Y. (272.6), 9 p. m., I. D. S. A. choir; 9:15, a. m. choir; 9:30, I. D. S. A. choir; 10:15, I. D. S. A. choir; 10:30, I. D. S. A. choir; 10:45, I. D. S. A. choir; 11:15, I. D. S. A. choir; 11:30, I. D. S. A. choir; 11:45, I. D. S. A. choir; 12:15, I. D. S. A. choir; 12:30, I. D. S. A. choir; 12:45, I. D. S. A. choir; 1:15, I. D. S. A. choir; 1:30, I. D. S. A. choir; 1:45, I. D. S. A. choir; 2:15, I. D. S. A. choir; 2:30, I. D. S. A. choir; 2:45, I. D. S. A. choir; 3:15, I. D. S. A. choir; 3:30, I. D. S. A. choir; 3:45, I. D. S. A. choir; 4:15, I. D. S. A. choir; 4:30, I. D. S. A. choir; 4:45, I. D. S. A. choir; 5:15, I. D. S. A. choir; 5:30, I. D. S. A. choir; 5:45, I. D. S. A. choir; 6:15, I. D. S. A. choir; 6:30, I. D. S. A. choir; 6:45, I. D. S. A. choir; 7:15, I. D. S. A. choir; 7:30, I. D. S. A. choir; 7:45, I. D. S. A. choir; 8:15, I. D. S. A. choir; 8:30, I. D. S. A. choir; 8:45, I. D. S. A. choir; 9:15, I. D. S. A. choir; 9:30, I. D. S. A. choir; 9:45, I. D. 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VEILED PROPHET PARADE FROM KSD

Sunday, October 4

(Continued from page 8)

WBAP, Fort Worth, Texas (475.9), 11 a. m., First Methodist church; 12:30 p. m., kiddies hour, Uncle Billy.

WGBM, Chicago, Ill. (226), 3-6 p. m., Stewart-Warner studio, tea dance program, Kayahat brothers, Earl Bergman's orchestra, Charlie Garland, Natie Calwell, Eddie Lotts, Honky-Tonk Glenn dances, Gordon Jordan; 8-10, Hazel McAdams, contralto; Sennow orchestra; Sunset male quartet, Joseph Haber, Jim Sullivan, Joe Kronenberg; 12-2, Ninety club request feature.

WCBD, Zion, Ill. (344.6), 8 p. m., mixed quartet; Gerald and Daniel Mason, cornet and trombone; J. B. McVie, R. F. Reid, vocal choir; John Thomas, baritone; H. E. Mayfield, soprano; Gerald Mason, cornetist; Alice H. Elmer, violinist; Daniel Mason, trombonist; Lillian Edwards, pianist; reading, Hector Robinson.

WCOO, Minneapolis-St. Paul, Minn. (416.4), 10:20 a. m., Plymouth Congregational church; 4:10 p. m., House of Hope Presbyterian church; 7:45, Central Lutheran church; 9:15, classical concert.

WDAF, Kansas City, Mo. (365.6), 4-5 p. m., program, Mrs. E. N. Deikman; 5-5:30, International Sunday school lesson, Dr. Walter T. Wilson.

WEH, Chicago, Ill. (379.2), 7-9 p. m., artist program.

WENR, Chicago, Ill. (266), 2-4 p. m., Barnard lyric

WTAS, Elgin, Ill. (302.5), 5-12 midnight, Fred Emma and the Decca vocal orchestra; Herbie Mintz, Bobe Payne, Phil Wilcox, Evelyn Johnson, Art Sulzer, Ronny Vincent, Roland Hinkel.

Mountain Time Stations
KOA, Denver, Colo. (322.4), 11 a. m., First Congregational church; 2 p. m., band concert, Olinger High-Lander boys' band; 4:30, R. H. Mintoner, organist; 7:30, First Church of Christ, Scientist.

Pacific Time Stations
KFWB, Hollywood, Calif. (232), 9-11 p. m., late news

program, William Penn hotel; 9, A. & P. Gypsies; 12, dance music, Sammie Jim.

WCAU, Philadelphia, Pa. (277.6), 8 p. m., Charis Maize, soprano; 8:30, Mary Wagner, soprano; Kathryn O'Boyle, pianist; 9:30, Al Lockhart, piano-accompanist; 9, song hits, Danny Dougherty; 9:30, talk, Wilson N. Durham; popular songs, Don Travelling, Isabel Fine, Max Freedman; 10, Herman Schwartz and his Blue Jackets.

WCTS, Worcester, Mass. (268), 8:30 p. m., concert program.

WCX, Detroit, Mich. (517), 4:15 p. m., The Detroit

Orion All-Programmed," 6:17-7, Hotel Shelton orchestra; 7:15-7:30, lounge talk, Bill Walker; 8:30-9:30, Al Held's hour; 9:30-9:45, talk, Edward H. Horst; **WTIC, Hartford, Conn. (478),** 6:30 p. m., Emil Heimburger's Hotel Band; 7:45, "Bill Grimes;" John W. Titcomb; 8, dinner music.

WWJ, Detroit, Mich. (327.7), 12:05 p. m., Julius Kiehl's Hotel Shelton orchestra; 10, Detroit News orchestra; 11, dinner concert; 8, News orchestra.

Central Time Stations
KFAB, Lincoln, Neb. (340.7), 5:30-6:30 p. m., Bulek Little symphony, Beishaw's orchestra; 6:30-9:30, Beishaw's orchestra; Mrs. Grammer, pianist; Clyde Davis, violinist; Hazel Miller and Frank Carrell, duet; Duke Harmonica orchestra.

KFKX, Hastings, Neb. (298.3), 9-11 p. m., musical program, Royal Clarke studio.

KFFF, Shenandoah, Iowa (269), 7 p. m., Smith-Baldwin orchestra.

KFVE, Union City, Mo. (330 p. m.), Amusement review, Romaine Fitching; 10, popular music concert, Brunson-Balke-Coleman company; Orchestra Romaine.

KMA, Shenandoah, Iowa (252), 6-7 p. m., dinner program, Alay's Flower orchestra; 9-11, familiar songs and music; 6:15, William Klotz, boy pianist.

KOL, Council Bluffs, Iowa (278), 7:30 p. m., Hugo Ryan and his New Haven Bohemian club orchestra; 8, Walter E. Okey, organ; 11-12, Holey Totsy hour, Ray Wynn and his orchestra.

KPC, Houston, Texas (296.4), 5:30 p. m., Uncle Judd's kiddies' hour; 7:30, Records' Rumbler dance orchestra; 8:30, Elizabeth Tracy, classical pianist; 9, recital, Mrs. Mark Westcott.

KSD, St. Louis, Mo. (345.1), 9 p. m., program.

KTHS, Hot Springs National Park, Ark. (374.8), 9-9:30 p. m., Meyer Davis orchestra; 9:30-9:45, W. C. Brown, baritone; Arthur Platt, accompanist; 9:45-10:30, Arthur Platt, pianist.

WBAP, Fort Worth, Texas (475.9), 7:30 p. m., Wagner Orchestra; 8:30-9:30, Ward's Trail Blazers; 10:30-11:30, George Orma's Palace theater orchestra; 11:30-12:30, stars, Majestic theater; 12:30-1:30 p. m., Sam S. Cash and acting artists; 1:30-2:30, Will Foster, S. Cash and acting artists.



Marjory Weber Bebestreit, left, is the pianist and organist who is entertaining during the noon hour Wednesdays at WLW, Cincinnati. Dorothy Talbot, above, is the coloratura soprano who has recently joined the staff of the new Oakland station, KTAB. She is well known to fans because of her former appearances at KFO, Elmer Grosse, right, and his versatile orchestra broadcast dance music from WEAJ every other Saturday afternoon.

trio; A. T. Norum, tenor; 9:30-11:30, Frank Westphal, All-American Pianists; James Bonham.

WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Radio Bible club, Dr. William M. Anderson; 8-8, First Baptist church; 8:30-11, Legion Smith's orchestra.

WGES, Oak Park, Ill. (250), 7-9 p. m., John Stanfort, tenor; Franklin Horowitz, bass; Margarette Ray, contralto; Frances Ruzic, violinist; Eddie Hargis, pianist; 11-2 p. m., Eleanor Roosevelt, radio club; 8-10, vocal baritone; Ruth Kalkbrenner, soprano.

WGN, Chicago, Ill. (379.2), 12 m., comedy, Uncle Walt; 1 p. m., musical, Chicago theater; 8-10, Drake concert ensemble.

WHAD, Milwaukee, Wis. (275), 9:15 p. m., band concert.

WHAS, Louisville, Ky. (398.9), 9-9:57 a. m., organ program; 10, Fourth Avenue Presbyterian church; 10:30-11, Christian Science church service.

