

Announcement of \$1,000 Gold Set Contest Winners; Helps for Beginners; How to Select or Wind the Proper Size Coil for any Variable Condenser

Radio Digest

EVERY WEEK **Illustrated** PROGRAMS **TEN CENTS**

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No. 8

RADIO ARTISTS ORGANIZE

FIVE NEW STATIONS GET IN VICTOR LINK

THIRTEEN BROADCASTERS ARE NOW IN CHAIN

World Famous Artists Heard February 12 from WTIC, WEAR, WWJ, WCCO and WOC

NEW YORK.—With the addition of five more broadcasting stations to the chain of eight broadcasting the Victor artist presentations, the Radio audience which has been entertained by these world famous artists, previously estimated at 6,000,000, has been considerably enlarged.

WTIC, Hartford, Conn.; WEAR, Cleveland; WWJ, Detroit; WCCO, Minneapolis, and WOC, Davenport, are now in the chain, in addition to WEA, New York; WJAR, Providence, R. I.; WEEI, Boston; WCAP, Washington; WDBH, Worcester, Mass.; WGR, Buffalo; WFI, Philadelphia, and WCAE, Pittsburgh.



FORM BODY TO IMPROVE BROADCASTS

Would Get Pay for Work

Plan to Investigate Radio's Injury to Theater and Phonograph— to Devise Remedy

NEW YORK.—The organization of the Radio Artists' Association of America is the newest factor in Radio broadcasting. What effect the new body will have on present broadcasting procedure is yet unknown.

Its aims, however, are to develop pro- (Continued on page 2)



Left, Bernice Berwin, a new voice in the KGO Audio Players. She will be heard in the three-act comedy, "Clarence." Above, Fay Marble, captivating stage and screen star, who entered the field of broadcasting from WJZ. Right, Winnie Lightner, one of the stars appearing in George White's Scandals, and broadcasting from WEA and KYW.

WSY Is Property of Alabama Polytechnic

Former Birmingham Station Goes to Auburn College

BIRMINGHAM, Ala. — The Alabama Polytechnic institute at Auburn will have one of the best equipped broadcasting stations in America under the terms of a gift just made by the Alabama Power company of this city.

President Martin of the power company has donated the company's broadcast transmitter, formerly known in the Radio world at WSY, to the Auburn college. For some time this station was operated in Birmingham by the power company. The outfit was built by the power company.



FAN THINKS HIS SET HAS ITS EYE ON HIM

CHICAGO. — Harry Pettingill of Kewanee, Ill., while tuning in on his Radio set on a recent Saturday afternoon, decided to make himself some coffee. The coffee started, he came back to the set and had just tuned in WQJ, when he was greeted from the loud speaker with, "Is the coffee hot, Harry?" spoken to Harry Giese by Jerry Sullivan at WQJ's weekly Saturday afternoon Kaffee Klatsch. Mr. Pettingill knew, however, that he was not the "Harry" referred to.

RADIO ARTISTS IN BODY

(Continued from page 1)

grams, to put Radio on a paying basis and to protect microphone artists. It will be national in scope.

Steps will be taken by the association to co-operate with the theatrical, phonograph and music publishing businesses. Charges that Radio has hurt any of these or other industries will be investigated by the artists' body. A spirit of helpful co-operation will prevail.

Membership in the organization is to be limited to those artists who have proven their ability beyond doubt. In order to become a member an artist must have appeared on the programs of at least two stations and have been accepted for a return engagement on at least one.

To Extend Branches Over Country

That the Radio Artists' Association of America may truly live up to its name, branch bodies are being formed in a number of principal cities. The organization work is proceeding rapidly it is said.

May Singhi Breen, Jimmy Clark, Nat Martin, Henryetta Turner, Kay Macrae and Elmer Grosso form the advisory committee of six which will guide the new association. All six are microphone artists of high repute in the metropolitan area.

The advisory committee has announced its selection of a board of executive directors consisting of Austin T. Rogers, well-known lecturer on industrial subjects, Harry A. Bruno, program director of WEBJ, and Richard R. Blythe, broadcasting dramatic critic, known on the air as "Blybrun." Don Short, newspaper and magazine writer, has been elected corresponding secretary.

Wish Ability to Be Recognized

A statement from the association states that it will work "to bring into proper consideration the efforts and ability of the Radio artists and to establish a definite position for broadcasting in the world of entertainment." The statement also declares that the association is not affiliated with any other Radio association or trade organization.

The Radio Artists' Association of America is very definite in its policy and purposes. Providing the policy is adhered to there need be no fear of lack of sincerity or that broadcasting will suffer as a result of the association. An excerpt from the announcement of the formation of the body follows:

"Charges that Radio is proving a menace to various industries, which have been made repeatedly since the inception of broadcasting, will be investigated and the amount of truth they contain ascertained. Steps will be taken to co-operate with the theatrical, phonograph and music publishing industries in overcoming the alleged difficulties which have arisen. The Radio Artists' Association of America does not intend to take an aggressive attitude toward these other lines of business, but rather to confer with their heads in order to make conditions favorable to all.

"Steps will be taken to find out and draw a definite conclusion as to whether Radio broadcasting can hurt the attendance at a really good show, or the sales of a good song or phonograph record."

ASKS NATIONS IN MEET TO TALK COPYRIGHTS

Spain Would Make International Law Protect Authors

WASHINGTON, D. C.—It is reported here that a conference will be held in Madrid in May under the direction of the directive committee of the Society of Authors of Spain to discuss the intellectual property in broadcasting. All societies of authors, editorial syndicates, editors, broadcasting companies, and Radio societies of Europe and America will be invited to send representatives to the meeting.

The subject to be discussed at the conference will be international protection of the rights of authors, composers, etc. It will decide to deny broadcasting of their works or to permit it for a consideration. The conference, after confirming these rights, will ask all nations adhering to the Convention of Berne to add articles to their legislation on intellectual property in conformity with the findings of the conference.

Radiophans Make Fund for Elimination of Interference

SIoux FALLS, S. D.—Cooperation between Radiophans and a local newspaper for the larger enjoyment of program receiving is shown here in a joint enterprise being carried on by fans, dealers and the newspaper to eliminate local interference. The paper is collecting a fund to which the public is contributing money for the employment of a Radio expert to trace down all interference. The paper prints a daily coupon for making subscriptions.

NEWS NOTES FROM FOREIGN LANDS

The first amateur Radio-photo fan has been discovered in England. Located at Burton-on-Trent, he has been assigned the experimental license 6PQ to transmit and receive photographs by Radio.

Cardinal Gasparri, on behalf of His Holiness the Pope, has expressed great appreciation of the gift of a special broadcast receiver now in use in the Vatican. The set will receive all of the principal European stations.

Station 5SC, Glasgow, claims British honors for 1924 in that it was the first to give a whole Greek play, first to give a play by children, first to broadcast educational talks for school children and first to give a complete act of opera.

Curacao, Dutch West Indies, reports that American programs are well liked there. A number of United States broadcasters are received easily.

Using a 100-watt transmitter, Gerald Marcuz of London, England, has succeeded in communicating with the Hamilton Rice expedition now on the Amazon in South America. The expedition also has a 100-watt set.

Erin is having its first Radio exposition from February 23 to 28, inclusive, in Dublin. The Irish Free State is soon to have its own broadcasting station.

A site near Dorchester, England, has been chosen provisionally for the first of the British "beam" Radio stations. This plant will act as a terminal for similar stations in Australia, Canada, South Africa and India.

Yunnanfou, Indo-China, is now connected with Saigon by means of the new 50-kilowatt, 10,000-meter Radio telegraph station erected at the former place.

A Southampton, England, listener has

heard the strokes of Big Ben consecutively through seven stations of the British Broadcasting company. This was accomplished by tuning in successive strokes through a different station.

Hay, Ford and Glenn Visit WFAA for Week

WLS Stars Conduct Dallas News Programs as Guests

DALLAS, Tex.—George D. Hay, world's champion Radio announcer, of WLS, Chicago, and two of his stellar artists, Ford Rush and Glenn Rowell, have been conducting every program from WFAA here this week since Monday. Their last program will be given Saturday night, February 28.

The Dallas News and Journal station, of which L. B. Henson is director, invited the famous trio down south as its guests. The three will leave here for Kansas City where they will be present and heard over WDAF Monday, March 2. Mr. Hay will stay all week in Kansas City for the Radio-electric show being held there from March 2 to 7. The "Hired Hand," Lambdin Kay, W. G. "Bill" Hay, and Gene Rouse, will also be guest announcers at WDAF during the show.

Chicago Fan Has Reverse English on His Reception

WASHINGTON, D. C.—An interesting communication has been received by the Radio section of the department of commerce from a Chicago fan who claims his reception is far better during daylight than at night. During the evening he says that the reception is harsh and grating and during the daytime it is clear. Officials here have not given any reason for this reversed situation.

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Looking Ahead

The Last Word in Radio Receivers will be described by Jacques Fournier beginning in the next issue. The principle of the super-heterodyne is perfect but its application with one filter and three iron-core intermediates does not usually give sufficient selectivity. A "super" containing four filters, all tuned, and provided with a single push pull audio stage has been developed by Mr. Fournier. Loop regeneration is another important feature included.

WFAA, the Dallas News and Journal, may be far, far away from many Radiophans, but its signals always come in strong. Want to see pictures of the Texas station and its staff and learn more about both? See the next issue of Radio Digest.

Radio Frequency Amplification Is Explained by Edward T. Jones in his next article. There are many methods of utilizing this amplification and Mr. Jones goes into the advantages of each with some suggestions as to construction.

Grebe Synchronphase Is Easy to Operate, although it is a five tube tuned Radio frequency outfit. This set will be taken up next in our "Operating and Trouble Shooting" series. Binocular coils and straight line frequency condensers are incorporated units that make for pleasant operation and selectivity.

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ANNOUNCE WINNERS OF AWARD CONTEST

\$1,000 IN GOLD SENT TO WINNERS OF PRIZES

C. C. Sheldon of La Verne, California, Declared First Prize Winner—University Professor Second

The first prize winner in Radio Digest's \$1,000 Gold Award Set Contest is C. C. Sheldon of LaVerne, Calif. From among the scores of entrants the judges decided that his receiver contained ideas as to circuit construction which were a greater advance in Radio than were to be found in any other.

Radiophans will undoubtedly await with interest the description of the first prize receiver and other winners in future issues of Radio Digest. The set winning first place will soon be described in detail. Watch for it!

Mr. Sheldon's receiver contains five tubes and makes use of Weagant regeneration both in the detector and in one of the Radio frequency stages. It is so constructed that the throw of a switch enables him to use either three or five tubes and the receiver may be tuned with three tubes to a distant station and then five tubes brought into play for increased volume or, if five tubes are found to be too much for local reception, the switch may be thrown to the other position and three tubes utilized.

Novel Super-Het Second

The winner of second prize is A. Christen, Dr., Sc., who is Professor of Physics, Laval university, Quebec, Canada. Considerable experimental work is shown in his method of combining the oscillator with the first detector in a super-heterodyne and providing a tuned Radio frequency stage ahead of the double duty tube.

Third prize is awarded to P. Edelman, 231 East Garfield avenue, Chicago. His receiver is a tuned Radio frequency set employing tapped primaries for control of oscillation at different wave lengths, regeneration in one of the Radio frequency stages and reflexing.

Re-Radiation Preventer Fourth

A tuned Radio frequency unit, for use ahead of any single circuit set, and designed by Joseph A. Thatcher and Joseph B. Parsons, of Toronto Radio Research Society, Inc., Toronto, Canada, is awarded fourth prize, for when this unit is used with such a set, one is adding an extremely selective and efficient stage of Radio frequency amplification.

W. C. Torrence of Waco, Texas, is given fifth prize for a combination of tuned Radio frequency, regenerative detector and reflexing on three tubes. This receiver was slightly damaged in transit but even under this handicap proved an exceptional distance getter.

Combination Circuits Popular

To Mr. Joseph B. Harms, of Plainfield, N. J., goes the sixth prize for another combination of tuned Radio frequency, regeneration and reflexing. Excellent selectivity was obtained because of the loose coupling between the spider web coils which made up the antenna coupler.

A three tube regenerative super-heterodyne which was, of course, reflexed, won seventh prize for E. M. Sargent, Oakland, Calif. In the opinion of the judges this receiver has not been worked out to its full possibilities but showed some excellent ideas and was fairly easy to control.

Harl Stogsdill, Bloomington, Ind., is awarded eighth prize for a regenerative reflex in which the oscillations are controlled by an absorption circuit. The absorption circuit consists of a 50-turn coil tuned by a three-plate condenser.

The Potentiodyne is the name given by its owner, Alan Murray of Brooklyn, N. Y., to a tuned Radio frequency, regenerative reflex which won the ninth prize. The unusual feature of this set, and which is responsible for its name, is an absorption circuit which includes a 400-ohm resistance coupled to the air core transformers between the tubes and by which the oscillations are kept under control at all wave lengths.

Friday, February 13, wasn't such an unlucky day for the nine winners, as they were notified by wire on that day as to the decision of the judges.

So the contest ends. The judges are through with their work, but the set builders remain to do the final and more important judging. Watch for the early issues of Radio Digest, which will give complete details for building the first prize winner and other prize sets.

Communicates with South Africa

LONDON, England.—Another big step has been achieved by Signor Marconi towards the perfecting of the British Empire's Radio communications. He has now proved their success by the receipt in South Africa of messages sent by short wave Radio from the Prince of Wales.

SOUTH AFRICA RELAYS PITTSBURGH



Broadcasting a special program was accomplished recently to South Africa from Pittsburgh. Among the features on the program was a playlet in which several KDKA "stars" participated. The artists in this playlet are, from left to right, Raymond Griffin, Mabel King, Irma Carpenter, Roy Strayer and Earl Mitchell. This program was rebroadcast by Station JB, in Johannesburg.

KDKA REBROADCAST BY SOUTH AFRICANS

JOHANNESBURGH PICKS UP PITTSBURGH PROGRAM

Radio Relay Spans 8,500-Mile Distance When Station JB in Africa Repeats Broadcast

PITTSBURGH.—On February 19, Station KDKA, Westinghouse station here, established a new mark of achievement when it broadcast the first program directed to and prepared especially for listeners in South Africa where it was rebroadcast by JB, Johannesburg station.

The feat with Station JB inaugurated an 8,500-mile Radio repeating tie-up, a distance equal to one-third the circumference of the entire globe.

Broadcasting was started from KDKA at 5:00 p. m. Eastern time. However, the South Africans were listening in at midnight their time. There is a difference in time of seven hours between Pittsburgh and Johannesburg.

Cables Tell of Success

All South Africa was listening in the night of the special broadcast. Owners of sets in all parts of the Transvaal in East, South and West Africa tuned in for KDKA's signals in the epoch-making test. Many cablegrams were received telling of success in reception.

In speaking of the broadcast Vice-President H. P. Davis of the Westinghouse company said, "The fact that our signals are reaching South Africa consistently must not be attributed to a Radio freak but is the natural outcome of the improved efficiency of Station KDKA. In recent months, KDKA's transmitting apparatus has been moved from its former site in the Westinghouse factory to an isolated position on a hill about a mile distant from East Pittsburgh. In this position, the signals are not shielded by any iron or steel framework, such as are in buildings, and an improvement in distance work has been noted.

"The South African broadcast is an indication to the world that we are not far distant from international broadcasting."

2LO Adds to Power; Will Have Three KW.

Moves Transmitter to New Store of Selfridge

LONDON, England.—Preparations are in hand to double the power of the London station, 2LO, and the transmitter is being moved from Marconi house to the new building of Selfridge's department store in the west end, the roof of which provides a suitable location for the new aerial.

Insurmountable difficulties were almost everywhere encountered by the British Broadcasting company in its search for a new location for 2LO. The new aerial will be about a mile way from the studios at Marconi house, so it has been considered advisable to raise the power from 1½ to 3 kilowatts to make sure that reception in South London shall not suffer. Whether or not three kilowatts will be maintained will depend on many points, but it is certain that the new 2LO will make itself heard better than its old former self.

The latest contribution of Radio to marine life saving was installed recently on a British ship. All the lifeboats of this ship are equipped with Marconi direction finding apparatus.

KFI AND WOC WON'T DO THIS AGAIN SOON

LOS ANGELES.—A. F. Conrardt of Wallace, Idaho, reported a new and unusual freak when he tuned in KFI and WOC recently, both broadcasting the same piece of dance music simultaneously to the same rhythm. Checking the phenomenon with a metronome, he thought it was a rebroadcast, but later found that the arrangements of the two orchestras were slightly different. The chance of duplicating this freak is about one in a million "listen ins."

Titania's Phonograph Record Tricks Fans

Diminutive Star's "Wax" Voice Thought to Be Real

LOS ANGELES.—A novel stunt was afforded fans recently by KHJ during the dinner hour broadcast of the weekly visit of Queen Titania, the child movie and broadcast star.

Without letting the invisible audience in on the proceedings a portable phonograph recording machine was brought

into the studio and a master record made of her evening's talk. At the conclusion of the reading the record on the machine was reversed and the talk again broadcast, this time through the needle, diaphragm and horn of the phonograph. It went out so realistically that many hearers, even after the whole matter had been explained fully, wrote in an accused Queen Titania of repeating her talk.

Quit Checkers for Radio

ENSLEY, Ala.—City firemen here have abandoned the checker board to while away the long weary hours between calls to fires and have adopted Radio instead. The Ensley Kiwanis club voted recently to purchase a Radio set for the city firemen.

EQUITY AND RADIO IN SHORT TRUCE



The Actors' Equity and Radio had a short truce recently when Jane Cowl (above) and several Equity officers appeared before the WJZ microphone to solicit funds to finish building the Cathedral of Saint John the Divine, New York city.