WHO, Des Moines, Iowa (526), 11 a. m., University church service; 7:30-8:30, Radio-Hughes orchestra.

WID, Chicago, Ill. (422.2), 10-11 p. m., Edgewater Presbyterian church; 2-4 p. m., Dorothy Davie Dillow, soprano; Carroll Martin, trombonist; Dan Russo, violinist; Ted Hunter, pianist; George Jenkins, contralto; 6-8, Elsie D. Hoffmann, soprano; Carl Zimmer, pianist; Joe Altabough, tenor; 10-11, Victor Young, Joe Altabough, Dan Mason, Ted Hunter, Harry Glise, Mildred Perlin.

WIRC, Cincinnati, Ohio (422.3), 6:35 p. m., Walnut Hills Christian church, Dr. J. J. Gustaberry; 10, Gene Schmidt, baritone; Walter Brierley; Merrill Schwartz, baritone; Gene Perneck, pianist.

WLS, Chicago, Ill. (344), 6:30 p. m., Ralph Emerson, organist; 7-7:55, Little Brown church; Little Brown church choir.

WLW, Cincinnati, Ohio (422.3), 9:30 a. m., school, Editorial Staff of Sunday School Publications, Methodist Book Concern; 11, services, Church of the Covenant; Dr. Frank Steverson; 7:30 p. m., services, First Presbyterian church of Walnut Hills; Dr. Frederick McMillan, minister; 8:30, concert, the H. & S. Pogue orchestra; Walter Ebersole, director; violin soloist, Arthur Dunlap.

WMBE, Chicago, Ill. (230), 3-5 p. m., Trianon orchestra; Woodman theater orchestra; Geraldine Deane, Charles and Harold, Trianon Hawaiians; Charles Farnock; 7-8, Trianon ensemble; Wayne King, Desmond Sullivan; 9-11, Trianon orchestra; LeRoy Tyler, H. Stokes, Robby and Iray.

WNC, Memphis, Tenn. (695.7), 11 a. m., First Baptist church.

WOMa, Omaha, Neb. (526), 9 a. m., church service, Rev. B. R. Brown; 9, Zion English Lutheran church, Nola Lindner, tenor.

WOC, Des Moines, Iowa (526), 8-8:30 p. m., church service, Rev. J. Scott Carr; 9:30-11:30, Palmer Hall symphony.

WORD, Batavia, Ill. (275), 10 a. m., byrons and aural song; 10:15, address, W. E. Puse; 9-11, I. B. S. A. church service; 9:15, address, A. L. Seelye; 9:45, Howard Hanks, pianist; Thelma Burton, violinist; Esther Arneson, accompanist.

WQJ, Chicago, Ill. (447.5), 3-4 p. m., afternoon musical program, Kooze Park, Charlotte Barkin, Ethel Elmer, Dorbeck brothers, Elizabeth Green, Jerry Sullivan, director; 8-10, Ralph Williams and his Radio Gipsy dance orchestra; Dr. Carl Berntingger, pianist; 8-9, E. Ben Berlin, Maria Desrova, Russian zarzuela, Fanelia trio.

WSAI, Cincinnati, Ohio (326), 4:15 p. m., address, Dr. S. P. Foster; 6:30 p. m., WSAI radio address; 7:45, sermonette, Dr. F. N. McMillan.

WSB, Atlanta, Ga. (428.3), 8 p. m., Wesley Memorial church service.

and Warner brothers movie; Frank Sterer, baritone; Howard Flynn, tenor; Frank Mathews, blues singer; Frank Picco and Vic Beall, comedy songs and songs.

KGO, Oakland, Calif. (361), 11 a. m., First Baptist church; 3:30 p. m., KGO Little Symphony orchestra; 7-7:30, First Baptist church.

KGW, Portland, Ore. (494.2), 10:55-12 noon, services, Church of Our Father, First Unitarian; 7:50-9 p. m., services, First Presbyterian church.

KHJ, Los Angeles, Calif. (405.2), 8-6:30 p. m., Ledgion's Arcadia cafeteria orchestra, Jack Cronshaw, leader; 6:30-7, Art Hickman's Hillmore hotel concert orchestra, Edward Finkler, director; 7:20, Arthur Bluskey, organist; 8-10, birthday program, Walker's Fifth Street Store company, arranged by J. Howard Johnson.

KMX, Hollywood, Calif. (338.9), 7-8 p. m., First Presbyterian church of Hollywood; Rev. Stewart P. MacLennan, pastor; 8-8, Ambassador hotel concert orchestra, Josef Rosenfield, director; 9-10:30, program, Beverly Hills Nurses' Association string trio; Colman Laboriel, violinist; Raquel Nieto, soprano.

KPO, San Francisco, Calif. (428.3), 3-4 p. m., Marshall Gilman, organist; S. Waldman, band and the Sixties Restaurant orchestra; 6:35, concert orchestra, Palace Hotel; 8, Palace concert orchestra; 8:30-10, Rudy Seiger's Paramount hotel orchestra.

Symphony trio; 6, dinner concert, Book-Cadillac hotel; 8, musical program.

WEAF, New York, N. Y. (491.5), 2:30-4:30 p. m., Government club meeting; 4:30-4:40, Gertrude E. Trolie, soprano; 4:40-5, Small Beach trio; 6-7, dinner music, Waldorf-Astoria; 7-7:15, musical program; 7:15-8:30, program, Mark Stroud theater, direction, Joseph Plunkett; 8:30-8:45, Tower health talk; 8:45-9, Paul Platzer, pianist; 9-10, music, A. and P. Gypsies; 10-10:30, musical program; 10:30-11:30, Ben Bernie and his orchestra.

WEAR, Cleveland, Ohio (389.4), 11 a. m., household science Motly Crocker; 7, Allion theater orchestra.

WEEL, Boston, Mass. (478), 8:20 p. m., Big Brother club; 7:30, music; 7:50, talk; 8, Duo Eblenhorst's Solo theater orchestra; 8:30, Tower health talk; 8:45, Mrs. William Blatt, reader; 9, A. & P. Gypsies; 10, Thermo Appliance company; 10:10, American House Harbina duo; Beverly Hulme's orchestra.

WGBS, New York, N. Y. (315.6), 8-9:30 p. m., Uncle Gerber; 9:30-9:45, orchestra; 7-7:15, "New Astrology," Edna Barr.

WGCP, New York, N. Y. (815.6), 5-5:15 p. m., Snoplin Trio; 5:15-5:35, Mirror race results; 6:18-6:30, Daniel Dunbar, pianist; 8-8:15, Charles Van Thoon, pianist; 8:15-8:30, Jeanne Laval, contralto; 8:30-8:45, Leo Lefebvre, jazzologist; 8:45-9, Vincent Laine, violin; 9-9:15, William Gaudin, contralto; 9:15-9:30, Kennedy Harmony quintet; 9:30-9:45, Marie McChirly; 9:45-10, Raymond Mather, baritone; 10-11, Strickland's Choir; Goshawk orchestra.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., WGR's afternoon program; 6:20-7:30, dinner music, Jewish community house orchestra; 9-10, children's club; Buffalo Council of churches, singing at Central Presbyterian church; 10-10:15, symphony, Mary Zoller; 11-11 a. m., supper dance music, Vincent Louis Hotel; 11:15-11:30, Marie McChirly, contralto; 9:15-9:30, Kennedy Harmony quintet; 9:30-9:45, Marie McChirly; 9:45-10, Raymond Mather, baritone; 10-11, Strickland's Choir; Goshawk orchestra.

WJAR, Providence, R. I. (305.9), 8 p. m., Berry Spring; 8:45, speaker, Fire Prevention; 9, A. and P. Gypsies.

WLT, Philadelphia, Pa. (384.3), 7:30 p. m., Dream World; 11:30-11:45, radio show from Philadelphia; Radio show, 10, Arcadia city dance orchestra.

WMA, New York, N. Y. (329), 6-6:30 p. m., Allie string ensemble; 6:30-7:30, Ernie Golden and his Hotel McAlpin orchestra; 7:30-8, Christus soloist; 10-12, popular music, Third Church of Christ, Scientist; 12-12:30, speaker, Fire Prevention; 9, A. and P. Gypsies.

WNYO, New York, N. Y. (526), 7-7:30 p. m., market high, Stanley; 7:30-8, Sunny Brook orchestra; 7:30-7:35, police alarm; 7:35-8, Sunny Brook orchestra; 8-8:30, song; 9-9:15, string quartet; 9:45-10, 9-10, lecture, Dr. G. H. S. Hark of Education.

WOB, Newark, N. J. (463.2), 8-8:15 p. m., "Words



organist; 8:30-1, Panther Hawaiian trio; 4-6, Bluebonnet serenaders.

WUOB, Chicago, Ill. (226), 6-7 p. m., Stewart-Warner studio, Clem Dany, Jimmy Jordan, Charlie Garland, Natie Calwell, Eddie Lotts, Corinna Jacobo, Patsey O'Sullivan, Lew Russell, Allion orchestra.

WCOO, Minneapolis-St. Paul, Minn. (416.4), 6:45 p. m., B. families; 8:15, Hamilton orchestra.

WDAF, Kansas City, Mo. (365.6), 8-8:57 p. m., piano tuning in number on the Duo-Art; dialect recital; C. M. Bacon; 9:15-9:30, story hour; Trianon ensemble; 9-9:30, Ibrahim band; Ivanovic trio club; 11:15-11 a. m., Merry Old Chief, Carl Nuebergs's Plantation players; Ted Meyer, organist; Eddie Kuhn's Kansas City Athletic club orchestra.

WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Artie Collins and his orchestra.

WGN, Chicago, Ill. (370.2), 13-10 p. m., Drake concert ensemble; Blackstone string quartet; 14:30, top time music, Maxwell Field tea room orchestra; 6:30-7, Drake concert ensemble; Blackstone string quartet.

WHAD, Milwaukee, Wis. (275), 6-7 p. m., Arthur Hildiet, organist; 9-10, Alameda university student program; Herman Leopold, tenor.

WHO, Des Moines, Iowa (526), 7:30-8:30 p. m., advance concert, Drake University Conservatory of Music; 8-9, Drake University Conservatory of Music, Dean Holmes Gannon, director; 11-12, Vign Sagar orchestra.

WIRC, Cincinnati, Ohio (422.4), 6 p. m., Alvin Boyer's Hotel Allion orchestra; 10, Fred Sander's orchestra; 11, organist, Robert D. Bentley; Post, American Legion; 12, theatrical stars, Wesley Helvey's Troubadours.

WLW, Cincinnati, Ohio (422.3), 7 p. m., dinner concert, Edna Gibson orchestra, Robert Vignoni, director; 8, concert, artists from the Cincinnati Conservatory of Music, arranged by Helen Hill; 8:45, instrumental trio; 9:15, a quartet group of Hungarian folk songs, Bertha Pasty, soprano, Thelma Zellers, accompanist; 9:30, the first in a series of famous O. Henry plays "The Handout of Evans;" concluding selections on the Wurzlitz Unitarian.

WMC, Memphis, Tenn. (695.7), 8:30 p. m., Edith's "Non-Profit;" 9, concert.

WOWA, Omaha, Neb. (526), 6 p. m., Phyllis Griswold, organist; 8:30, popular song period, Lillian Hanson; 7, Randall's Royal Pantheonic orchestra; 9, American Legion program.

WOK, Chicago, Ill. (217.3), 6-7:30 p. m., Ada Allan, soprano; Dorothy Weston, baritone; LeRoy North, pianist; Banks Kump, organist; Gus C. Edwards, violinist; WOK string trio; 7:30-9 a. m., Herman Gold, pianist; Benny K. Edwards, American Legion; LeRoy North, pianist; Gus C. Edwards' orchestra; Leo Dutler, tenor; Harlan Merrill, musical star; Jimmie Duke, baritone; Buck Warner, pianist; Frankie Beal, pianist; Paul Small, tenor; WOK string trio.

Monday, October 5

Monday, silent night for: CHIC, CNRR, CNRE, CNRF, CNRW, CDFM, CFMG, KMJ, KIDS, KTCL, KYW, WGBM, WCBD, WEBB, WEGJ, WENR, WFL, WGSB, WGES, WGN, WHAS, WIP, WJG, WLS, WMAA, WMBE, WOC, WQJ, WRD.

Eastern Time Stations
CHIC, Toronto, Can. (357), 8 p. m., CHIC Symphony orchestra; George Miller, vocalist.

CNRR, Toronto, Can. (308.6), 10 p. m., CENRO Little Symphony orchestra; Alice Holbeist, soprano; Sydney Walsh, tenor.

KDKA, Pittsburgh, Pa. (308.1), 8:15 p. m., dinner concert; 7:30, children's recital; 8:30, concert.

WAHG, Richmond Hill, N. Y. (315.8), 12:15-12:30 p. m., musical program; 7:30 p. m., musical program.

WBRR, New York, N. Y. (272.6), 8 p. m., Syrian Oriental musicians; 8:30, World News Digest; 8:30, Barbara Jonach, soprano; 8:55, Bible instruction; 8:50, Syrian Oriental musicians.

WBZ, Springfield, Mass. (333.1), 8:30 p. m., Capitol theater orchestra; "The Prometheus," Theodore A. Minton, conductor; 8:45, "The Red Cross Program for 1925," James T. Nicholson; 10, Grace Lemna Kompton, soprano; 10:20, Hotel Brunswick orchestra.

WCAE, Pittsburgh, Pa. (461.3), 9:30 p. m., dinner

FOLLOWING SPORTS THROUGH MIKE

DISTANT GAMES ARE ON WGN SCHEDULES

RYAN AND NEAL WILL MIKE BIG MIDWEST CONTESTS

Station Engineer Will Use Unique Microphone Arrangement in Broadcasting Big Ten Gridiron Tilt

CHICAGO.—Preparations for broadcasting four of the most important Big Ten conference football games and a trio of unusual inter-sectional contests by WGN, the Chicago Tribune station on the Drake hotel, have been almost completed, Director Quin A. Ryan has just announced. The following list of games will be broadcast by WGN:

- October 3, Nebraska at Illinois
 - October 17, Wisconsin at Michigan
 - October 24, Michigan at Illinois
 - October 31, Illinois at Pennsylvania
 - November 7, Chicago at Illinois
 - November 21, Minnesota at Michigan
 - Thanksgiving, Notre Dame at Nebraska
- "The schedule outlined above is by no means a final one," said Director Ryan, "since it is the station's policy to present all the most important games of the season and to give the fans an opportunity to 'hear' the best midwest teams in action. There may be some mid-western changes in the present list to include games of wider interest."

Game Every Saturday

"As will be noticed in the schedule, there are several open Saturdays on all of which games will be broadcast. The teams so far listed represent, according to the football sharps, probably the strongest aggregations in the midwest."

"Notre Dame, last year's national champion, will of course be forced to build an entire new team owing to losses by graduation, but Coach Knute Rockne's success building eleven, makes the inclusion of at least one Notre Dame game imperative."

Distance makes no difference to WGN when there is an interesting game due. The Nebraska-Notre Dame game and the Illinois-Pennsylvania contest will be broadcast respectively direct from Lincoln (Continued on page 21)

Big Kick-Off Saturday in 1925 Radio Football

Harvard, Chicago, Cincinnati, and Holy Cross on Air

Most of the leading college football teams start their regular schedules on Saturday, October 3, and at the same time several broadcasting stations will start carrying the games over the air to those unable to attend. Among these stations are WBEZ, WSAI, KXW and WMAQ.

The high spots on the WBEZ schedule include the games of the "Big Three," Harvard, Yale, and Princeton, and other important tilts in the East. Play-by-play accounts of these games will be miked direct from the field. Station WJZ, in New York, will have charge of the pick-up for games played in New York and in return WBEZ will pick-up the Harvard-Yale game for them.

Besides the Harvard games, the Boston station will fill out its schedule with games played by Holy Cross.

- The complete WBEZ schedule follows:
- October 2—Harvard vs. Rensselaer.
 - October 10—Harvard vs. Middlebury.
 - October 17—Harvard vs. Holy Cross.
 - October 24—Harvard vs. Dartmouth.
 - October 31—Holy Cross vs. Bucknell.
 - November 7—Princeton vs. Harvard.

Sport Broadcasts

FOOTBALL

Saturday, October 3

- Amherst-Princeton, WJZ (454.3).
- Chicago-Kentucky, KYW (585.4), WMAQ (447.5).
- Hanover-Cincinnati (8:00 p. m. Central time), WSAI (325.0).
- Harvard-Rensselaer, WBEZ (283.1).
- Michigan Aggies-U. of Michigan, WWJ (352.7).
- Nebraska-Illinois, WGN (370.2).
- North Dakota-Minnesota, WCCO (416.4).
- South Dakota-Northwestern, WBBM (226).

WORLD'S SERIES

Opening Date, October 7

- KDKA, KPOA, KOA, KPRC, KTHS, KYW, WBEZ, WCAE, WCCO, WDAG, WEAB, WEAR, WGN, WGY, WGR, WJZ, WMAQ, WRC, WSB, WTIC, WWJ.
- (See page 15 for wave lengths.)

- November 14—Yale vs. Princeton.
- November 21—Harvard vs. Yale.
- November 28—Cornell vs. Pennsylvania.
- November 28—Boston college vs. Holy Cross.