COOLIDGE ENDORSES LARGER RADIO FUND

\$125,000.00 EXTRA MAY BE GIVEN DEPARTMENT

President Asks Congress to Allow Money to Take Care of Unforeseen Demands

WASHINGTON, D. C.—An additional appropriation of \$125,000 for the administration of the Radio law has been recommended to Congress by President Coolidge. In transmitting this recommendation the president includes a statement from the director of the budget reading as follows:

"This estimate is necessary to enable the department of commerce to meet rapidly increased and unforeseen demands upon this appropriation. Not only are the uses of Radio receiving and broadcasting apparatus growing beyond all anticipations, but innumerable and unexpected problems in connection with their use are arising daily. Every receiving and broadcasting set is a possible source of demand upon the department for investigation.

"The past few weeks have brought in complaints and requests from the country that are far beyond the capacity of the department to handle with its present organization and equipment. These complaints and requests come from all sections of the country and each one is a separate problem requiring special personal inquiry, involving much travel and the transportation of instruments. The requirements arising from this most rapidly growing industry could not be fully anticipated at the time the budget for the fiscal year 1925 and 1926 were submitted."

SELL COLLIE PUP BY KFNF AUCTION

First Radio Auction Held to Raise Funds for Repairing of Parsonage

FORT WORTH, Texas.—The first dog ever sold by Radio auction arrived here recently. "Tired as a dog" from his long trip from Shenandoah, Iowa, the Scotch collie pup made friends with his new master, Police Commissioner Alderman.

A few weeks ago the fact that a parsonage in a little Iowa town needed re-furnishing and repairs was broadcast to the world from Shenandoah. The speaker suggested that persons friendly to the cause send in articles of value which might be auctioned.

The first to respond was Henry Field of Shenandoah, Station KFNF, who donated the pup which has since been named "Radio." Bids were called for over KFNF and received by the...

NEWSY BRIEFS AND CHITCHAT FROM THE STATIONS

New realms of musical appreciation will be conquered by the KGO Little Symphony orchestra beginning Tuesday, March 3, when a series of night concerts will be inaugurated. The works of Dvorak will be played by the orchestra directed by Carl W. Rhodehamel. Arthur S. Garbett, music interpreter, will show how he believes the "Merry Widow Waltz" might have been evolved from the works of Beethoven and Mendelssohn. Radiophans who believe that all modern song writers are divinely inspired with their tunes, might do well to tune in to KGO and learn that there is very little new under the sun.

WGBS's rendition of "Cavalleria Rusticana," with full operatic cast, has met with such great favor that the New York Gimbel Brothers' station announces more operas to be broadcast soon.

The Westinghouse Symphony orchestra, directed by Victor Saudek, is a welcome newcomer on the air and is broadcast from KDKA every Sunday afternoon from 2:30 to 4 p. m., eastern time.

"Roxy" Rothafel, broadcasting from the Capitol theater every Sunday night over WEA, is the same old announcer again. The censorship on Roxy's breezy style, said to have been instigated by the American Telephone and Telegraph company, owners of WEA, was removed because of public indignation.

School teachers in Massachusetts have adopted WEEI's Big Brother club to aid them in teaching their pupils to write better letters. "Bob" Emery, director of WEEI and formerly head of WGI, founded the Big Brother club, which has now become almost as much of an institution in the East as the Boy Scouts of America.

Dr. S. Parkes Cadman, D. D., speaking through WEA and WEEI on Sunday afternoon, February 15, gave a sermon on "The Lure of London."

Mrs. Oliver Harriman, distinguished philanthropist and widow of the late railroad king, and Howard Chandler Christy, pre-eminent American artist, presented a Camp Fire Girls' program last Saturday evening over WOR, Newark. The occasion was the thirteenth birthday of the organization of the Camp Fire Girls.

The Atwater Kent Radio artists have begun another weekly series of musicales from Stations WEA, WEEI, WFI, WGR, WJAR and WCAE, broadcasting simultaneously.

WRC, "The Voice of the Capitol," at Washington, has lost its leading announcer, C. F. Gannon, who is bidding adieu to his friends of the invisible audience to go to New York and become a stock broker.

Efram Zimbalist, the famous violinist, made his ether debut over WGBS recently when that metropolitan station broadcast the music incidental to "Quo Vadis," motion picture now being shown at the Apollo theater, New York.

WTAM, Willard station, and WEAR, Goodyear, at Cleveland are both now inter-connected in the cross country chain of stations broadcasting WEA programs. The two Cleveland broadcasters are dividing time.

CKY, Winnipeg, Canada, recently rebroadcast WABN, La Crosse, Wis., when the latter station was featuring a program given by the "Winnipeg Kiddies," a group of child entertainers from the Canadian city. Parents and friends of the children in Winnipeg, listening on crystal sets to the CKY rebroadcast, were highly pleased.

When all other means failed to locate H. L. Hartenstein, traveling in Michigan when his wife died at home in Chicago, Dr. Preston Bradley interrupted his Sunday sermon over WQJ to ask his Radio congregation to help. Mr. Hartenstein was found as a result.

Four of the world's greatest organists and an orchestra of seventy from the Philharmonic society of New York were heard recently through WGY, Schenectady; WRC, Washington, and WJZ, New York city.

The Mark Strand theater orchestra will be heard now every Wednesday and Friday evening at 7 p. m., eastern time, broadcasting from WGY, Schenectady. Julius Boxhorn is conductor.

Several Broadway stars have been heard on Station WHN's nightly broadcasts since the addition of the Club Wigwam and the Silver Slipper revues to Loew's State theater studio's regular programs. Lew Holtz, Harold Stern and

Charles Mason may be heard every Monday night from 12 to 12:30 a. m., eastern time.

Gene Ingraham's orchestra, heard numerous times over WOR, Newark, has made its debut over WEA, New York, and will continue to be a semi-monthly Saturday afternoon feature there.

WHA, University of Wisconsin at Madison, has given three of a series of eight weekly educational talks on "Food Problems in Home Making." The subject for next Monday, March 2, will be "What Are Satisfactory Meals?" The lectures begin at 7:45 p. m., central time.

Meyer Davis orchestras are now broadcast from seven stations—WRC, WFI, WEA, KDKA, WCAU, KTHS and WDAX. Two distinct Meyer Davis orchestras are broadcast by WRC. The head of the orchestra organization is highly sold on the value of Radio advertising.

WLW, Crosley station at Cincinnati, is broadcasting time signals daily at 11:55 a. m., central time.

"Footlight and Lamplight," the weekly book and play criticism broadcast by Oliver Saylor every Thursday at 8:30 p. m., eastern time, from WGBS, New York, is being reprinted in many of the larger daily newspapers throughout the country.

A Radio show recently held at Nampa, Idaho, had as one of its attractions a receiving set contest, in which prizes were awarded to the person owning the receiver which tuned in the clearest signals from the most distant station. The competition was arranged by the Woodmen of the World.

Clara Kimball Young recently tuned in on the excellent set in "Roxy's" office in the Capitol theater, New York, to hear her father and mother broadcast from KHJ, Los Angeles.

Eddie Burke, that grand old Irishman, who is the possessor of a set of bagpipes more than 200 years old, gave Radiophans a thrill from Station WEBJ, New York, when he played a number of Irish melodies.

Since WOC has eliminated all the forenoon schedules they have added several new and instructional features to their afternoon programs. One of these is a "Home Management" talk by a member of the WOC personnel known to fans as "Aunt Jane."

A new record in Radio reception has been accomplished by a French amateur in Tonkin, China. He reported reception of the Eiffel Tower station, using a one tube set on a loop aerial.

'Chocolate Drop' Now Tickles WBAP Keys

Is Eleven-Year-Old Rival to the "King of the Ivories"

FORT WORTH, Texas.—Hired Hand, substitute announcer for WBAP, the Star-Telegram station here, made a find recently. It was "Little Jimmy" Moore, age 11, negro, who caresses a piano in a manner that would do the average concertist credit.

The boy, hardly tall enough to reach the pedals on the piano, has already furnished music for WBAP concerts and received messages of applause.

"Jefferson City, Mo., had its 'King of the Ivories,'" the Hired Hand says, "but WBAP now has its 'Chocolate Drop' for a mascot." Promises are made to the appreciative listeners that "Chocolate Drop" will be put on the air again soon. The little pickaninny has been playing "since he was knee high to a Texas grasshopper," but cannot tell one note from another, playing simply by ear.

KFI to Pilot Film Train

HOLLYWOOD, Calif.—Hollywood, home of the cinema, has started a radio-directed movie caravan on a twelve-week tour throughout the eastern cities. KFI, Anthony's, at Los Angeles will keep the country informed of the progress of the silversheet stars' train, where to expect them, when they will arrive and what they will do at each stop.

The NEW Radio Book



How to understand radio, assemble circuits, improve reception, operate sets,

Every phase of Radio reception gathered into one book at last! Explanation of elementary principles, directions for constructing parts, detailed how-to-build articles for the assembly of sets, operating directions on popular manufactured outfits.

For the non-technically inclined there is a two-color broadcast map of the country, operating schedules of all the leading stations, call letters and power rating of every station on the air, suggestions for the care of batteries and tubes.

Compiled by the technical staff of Radio Digest, it represents the high lights of the past twelve months in the Radio field. All this data is indexed for ready reference and logically arranged. Only a few thousand have been printed and this offer will stand for a limited time. The only book of its kind and is FREE with one year's subscription to Radio Digest.

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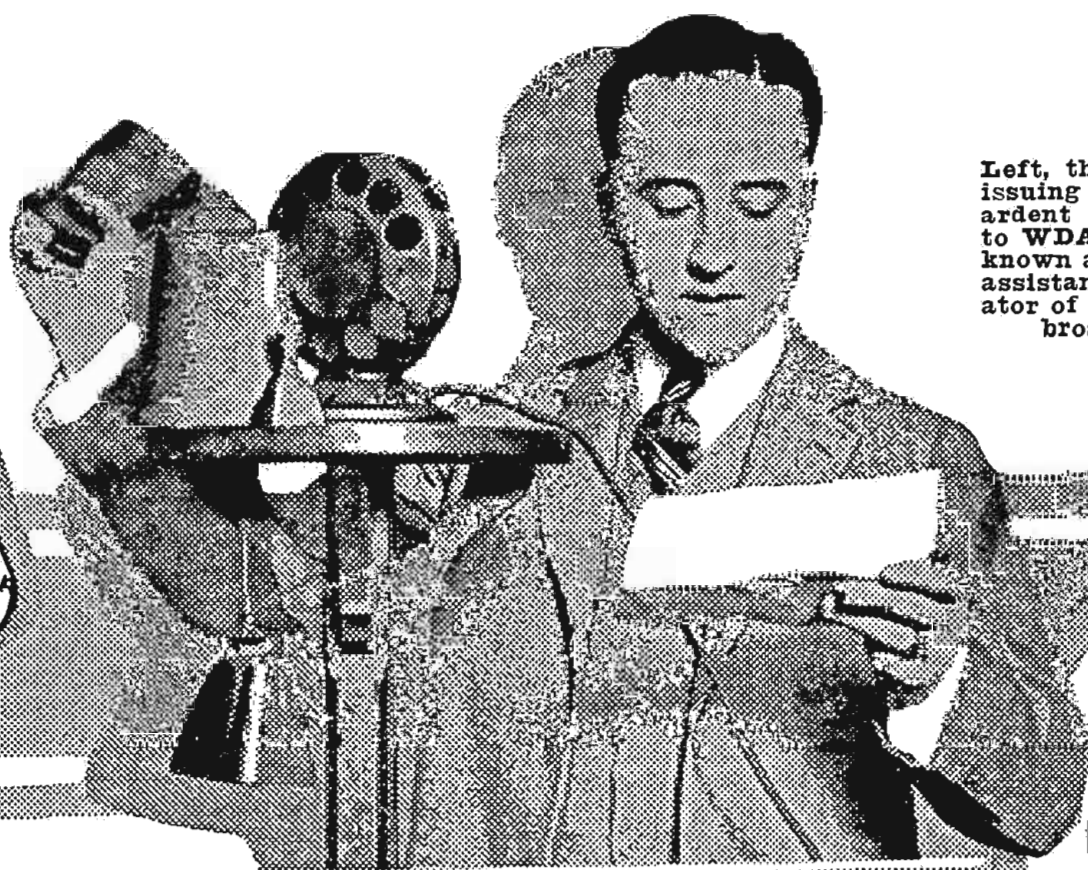
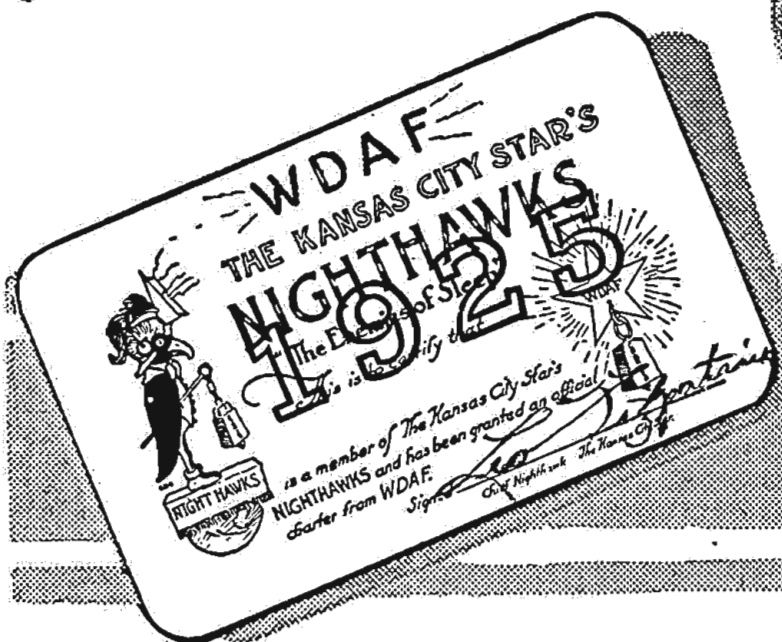
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WDAF Nighthawks and the Merry Old Chief

More than 200,000 Nighthawk membership cards similar to the one pictured here have been issued by the "Merry Old Chief" to his constituents.



Left, the "Merry Old Chief," caught as he is issuing a Nighthawk charter to one of his ardent followers. Radiophans who listen in to WDAF, will hear the "chief," who is better known as Leo Fitzpatrick. Below, V. S. Patton, assistant announcer and remote control operator of WDAF, having charge of all programs broadcast outside of the Star's studio.



STATION WDAF, the Kansas City Star Nighthawks, just doing a little hawking, is a phrase familiar to Radio listeners all over the United States and other parts of the world. For when the "Merry Old Chief" starts to dispense his happiness and good cheer at 11:45 o'clock, fans invariably dial for Kansas City.

The "Merry Old Chief" is the most popular feature of the Nighthawk programs. His original style of announcing, his ready wit, his "million dollar" laugh and his unusual singing voice have endeared him to the hearts of many fans. Formerly a feature writer on the Star staff, Leo Fitzpatrick was made Radio editor upon the opening of Station WDAF. He won fifth place in the Radio Digest announcers' contest despite the fact that he had not been heard over Radio during the entire length of the contest.

There is hardly a listener in the country who does not know by heart the catching "signing off" words of the Nighthawks as they are repeated by the "Chief" each night, "WDAF, the Nighthawks, bidding good night to those on the Pacific coast, good morning to those on the Atlantic, goodbye to all until tomorrow night at 11:45 o'clock. Alright, Don, turn off the juice, crank the fivver, and let's go home."

Although WDAF is primarily noted for its Nighthawk frolic, it puts out other programs of exceptional merit and has introduced some very unique ideas in the Radio field.

The "School of the Air" program from 6 to 7 o'clock each night contains many entertaining and educational features for the whole family. It would be hard to say whether the "Tell-Me-a-Story Lady" or the Trianon Ensemble of the Hotel Muehlebach is the more popular feature of this program.

Mrs. J. Leon Coulter, the "Tell-Me-a-Story Lady," has entertained the kiddies nightly with her bedtime stories since March 4, 1924, and has instituted for them a "Laugh-in-Your-Dream" club. Any kiddie may become a member by doing a kind act. Grown-ups, as well as youngsters, enjoy her stories and are included in the membership of the club. Although the club is only two months old, there are already 5,000 members.

Other regular features of the "School of the Air" programs are the readings by Cecile Burton, weekly

talks by representatives of the Meat Council of Greater Kansas City, Health Conservation association, children's bureau, C. H. Cheney, under the auspices of the American Bankers' association, a personal message from Roger W. Babson, statistical expert, and a book review by Louis Mecker of the literary department of the Star.

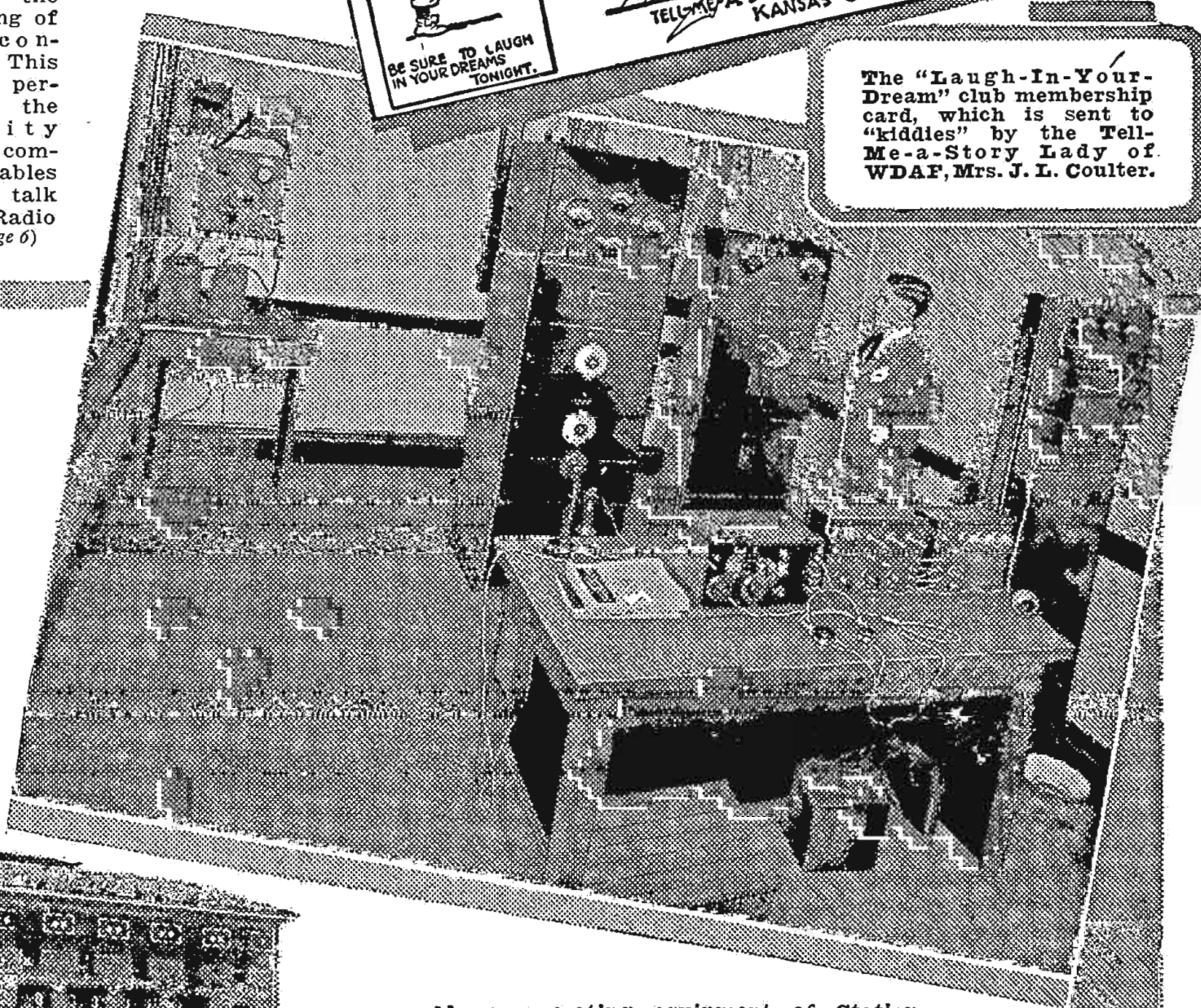
WDAF's popular musical programs on Monday and Friday nights are unsurpassed for variety. A popular feature of these programs is the fivver with its motor, horn, rattles, bumps, and everything. The "Merry Old Chief" is the driver and the listeners in are the passengers. The fivver takes imaginary trips around the town, transporting the Radio audience to various theaters and hotels where entertainment is furnished by orchestras, soloists and vaudeville artists.

This remote control broadcasting involves an intricate system of special telephone lines. As many as eleven places may be connected with the Star's operating room in as many seconds.

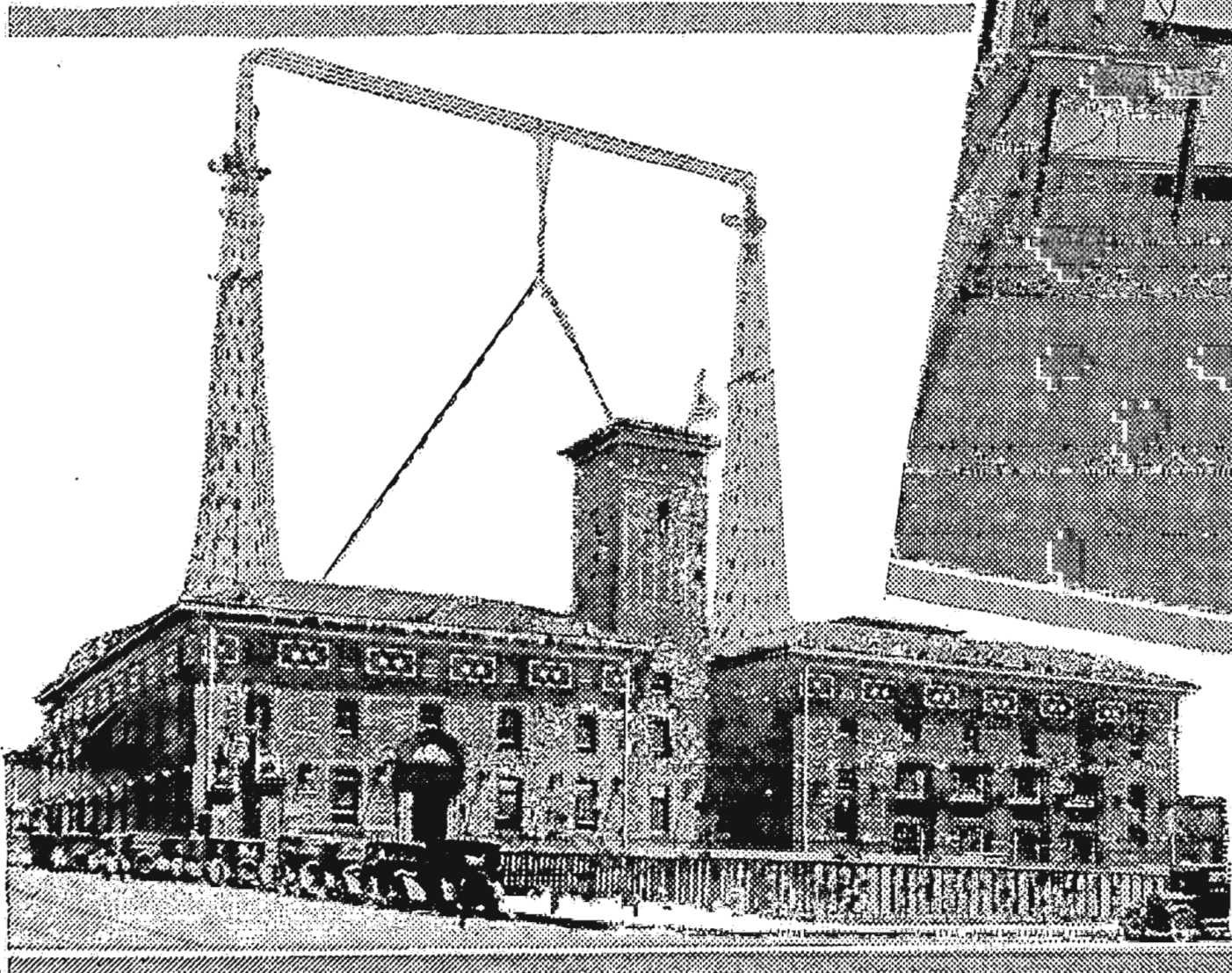
WDAF is the institutor of one of the most unique and original ideas in the history of Radio in the broadcasting of telephone conversations. This system, perfected by the Kansas City Telephone company, enables anyone to talk over the Radio (Turn to page 6)



The "Laugh-In-Your-Dream" club membership card, which is sent to "kiddies" by the Tell-Me-a-Story Lady of WDAF, Mrs. J. L. Coulter.



Above, operating equipment of Station WDAF, with Don D. Johnson, chief operator, at the power panel. Left, aerial installation, showing the towers on top of the Star building.



WCCO ONLY STATION TO RELAY AIRPLANE

ECLIPSE REBROADCAST IS GIVEN BIG ACCLAIM

New York Test Fails, but Minneapolis Succeeds—Plane Transmitter Made Up in Hurry

MINNEAPOLIS, Minn.—The story of the recent solar eclipse, as the Gold Medal station, Saint Paul, Minneapolis, WCCO, broadcast it by remote control from an airplane, was heard from Saskatchewan to Texas.

WCCO was the only station west of New York to try broadcasting from an airplane in connection with the eclipse, and, according to reports, it was the only station to carry it through successfully.

The broadcast was planned as rather a last minute affair. Weather reports early in the week indicated that people in the Middle West might be prevented from seeing the eclipse by clouds. The suggestion to send a plane up above the clouds and broadcast from it was made to Ray L. Sweet, chief engineer of WCCO. He called upon three of his operators, Hugh McCartney, Loyal Smith, and Edward Kelley, to assist him. The 19th Observation Squadron offered to provide a plane, and First Lieutenant G. M. Palmer volunteered to fly.

Use Rebuilt 5-Watt Transmitter

A 5-watt amateur transmitting set owned by Mr. McCartney was rebuilt, so that it would fit into the fuselage of the plane. On it was installed an ordinary telephone mouthpiece with a lousophone (a device to prevent extraneous noises from being picked up). A 100-foot trailing wire served as antenna and the stay-wires and all metal parts of the airplane as counterpoise.

A short wave, low loss, two tube receiving set built by Mr. Kelley was placed in WCCO's St. Paul studio.

At 7:30 on the morning of the eclipse, WCCO went on the air. The announcer described the experiment about to be attempted and asked that those who heard it send in reports to the station. The announcer talked until 7:37. Then the switch was made to the plane. Immediately the voice of McCartney, who was acting operator, came through clear as a bell. There was some interference from the airplane motor, but it was not enough to bother.

To a large part of the west, clouds had obscured the early part of the eclipse, but the plane flown by Lieutenant Palmer was carrying Mr. McCartney above the clouds where an excellent view of the phenomenon was obtained. Mr. McCartney described it in detail, as well as the flight they were making.

Station Changes

WCCO, the Gold Medal station of Minneapolis-St. Paul, plans to have the formal opening of its new 5,000-watt transmitter concurrent with the broadcasting March 4 of the inaugural address of President Coolidge. A special program will be given later in the evening from the new Nicollet hotel studios. Tests of the large transmitter will be made for some days prior to the opening.

WOC, Davenport, has changed its silent night from Tuesday to Monday.

WORD, at Batavia, Ill., with control studio in Chicago, has added an extra schedule on Tuesday evenings.

KGO, General Electric station at Oakland, Calif., has had its recently assigned wave again changed. For a short time operating on 300 meters, KGO has now taken the wave length of 361 meters.

The Portland Oregonian station, KGW, now has its silent night on Monday instead of Thursday as formerly was the case.

KRMQ, Fayetteville, Ark., is now operating on 298.8 meters.

First American Diamond Is Given Girl Fan by KTHS

HOT SPRINGS, Ark. — Miss Louise Brown of Moberly, Ark., is the proud possessor of the first American mined diamond ever given away by a broadcasting station. She was recently awarded the diamond by Station KTHS, the New Arlington hotel, here.

The stone, which was sent to KTHS Director G. C. Aronow by the business man of Nashville, Ark., was mined in America's only diamond mine, located eighteen miles from Nashville. It is an exact stone, weighing one and sixty-eight one-hundredths carats.

LEE SIMS SUCCEEDS HERB MINTZ AT KYW



Lee Sims

CHICAGO.—With Herbie Mintz' departure from KYW to go with the new local station, WHT, where he has accepted the role of musical director, W. J. Werber, director of KYW, has superintended a search for "scop" in Jimmy up Lee Sims as a member of the Chicago Evening American-KYW staff.

STANDARD FREQUENCY TRANSMISSION HOURS

Bureau of Standards Announce March and April Schedule

WASHINGTON.—The next transmissions of standard frequency signals by the bureau of standards will be held on March 5 and 20, and April 6 and 20, WWV at Washington, D. C., and 6XBM at Stanford university, California, as usual, will accompany the signals.

The schedule of transmissions appears below. The figures not in parentheses below the dates indicate kilocycles frequency, while the figures in parentheses immediately below these refer to approximate equivalent wave lengths.

Time	March 5	March 20	April 6	April 20
7:00 a. m.	(1500) (200)	(1500) (200)	(1500) (200)	(1500) (200)
10:12 to 10:28 p. m.	(852) (352)	(852) (352)	(852) (352)	(852) (352)
10:24 to 10:25 p. m.	(852) (352)	(852) (352)	(852) (352)	(852) (352)
10:26 to 10:44 p. m.	(852) (352)	(852) (352)	(852) (352)	(852) (352)
10:45 to 10:56 p. m.	(852) (352)	(852) (352)	(852) (352)	(852) (352)
11:00 to 11:03 p. m.	(852) (352)	(852) (352)	(852) (352)	(852) (352)
11:12 to 11:25 p. m.	(852) (352)	(852) (352)	(852) (352)	(852) (352)
11:24 to 11:25 p. m.	(852) (352)	(852) (352)	(852) (352)	(852) (352)

*Eastern standard time for WWV, Washington, D. C. Pacific standard time for 6XBM, Stanford university, California.

†The schedules marked with this sign are tentative only. Standard frequencies; later announcement will be made if there is any change.

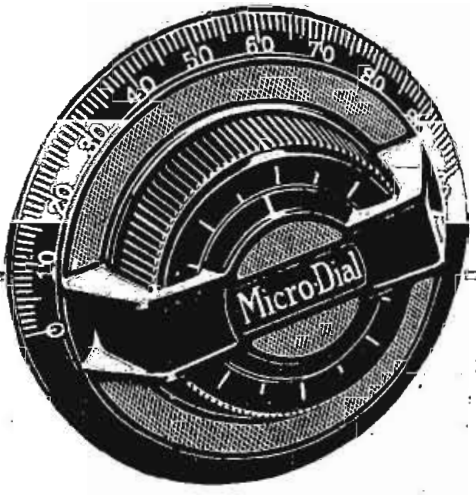
WDAF AT KANSAS CITY

(Continued from page 5) by calling the station on the phone. The calls are put directly through the amplifier without the aid of a microphone other than the telephone transmitter. By this system also the station may transmit entertainment. Recently a full program was broadcast over telephone from various homes in Kansas City.

Since Harry Snodgrass has discontinued broadcasting from WGS, it is doubtful if there is a pianist in the country who is as popular or as versatile as Lee, the "mystery man" of WDAF. His full name is Lee Mansfield and he is almost totally blind. He plays only by ear, being unable to see the notes on a sheet of music, and having once heard a piece he is able to reproduce it without mistakes. He plays on the Nighthawk programs every night, supplying numbers requested.

Seven Stations Maintain a Constant Frequency Output

WASHINGTON.—Seven broadcasting stations whose transmitting waves were measured during December by the Bureau of Standards were found to maintain a sufficiently constant frequency to be useful as frequency standards. These stations were: WCAP, Washington; WRC Washington; KDKA, Pittsburgh; WBEZ, Springfield, Mass.; WGY, Schenectady, N. Y.; WSB, Atlanta and WWJ, Detroit.



SHARP!

Fifty times as sharp as an ordinary dial. Revolutionizes reception in any set. Indispensable in sets of naturally high selectivity. Install with a screwdriver—no butchering of shaft or instrument.

Two dials in one, both operating through complete circle—Fits any standard shaft—Logs to one-eighth of a degree—Built like a fine watch—Equip with Jewett Micro-Dials and get everything your set can drag in!

At your dealer's or direct from us, if he is not yet supplied. Price \$3.50 each.

JEWETT RADIO & PHONOGRAPH CO. 5070 Tweelfth Street Detroit, Michigan

"Compare It You'll Buy!"

MICRO-DIAL



WTAT GOES TO SEA AND EARNS A NAME

BECOMES "ONLY SEAGOING BROADCAST STATION"

Portable 100-Watt Set of Edison Light, Boston, Gains Fame from Eclipse Tests

BOSTON.—WTAT of Boston is now known as "The Only Seagoing Broadcast Station in the World," as a result of the most sensational tests of transmission ever attempted.

Broadcasting on the high seas from one of Uncle Sam's coast guard cutters was the unusual mission assigned to the Edison Light broadcast station during one of the scientific tests conducted during the solar eclipse. WTAT, portable 100-watt broadcasting station, was taken 100 miles off the Atlantic coast on the United States coast guard cutter Tampa, and broadcast a 16-hour continuous program for official scientific checkers, experimenters and broadcast fans.

WTAT Doesn't Mind the Sea

The Tampa left her dock at Charlestown navy yard at four o'clock Thursday afternoon prior to the eclipse. As the Tampa cast off for her trip to sea, WTAT started broadcasting and remained on the air for thirty minutes. Broadcasting continued throughout the day at hourly periods beginning on the hour for thirty minutes until 12 o'clock midnight on the night before the eclipse. From that time until 5 p. m. on the afternoon after the eclipse WTAT broadcast almost continuously.

The Tampa arrived back at her dock in the Charlestown navy yard Sunday morning after the eclipse. More than 1,000 letters and reports have been received

YOUNG SOLOIST FROM SIOUX TRIBE



Sioux Indians permitted the youngest soloist of their tribe to broadcast recently from Station WCCO. She is Irene Burge, three-year-old daughter of Mr. and Mrs. Burge. Despite her American name, she is a direct descendant of the red men who roamed the western plains.

from the New England states, New York, New Jersey, Pennsylvania, Ohio, Kentucky and Canada. Florida, Illinois and Nova Scotia were the greatest distances heard from.

So now WTAT is "The Only Seagoing Broadcast Station in the World."

Canada Buys \$7,000,000 Worth

WASHINGTON, D. C.—Radio apparatus sold in Canada last year was valued at \$7,000,000. It is believed that Radio will stand out preeminently in the sales of electrical goods in Canada in 1925.