Mikes Night Games

Station WSAI opened the 1925 football season over the mike last Saturday with a rather unique game to describe to the fans. The game was played at night between the University of Cincinnati and Transylvania. A special radiant fluid was placed in the ball and it appeared silver-like under the rays of the powerful arc lights illuminating the field. The next game, that on October 3, when "Cincy" clashes with Hanover, will also be played under the same night conditions.

The remainder of the games will be played in the afternoon and they like the first will be brought to the homes of the listeners by Eugene Mittendorf, play-by-play. Mr. Mittendorf is now manager of WJRC, but he will be back at the WSAI mike for the games as he was last year.

The other Cincinnati home games to be miked are: October 10, Georgetown; October 17, Otterbein; October 24, Denison; October 31, Dayton; November 14, Ohio; and November 26, Miami.

Totten Back at WMAQ

After having successfully broadcast most every home game played by the Chicago Cubs baseball team, Hal Totten will commence another season of football announcing over WMAQ, the Chicago Daily News station, on October 3, when the University of Chicago tackles the University of Kentucky at Stagg field, Chicago. H. M. Beardsley will cooperate with Totten this time as he will subsequently at Stagg field.

KYW, Chicago's Westinghouse station, will also broadcast the Chicago U home games. The KYW microphones will be in charge of Harold "Shorty" Fall, assistant director.

The dates of the games are: October 10, Ohio State; October 17, Northwestern; October 31, Purdue; November 14, Dartmouth; and November 21, Wisconsin.

Washington U. Games Over KFOA

SEATTLE, Wash.—All University of Washington football games will be broadcast direct from the university stadium through Station KFOA, Rhodes Department store here. The first game will be on Saturday, October 10.

FOR ADDITIONAL SPORTS REFER TO PAGE 7

STATIONS IN ORDER OF WAVE LENGTHS USED

| Meters | Call | Meters | Call | Meters | Call | Meters | Call | Meters | Call | Meters | Call |
|--------|-------|--------|------|--------|------|--------|------|--------|------|--------|------|
| 215 | KTAB | 276.3 | WJAS | 309.1 | KDKA | 365.6 | WDAF | 406 | WBAR | 488.5 | WCAP |
| 217.3 | WOK | 278 | KOIL | 315.4 | KPDM | 365.6 | WHB | 410.7 | CKAC | 488.5 | WRC |
| 226 | WBBM | 278 | WCAU | 315.6 | WAHG | 370 | CYE | 416.4 | WCCO | 475.9 | WBAP |
| 226 | WJBO | 278 | WJBL | 315.6 | WAGS | 370.2 | WERE | 421 | KIAP | 475.9 | WTIC |
| 249 | KYWB | 278 | WRBC | 319 | WGR | 370.2 | WGN | 421 | WLIW | 475.9 | WFAA |
| 243.8 | WAMD | 280.2 | WNAC | 219 | WSMB | 374.8 | KTHS | 422.2 | WKRK | 480 | CYL |
| 250 | WGES | 282.3 | WOAN | 222.4 | KOA | 379.5 | WGY | 428.3 | WSB | 483.6 | WGC |
| 250 | WMBB | 285.5 | WKAR | 320 | CYC | 381.4 | CKY | 428.3 | KPO | 491.5 | KGW |
| 252 | KFWB | 285.5 | WRBO | 323.1 | WBEZ | 384.4 | KJR | 434.5 | CNRO | 491.5 | WBAP |
| 261 | KFWA | 288.3 | KPKK | 335.9 | IGNX | 384.4 | WMBF | 434.5 | NAJ | 491.5 | WAC |
| 265.5 | WMAK | 293.9 | KJIS | 340.7 | WAGS | 385.4 | WEAR | 435 | ATG | 491.5 | KLN |
| 268 | KFN | 293.9 | WEAO | 340.7 | WKAQ | 389.4 | WTAM | 434.5 | CFGN | 608.2 | WIP |
| 268 | WCT'S | 296.9 | KPRC | 344.6 | WMCA | 394.5 | WFPI | 440.9 | KLDS | 508.2 | WOO |
| 272.5 | WBBE | 299.8 | KFMQ | 344.6 | WLS | 394.5 | WLIT | 440.9 | WDWF | 516.9 | CJCA |
| 272.5 | WBBJ | 299.8 | KSL | 348.0 | KWSC | 400 | WEX | 445 | ATG | 516.9 | WGX |
| 272 | WBBH | 299.8 | WPC | 352.7 | WWJ | 399.8 | WHT | 445 | KPOA | 516.9 | WIR |
| 272 | WRW | 302.3 | WJTD | 356.9 | NCA | 400 | PWX | 454.3 | WJZ | 526 | WHO |
| 275 | WHAD | 302.8 | WJAS | 358.7 | CKAB | 405.2 | KHJ | 455 | KYW | 526 | WNYC |
| 275 | WHAR | 305.9 | KYCL | 361.2 | KGC | 405.2 | WJY | 461.3 | WCAB | 545.1 | KFOO |
| 275 | WORD | 305.9 | WJAR | 361.2 | WHN | 405.2 | WOR | 461.3 | KPT | 546.1 | KSD |



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Limitation of Broadcasters

SECRETARY HERBERT HOOVER, of the department of commerce, under whose administration Radio falls, has expressed himself as desirous of the consideration of a plan for the limitation of broadcasting stations. Note: Mr. Hoover does not necessarily recommend the limitation of stations. He only announces that this is a subject he would like to have discussed at the forthcoming Radio conference. He asks the opinions of dealers, manufacturers, broadcasters and the general public.

Radio Digest is in a splendid position to give much valuable information to the department of commerce on this very subject from the standpoint of the general public. Over fifty thousand "Consensus of Opinion" ballots, it will be remembered, were received by this publication from its readers and their friends when it was desired to learn what the public thought of the limitation of issuance of broadcasting licenses in accordance with the Kintner or some similar, perhaps improved, plan. These are still on file. Almost unanimous the vote stood in favor of limiting licenses according to some logical plan.

We do not ask that existing stations be forced to go off the air, but we do believe that it would be most desirable not to allow new stations to take the air until an exclusive wave is available for the period of operation of the station, either as a result of some older broadcaster closing down, or as a result of technical research which will open up new wave bands, the "ether roads."

Time and time again we have suggested that the United States senate and house of representatives study the problem a bit more carefully and provide sufficient funds with which the Radio section of the department of commerce might work. The "police force" of the air cannot keep the "traffic" regulated without "whistles" and "traffic semaphores." In Radio language, the Radio supervisors, limited in number as they are in the first place, cannot adjust broadcasting stations and keep them adjusted to the exact assigned wave lengths without possessing precision frequency meters and similar Radio measuring and observing apparatus.

These meters sometimes cost as much as would a new and useless culvert for the tributary between the sovereign states of Wynken and Blythen—paid for, of course, from the famous pork barrel, or rivers and harbors appropriation bill.

Or a decimal, calibrated wavemeter has been known to cost all of a tenth of what it does to send a senator on a beautiful joy-ride on a U. S. Shipping Board vessel, the Leviathan for example (first-class \$2,000 stateroom), to the Zulu or Philippine Isles to investigate the proximity of vermin in the straws of the straw-thatched roofs of native huts.

However, we must not stoop, in these dignified columns, to criticize the actions of senators. We will leave that mission for Vice-President Dawes, a very capable gentleman, who knows the kind of language to use on such occasions.

What we started to say was, let's first of all provide sufficient funds for the Radio section. Congress allowed \$125,000 last year. That wasn't half enough. Give the supervisors what they need so that the listening public will get what they want—clear reception from properly adjusted and operated broadcasting stations.

Then, if it is still necessary to limit broadcasting stations, all right, we'll limit them!

Radio Beckons Youth

IT WAS once, "Go West, young man, go West," but now has changed to, "Study Radio, young man, study Radio." Opportunities in Radio, far beyond the most vivid imaginations, await the youth of today. Not long ago a Seattle boy—he is hardly more than that—sent in a drawing of a cone type reproducer to a large Radio manufacturer. That manufacturer is now making nearly a thousand of these cone speakers every day, and the youth is in the employ of the company at a splendid salary.

Do not discourage the lad who "messes up" the basement work room with wires and "that Radio junk!"

RADIO INDIGEST

To Graham McNamee, Gold Cup Winner

Whether at home, or club, or seashore,
Or mountain realms so rare,
A treat is sure in store for you
When Mac is on the air.

Just twist and turn the dials around
Till New York comes in. You'll see
That you have stumbled onto
WEAF and McNamee.

He handles all the worth while stuff
And takes you right along
With him to mingle, see, or hear
Be it sports, dance or song.