AIM TO LEARN MORE ABOUT ANNOUNCING

COMMITTEE TO STUDY THE PECULIARITIES OF ART

Scientific Foundation Sought by Body Formed at Instigation of Station WJZ

NEW YORK.—A definite step towards the perfection of the newly-born art of Radio announcing was made recently in the meeting of the newly organized Radio voice technique committee. The committee was formed at the request of WJZ, the Radio Corporation of America station here, "for the purpose of determining what characteristics constitute the perfect Radio announcer."

By means of a Radio recording device recently perfected by Alvin Busse and Robert C. Borden, instructors in public speaking at New York university, the committee listened to a series of records setting forth the various factors of Radio announcements. Rate of delivery, accent variation, average pitch, pitch variation, formality, distinctness, mechanically recurrent rising inflection, mechanically recurrent falling inflection, arbitrary stress placement, provincialisms, and tone qualities were illustrated by the records and judged by the committee members.

The committee does not aim for any standardization of announcers.

"This Free Book Showed Me the Way to Big Money in Radio"

It has Started Thousands on the Road to Independence and Success—has Lifted Them Out of the Rut of Office Routine and Helped Them Become Experts in This New, Fascinating, Profitable Profession. Let It Do the Same for You.

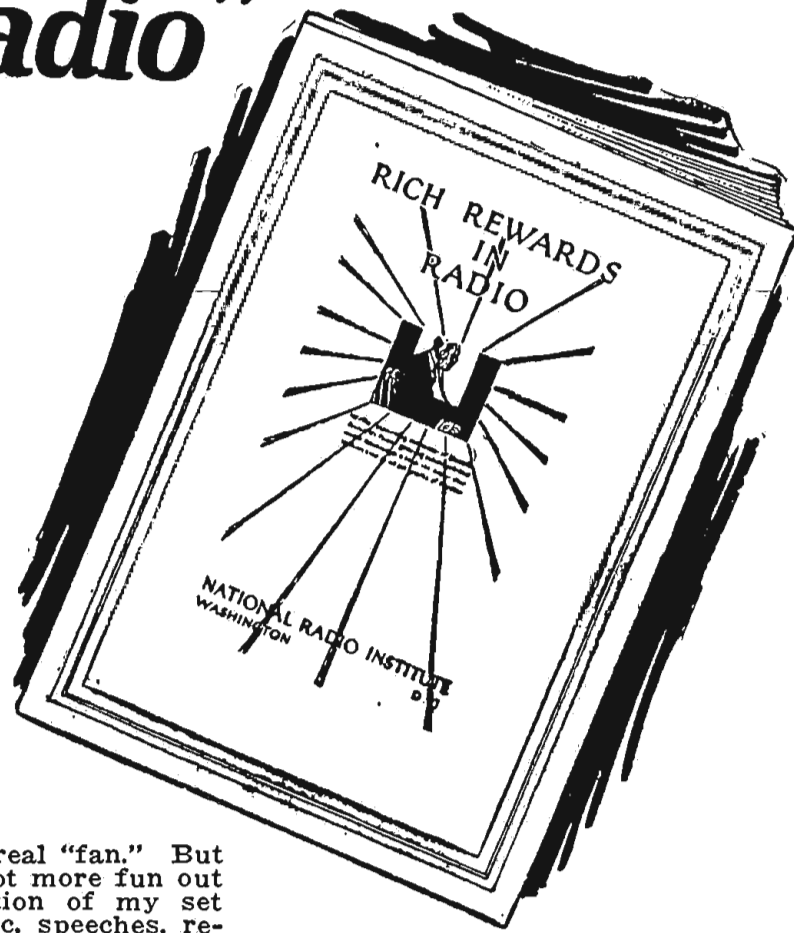
SIX months ago I was what you might call "a handy man about the office." I had what I considered a good job with a large manufacturing concern. Having taken a two years' business course, knew enough of stenography and elementary bookkeeping to be of real value in general office work.

I took special dictation from the President, assigned general correspondence to the regular typists, was responsible for the purchase of office supplies, approved petty cash vouchers for the errand boys and clerks, and was entrusted with the responsibility of making deposits at the bank and bringing in the pay-roll.

In addition to these, I was often privileged to arrange accommodations for the President when he went off on a trip. And when he wanted some personal matter attended to, such as purchasing theater tickets or having his evening clothes brought down to the office, I was always selected for such tasks. I was, in fact, an assistant to the President. And accordingly I was paid \$40 a week.

I won't say that I was satisfied with this salary—although it was more than the other clerks were getting—but the fact that the President had confidence in me gave me a certain standing among the others which kept me fairly contented.

Then one day, having a little extra money on hand, I bought a small Radio receiving set. Several of my chums had Radio outfits and I had always wanted one in order to enjoy the broadcast programs in the evenings at home. There was ordinarily



a chance, I thought. At least it wouldn't cost anything to get the book for it was free.

I sent for the book—"Rich Rewards in Radio." That was six months ago. What the free book meant to me is best explained by the fact that, as a Certified Radio-trician, my income this year will be at least \$5,000. And that's only the beginning. For I can already see the enormous possibilities for trained men in this fascinating, profitable profession. And I'm going to get my share of the big money being made by those who are "growing up" with this fast growing industry.

Thanks to the splendid training which I got from the National Radio Institute, in my spare hours at home, and with a Government First Class License in my pocket, the rest is up to me. But the opportunities for money, independence and success are unlimited in Radio and I'm going to go the limit.

I won't attempt to tell you all the details of the wonderful opportunity that awaits you in Radio. The Free Book of the National Radio Institute—the same one that I sent for—will tell you all you want to know. It showed me the way to big money in Radio—it lifted me out of the rut of office routine and made me an expert in this fascinating profession. Why can't it do the same for you? It can—the 32 page, fully illustrated free book will tell you how. The coupon will bring it to you—without obligation. Why not send for it—TODAY?

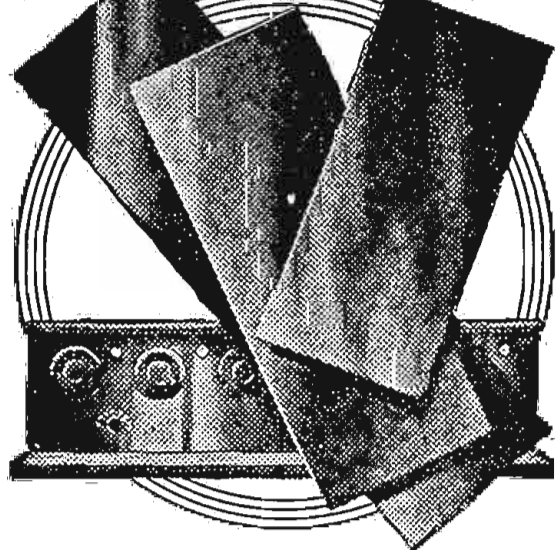
National Radio Institute Dept. 55YB WASHINGTON, D. C.

Form with fields for Name, Age, Street, Occupation, City, State, and a box for the coupon to request the free book.

The Panels That Produce Results

A superior panel will increase the efficiency of your reception through reducing surface leakage. You can be certain of this if your set is built with—

ELECTRASOTE PANELS



These beautifully finished panels will neither warp nor change color. They are scientifically constructed to reduce surface leakage to a minimum, hence assure increased efficiency of the set.

One of the famous "sote" products introduced by The Pantasote Company, Inc., Electrasote Radio Panels are sold strictly on their merits—yet are

Lower Priced than other standard panels

Make your Set an "Electrasote Panel Set"—and get results!

On Sale at good Radio Dealers

M. M. FLERON & SON, Inc.

Sole Sales Agents

Trenton - New Jersey

Advertisement for 'Pay Increases Over \$100 a Month' featuring a testimonial from A. N. Long, Greensburg, Pa.

Advertisement for 'Doubles Salary' featuring a testimonial from T. Winder, Grand Junction, Colo.

Advertisement for 'From \$15.00 to \$80.00 a Week' featuring a testimonial from Geo. A. Adams, Tamaqua, Pa.

One day the traffic manager at the office mentioned that he was going to buy a Radio and flattered me by asking my advice. I offered to help him select a set and install it. He told me to go ahead, rig one up for him and let him know what I wanted for my trouble. It wasn't trouble—it was real fun—and I made \$30 for a single night's amusement.

That set me thinking. Why not get into Radio in earnest? Two fellows I knew had given up office work and were making big money as Certified Radio-tricians. One was a salesman for a large radio manufacturer, with a fine office of his own in his home town; the other was a ship operator, traveling around the world, seeing things I had always wanted to see—and getting big money for doing it.

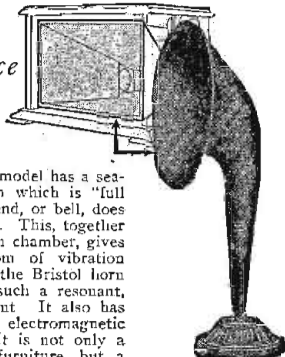
I decided to study Radio and train for a real job. But I wasn't in a position to give up my work at the office, for I had saved little or nothing, and had to contribute something at home every week.

Then one day I noticed an advertisement in Radio Digest. The heading first attracted me, for it read—"Men Wanted in Radio—You Can Train at Home for One of These Big-Paying Positions—This Free Book Will Tell You How." Here was

AN EVENING AT HOME WITH THE LISTENER IN HIS EASTERN TIME (SEE INSTRUCTIONS FOR USE)

Table with columns for Station and City, and rows for days of the week (Saturday, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday) listing broadcast times.

It Has the Full Sweet Resonance of Our Upright Horn



Model S, \$25.00

THE new cabinet model has a seasoned wood horn which is "full floating"—the other end, or bell, does not touch the cabinet. This, together with a long expansion chamber, gives it that same freedom of vibration which goes to make the Bristol horn type Loud Speaker such a resonant, sweet-toned instrument. It also has the same high-grade electromagnetic sound mechanism. It is not only a handsome piece of furniture, but a speaker worthy of the best radio set that money can buy.



Cabinet Model, \$30.00

There are five Bristol Loud Speakers, priced from \$12.50 to \$35.00. If not at your dealer's, write for Bulletin No. AY-3020.

THE BRISTOL COMPANY Waterbury, Conn.

BRISTOL AUDIOPHONE Loud Speaker

For 36 Years Makers of BRISTOL'S RECORDING INSTRUMENTS. Ask Any Technical Engineer

Why it is Better

Diagram of a Federal transformer with callouts: Oversee locking nuts, slotted for easy turning...; Heavy nickel-plated brass mounting screws...; Back enameled shield...; Only highest grade pressure-insulated Canada drying VAC...; Large laminated silicon steel split type core...; In general the larger the core the better the transformer...; Federal Telephone Manufacturing Corp., Buffalo, N. Y.

Instructions for Use—All the hours above are given in Eastern Standard Time. If your city uses Central Time, subtract one hour from each of the periods stated; if your city uses Central Time, subtract two hours; if your city uses Mountain Time, subtract three hours. This table indicates only the evening and, on Sunday, the late afternoon programs.

STATIONS IN ORDER OF WAVE LENGTHS USED

Table listing radio stations and their call letters, organized by wave length.

"MASTER of Every Note in the Orchestral Range" is the proven claim of the Federal No. 65 Audio Frequency Transformer! Volume without distortion is the basis for the beauty of Federal Tone.

Insist upon Federal parts for your "pet" hook-up. There are over 130 standard parts bearing the Federal iron-clad performance guarantee.

Federal Telephone Manufacturing Corp., Buffalo, N. Y.

Federal logo with 'Standard RADIO PRODUCTS' and city locations: Boston, New York, Philadelphia, Pittsburgh, Chicago, New Orleans, San Francisco, Bridgeburg, Canada.

PRESIDENTIAL INAUGURATION BROADCAST WEDNESDAY FOR FIRST TIME

Index to Talks, Lectures and Addresses

TABULATED below is a time table of the stations giving talks, lectures and addresses this week. These range from the instructive and serious to the humorous and frivolous. The stations listed are divided into the four different kinds of time in use. The hours are given in the kind of time in use at each listed station. By using this table as an index and referring to the complete programs below, full information will be obtained.

Eastern Time Stations

Saturday, February 28: 7:15, WGBZ; 8:45, WJZ; 9:00, WBBR; 9:30, WOR; 10:10, WNYC.

Sunday, March 1: 8, WCAU; 8:30, WBBR; 9:15, WHN; 10:15, WHN; 11:30, WHN; 12:15, WHN; 1:00, WHN; 2:00, WHN; 3:00, WHN; 4:00, WHN; 5:00, WHN; 6:00, WHN; 7:00, WHN; 8:00, WHN; 9:00, WHN; 10:00, WHN; 11:00, WHN; 12:00, WHN.

Central Time Stations

Thursday, February 26: 6:45, WTAQ; 7:00, WMAQ; 7:15, WCAQ; 8:00, WMAQ; 9:00, WMAQ; 10:00, WMAQ; 11:00, WMAQ; 12:00, WMAQ.

Mountain Time Stations

Monday, March 2: 7:30, KOB; 8:00, KOB; 8:30, KOB; 9:00, KOB; 9:30, KOB; 10:00, KOB; 10:30, KOB; 11:00, KOB; 11:30, KOB; 12:00, KOB.

Pacific Time Stations

Saturday, February 28: 6:30, KHJ; 6:45, KHJ; 7:30, KHJ; 8:30, KHJ; 9:30, KHJ; 10:30, KHJ; 11:30, KHJ; 12:30, KHJ.



Jules Klein is the leader of the Hotel Statler orchestra, which entertains at lunch time listeners in of WJZ, Detroit.

Mrs. David Elliott Martin is the chairman of the committee for the California State Department of Education, which has created a new way to teach geography by Radio. Lessons are broadcast every Monday morning by KGO, Oakland. Michael Lamberti (right) is the well-known concert cellist who will play Saturday night at WAHG.

The four happy looking gentlemen at the top of the page are prominent members of the Lake Merritt Ducks, which will meet this Friday evening at KRLD, Oakland. Eleanor Freemantel (at the piano) is the catch-catch accompanist at WCOO.

Index to Popular and Classical Concerts

TABULATED below is a time table of the stations giving popular and classical concerts this week. The concerts are divided into two classes, popular and classical. Stations are likewise divided into the four different kinds of time in use. The hours are given in the kind of time in use at each listed station. By using this table as an index and referring to the complete programs below, full information will be obtained.

Popular

Eastern Time Stations

Saturday, February 28: 7:00, WNYC; 7:30, WJZ; 8:00, WBBR; 9:30, WOR; 10:10, WNYC.

Sunday, March 1: 7:25, WREB; 7:30, WAFB; 8:15, WCAE; 9:00, WMAQ; 10:00, WJZ; 11:00, WBYW.

Monday, March 2: 9:45, WAFB; 10:00, WJZ; 11:00, WBYW; 12:00, WJZ; 1:00, WBYW; 2:00, WBYW; 3:00, WBYW; 4:00, WBYW; 5:00, WBYW; 6:00, WBYW; 7:00, WBYW; 8:00, WBYW; 9:00, WBYW; 10:00, WBYW; 11:00, WBYW; 12:00, WBYW.

Central Time Stations

Saturday, February 28: 7:00, WMAQ; 7:15, WCAQ; 8:00, WMAQ; 9:00, WMAQ; 10:00, WMAQ; 11:00, WMAQ; 12:00, WMAQ.

Mountain Time Stations

Monday, March 2: 7:30, KOB; 8:00, KOB; 8:30, KOB; 9:00, KOB; 9:30, KOB; 10:00, KOB; 10:30, KOB; 11:00, KOB; 11:30, KOB; 12:00, KOB.

Pacific Time Stations

Saturday, February 28: 6:30, KHJ; 6:45, KHJ; 7:30, KHJ; 8:30, KHJ; 9:30, KHJ; 10:30, KHJ; 11:30, KHJ; 12:30, KHJ.

Classical

Eastern Time Stations

Saturday, February 28: 7:00, WNYC; 7:30, WJZ; 8:00, WBBR; 9:30, WOR; 10:10, WNYC.

Sunday, March 1: 7:25, WREB; 7:30, WAFB; 8:15, WCAE; 9:00, WMAQ; 10:00, WJZ; 11:00, WBYW.

Monday, March 2: 9:45, WAFB; 10:00, WJZ; 11:00, WBYW; 12:00, WJZ; 1:00, WBYW; 2:00, WBYW; 3:00, WBYW; 4:00, WBYW; 5:00, WBYW; 6:00, WBYW; 7:00, WBYW; 8:00, WBYW; 9:00, WBYW; 10:00, WBYW; 11:00, WBYW; 12:00, WBYW.

Wednesday, March 4

- (Continued from page 11)
- WCOO, Chicago, Ill. (260), 7-8 p. m., classical program.** Bears-Hoebak, M. C., Fred Unger, Luciano Alberti, Holtzman, Kellie, M. G. Taylor, Bonney, soprano; Ed. Bonney, alto; soprano; Engstrom-National Army band; 8-9, Amber Furniture company; 9-10, W. J. Day, baritone; 10-11, W. J. Day, baritone; 11-12, W. J. Day, baritone; 12-13, W. J. Day, baritone.
- WCOO, Minneapolis-St. Paul, Minn. (418.4), 4 p. m.,** "The Dances of the West" by G. W. Johnson, soprano; 5-6, W. J. Day, baritone; 6-7, W. J. Day, baritone; 7-8, W. J. Day, baritone; 8-9, W. J. Day, baritone; 9-10, W. J. Day, baritone; 10-11, W. J. Day, baritone; 11-12, W. J. Day, baritone; 12-13, W. J. Day, baritone.
- WDAF, Kansas City, Mo. (365.8), 8-9 p. m., address,** "The Dances of the West" by G. W. Johnson, soprano; 9-10, W. J. Day, baritone; 10-11, W. J. Day, baritone; 11-12, W. J. Day, baritone; 12-13, W. J. Day, baritone.

- KFOA, Seattle, Wash. (455), 4-5:15 p. m., Olympic** hotel orchestra; 5:45-6:15, Hopper-Kelly company studio program; 6:30-7:00, Seattle Times studio program; 7:00-7:30, W. J. Day, baritone; 7:30-8:00, W. J. Day, baritone; 8:00-8:30, W. J. Day, baritone; 8:30-9:00, W. J. Day, baritone; 9:00-9:30, W. J. Day, baritone; 9:30-10:00, W. J. Day, baritone; 10:00-10:30, W. J. Day, baritone; 10:30-11:00, W. J. Day, baritone; 11:00-11:30, W. J. Day, baritone; 11:30-12:00, W. J. Day, baritone; 12:00-12:30, W. J. Day, baritone.
- WGBS, New York, N. Y. (1545.1), 8 p. m., recital.** James MacMillan, soprano; 8:15-9:00, W. J. Day, baritone; 9:00-9:30, W. J. Day, baritone; 9:30-10:00, W. J. Day, baritone; 10:00-10:30, W. J. Day, baritone; 10:30-11:00, W. J. Day, baritone; 11:00-11:30, W. J. Day, baritone; 11:30-12:00, W. J. Day, baritone; 12:00-12:30, W. J. Day, baritone.

Thursday, March 5

- WIP, Philadelphia, Pa. (508.8), 4 p. m.,** Income Tax Authority. Concert by the W. J. Day orchestra.
- WDAF, Kansas City, Mo. (365.8), 8-9 p. m.,** piano recital. Concert by the W. J. Day orchestra.
- WGBS, New York, N. Y. (1545.1), 8 p. m.,** recital. Concert by the W. J. Day orchestra.

DANCING

- Salute, February 28:** 8:00, WJZ, WBBR; 9:00, WMAQ; 10:00, WJZ; 11:00, WBYW; 12:00, WJZ; 1:00, WBYW; 2:00, WBYW; 3:00, WBYW; 4:00, WBYW; 5:00, WBYW; 6:00, WBYW; 7:00, WBYW; 8:00, WBYW; 9:00, WBYW; 10:00, WBYW; 11:00, WBYW; 12:00, WBYW.
- WDAF, Kansas City, Mo. (365.8), 8-9 p. m.,** piano recital. Concert by the W. J. Day orchestra.
- WGBS, New York, N. Y. (1545.1), 8 p. m.,** recital. Concert by the W. J. Day orchestra.

- WIP, Philadelphia, Pa. (508.8), 4 p. m.,** Income Tax Authority. Concert by the W. J. Day orchestra.
- WDAF, Kansas City, Mo. (365.8), 8-9 p. m.,** piano recital. Concert by the W. J. Day orchestra.
- WGBS, New York, N. Y. (1545.1), 8 p. m.,** recital. Concert by the W. J. Day orchestra.

Friday, March 6

- WIP, Philadelphia, Pa. (508.8), 4 p. m.,** Income Tax Authority. Concert by the W. J. Day orchestra.
- WDAF, Kansas City, Mo. (365.8), 8-9 p. m.,** piano recital. Concert by the W. J. Day orchestra.
- WGBS, New York, N. Y. (1545.1), 8 p. m.,** recital. Concert by the W. J. Day orchestra.

- WIP, Philadelphia, Pa. (508.8), 4 p. m.,** Income Tax Authority. Concert by the W. J. Day orchestra.
- WDAF, Kansas City, Mo. (365.8), 8-9 p. m.,** piano recital. Concert by the W. J. Day orchestra.
- WGBS, New York, N. Y. (1545.1), 8 p. m.,** recital. Concert by the W. J. Day orchestra.

CAST WEDNESDAY FOR FIRST TIME

COA.
 OA; 8:10,
 ns
 8, KNX;
 J.
 ; 9, KNX.
 IJ, KNX;
 KHJ; 11,
 FI, KNX,
 J, KFI; 8,
 KNX; 10,
 KFI; 8,
 KNX; 10,
 KLX; 8,
 10, KFI,

, KTHS,
 WMAQ,
 A, WGN,
 D; 7:30,
 3, WCBD,
 MC; 8:30,
 D, WGN,
 AY; 6:25,
 7, KYW,
 QJ; 7:30,
 WGN,
 WOI;
 9, KSD,
 AQ; 9:30,
 A,
 5, WGN,
 F, WGN,
 WEBH,
 C, KYW,
 WEMC;
 S, WHA,
 WSB; 12,

, WGN,
 AY; 6:30,
 WOA; 7:
 QJ; 7:30,
 WEBW,
 S, WFAA,
 LW; 9:15,
 P; 10:03,
 V; 10:45,

, WLW,
 KFNF,
 OAW; 7,
 WHAS;
 N, WHO,
 MC; 9:15,
 WSB.

ons
 COA.
 AC.
 :

is
 6, KHJ;
 GO; 8:30,
 KHJ.
 JS; 6:30,
 IX; 7:15,
 O, KFSG;

LX; 6:30,
 KPO.

KHJ; 6:30,
 AGW; 9, KFI; 10,

Wednesday, March 4: 6, KHJ, KLX;
 6:15, KNX; 7, KNX; 7:30, KHJ; 8,
 KGW, KLX.

Thursday, March 5: 6, KHJ; 6:30,
 KNX; 8, KGW; 8:30, KJS; 9:15,
 KFSG; 10, KFSG, KPO; 11, KPO.

Friday, March 6: 6, KHJ, KLX;
 6:30, KNX; 7, KFI; 8, KFI; 9:15,
 KFSG; 10, KFSG.

WOAW, Omaha, Nebr. (526), 6 p. m., every child's
 story hour, Grace Sorenson; 6:20, to be announced;
 6:45, Randall's Royal Fontenelle orchestra; 9, pro-
 gram, May Seed and Nursery company; 10:30, Frank
 W. Hodek, Jr., and his Nightingale orchestra.
 W.C. Davenport, Ia. (483.6), 7 p. m., musical program,
 WEAF; 11, Lonis Connor and his LeClaire hotel
 orchestra; Peter MacArthur, baritone.
 WORD, Batavia, Ill. (275), 8 p. m., Aurora College
 stringed trio; 8:10, Grace Everett, reader; 8:20, Mrs.
 Ralph Esny, soprano; 8:30, Sunday school lesson, B. J.
 Hollister; 8:55 Evelyn Nelson, pianist; 9, Aurora col-
 lege stringed trio.

University of Pittsburgh studio; 8:30, concert.
 WAHG, Richmond Hill, N. Y. (315.6), 12:1 p. m., pro-
 gram, Brooklyn Federation of churches; 8-8:30, violin
 ensemble; 8:30-8:45, Helen Kreutzlin, soprano; 8:45-9,
 Harris and Evans; 9-9:15, Fred Ehrenberg, musical
 ass; 9:15-10, Michael Lambert, cellist; 10-10:15,
 Radio Question Box, Wm. F. Diehl; 10:15-10:30,
 Helen Kreutzlin; 10:30-10:45, Fred Ehrenberg; 10:45-
 11:45, dance music.
 WBAV, Columbus, Ohio. (293.9), 8 p. m., Dispatch
 concert, Alma Borneman's Chittenden hotel orchestra.
 (Continued on page 14)

WMAQ, 6,
 KSD, WGN, WSAI, WSB; 8:30,
 WCCO, WMC, WLW; 9, WMAQ,
 WOO, WOC; 9:35, KYW; 11:30, KYW;
 12, WCAL.
 Sunday, March 1: 6:30, WLS; 7,
 KYW, WBCN, WLS; 7:30, WBAP;
 7:50, WORD; 8, WCBD; 8:30, KTHS,
 WLW, WOAI; 9, WGN, WOA,

TABLE FOR MAKING TIME TRANSITIONS

Table with 10 columns (1-10) and 4 rows (Eastern Standard Time, Central Standard Time, Mountain Standard Time, Pacific Standard Time) for time transitions.

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

Friday, March 6

(Continued from page 13)

- WOCF, Pittsburgh, Pa. (451.3), 6:30 p. m., dance concert. William Penn. 6:30. Little Kayses. 8:30. ... WFL, Madison, Wis. (535.4), 7:30 p. m., dance concert. ... WFL, Madison, Wis. (535.4), 7:30 p. m., dance concert. ... WFL, Madison, Wis. (535.4), 7:30 p. m., dance concert. ...

JACK BARKER GIVES KYW CLEVER TUNES



Jack Barker

Jack Barker, who plays the leading role in "No. 10 Nanette," at the Harris theater, Chicago, has become a steady broadcaster at Westinghouse Station KYW. Beside being a headliner of the legitimate stage he has now become a headliner of the ether. Mr. Barker, whose home is in Kansas, is a member of Sigma Chi fraternity at Northwestern university, and although not a native of Chicago, he has many thousand friends claim him as a "bit of the windy city."

Morning Broadcast Nearly Starts Riot

Honolulu Gets Oakland So Loud It Walks Neighbors

OAKLAND, Calif.—Such is the power of Radio that while entertaining Japanese listeners, Radiophones in Australia, New Zealand and Tasmania, a recent early morning broadcast from KGO nearly started a neighborhood row in Honolulu, 3,000 miles from the station. The report of O. L. Rodgers, warrant officer in the United States army, stationed in Honolulu, shows that only the prompt arrival of the native police saved the situation of peace bordering on riot. "Your special program was received so loudly," wrote Rodgers, "that it disturbed the slumbers of my neighbors. Somebody telephoned the police. Ten things began to happen. I thought for a while that we would spend the rest of the night in the police station."

KFNH Makes Additions to Studio Broadcast Service

SHENANDO, Iowa.—Owing to the increase in listeners attracted to Station KFNH, the local Western Union manager has installed an operator at the station throughout the day instead of the traffic. During the evening broadcast, an extra operator is always on duty. To help improve the wedding business, Little Station KFNH is offering the services of the Radio chaplain to anyone who wants to get married at the Henry Field Seed company studio. This is a chance for anyone who wants to get married very cheap. Go to Shenando.

Claims Toy Electric Train Creates Radio Disturbance

GRAND JUNCTION, Colo.—Is the toy electric train making life miserable for the Radiophones in this city? Lawrence Botsford, president of the Mesa County Radio association, claims much of the noise which is bothering La Fave in this city is caused by the toy electric train. After numerous tests had been conducted it was established that electric trains of the toy variety cause an electrical disturbance which can be heard several hundred feet through a sensitive Radio receiver.

Fine Southern Amateur for Maliciously Interfering

WASHINGTON, D. C.—Word has just been received here by the Radio section of the department of commerce of the imposition of a fine by the court at Knoxville, Tenn., for the use of an unlicensed transmitter by an amateur in that city.

Mountain Time Stations

KOA, Denver, Colo. (622.8), 8 p. m., Red Smith and the Blue Bird Quartet. ... KOB, Boulder, Colo. (548.0), 7:30-8:30 p. m., ...

Pacific Time Stations

KFI, Los Angeles, Calif. (627.5), 7:30-8 p. m., ... KFI, Los Angeles, Calif. (627.5), 7:30-8 p. m., ... KFI, Los Angeles, Calif. (627.5), 7:30-8 p. m., ...

Central Time Stations

KFCM, Beaumont, Tex. (515.0), 8 p. m., Victory band concert. ... WFL, Madison, Wis. (535.4), 7:30 p. m., dance concert. ...

DEVICE "SMELLS" LEAKY GAS PIPES

Principles of Radio Applied in Electric Devising Rod. Now in Use

NEW YORK.—Tearing up roadways and sidewalks in an attempt to locate leaking gas mains, and stealers of gas, will soon be almost a thing of the past as the result of a new electrical invention in use in California. The principles of the Radio to this work. Mains and pipes are found by what may be called a "radio detector." ...

Advertisement for Ryam's Simplest Possible Super-Het Manual, featuring a large illustration of the manual and text describing its features and availability.

Radio Digest Publications 510 N. Dearborn St., Chicago

Inductance and Capacity Combinations

Their Values for Broadcast Wave Lengths

By David B. Arnold

THERE is considerable doubt in the mind of the average Radiophan on the subject of proper condenser values to be used in conjunction with air core transformers. It must be borne in mind that the wave length range of tuned Radio frequency transformers is determined by the inductance value of the secondary winding, and the capacity range of the variable condenser used with it. It is also well to remember that highly efficient inductances and capacities, that is, those of the low loss type, always cover a greater wave length range than the units in ordinary use.

The Formulas Used

The wave length of any oscillating circuit, made up of a coil and condenser, is determined by means of the following formula:

$$\lambda = 59.6 \sqrt{LC}$$

in which λ = wave length in meters, L = inductance in milhenries, C = capacity in micro-microfarads. If we know the capacity and wave length, but not the inductance, the formula becomes:

$$L = \frac{\lambda^2}{3552C}$$

With known inductance and wave length the formula is:

$$C = \frac{\lambda^2}{3552L}$$

The inductance is, of course, a mixed value determined by the diameter of the coil form used, the gauge and insulation of the wire, and the number of turns. This does not change. The condenser, on the other hand, has a varying capacity and it is this factor which must be considered in the application of the above formula. The minimum capacity of the condenser determines the lowest, and the maximum capacity the highest, wave length covered by the combination.

CHART No 1						
WAVE LENGTH RANGE 190 TO 600 METERS						
C = 250 mmfd. = .00025 mfd. L = .40 mh.						
DIA. OF TUBING	3 INCHES		3 1/2 INCHES		4 INCHES	
GAUGE OF WIRE & S D C.C.	LENGTH OF WINDING IN INCHES	NUMBER OF TURNS	LENGTH OF WINDING IN INCHES	NUMBER OF TURNS	LENGTH OF WINDING IN INCHES	NUMBER OF TURNS
20	4.4	100	3.6	83	3.0	69
22	3.4	99	2.8	81	2.3	64
24	2.4	82	2.1	71	1.8	59
26	1.8	75	1.6	66	1.5	58
28	1.6	73	1.4	64	1.2	54
30	1.3	70	1.1	59	.9	50

Condenser Design

While condenser design is constantly improving, the average maximum to minimum capacity ratio of 10 to 1 can be safely assumed. Since the square root of the capacity is a factor of wave length then the wave length ratio is determined by the formula,

$$\frac{1}{\sqrt{10}} = 3.16$$

which is the minimum to maximum wave length ratio. If then the combination of inductance and maximum capacity is designed for the wave length of 600 meters, the low wave length value reached will be approximately 190 meters.

Ordinarily, the experimenter's mind is made up as to the condensers he wishes to use, but he is undecided as to the size of the proper coils to cover a given wave

length band. Or, as occasionally happens, he has some coils, but does not know what value condenser to use in conjunction with them. No attention will be paid to the primary windings in this article, as in most cases this can be determined by using one-eighth as many turns as are used in the secondary.

Factors in the Value "L"

As previously stated, the inductance value of any coil is determined by the diameter of the coil form; the number of turns of wire and the length of the winding, the length depending on the gauge of the wire and the kind of insulation. The following formula is used for determining the inductance of single layer

coils wound on cardboard, fiber, bakelite or hard rubber tubing:

$$L = \frac{.0002 A^2 N^2}{3A + 9B + 10C} = \text{induct. in milhen.}$$

in which N = number of turns, A = diameter of coil, B = length of winding, C = depth of winding. In determining the inductance of a single layer coil the element C can be neglected, as the depth of the winding being so small it is negligible, but in determining the values of multi-layer coils it becomes a very important factor.

The maximum values for the average variable condensers are as follows: 11-plate = .00025 mfd. or 250 mmfd., 13-plate = .00025 mfd. or 250 mmfd., 17-plate = .00035 mfd. or 350 mmfd., 21-plate = .0005 mfd. or 500 mmfd., 23-plate = .0005 or 500 mmfd.

Use Table 1 for .00025 Mfd.

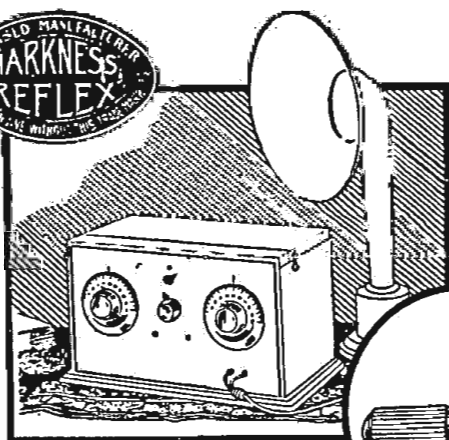
Using a condenser of .00025 mfd. capacity, and applying the two formulas given, it will be found that an inductance value of .40 milhenries is required. The table worked out for this capacity allows the choice of six different sizes of wire and three sizes of tubing, thus giving the experimenter considerable latitude. The three tables have been based on the use of double cotton covered wire, as this is the most easily obtainable. All three charts cover the same approximate wave length range of 190 to 600 meters, this being the present broadcast band.

As the diameter of the tubing increases, the required number of turns decreases, likewise, as smaller gauge wire is used the number of turns required is less, the smaller gauges of wire permitting a more concentrated inductive field.