He makes you see just what he sees
Tho' he's nowhere around
For description, wit, his equal
In Radio cannot be found.

B. V. L.

The foregoing are but four stanzas of a ten stanza poem written by B. V. L. in honor of McNamee's victory.

Useless Facts and Figures

Ed Squires, former announcer at many stations, is a Yale graduate, according to a newspaper clipping. So that's the reason we uneducated bores can't comprehend him!

Earthquakes are said to clear the air of static, but who the— well, who cares to have pet earthquakes under his antenna?

Swear words are almost as handy as electric soldering irons when building one's own receiver.

Radio helped save seven tourists and four Swiss guides and porters during the past tourist season in the Swiss Alps. The number of Swiss cheeses so rescued has not yet been tabulated.

The Duke of York makes dictaphone records of his broadcast speeches from 210, London. He likes to hear his speeches repeated. The duke seems to be alone in this proposition.

Magnetized screw drivers will not pick up brass screws.

Bachelors tune in the most distant stations on the loud speaker.

Unmarried women get a chance to listen in much more than their homemaker sisters. GOOFY GUS.

The Mystery of the Ether

Through walls of my humble cottage
Comes the breath of the mountain air;
And lo! the voices of angels
Seem to vibrate everywhere.
Over the waves in the ether
Such harmony divine—
It seems to come from another world
And enter this soul of mine.

RHEA SHELDON.

A Warning

Now that I have killed off all the slow announcers, abolished most sopranos, and put out of business all stations not observing silent nights, I will next train my guns on editors of Radio journals who throw my contributions in the W. B.

I am vindictive, revengeful, and remorseless when I go on the war path! GEORGE.

Listen here old bean, you should threaten Radio editors who live in Chicago! It is to laugh! Ha! Ha! Next time one of those tanks you make on your shoe string selling trips, wave at someone on the observation platform and maybe they will toss you and old Chicago paper containing some of our choice crime news. Besides that our desk overlooks the Cook county jail, or "Hotel de Druggan," where our best gunmen sleep off the effects of nocturnal arousing in the company of the guards.

And now to show you that we are not afraid of you we will publish one of your poems:

An Ambitious Egoist

I want to be a 'nouncer,
And in a studio stand;
A microphone before me,
A program in my hand.

I want to be a 'nouncer,
So folks may hear me speak;
I know I'd be a dandy,
My voice is soft and sleek.

I want to be a 'nouncer,
And next year's contest win;
I'll bet I'd have as many votes
As all the rest get in.

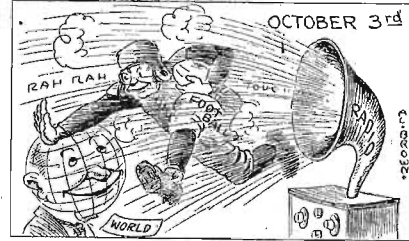
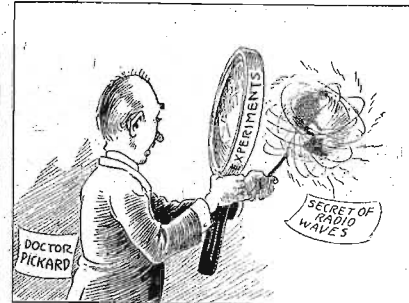
GEORGE, THE WANDERING MINSTREL.

Beware of Static!

Francis Mistress: "Jane, Jane! Come quickly, and take the parrot away—the master's dropped his tube set!" CHEERIO.

Not long ago the Japanese government announced that they were going to erect a station on the island of Yap, and now R. H. C. writes in and says they are all wrong, that we have enough Yap stations now!

News of the Week



Condensed BY DIELECTRIC

There is a fascination to one station, among the hundreds of broadcasters, that doubtless assures it a very large nightly audience—WSB, Atlanta. It is not only the personality of their popular announcer which impels one to dial to four hundred and twenty-eight meters, but to an atmosphere of southern hospitality. "Atmosphere" is sometimes difficult to get across the footlights, yet a number of broadcasting studios are really successful in accomplishing that very thing. Who, for instance, fails to note it when the Melody orchestra is performing for us?

At least a portion of one of the programs presented through WEAF, Cleveland, recently was of a satisfying nature in more than one respect. A variety of vocal arrangements won first place, although the violin selections were not far behind and the orchestra's work left a favorable impression, if not especially impressive. The voices of a tenor and baritone blended to make their singing of well-known numbers quite the hit of the evening. Then followed a quartet singing of "Kentucky Babe", which deserves honorable mention, and violin playing of no mean order.

Once in so often I manage to get around to WBZ at Springfield, Mass., to see how this old timer is coming on. The other evening was one of such occasions. The Hotel Brunswick orchestra should be classed among our leaders entertaining by Radio and usually has a program with a broad appeal. As I listened, however, the numbers selected appeared to have been chosen with less care than customarily, while their rendition was at times open to censure. That will soon be forgotten and forgiven.

Another station to be mentioned here for its variety program with capable execution is WSAI, the United States Playing Card company at Cincinnati. Here also we had violin playing which certainly brought pleasure to most in the Radio audience and soprano and contralto singing equally effective. In the course of the singing there was a contralto and soprano duet of "The Rosary". There is a song demanding intelligent treatment or it degenerates into a sad mess of meaningless phrases set to commonplace music—countless times it is so. Again, one may sit in awe and reverence, as we did when these two ladies used their voices to reveal its soul.

After the multitudinous renditions of "The Sidewalks of New York" to which so many listeners were treated who sat in at the past Democratic convention in New York city, the song should be familiar in every state in the Union. Taking this as his text, an entertainer in the studio of WHT, Chicago, presented various ways in which the music might be given. The stunt was rather novel in that it included not only varying interpretations of the melody, but also as played on different instruments. The effect was out of the ordinary and discloses another means of varying features.

WEAF, New York, is no doubt rejoicing over the high honor paid to one of its announcers, Graham McNamee, the recipient of the gold cup award (which is simply another item in the list Radio Digest has sponsored for improving broadcasting). "Mac" has my sympathies, for every announcer and his friends will immediately prepare to wrest the honor from him another year. So much for that. My purpose in mentioning WEAF was to call attention to Jacob's symphony orchestra. They played two compositions recently, one composed by Sibelius and the other by Albanez which stood out in a splendidly arranged program. The former was especially graceful and well played.

Bringing Your R.F. Amplification Up-To-Date

How to Modernize Your Old Set

By P. E. Edelman

INTRODUCING refinements in radio frequency amplification, let us suppose, first of all, that you have a tuned radio frequency set that won't quite work through local broadcasters. Maybe you have one of the kind labelled neotrodynic or some other dync. Or, instead of a diner variety you have a home built luncheon or breakfast type which is satisfying, except that you cannot just reach out through locals every night.

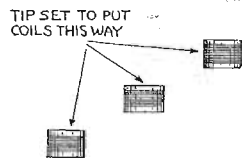
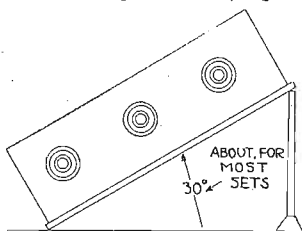
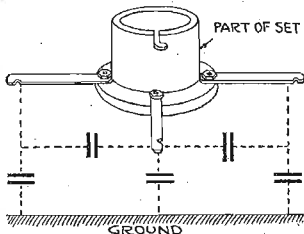


Figure 1

If you remove your aerial and ground wires you can still tune in the local stations nicely. This is because coils, acting as radio transformers, also act as miniature loop antennas. Now, as a simple experiment requiring no changes in wiring, tip your entire set up on one end, as illustrated by figure 1, so that the turns of the tube coils are in exact horizontal position. Work the set this way, and the coils no longer act as loop pickups. This is because the magnetic

component of the Radio wave front slides by the coils instead of cutting them to set up high frequency potentials (volts). Only that energy coming by way of the aerial will now work the set.