In table number 2 the use of a condenser of .00035 mfd. maximum capacity is assumed, which capacity requires an

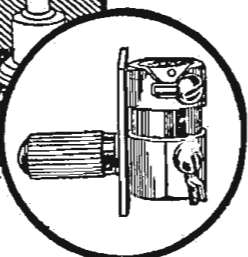
(Continued on page 18)

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FOR SELECTIVE TUNING

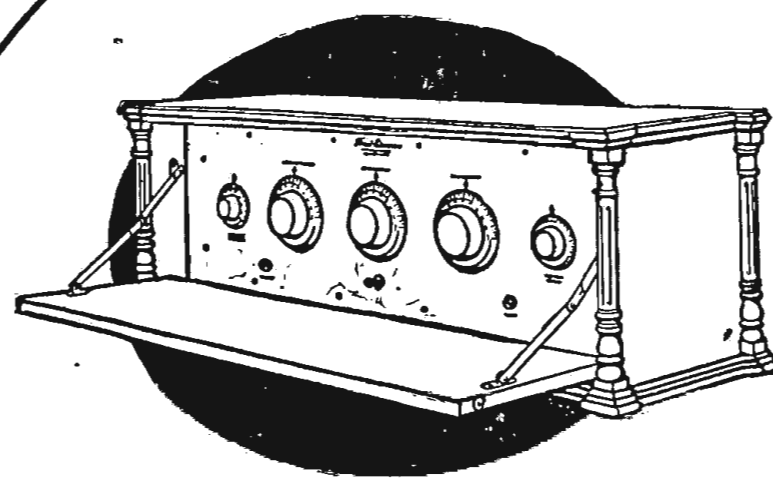
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Please send me a copy of "Shamrock Radio Builder's Guide Book" containing diagrams and complete instructions for building 10 sets at prices ranging from \$15 to \$50. I enclose 10 cents (U. S. stamps or coin.)

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AFTER ALL

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RADIO



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Less Stations and Better Radio

THERE are many complaints coming to us about the close proximity of station wavelengths. In order to make room for additional stations meter lengths have been arranged so that there is but a fractional difference between many of them.

The result has been that there are stations very frequently come in together, blurring and spoiling the reception. Very selective receiving sets are needed in order to catch a variety of programs.

Not so many broadcasters and more widely separated wave lengths would be much better. If a Radio listener were to tune in on one hundred programs a night he would have time for catching nothing but the announcements. There is no need for more than twenty-five programs nightly. With that number and a more widely diverging wave length than is being used at this time, programs would come in loud and clear on the inexpensive as well as the expensive sets. Radio is a blessing in many homes. It keeps the young folks home at night, provides endless entertainment for countless married people who cannot get away from home because of small children and it cheers the aged and infirm. It should not become solely a rich man's diversion.

Radio Locality a Real Estate Asset

RECENTLY a prospective customer for a lot on which to build his home completed every detail for the purchase even to the Radio quality of the vicinity. A receiving set was placed on the lot and an aerial set up. After proving to his satisfaction that the locality was good for Radio the deal was completed and the house built.

Times do change. Once it was a good spring or a cold well that gave particular value to a dwelling site, while shelter from the winds was highly prized. A well-graded and fairly level road was among the things especially desired, as near as to school and church. Good neighbors were, of course, among the great essentials. Provided with these good comforts and graces, the home-seeker thought little and cared less about what was going on in the air, if it was not mosquitoes or excess of dust. But as we swing into the second quarter of the changeless twentieth century, behold how the heavens figure in real estate deals. How desirable the clear beneath, or the waters under the earth, if the sky be not favorable for listening in, the site is uninteresting to your Radio devotee. This discovery and invention, together with the human penchant for things different, make history and well nigh unmake nature.

Radiophone Supplants Letters

RADIOPHONE conversation has been carried on between father and son over Radio for some time, the distance being seventy-five miles. These communications are passed daily and in broad daylight with the same reliability of a private telephone, which necessitates no toll charges. Both father and son are licensed amateurs using respectively the calls BBE1 and BDG5. The son says the daily chat has never been missed so far. Other members of the family use the microphone and letter writing is a thing of the past.

A log has been kept and this has given the information that during rain storms, when the antenna and counterpoise are wet, best reception is had. These amateur sets have also given effective service in emergencies when wire communication was interrupted.

Increased Use of Radio on Farm

FROM a survey made by the department of agriculture the use of Radio on the farm has had a rapid increase during the past year. It is estimated that there are now more than a quarter of a million receiving sets used in farm homes.

The Radio market news developed by the department has grown so rapidly during the past three years that it is now possible for farmers to receive the daily market quotations and reports on agricultural conditions, both of which are a great aid to the farmer.

RADIO INDI-GEST

"The Land of a Million Smiles 'Way Down in Arkansas"

Dedicated to Gen. D. Hay

Say Judge, you are a daisy,
You've got us nearly crazy,
Us ladies all fall for yer style;
And Ma and Aunt Mary
Say you've got the curdy
And all other lads beat a mile.
Stop! and look and listen that's the latest law,
At every railroad crossing, way down in Arkansas.

Chorus:

When we hear your 'old train tootin'
As sure as you're born,
The hogs all go to rootin'
Out in the waller corn.
Then throw off your neck at our house,
The corn pone's good and hot,
And the mountain dew is ticklin'
Down in the old wood lot.

Now please don't think me ally
For writin' you this note,
I'm just a plain Hill-Billy,
You've surely got my goat.
And Ma says you're the whiskeys
That growed out on the rat,
And Pop says you're the yammer-yammer
And lots it go at that.

Git times in the stilly night
We hear the old train thumpin',
And we seem to see the old headlight
And the rear end 'o' 'ummin',
And then the bell goes Ding-a-ling,
We know there's something hummin',
Torn on the steam and everyting
For joy is in the comin'.

Last night the frogs were singin',
Down by the Old Mill Stream,
And the Bungle bugs were dingin',
On a play for the silver screen.
And the shadows soft and 'nearly',
Played 'round our cabin door,
And the old train kept a-veezin',
Just as it did of yore.

And when you're sailing in the blues,
My soul for you is pinin',
The toughest heartie are sometimes true,
Pure good needs no refinin',
And when the old wheels cease to move
And the ocean refuses to rise,
May all your sorrows,
Be watted to the skies.

Old Dear, I fain would leave you,
Don't think I'm getting lar,
But a corn-fed fan now loves you,
Who's down in Arkansas,
When your old train goes a-tootin'
Out in the Ozark wilds,
Please don't forget your "smokein'"
In the "Land of a Million Smiles."

HARRY A. BROADBENT

Radio Degeneration

A SHORT STORY

By Raymond Martin

His new Radio did not work first. Simply wonderful! The new stations continued to come in, and loud enough to be heard for a block. Now Denver, Chicago, Pittsburgh, New York. And then—yes, it was KZUX, Manly, E. A. he had a good deal of satisfaction covered his face as he turned up the amplification and settled himself more comfortably in his chair. There was no doubt in it, his set was berries.

But suddenly something happened. KZUX "faded" completely out. "Strange," he said softly as he began an awkward turning of the dials, (he was a new fan), "they were plain as day." He continued his manipulation for some time, but all was quiet—except, perhaps, the man. He examined the set; he tuned; he examined again; but no sound. Then he went to bed.

A little later the man in the apartment above, sighed, smiled and turned over to go to sleep. All was quiet in the apartment below. His idea of "grounding" his trouphair's aerial led to the racket in his room had been great as a promoter of restful and undisturbed sleep.

Walls Walls Expedition

Great fear and consternation reigns throughout the country. The far famed expedition to Walla Walla, which sailed a few weeks ago, has not been heard from. Friends of the crew are frantic, and at a loss to understand the meaning of such a thing.

From advices received tonight, it was learned that the "Kanoofis" had reported to several stations to be on the lookout for signals from any pirate craft. Emergency measures will be taken to rush immediate relief to the stricken ship if it can be located.

Any reader hearing word of the "Kanoofis" should communicate with us, and we will present them with a quart of "leaks" from a well known grid leak.

Yes, Altogether

Q—I have a 2h-tube super inlaxed regenerative eliminated de luxe superheterneupfoultudyns. My trouble is that I get too much static. Can this be overcome on my set?

A—Sure, very easy. All you have to do is to disconnect your A battery leads from your A battery and connect them to your 110-volt light socket, and the static will disappear altogether. N. O. A. LOT.

Did It Strike You D-U-M-M-E?

Dear Ind.—One evening during last summer I was listening in when a terrific thunder storm came on, and suddenly I got D-E-A-F. How's that?
C. A. MAROHALL

Mr. Kaltenborn's Prophecy



Condensed

By DIELECTRIC

There is no question as to the importance of WOAW to a large number of the regular Radio listeners and it is to be hoped that the changes in wave length of some stations will increase the number who may tune in the Woodman station. I confess to infrequent visits but am not guilty of intentional 'slight'.

WCOO engages a program director who hustles after the interesting features. Each time I have tuned in this station there was something attractive in the air. One of many humorous offerings Radicaal, and about as good as the best, was that musical classic "Johnny My Boy." Repeated until the phrase ceased everything else from mind, but varied in expression each time, you couldn't help but open that grin to a laugh.

The Drake Ensemble selected a particularly choice group of numbers to play the other evening, which is not always true of this or any other musical organization. Following their offering was the usual classical concert, in this case consisting of Brahms' songs. While these are not as transparent as some, few could listen without experiencing some joy and WGN is to be complimented on arranging these features.

When WCAP was tuned in to listen to the Waldman Park hotel all that was heard for some time was the steady chatter of men and women unmindful of "us millions." After the opening strains of the orchestra the tardiness was forgiven. Before that there was chatter at home, as well as abroad.

In listening to the songs with piano accompaniment you will notice how "loarse" many of these pianos have become with use. Even in the studios of several of our largest stations room is given to these diseased instruments and their rough tones are set before us without any intimation of apology. WEAR could have rained (but didn't) the playing of a Chopin nocturne and scherzo had they possessed such a piano. Especially in that composer's music must one have a good instrument.

Not only has Cleveland a splendid organ in the public auditorium but an excellent artist in the person of Mr. Craft, whose playing recently was broadcast through Station WTAM. Very fine indeed.

There really are quite a good many first class features appearing at several stations and one has the advantage of choice—if he is in search of classical productions. It is a wonderful privilege to have the New York Philharmonic concerts delivered to your loud speakers. The Chicago Civic Opera company has no superior in this country. The Victor and Brunswick concerts are unique. KDKA added much to our pleasure when it broadcast the Minneapolis symphony orchestra concert.

WHAZ ordinarily introduces to its audiences talent of standing and programs of merit. That they should slip once in a while is no more than should be expected. Perhaps we should be willing to make some allowance for the Renaissance high school orchestra. We do; but why not wait for a little further drilling before addressing Mike?

Have you ever been annoyed, in trying to recognize the station to which you listen, by the rapid succession of orchestra numbers with no announcement between them? So have I, and countless more besides. Take heed, ye mighty men of letters, and call them out more often!

Hetduogen Builders Getting Splendid Results

Range, Volume and Quality Praised

THERE is no question but that the Hetduogen requires unusual care in construction, a great deal of adjustment and patients in tuning to get the knack of bringing stations in. As a consequence there were many who tackled its construction and fell down, due either to lack of patience or a shortage of care at some stage of the work. Those who built this remarkable set as it should be done, with full appreciation of the importance of details all the way through, have been rewarded with results far beyond their expectations. There is no set that will equal the Hetduogen for selectivity on an outside antenna and few that can keep pace with it when reaching out for distance. For the encouragement of those who have not had the results hoped for, the following letters from successful builders are printed, that they may know it can be done, in some cases by those very new to Radio.

Discards a 240-Station Set

Dear Sirs: The Hetduogen is a knock-out with me. My son-in-law and I had one built before all of the issues on it were out. First we just put it up haphazard; now one is built permanently and I wish to state with all truthfulness that I am getting stations I have never been able to get before. Pulling them in from coast to coast and Canada to the Gulf. Before building the Hetduogen I had a double feedback regenerative set with three transformers so this hit me pretty good and I had only to buy a 3 plate and a 7 plate.

Up to date I have 240 stations logged including England, France, Italy, Honolulu, Mexico and Canada. Ten new stations have been heard over the Hetduogen. What a blessing it is to know that the squeaks, howls, rat, tat, and what not that keep messing up a fine program are eliminated. I am only an amateur and I am tickled pink to know that I made a go of it the first time.

Wish to thank you for publishing a unique hook-up like this Hetduogen. My house is full of Digests and in a short while I intend to subscribe to your wonderful magazine.—J. J. Goar, 3955 Nokomis avenue, Minneapolis, Minn.

8-Tube Super Now on Shelf

Mr. John G. Ryan: Thank you for your reply to my previous questions on Hetduogen. Am now receiving and the tone and volume are great, no static, howls or interference. My heterodyne 8 tube is on the shelf collecting dust, the Hetduogen is so much better.—C. R. Handy, 134 Summit street, East Providence, R. I.

Radio Digest Publishing company: Having constructed the Hetduogen as outlined in the December 27 to January 31 issues, wish to state that I believe Mr. Brush has a remarkable set. To date, using 2 stages of audio frequency amplification with a model R loud speaker I have received WREO at Lansing, Mich., WFAV at Lincoln, Nebr., KSAC at Manhattan, Kans., KOA at Denver, KFSG and KNX at Los Angeles, KGO at Oakland. WREO is approximately 2,000 miles which, when it comes in on a loud speaker, distortionless and with plenty of volume, is pretty good; but getting them five nights in a week is remarkable. If I had not been able to log the set accurately I would never have been able to do it.—Ralph Skaife, Colfax, Wash.

Mr. C. E. Brush: I have made a Hetduogen receiver from plans outlined in Radio Digest and have had it in operation for about a week. One night I brought in KGO at 8:50 p. m., central time while WHAS right across the river was going. This on two stages.—J. G. Landwehr, 532 Ely avenue, Jeffersonville, Ind.

WBZ and KGO Repeatedly

C. E. Brush: I am taking the liberty of writing you, expressing my appreciation of your efforts in writing so complete a description of the operation and construction of the new Hetduogen.

I am a mere amateur in Radio but have had and used many different kinds of sets from the one tube to the eight tube super. Now believe I have found my ideal in Radio for quality of tone and selectivity. Although my set is not yet finally completed, having attached a two stage amplifier in place of the three stage specified, I have had wonderful results, both in separating stations

that gave me trouble before and in getting distant stations. I have logged such stations as CYZ, Mexico City, WBZ, Springfield, Mass.; KGO, Oakland, Calif., and can get them repeatedly.—Fay B. Vial, Spring Valley, Minn.

Gets KFI in Virginia

Gentlemen: My hat is off to Mr. Brush and to you, Radio Digest, for publishing the articles on the construction of the six tube Hetduogen. It is truly a wonderful circuit. For the construction of my own I used the parts out of an old three-plug coil set, together with a few parts from an old receiver, half a dozen disc records and about 3/8 pound of dcc. magnet wire.

Nearly every part used in this particular set has its loss, but even with this makeshift hook-up I got KFI loud enough to hear out on the street, together with practically everything east of the Rockies, the first night I tried it out. (No, they were not all at the same time.) For the benefit of city fans I must add that I was testing the set in the heart of the business district, with a movie house next door, a power line down the other side of the building and a trolley line in front. What more could one ask? Hetduogenially yours, A. M. Frix, 539 Main street, Danville, Virginia.

Radio Digest, Gentlemen: I have an apology to make to your magazine. A long time ago I tried to build a set that you published and followed a series of articles with bated breath to the bitter end and wound up with about \$35 worth of Radio parts and no set and very little patience. I said at that time that I did not believe Radio Digest tried to do anything but help some advertisers sell parts.

But now I have built the Hetduogen. I will say that it is about as near a complete description of a set-building operation that I ever saw in a magazine. I followed it step by step and every dimension checked (except the one as to cabinet depth, of course) and I wired it up on a rough board without a panel, used bell wire to connect up with and cut a

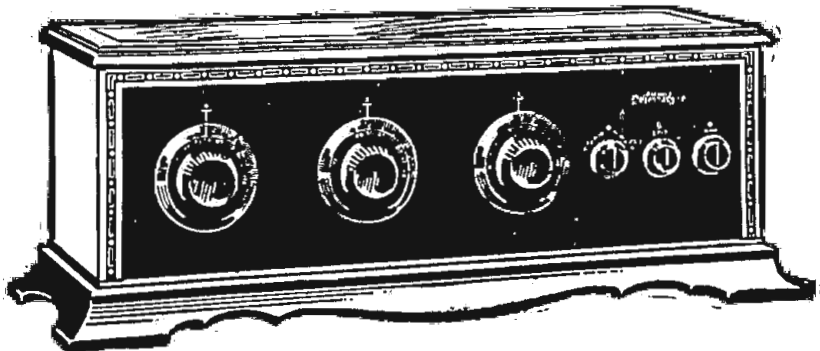
23-plate down to get the .00015—and it worked fine.

I turned the switch on about 8 p. m. last night, February 3, and logged about twenty stations from 100 watts at Fayetteville, Ark., on up to the KFI station at Los Angeles at about 11 p. m. All were tuned on the loud speaker and all the stations that I logged could have been heard for 100 feet from the set. Some volume!—Tony Peters, Clarendon, Ark.

Tunes Out 1,000-Watt Local

Dear Sirs: I have followed with interest the Hetduogen articles in the recent issues of Radio Digest and have built a set according to the plans of Mr. Brush. Being unable to secure a particular make of audio transformers which I wished to use I had to send away for them and while waiting decided to try the set out on five tubes using an old pair of unshielded transformers.

Being situated pretty far north as compared to the location of most of the U. S. broadcasting stations I thought perhaps my experiences and success with this set in the tests equipped above might be of interest. The first kick came when the set worked without further adjustment than that of the second detector and I immediately picked up Calgary CFCN with all kinds of volume on the loud speaker shortly followed by KOA at Denver with quite as much volume as a Victrola using a medium fine needle. After hearing these I decided there was no necessity of using headphones at all and have done all tuning on the loud speaker. Using the set for four nights which have been if anything below the average for reception I have heard the following stations as well, with good volume: KFKX, Hastings, KGO, Oakland, Calif., KPO, San Francisco, KGW, Portland, Ore., KFI, Los Angeles, KFAV, Boise, Idaho, WCB, Zion, Ill., WSAI, Cincinnati, WCAL, Northfield, Minn., CKY, Winnipeg, CKCK, Regina, WOA, Omaha, WOC, Davenport. (Continued on page 20)



And its tone quality is unequalled

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But perhaps the most remarkable feature of the Deresnadyne is its absolute fidelity of reproduction. It is noted for the absence of undesired noises. Its mellow tone is not equalled by any set. It maintains its mellowness even when operating at full volume.

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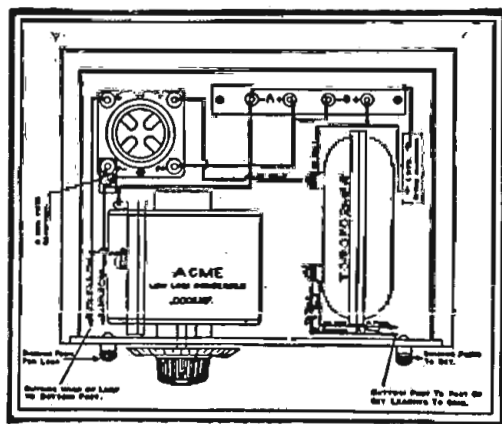
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DIA. OF TUBING	3 INCHES		3 1/2 INCHES		4 INCHES	
GAUGE OF WIRE B&S D.C.C.	LENGTH OF WINDING IN INCHES	NUMBER OF TURNS	LENGTH OF WINDING IN INCHES	NUMBER OF TURNS	LENGTH OF WINDING IN INCHES	NUMBER OF TURNS
20	3.4	78	2.8	64	2.4	55
22	2.5	70	2.1	58	1.85	52
24	2.0	66	1.65	55	1.5	49
26	1.6	62	1.35	53	1.2	47
28	1.3	59	1.1	50	1.0	45
30	1.0	56	.85	48	.75	42

CHART No 3						
WAVE LENGTH RANGE 190 TO 600 METERS						
C = 500 mmfd. = .0005 mfd.			L = .20 mh.			
DIA. OF TUBING	3 INCHES		3 1/2 INCHES		4 INCHES	
GAUGE OF WIRE B&S D.C.C.	LENGTH OF WINDING IN INCHES	NUMBER OF TURNS	LENGTH OF WINDING IN INCHES	NUMBER OF TURNS	LENGTH OF WINDING IN INCHES	NUMBER OF TURNS
20	2.65	61	2.2	51	1.9	44
22	1.95	55	1.65	46	1.45	41
24	1.55	51	1.3	43	1.15	38
26	1.2	47	1.05	41	.95	37
28	1.0	45	.9	40	.8	36
30	.8	44	.65	36	.6	34

CONDENSER VALUES

(Continued from page 15)

inductance of .29 millihenry to cover the wave length range of 190 to 600 meters. Though condensers of .0005 mfd. capacity are not in general use in tuned Radio frequency circuits, there are undoubtedly many experimenters who have condensers of this value, and table number 3 will permit their use in the designing of efficient circuits when the coils are to be used as tuned Radio frequency transformers, tuners for single circuit, double circuit, or three circuit sets, wave traps and wave meters.

The formulae given in the first part of this article can be used for working out the design of filter couplers, oscillator couplers and air core tuned intermediate frequency transformers.

In winding the coils the wire should be kept taut to keep all knots and snarls out of it, and should be wound tightly and evenly on the form. By using the proper care in winding the coils, there is no necessity of using shellac, collodion or other liquid binders to keep the wires in place, as this is of kinder of any sort should be avoided. The use of the various binders not only increases the distributed capacity of the coil, but very often introduces leakage losses which materially broaden tuning.

The Reader's View

Believes Letters Continuing

Considerable trouble and annoyance is experienced by Radio listeners in making out the call letters of broadcasting stations on account of so many of the letters of the alphabet having a similar sound over Radio.

For instance, the letters C, D, E, P, T, V and Z are not easily distinguishable over Radio.

Thus, for Zlot, Illinois, whose call letters are WZDD, the numerals 23-3-2-4 should be announced immediately after the call letters.

Each listener can have a consecutively numbered alphabet to which to refer and few mistakes will then be made insofar as identification of stations is concerned.

I believe this idea is original with me and should like to see the same adopted generally for the good of the art.—Carl Brown, Columbus, Ohio.

Congestion in the Air

As I have a very selective five tube pentode and all storage batteries are kept fully charged I must say the trouble and annoyance with interference is not so much state as it is congestion. I have too many stations on the air at the same time. The best sets are sensitive and

selective enough. What else could be expected when there is at times from two to four stations on the same wave length at the same time, and if you try to tune out one or more stations you only tune in to a bunch of other stations. And, then again, so many stations are so noisy. Such a roar and clutter some of the stations make spoils all reception. To get good reception we must stay up until about 3 or 4 o'clock in the morning when there are fewer stations on the air.—E. D. Tibbitts, Nebraska City, Nebraska.

Explaining WCX Announcing Waiver
(Editor's Note.—In the January 31 issue "Editorial" writing in the "Editorial" column on the subject of WCX, at the end of the column, entitled, "WCX for his own sake" was a sentence which reads: "The club members are not to be blamed for the WCX situation." It is thought that the club members are not to be blamed for the WCX situation. The club members are not to be blamed for the WCX situation. The club members are not to be blamed for the WCX situation.

"Thanks for the boost and no kick on the knock—we know it. However, we have to take these two concerts as we get them. The afternoon program is given by the Detroit Symphony trio (two of the players are internationally known), while all of the men in the group at the dinner concert are first class symphony players. They will not play straight through. We feel that most listeners would rather have music of this class, even though they have to suffer the waits, than to have in-

different stuff."—Chief Tony, director of WCX, Detroit.

Give Sets to Poor
Can you advise me why it is that Radio firms are so interested in donating expensive sets to people with means when they could well afford to buy the very best there is?

Why don't they make these donations to the poor, who would really appreciate the gift? It would not be necessary to give the poor an expensive set to make them happy, either. At least fifteen or twenty families could have been made happy for the price the expensive set, recently given one of our high school officials, must have cost.—A Reader.

Arrangement of Binding Posts

If a Radio set is so built that the binding posts are arranged along the bottom edge of the panel it is a good idea to raise the cabinet about 1 inch above the table by means of small rubber plugs. The wire leading to the post can then be run beneath the cabinet and out from the back, thus keeping them out of sight.

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Broadcast Listener's Reference Library

Part IV—Tuning Your Regenerative Receiver

By Edward Thomas Jones, A. I. R. E.

SINCE there are thousands of regenerative receivers in use, and many of these are improperly operated, causing disturbance in nearby receivers and distorted reception, it is hoped that the writer can give some facts about this type of set that better results will be obtained and less interference caused. A brief explanation of regeneration will be in order so that the owner of such a set will have some idea of what occurs to the unseen electric currents when he moves the various dials.

Theory of Regeneration

The tuning of a regenerative set is done chiefly in the grid circuit of the detector tube and an inductance is placed between the grid and filament with a variable condenser in parallel. This inductance is designed so that when the condenser is at maximum capacity the circuit will respond to wave lengths of 550 to 600 meters, and when the condenser is at minimum the circuit will respond to signals around 200 meters. This grid circuit, composed of the coil and condenser, has a certain resistance to Radio frequency currents and regeneration is utilized to lower this resistance and thereby considerably increase the sensitivity of this circuit so that far weaker signals will affect it.

There are several methods of securing regeneration, but that most commonly used is the tickler feedback system. A small coil is inserted in the plate circuit of the tube and so placed that its magnetic field coincides with the magnetic field of the grid inductance. In this way energy is fed back from the plate circuit into the grid circuit, which creates what is known as negative resistance, which opposes or offsets the positive resistance of the grid circuit and gives a much lower effective resistance. The result is a far greater range and much sharper tuning.

The second most popular method of securing regeneration is that of inserting a variometer in the plate lead and varying the inductance of this variometer so that feedback is accomplished through the internal capacity of the tube when the plate circuit is brought into resonance with the grid circuit. Either of the above methods may be employed with either of two antenna coupling systems.

Single vs. Three Circuit Tuner

If the antenna is coupled to the grid coil by attaching the antenna directly to that coil, we have what is called a single circuit tuner, while if the antenna system is coupled to the grid coil by means of a separate primary placed in inductive relation to the grid coil we have what is usually called a three-circuit tuner. With any of the four possible combinations there are two dials, one on the condenser of the grid circuit and the other on either the tickler feedback or the variometer. The first is known as the wave length dial, while the second may be labeled regeneration, amplification, tickler or volume control.

The most important part of tuning such a set is to remember that less regeneration is necessary on lower wave lengths than is required for the longer wave lengths. Figure 9 is a typical panel of a regenerative set and it will be found that when the wave length dial is down at 20 or 30 the tickler dial should be, let us say, around 30 or 40. If it is necessary to turn the dial to 40 to bring in a higher wave length station, the tickler will have to be advanced to about 50. As we go up the scale on the wave length dial we will have to go up the scale on the tickler. The whistling interference which is caused is largely the result of the operator not being aware of this fact and, having brought the tickler up to about 70 when the wave length dial is at 60, he

neglects to reduce the tickler when the wave length dial is turned to the left to again receive a station at about 40. After a little practice the relative positions of these two dials will be learned, and one is able to operate this type of receiver in the manner outlined below.

Finding Stations

When searching for stations the wave length dial is slowly turned from zero to maximum with the left hand, while the tickler dial is, at the same time, turned with the right hand, so that regeneration is kept just below maximum throughout the scale. The practice of picking up a whistle of a broadcasting station by having the tickler dial too far to the right, getting on the beat note and then retarding the tickler coil slightly, should be stopped. Tuning can be done just as easily by the correct method described above if the operator will only study the position of the dials. The wave length dial can be logged, but the tickler dial cannot, as its position is determined by the condition of the filament battery and the plate battery. When the plate batteries are new, very little regeneration is required at a given setting of the dial, but as the batteries wear down the regeneration will have to be increased and higher setting of the tickler dial used.

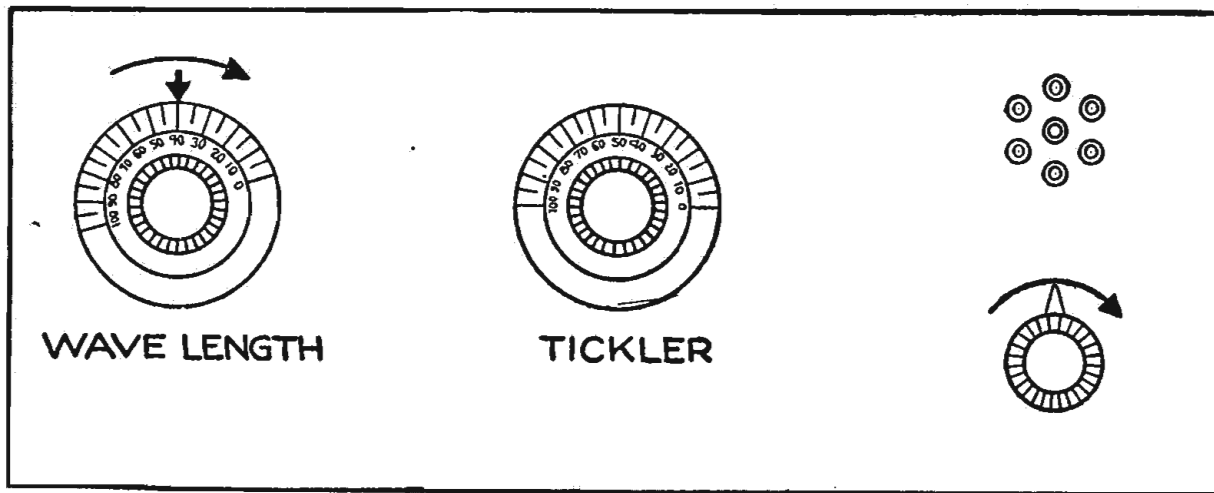


Figure 9

However, this change in tickler settings is very gradual and it is not hard for the operator to note the variation in the range on the scale which must be covered by the tickler dial.

Grid Leak Is Important

The value of the grid leak in a regenerative receiver is very important and it will be found desirable if one is using the cartridge type leak to have several sizes of cartridges and test them all thoroughly to determine which is the best for stable operation and clear tone at all wave lengths. If one of the smoothly variable grid leaks from 1/4 to 10 megohms is used this should be slowly turned, while a medium strength signal is being heard, for best adjustment. The UV-200 tube requires a comparatively low resistance anywhere from 1/4 to 2 megohms, the UV-201A uses from 2 to 5 megohms, while the UV-199 requires 5 to 9 megohms when used with a .00025 mfd. grid condenser.

If the proper value of grid leak is not found the set will be unstable and will be apt to "spill over" on a strong static discharge or powerful signal, and a station cannot be held for any length of time. With the proper grid leak and condenser it will be found very easy to slide the tickler into maximum regeneration without a tendency to reach a certain point and then suddenly "spill over." With the wave length dial as shown in figure 9 we will presume that Memphis is being picked up at 40; as regeneration is increased the volume of the program will increase and if it is still further advanced a slight "mushiness" or blur will mar the quality of the program. If the tickler dial is turned still further to the right a point will be reached where the voice or music will suddenly cease with a slight thud and no music will be heard at all. The point where the voice and music were clear and strong, just below that where the blur was noticed, is the correct point for the tickler and nothing is gained by increasing further. The moment the tube goes into oscillation as denoted by the

(Continued on page 20)

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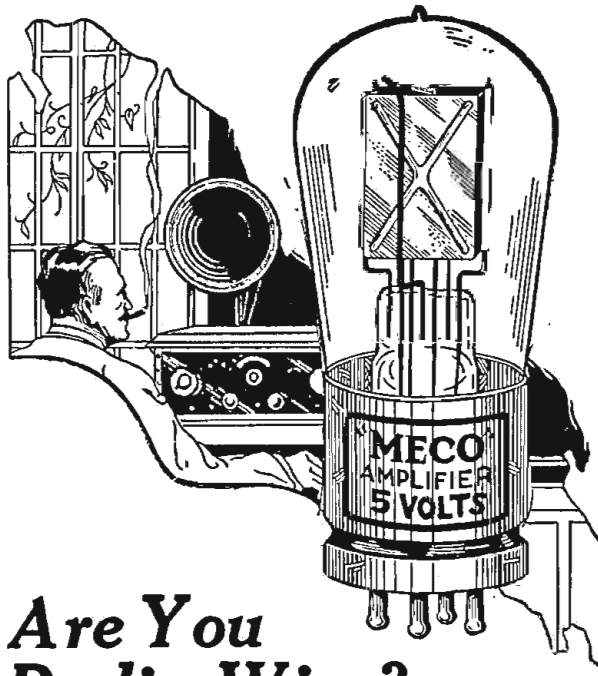
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ELGIN RADIO SUPPLY CO.,
Dept. A, 207 E. Chicago St.,
Elgin, Illinois.

Send the FREE drawings of the Elgin Super-Reinartz at once. Also tell me how I save \$50.00 on this set. I enclose a stamp for postage.

Name _____
Address _____
(Please PRINT in pencil)

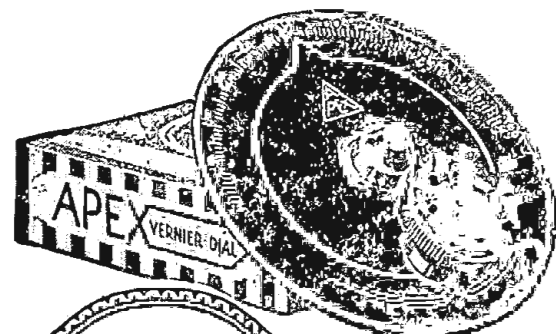


Are You
Radio Wise?

When your radio is on "parade" before your assembled guests, then you want the greatest volume coupled with clear, distinct receptive tones. MECO Tubes are favored among those of long experience for these desired results. You can convince yourself of this fact by standardizing on MECO Tubes as so many others are doing.

MECO Tubes fit every set. Five and three volt sizes are supplied you by your dealer who can obtain them from recognized radio jobbers.

Metropolitan Electric Co.
Des Moines, Iowa



**MORE
DISTANT
STATIONS**

WITH THE **APEX** VERNIER DIAL

Greater range, bigger volume, finer selectivity, less interference. Lasts forever. The one big advance yet made in tuning. Ratio 12 to 1. Quickly applied to any shaft. For sale by all good Radio Dealers.

If unable to obtain from dealer, enclose

\$2.00 for Royal Brass Finish.

\$2.50 for Satin Silver Finish.

\$3.50 for De Luxe Gold Plated Finish.

The Apex Super Five

is a tuned radio frequency receiver of the highest type. Built into a highly finished walnut cabinet—complete with Jones Multiple Battery Cable—all settings highly gold-plated. List price \$95.00 complete.

7 Tube Microdyne Super-Heterodyne for \$97.50

Receive the parts complete to assemble your set. Coast to coast on an 18 in. loop. Assemble this 7-tube Microdyne Super-Heterodyne on a 7 x 18 in. panel in 3 hours. Parts complete. Price of cabinet, to fit, on application. If your radio dealer cannot supply, send check or money order and name of dealer.

RADIO JOBBERS: Some very profitable Apex Radio Territory still available. Write or wire immediately.

RADIO DEALERS: Apex Radio Products have the call today. Write for profitable sales plan at once.

Apex Electric Mfg. Co.
1414 West 59th St., Dept. 205-A



End **50%**
of your radio troubles with **Ekko Clamps**

The experience of set manufacturers and service stations shows that 50% of the trouble with radio sets comes from a faulty ground. It is not enough to wrap a piece of wire around a pipe. The contact must be firm and permanent. The Ekko Clamp insures a good ground. The half-moon shape makes it easy to attach anywhere and a turn of the screw fastens it securely. The hardened point bites through paint or rust. The connection is made tightly so corrosion cannot form and ruin it. Sold by radio dealers everywhere.