CAPACITY EFFECT OF SUPERFLUOUS BUS WIRING MAKES SET HAVE CONDENSER PICKUP OF LOCAL STATIONS

Figure 2 Fine business, so far. But perhaps your set is weighed down with ounces and ounces of old style bus bar wiring, pretty perhaps, yet forming a fairly good size condenser plate, as indicated by figure 2. The heavy bus connector does some good if actually used between the coils and

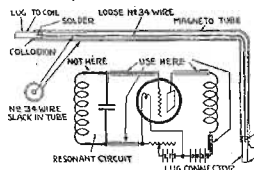


Figure 3

condensers only, that is, in the resonant circuit, but it is superfluous in the connecting wires requiring no large area. I find by test that a number 34 dsc. wire works exactly as well as a number 14

wire when properly applied as a conductor in such parts of the circuit as are not measurably affected by the very small resistance offered by the smaller wire. Yet this change reduces capacity coupling, and is a real refinement. To get mechanical strength in small wire I have designed the combination shown in figure 3, which is easily made from magneto tubing, wire and collodion. Such conductors can be used from the resonant

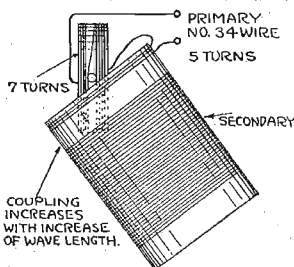


Figure 4

coil and condenser circuit (not in resonant circuit itself) to grid, to filament and to plate terminals. Minimize capacity effects in the set and you minimize capacity energy pickups. A further improvement in this general refinement or overhauling of familiar R.F.

circuits, is to replace the primary windings of the radio frequency transformers with a new coil wound with number 34 dsc. wire. This further reduces capacity coupling energy leakage. If further, you

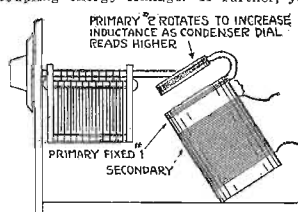
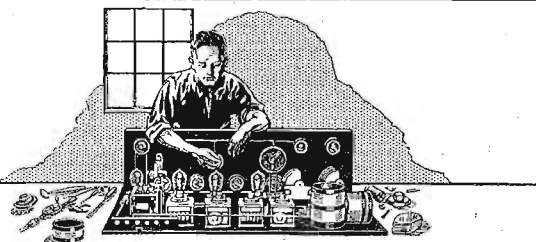


Figure 5

will now make the primary of the second transformer coil as shown by figure 4, as a variometer wound with number 34 dsc. wire, and turnable by a knob, you can throw away the stabilizers in the old set, potentiometers, neutralizing condensers, resistances, and what-nots. Besides, you will now begin to range those higher wave length stations which were but feebly heard with the old set. The reason is that most stabilizing methods to be effective on the lower range of broadcast wave lengths have to do this at the expense of full amplification efficiency at the higher wave lengths. This fault may be overcome by automatic or

(Continued on page 18)



Good Radio Requires Good Material

Veri-Chrome Panels

By the purchase of a controlling interest in the Veri-Chrome Laboratories, the financial and production resources of the Formica Insulation Company have been placed behind this remarkable new process for decorating radio panels. Elaborate decorations can be produced much more rapidly and more economically than by engraving. Reproductions designed by the leading American artists are offered. Tuning scales may be marked directly on the panel, eliminating the standard dial and substituting numbers instead. The reduction in cost is large. Write for prices on complete panels finished in this way in quantity.

IT IS just as impossible to build dependable radio with poor material as it is to build a good automobile or a good locomotive that way. Formica panels, base panels, winding tubes, insulating bushings and washers have the qualities that make lasting durability possible. They have electrical qualities that are more than sufficient for any need—and they combine with their equally essential mechanical strength, resistance to warping, and cold flowing. They never distort in use so that instruments are displaced.

The Formica finish is unequalled in richness and gloss. And that finish is one of the most permanent in the world: it does not discolor, grow dull, check or craze. No ordinary varnish or lacquer can equal it. These are all things that count. They make or break the satisfaction a radio set will give. And that is why for years the great majority of radio manufacturers have used Formica.

DEALERS: Formica panels in individual envelopes furnish a line on which dealers make a very satisfactory profit.

THE FORMICA INSULATION COMPANY
4667 Spring Grove Avenue, Cincinnati, Ohio

- 1 Formica is used by nearly all the leading set makers—and has for years been used by more set makers than any other material.
- 2 Formica is unaffected by weather and time—it lasts forever.
- 3 Formica in appearance is the finest of all panel materials and always remains so.
- 4 Formica's electrical qualities of every kind far exceed any possible requirement.
- 5 Formica has high mechanical strength and will not break in use.
- 6 Formica will not sag from heat or cold flow under pressure. It retains its dimensions. Breathe your caution to it stay thin and arched when you put it.
- 7 Formica panels are sold in neat craft paper envelopes which assure you that you are getting the genuine.
- 8 Formica is one of the most widely approved materials in radio.

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- 2 South Clinton Street.....Chicago, Ill.
- 516 Oxtun Bldg.....Cleveland, Ohio
- 327 Cutler Bldg.....Rochester, N. Y.
- 422 First Avenue.....Philadelphia, Pa.
- 6 Dixon Street.....Boston, Mass.
- 55 Calle Obispo.....Habana, Cuba
- 1026 Second Avenue.....Minneapolis, Minn.
- 725 Bulletin Bldg.....Philadelphia, Pa.
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The New AMSCO Allocating Condenser (S.L.F.) spreads the stations evenly around dials. Eliminates the crowding of low wave stations and simplifies tuning. And unlike previous, straight line frequency condensers, its "half-a-heart" rotor plates save space in the cabinet. Three sizes—single or Siamese.

To get the finest tuning

The New AMSCO Vernier Dial is as easily installed as an ordinary dial—and as easily manipulated. But—each turn of the dial is stepped-down to 1-13th the motion—giving fineness to your fingers. A precision instrument, without momentum or back-lash. There is no vernier like it for distance-getting. Low in price.

Ask your dealer for these and other AMSCO Engineered Radio Products. Everything in Condensers, Rheostats, Potentiometers, tube sockets, dials, etc.

AMSCO PRODUCTS INC., Dept. O
Broome and Lafayette Streets, N. Y. City
Makers of the Melco Supreme Radio Receiver



MODERNIZING YOUR OLD R.F. SET

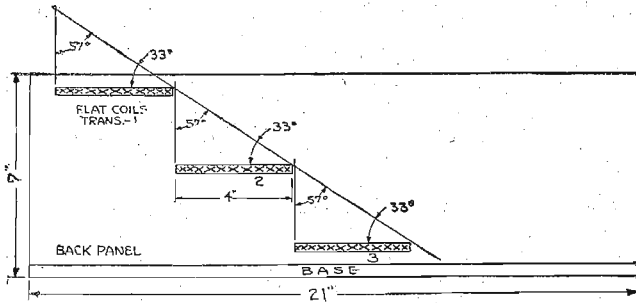


Figure 6

(Continued from page 17) semi-automatic change in the primary to secondary coupling, or the effective number of primary turns of the transformer may be varied simultaneously with changes in the wave length range of dial settings on the condensers. Figure 5 indicates this.

Coming back to the tipped up set, arranged to get the coils horizontal; well, the old set doesn't look so handsome that way. Besides, to arrange the coils this way on a new panel, we may think, requires an unlikely tall panel. Not at all. Look at figure 6; use flat type coils, keep the old inter-coil angles, but leave the coils horizontally placed if you are not so anxious to hear the local stations when distant programs are on the air.

Combining Dials

Maybe by this time you are considering rebuilding the old diner set? Well, you are in for an interesting time, and perhaps several genuine silent nights while changes are in progress. Why not cut off one of those three dials? See figure 7, and get any of the better makes of tandem condensers on the market. Don't forget to

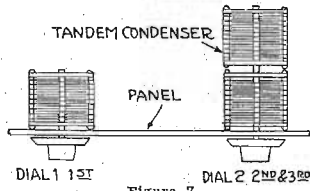


Figure 7

keep the coils in proper arrangement, and the leads to the coils of nearly equal

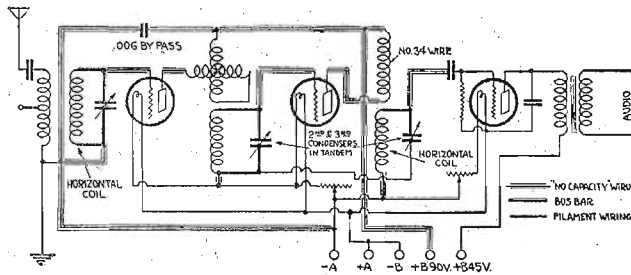


Figure 9

length in each Radio stage, as indicated for example by figure 8.

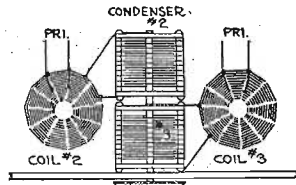


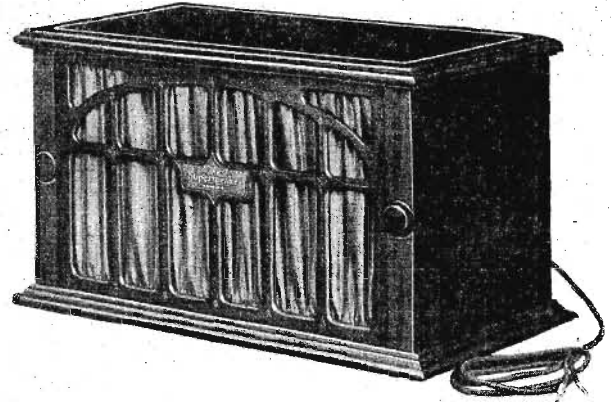
Figure 8

If you have really gone this far in re-dressing the old set, maybe you will go further and fix up the audio stages and speaker in latest 1925-26 style. But that is another subject, reserved, as the song says, for "Some Other Day."

Figure 9 shows about the way the revamped circuit on the old R.F. set should look when entirely changed, and you may be disappointed if you do not make at least some of the changes suggested, because local broadcast stations are being built closer and closer. Some morning you may find one going up right in your own city block.

Just as a final suggestion, if you have never had any experience before at rebuilding set, better study the whole thing carefully before touching a wire. Decide definitely just what changes you are going to make and have all new parts ready before starting.

Never drive a nail into hard rubber or composition. Drill a hole.



Two Superspeakers Now-- Both by JEWETT

With the new Jewett Superspeaker Console, a Radio reproducing instrument enters the realm of fine furniture.

Yet there is no sacrifice of brilliancy, volume or tone.

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Hints on Antenna Erection

Part I—Aerial Insulation

By William Fenwick

IT is the purpose of the writer in the present series to describe for the benefit of the Radioist the best procedure in the construction and installation of the many varieties of Radio antennae, or as some prefer to call them "wave-catchers."

In the writer's opinion at least, every broadcast-listener who has not had, or does not intend to have, an expert install their outfit, should obtain an elementary text-book on radio frequency alternating currents, several of which are on the market that sell for less than one dollar. The reason for this is so the beginner may acquire a knowledge of their peculiar behaviour, which is indeed, to put it mildly, amazing in the extreme in the mind of a layman. As this subject handled completely is not within the scope of this series, just a brief outline of it shall be given.

Losses at Radio Frequency

These high frequency oscillations—or alternating currents—which are set up in a receiving antenna by a passing Radio wave will creep along any surface which is moist, or which merely has a thin film of dirt upon it, as dust particles are fairly good high frequency conductors. For example, a few years ago the majority of "hams" utilized as a grid leak, a piece of cardboard with either a pencil or India ink line on it; thus, the graphite or carbon particles deposited, created a high resistance unit. Also, when these oscillating currents flow along a conductor—e. g., a wire—any mass which happens to be located within a few feet will absorb a certain amount of energy from it; i. e., an alternating electromotive force will be induced in the object in the same manner as when two coils are inductively coupled in a circuit, and energy is transferred from one to the other.

Obviously, when the aforementioned conductor is an aerial wire or the lead-in, and an object such as a building, a tree, etc., is near it, it means just one thing—losses. And when the small amount of

energy which is induced in the antenna circuit (equal to a few billionths of the power exerted by the common housefly in climbing one inch up a wall) is considered, and if the receiver incidentally happens to be of the crystal variety, one begins to appreciate the emphasized paragraphs of articles on antenna insulation, low loss apparatus, etc.

Insulation Very Important

Undoubtedly the most important single thing in designing an aerial of any sort is insulation, for the difference between a goodly and a poorly insulated antenna is just that between reception of quality and of weak signals, frying noises, et cetera. Therefore, as has often been said, and which is evident from the foregoing, "a good antenna is half the battle." A poorly insulated aerial is one of the greatest menaces to long distance and quality reception, for most of the energy collected leaks away, and what actually does get to the receiver is often too weak to be reproduced.

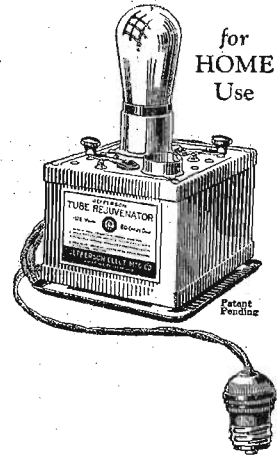
For this reason, when you begin any sort of an installation be sure to buy the best insulation obtainable; it may cost a little more, but the increase in efficiency soon compensates for it. The best types to use for the antenna are those made of Pyrex (glass), porcelain, or of a composition called Electrose, and having corrugated and highly polished or glazed surfaces, as they minimize the chances of surface leakage.

The foregoing paragraphs also refer to the lead-in's place of entry into the house. A good grade of insulating bushing should be provided here, as the covering on the wire is not sufficient to prevent leakage at this point. The lead-in should be let hung free in the air, entering the operating room directly from outside and being kept away from walls, etc., as much as possible for the reason explained above. The antenna, too, should have an ample clearance of all surrounding objects for the same reason. Five or ten feet above

(Continued on page 22)

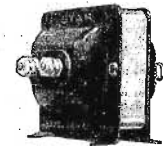
Better reception this season than last!

WOULD you like better radio reception this fall and winter than last? Better distance? Better volume? Better tone? You will enjoy better results in every way, this season, if you keep your tubes at full efficiency with the Jefferson Home Tube Rejuvenator.



All tubes deteriorate rapidly with use. The Jefferson Tube Rejuvenator "brings them back" in 10 minutes! Use it once a month—keep your tubes like new. Completely restores paralyzed or exhausted tubes. Doubles and trebles tube life, quickly paying for itself through this great saving.

Takes large or small tubes—types 201-A, 301-A, UV-199, C-299, 5-VA. Attach to any alternating current electric light socket in your home. The Jefferson Home Rejuvenator for tubes is as essential for satisfactory radio reception as a charger for storage batteries. Get one now; start the season with your tubes in perfect condition. Sold by leading dealers in radio supplies, and fully guaranteed.



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Your radio, no matter how costly, can be no better than its transformers. Our experience as the world's largest manufacturers of small transformers is everywhere recognized by leading radio engineers who carefully specify "Jefferson." If you want amplification without distortion—clear, pure, sweet, natural tones from your radio—make sure it is equipped with Jefferson Transformers. Sold by the better radio dealers, used by leading set manufacturers.

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501 So. Green St., Chicago, Ill.

Makers of Jefferson Radio, Bell Ringing and Toy Transformers; Jefferson Spark Coils for Automobile, Stationary and Marine Engines; Jefferson Oil Burner Ignition Coils and Transformers.



JEFFERSON TUBE REJUVENATOR

Keeps radio tubes like new



Look for this blue and orange display carton on your dealer's counter. It contains the Jefferson Tube Rejuvenator.

THE TUBE WITH A SENSIBLE GUARANTEE



That moment!

THE last inning—tie score—and the bases are full—you hear the crowd yelling!!!—then you hold your breath, for that moment—Alas! You are disappointed, reception has ceased due to faulty tubes.

Supertrons Play Right Thru to the End of the Game

Insist on Supertrons—at your dealer. Each Supertron tube is serial numbered for your protection.

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SUPERTRON
A SERIAL NUMBER GUARANTEE

Switch Doubles Condenser's Range

Wiring Scheme Permits 3 Scales on Condenser

I had a variable condenser with a maximum capacity of .0025 mfd. and a minimum of .00007 mfd. which I wished to use in a regenerative three circuit set. In

WORKSHOP KINKS EARN A DOLLAR—

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

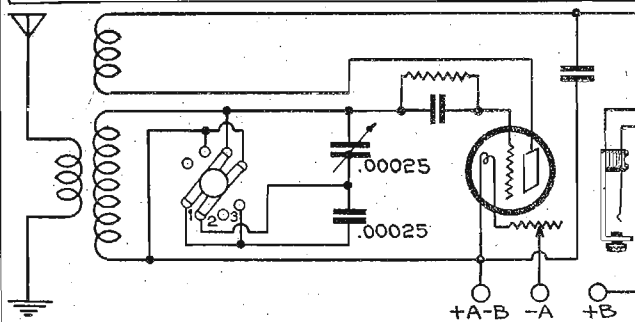
RADIO KINKS DEPARTMENT
Radio Digest
510 North Dearborn St., Chicago

connection with the proposed lowering of the broadcast wave band from 200 to 150 meters, I inserted the scheme shown here-with, which is, I trust, self explanatory.

In one position you will note that the two condensers are in parallel giving a maximum capacity of .0005 mfd. or 500 micromicrofarads, in the next position the variable condenser is used alone with a maximum of .0025 mfd. or 250 micromicrofarads, while in the third position the two condensers are in series giving a minimum of 6-4/5 micromicrofarads and a maximum of .000125 mfd. or 125 micromicrofarads.

With a coil that puts KSD at 99 on the condenser dial when the two capacities are in parallel, I can get well below 150 meters when the capacities are in series. This stunt can also be used on tuned radio frequency sets and super-heterodynes.—L. R. Hennessy, Hudson, N. Y.