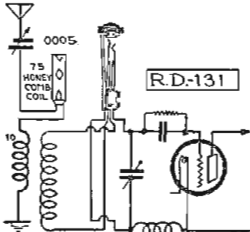
Price each, **25c**

THE EKKO COMPANY
111 West Monroe Street • Chicago, Illinois

HOOK-UP R. D. 131

MOST of the super-heterodyne articles which have been published show this lustily famous receiver laid out for loop reception only. In the majority of cases a loop will raise to the set all the energy needed for either local or long distance reception, but there are cases where the use of an outside aerial would be desirable.

It was natural that the listener would conclude he could just substitute the secondary of a variocoupler for the loop and connect his outside aerial and ground to the primary and many tried it. The result was a broadness of tuning and strength of local stations that even the sharpest filter could not take out and usually the experimenter put in his loop in a hurry. The explanation is that the variocoupler does not permit of sufficiently loose coupling for selectivity through nearby stations. R. D. 131 shows an excellent method of coupling the antenna. A fixed coupler of the usual type containing a 10-turn primary and 50-turn secondary is used. In series with the primary is a 75-turn honeycomb coil and variable .0005 condenser.



The honeycomb adds enough inductance that the circuit may be tuned to resonance with the incoming signals, while only 10 turns coupled to the secondary permits sufficiently loose coupling to retain selectivity.

The back is so connected that whether a loop is inserted in the jack or withdrawn, automatically connecting the secondary, the variocoupler is always used for tuning the grid circuit of the first detector. The coil in the lead from back to filament is the pick-up coil of the oscillator. It should be needless to add that great care in placing the honeycomb should be exercised to be sure it does not interact with other parts of the set. A fixed coupler may be constructed for about \$1.50 or purchased for \$6.00; a coil mounting is 50 cents; a 75-turn honeycomb coil will be \$1.50, and a .0005 mfd. variable condenser should cost about \$5.00.

One of the most useful pliers for building receiving sets are of the small, round-nose type, with cutting jaws



FREE Booklet and Hook-ups

Premier "Lo Loss" Tube Socket Checks Current Losses

What is it that saps current strength? Insulation is poor, contact is not tight, and contact capacity is low. The Premier "Lo Loss" Tube Socket is specially designed to stop such losses. The hatching cross section will thin to prevent phase angle distortion between terminals. All metallic parts are arranged for maximum capacity. Positive contact is insured by cam action lock and self-cleaning action of contact spring on tube pins. One piece contact springs have twice ordinary deflection range. Station event permits inspection of contacts at all times.

Price 99 cents. Send for Bulletin No. 94 showing complete line of Premier Quality Radio parts to your dealer. Premier Quality Radio. If he cannot supply them, write us, enclosing his name.

Premier Electric Company 3210 Ravenswood Avenue Chicago

PREMIER Quality Radio Parts

HETDOUGEN BUILDERS

(Continued from page 17)

and two of the Chicago stations whose call letters I do not have before me as I write. Many of these stations have been picked-up while our local, broadly tuned, 1,000-watt station, was on the air. With the filter coil set at the point where I write, many of these stations have been picked-up on about 5 degrees on each condenser and by changing the filter it is even finer. On the harmonic wave of the local (something about 250 meters) can tune out on 2 degrees.

To sum up, the set is extremely selective, reaches out, well and brings in good volume and I am anxiously awaiting the arrival of the shielded transformers so that I may give the set a more fair trial and also use the extra stage of audio. In addition to the stations listed above I heard several more whose call letters I do not catch. For the moment, I try out under such conditions who could ask more? Please convey to Mr. Brush my thanks and appreciation of the complete details of his article. Yours sincerely, Geo. D. Roberts, 9515 83rd Avenue, Edmonton, Alberta, Can.

REFERENCE LIBRARY

(Continued from page 13)

slight touch the receiver becomes a small transformer which will cause annoyance to neighbors over a wide area.

(Increased range results from the use of Radio frequency amplification so the novice will find the next article by Mr. Jones of unusual value, as the subject is Radio frequency amplification.—Editor's Note.)

Dull Finish on Panels

Never use emery cloth to finish the surface of panels. This may leave small particles of carborundum on the panel, which is a conducting medium. Use a fine grade of sandpaper. After working the panel to a dull finish, dust it off and apply a light oil with a rag.

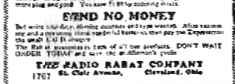


FOR LIMITED TIME ONLY

Our special price for \$2.25 in 20's and 25's BAKED TUBES. The Baker and Rabat prices are in force. To clip this coupon, send 10¢ to the publisher.

Rabat Super Batteries. For more information, send 10¢ to the publisher. Rabat Junior Battery \$2.15 c. o. d. 1000mah. 1.5v. 20's and 25's. Rabat Super-Charger \$3.00 c. o. d. 1000mah. 1.5v. 20's and 25's.

SEND NO MONEY. We will deliver, collect upon delivery. All items shipped in the mail. 10¢ in stamps. DON'T WAIT. ORDER TODAY and we'll be at your service. THE RADIO STAMP COMPANY, 1767 St. Clair Avenue, Cincinnati, Ohio.



50 RADIO Stamps

There is an amazingly easy way for you to have one of the most popular stamps in the world. The Radio Stamp is a 50-cent stamp, and you can get it for only 10¢. The Radio Stamp is a 50-cent stamp, and you can get it for only 10¢. The Radio Stamp is a 50-cent stamp, and you can get it for only 10¢.

P. M. BRYANT Dept. 22, 366 Wrigley Bldg. Chicago, Illinois

Variable Grid Leak

A suitable set of values for a grid leak would be 1 megohm, 3 megohms, 5 megohms, and 7 megohms. A means may be provided for bringing these values in action which may be secured by wiring a tap switch so that it may

EQUAL TO THE BEST

No More B Batteries

Make Your Own B Current Supply Unit

and run your set from regular 60 cycle A. C. house current. Easy to hook up. Operating and replacement costs less than \$2 per year.

Furnishes up to 125 volts B current.

No A. C. hum! The Molliformer filters it out. Does not use tubes.

Complete essential parts and instructions to make

Individual Parts Sold Separately

Write for Literature

C. E. JACOBS 2802 N. Kedzie Ave. Chicago

is used to switch any one of a number of grid leaks into the circuit. This will provide a definite, positive value of grid resistance to suit the requirements of various groups of stations, according to their distance and power.

The Crystalstat



The Ideal Radio Detector but equally suitable for crystal sets. The Crystalstat enables the following features: A meter which is built in an air tight enclosure. A shock and vibration proof circuit. A variable condenser which is built in an air tight enclosure. The Crystalstat is built in an air tight enclosure. The Crystalstat is built in an air tight enclosure.

DEALERS and JOBBERS please get our complete literature and distributor and our latest advertising prospectus.

MAGNATRON advertisement featuring a vacuum tube and text: 'YOU won't believe how much your reception is dependent upon the vacuum tubes until you switch to MAGNATRONS. Stations you were unable to get before will come in. Stations you are hearing now will come in better. When you pin your faith to MAGNATRONS you are following the lead of radio fans who know.' Includes contact info for CONNEMEE ELECTRIC LABORATORIES.

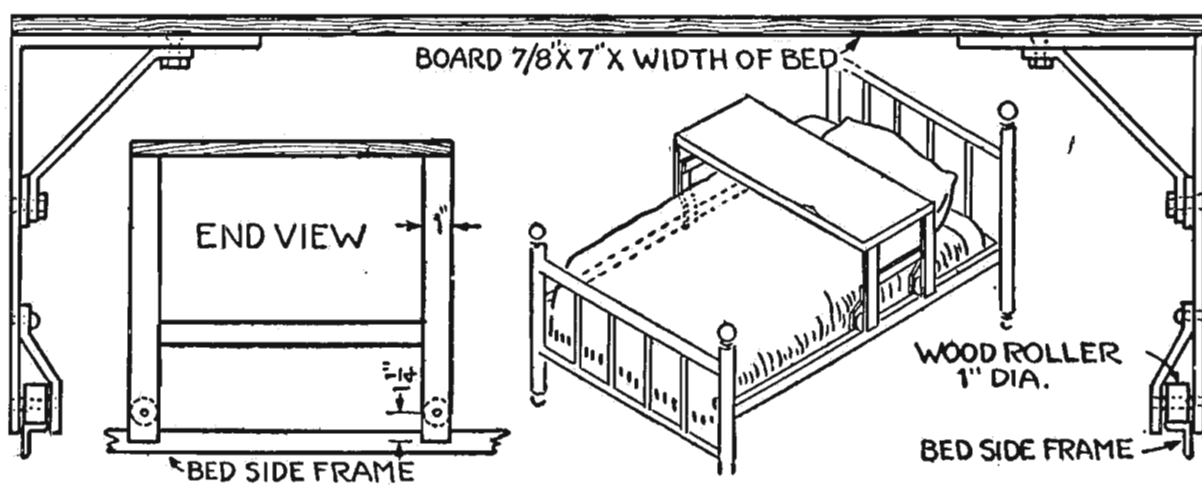
GOLD SEAL HOMOCARGER advertisement featuring an image of the charger and text: 'Radio's most popular Battery Charger! OVER 250,000 Radio fans have found the big capacity 5 ampere GOLD SEAL HOMOCARGER ideal for keeping their Radio Batteries fully charged and operating at top efficiency. Connects to any lamp socket and charges all Radio "A" and "B" and Auto Storage Batteries over night for a nickel.' Includes contact info for THE AUTOMATIC ELECTRICAL DEVICES CO.

Bed Table Supports Set for Invalid

Aid for Convalescents in Hearing Programs

The illustration shows a very handy device for use in hospitals as well as the home, so that a sick person or convalescent may use a receiving set at will. It

RECEIVER RESTS AT ANY LOCATION



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

consists of a board as wide as the bed with supports that have rollers at their lower ends to run on the frame or rail of the bed. The height of the supports will be governed by the thickness of the springs and bedding. They should be of a length to raise the table top above the bed clothing and to a convenient height to be reached by the convalescent while sitting or lying in bed. Dimensions not given must be determined for each individual case.—William Schubert, Schemectady, N. Y.

The charging rate in amperes is indicated on the battery name plate. Never exceed this rate.

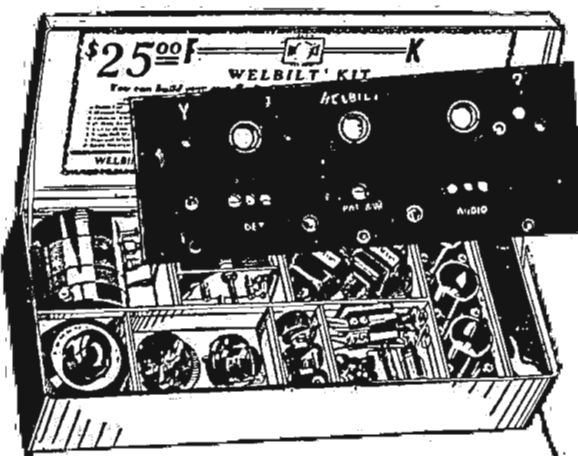
SOLVED!

—The "B" Battery Problem

Throw away your "B" Batteries and install a Kellogg Trans-B-former. It gives you "B" Battery current direct from your electric light socket at the trifling cost of one-fifth of a cent per hour. Gives better reception—no interferences. Write for details.

KELLOGG

SWITCHBOARD & SUPPLY CO.
Trans-B-Former
1066 W. Adams St., Chicago, Ill.



The Lowest-Priced High-Quality Kit

WEL-BILT TRIPLE KIT

Has Only the Best Parts
Consisting of: Straight Line Low Loss Condenser
High-Grade Transformers
Litz Wire Tuner
Bakelite Sockets
Engraved and Drilled Panel
Midget Condensers
Rheostats, Dlals, Jacks, etc.

\$25

Satisfaction or Money Refunded

WEL-BILT MFG. COMPANY
102 Chambers St., New York, N. Y.

Life of Head Phones

Evidence of the stabilization of values in the Radio world is given by the announcement that head phones have been brought to such a high development of excellence that they can be sold on a five-year guarantee.

It is known to the old-time Radio "hams" that good head phones should last up to ten years with ordinary care in avoiding bumps and crashes. But in recent years, with a Radio buying public knowing little of head set facts, there has been a tremendous sale of short-life phones which give excellent results at first but rapidly fade as their magnetism vanishes.

Scientific experimentation has proved that the best phone magnet material is

drop forged steel of special quality. It has been found that tungsten steel, the usual magnet material, when bent into magnet shape, is permanently injured as a retainer of magnet strength. On the other hand, drop forged steel of special quality makes a stronger and longer lasting magnet. As the magnet is the heart of the head phone, five-year service can be guaranteed if sufficient care is taken in selecting magnet material and in the magnetizing processes.

Your aerial should be taut but does not have to be level.

Look for the name

WD-11
Radiotron

Buy Tubes by Name

WD-11
Radiotron

Make BIG MONEY! IN RADIO

We Need Men—Can You Qualify?

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

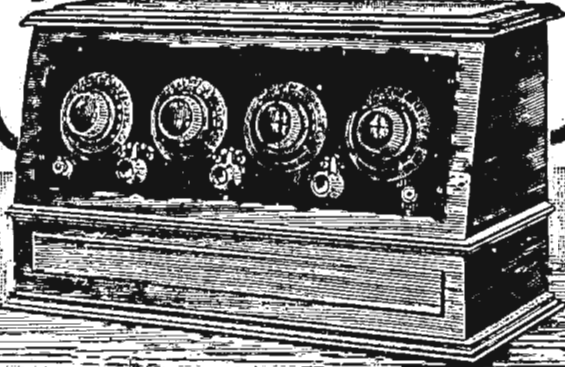
The Instrument makes the sale easy by its performance. We train you to know radio and our methods, make you worthy to wear the Ozarka button as our accredited representative. Previous experience is not necessary. In fact we prefer to do our own educating. If you have a clean record, are industrious,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

FREE, LARGE Illustrated BOOK

WRITE Today for illustrated book No. 101 that gives the entire Ozarka Plan. Don't fail to give the name of your county.

OZARKA, Inc.
841 Washington Blvd.
CHICAGO

4 Tube Sets As Low as \$39.50



Wanted CRYSTAL CRANKS—

to know that we have a new perfect 100% Rectifier, no ifs, ands or alibies. Think of it, if you find just one dead spot within 5 days you may return it and get your money back. We know you are going to look for that spot; we also know you will not find it. You will not get stung. It is a "go-get-'em" kind. Not over two to any one Crank. 50 cents each.

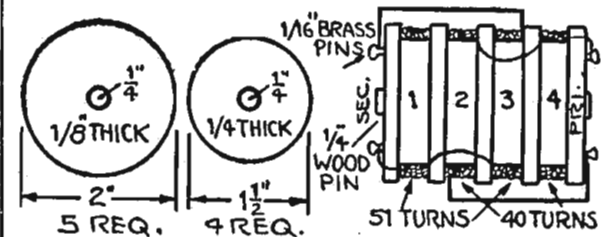
Genuine
Miller-B-Metal
PRODUCTS

Try the 99% Rectifier. Only one non-rectifying speck about the size of a "nit's eyebrow." We are tossing them in while they last.
Three for \$1.00

The A. H. Miller Radio Co.
1255 W. Grand Blvd., Detroit, Mich.

Making Transformers with Coils in Tandem

After doing considerable experimenting with several transformers I found the one shown to work exceedingly well. The materials required are 5 discs of panel



insulating material 2 inches in diameter and 1/8 inch thick, and 4 discs 1 1/2 inches in diameter and 1/4 inch thick, all discs having a 1/4-inch hole in the center, one 1-inch dowel. The discs are placed on the dowel alternately, one large, one small, allowing the ones to come at the ends.

Wind in groove 1, 51 turns of number 30 d.c. wire, also 51 turns of the same wire in space 3. In spaces 2 and 4 wind 40 turns each of the same wire. A three-plate condenser is placed across the primary.—Arthur H. Phillips, Winnipeg, Manitoba, Canada.

Our Discounts Talk!

R. C. A.
Crosley
Erla
Acme
Kellogg
Bradley
General Radio
B-T
Melco
Pacnet
Dubilier
and other lines.

Listen to them! You can make money if you buy right—here's the place to do it.

Standard lines—sets, parts, accessories—shipped now! Our fast service puts goods on your shelves when you want them. The scarce items, too, hard to get elsewhere, are waiting for you at Fuettler's.

Our catalogue No. 8 shows you—tells you—sells you!

Write for it now, and note our prices

CATALOG No. 8

FUETTLER
RADIO SUPPLY CO.
2121 Locust St.
ST. LOUIS, MO.

Morrison Loud Speaker Unit

\$5.00

Volume—Tone The Best In Radio

Every set reaches its maximum performance when it reproduces through a Morrison Unit. Volume on long distance work and the marvelous Morrison tone quality are unmatched. Thousands of Morrison owners from coast to coast know this.

Of all the elements in radio receiving there is one you can be certain of—buy a Morrison, and you've got the best reproducing unit you can buy. Use it indefinitely—it's built to stand long service.

Morrison is an adjustable unit.
Ask for our booklet on Loud Speaker Facts.

On sale at all good radio and phonograph dealers.
Mail orders shipped promptly from factory.

Morrison Laboratories, Inc.
343 E. Jefferson Ave. Detroit, Mich.



The World shut out,
yet in close touch
with the World.

GREBE SYNTHONIC

Ask your dealer or write us for full information

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Van Wyck Blvd., Richmond Hill, N. Y.
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This company owns and operates station WAHG



TRADE MARK
A. H. Grebe apparatus is covered
by patents granted and pending



Supplied also with
base for batteries