DIAGRAM FOR TRIPLING VARIATION



WGN GIVES FOOTBALL

(Continued from page 14)

and Philadelphia, necessitating the use of over a thousand miles of leased telephone wire in each case to bring the story of each game to the transmitting set atop the Drake hotel. All of the other games will mean out-of-town lines for WGN, as well.

Ryan Has Style of His Own

Mr. Ryan, who made a name for himself last fall as a football announcer, will again handle the microphone for WGN, following the same methods that thrilled his hearers during the big games presented a year ago. In depicting a football game, Quin has left the stereotyped lanes of announcing in favor of a style distinctively his own—one that is deft, witty and sparkling—which does more than convey the mere mechanical details of the game in progress.

It takes no great mental effort on the part of the listener to imagine he is viewing the contest; in fact, through the medium of his loud speaker he becomes, under the stimulus of Ryan's vivid description, an attendant at the game—he is

one of the rabid, cheering fans, or in the next instant he is circling the ends with a fleetfooted halfback—the urge and roar of it are omnipresent. The listener "feels" the game, and his excitement rises with each daring maneuver of the elevens.

Unique Microphone Arrangement

When broadcasting a football game, WGN goes on the air about half an hour before the referee's whistle summons the combating elevens, and Ryan's introductory announcement prepares the listener for what is to follow.

The technical details are in the hands of Paul G. Neal, chief engineer of WGN. He evolved the idea last fall of paralleling five microphones and placing them at various points on the gridiron to catch the sounds of the game.

A "mike" is usually situated at each goal post to get the cheers, the college songs, and those spontaneous roars that greet every successful play. Other microphones occupy still other vantage points,

and one is at Quin Ryan's elbow where he identifies the different cheers and songs for the listeners.

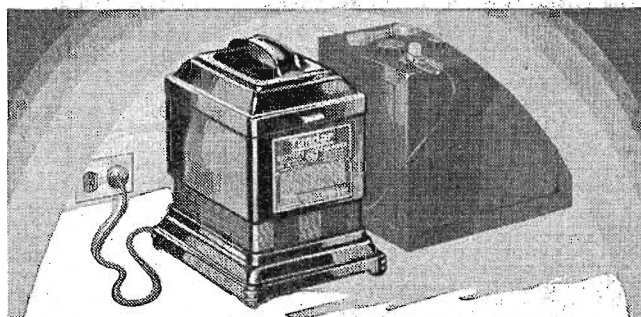
It is this microphone arrangement coupled with Ryan's announcing that makes WGN football broadcasts what they are. Mr. Neal will be in charge of the mechanical arrangements at all the games this fall.



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60 cycles—110 volts

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SHELDON FAIRBANKS, Director

Questions and Answers

Amplifier Voltage
(14612) P.S. Wait, Park, Minn.
Why is it that I cannot use more than 45 volts of B current on my 4-tube regenerative set?

A.—Without more data on the construction of your receiver we cannot advise why the limit to the voltage you can apply is but 45 volts. Send on the circuit and some details as to make of parts etc., and we may be able to help you. Using audio transformers of any ratio, if two stages or not more than 2 to 1 in three stages, you should be able to put 90 volts on the amplifiers; with any of the resistance coupling kits, this should be feasible also, and 135 volts would be better.

Delco Plant as B Power Supply
(14602) E.B. Evansville, Ind.

I would like to have a hook-up for a B eliminator to use with a farm lighting plant supplying 32 volts D. C. Also, how I might cut down the voltage to six volts to get rid of the A battery?

A.—The only possible way you could get B battery power from such a system would be in the purchase of a 32-volt to 150-volt dynamo, and then carefully filter the output with condensers and chokes. Such units are for sale by many concerns, being army material purchased during the war from General Electric company.

The other problem is easily solved as you need only connect a wire to the negative end of the 32-volt bank of batteries and tap in after the third cell (for the plus 6-volt lead. If the set is some distance from these batteries it may be necessary to tap in after fourth cell to get 5 volts

Men wanted to build radio sets in spare time. Leon Lambert, Wichita, Kansas.

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(or more still with greater distance) to allow for voltage drop in the long lines to set.

A. B. C. RADIO COURSE

(Continued from page 19)
inductance L_p in order to prevent the direct current plate circuit EKFPB being short circuited by the low resistance coil. The capacity of the condenser S is sufficiently large to offer a low impedance to the alternating current component of the plate current.

Another possible combination is given in figure 118, which shows the use of separate plate and grid oscillatory circuits.

(Having explained, in successive chapters, the principles of oscillating tube circuits and methods of combining inductance and capacity to form them, Professor Moreton next week shows a number of practical applications in Radio usage, of these hook-ups.—Editor's Note).

ANTENNA ERECTION

(Continued from page 20)

a roof is considered about right, while much more separation than this is desirable from metal covered roofs, steel buildings, trees, and such.

Short vs. Long Aerial

When utilizing a tree as a support, always remember to insert the insulator

Telegraphy—Both Morse and Wireless taught thoroughly. Big salaries. Wonderful opportunities. Expenses low; chance to earn part. School established fifty years. Catalog free. Dodge's Institute, Sixth St., Valparaiso, Ind.

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not less than ten feet from the nearest branch. Although this may shorten your aerial quite a bit, keep in mind that a short one away from all obstacles is infinitely more efficient than a long one whose energy is being almost completely lost by absorption, etc. A point worth noting here is, that a low, short aerial is more selective and will pick up much less interference than a long, high one. Therefore, the logical thing for those who are fortunate enough to possess such a location to do is, to erect a large antenna for winter use, when the ether is practically static free, and a small one for the summer when there is so much "noise flying around."

It might be worth noting here that the connections become corroded from the weather as time goes on, and that he wise who attempts to combat it. An excellent aid in so doing is to wrap each joint in the antenna proper with waterproof tape and then give them a coat of varnish or shellac. This it can easily be seen that any soot or other substances

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which would tend to accumulate on the wires and eat away the connections—introducing high resistance—will effectively be prevented from doing so. Undoubtedly it is unnecessary to add that every joint in the aerial should be soldered. For no matter how good an unsoldered connection is made, each wire will acquire from weather conditions a thin film of dirt, thereby creating a separation between wires.

(Having shown the necessity of care in antenna construction, Mr. Fenwick will next take up the various types of outdoor antenna and the construction of each. Portable types are also considered, as is the directional effect of most aeri—Editor's Note.)

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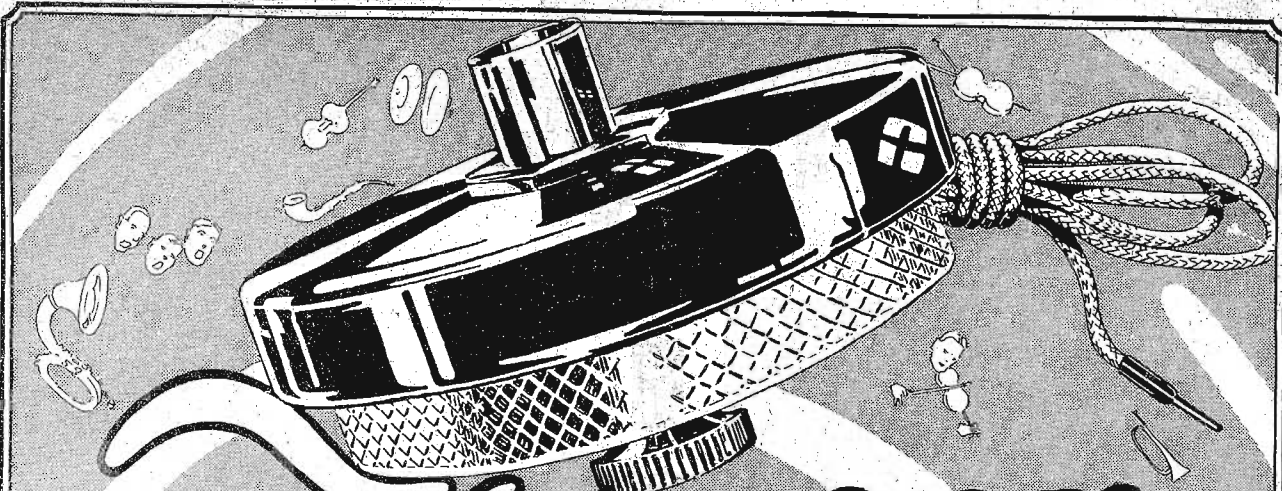
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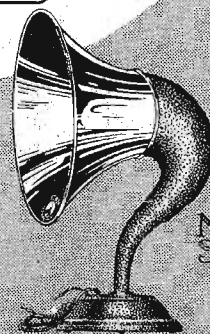


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