

SEES RADIO AS KEEPER OF PEACE

NEWS BRIEFS FROM THE BROADCASTERS

DICKENS' YULETIDE CAROL TO COME OVER KGO

Navy Band Will Give Homecoming Concert—Toledo Night Is New Feature at Jewett WJR

Charles Dickens' immortal "Christmas Carol," especially adapted to Radio, will be the feature production from KGO, Oakland, Thursday evening, December 24. Special music has been written for the purpose of creating atmosphere, accentuating characters, identifying voices before the microphone, and to break the strain of listening too long to the voice alone.

A homecoming concert by the United States Navy band will be broadcast December 19 by WRC, Washington, D. C. The tour completed by the Navy band this year included concerts in nearly all of the leading southern cities.

WJR, the Jewett Radio and Phonograph company 5,000-watt station, has decided to adopt Toledo one night each week, putting on the air a program by Toledo musicians and entertainers. The city has a large number of talented musicians and the addition of their art to the supply of Radio entertainment will be quite worth while.

To give additional Christmas flavor to the KGO broadcasts this week, the KGO Little Symphony orchestra will play the Haydn "Toy" symphony Sunday afternoon, December 20, at 3:30 p. m., pacific time. Arthur S. Garbett, writer and musical analyst, will give a brief word sketch of Haydn and his "Toy" symphony, and the orchestra will play small parts from the work illustrating his remarks.

Negro spirituals, which have been handed down by word of mouth through generations, many of which have never been written, were presented recently at WSM, Nashville, by the Fisk Jubilee singers who have made several world tours and have sung before kings.

Talented children of the capital are to be given an opportunity to become full-fledged broadcasters by WRC, Washington, D. C. Through the inauguration of weekly periods devoted entirely to performances by child artists, WRC hopes to encourage the development of musical art among the youth of the city.

Uncle Bob, the big brother of WEEL, Boston, has 26,000 active correspondents who write to him every week. Although swamped with this tremendous mail which shows his popularity with Big Brother club members, Uncle Bob manages to give his young listeners interesting programs by leading men of the day, to direct the uke and harmonica bands, glee club and debating team of the organization, and to arrange Friday concerts of orchestras and bands from various schools.

Radio churchgoers around the country who have tuned in Central church on Sunday mornings over KYW, Chicago, since this feature's return to the ether a few weeks ago, have heard Dr. Frederick F. Shannon's sermons and the chorus of one hundred voices under the direction of Daniel Protheroe, as well as prominent soloists.

Radio engineers of WGY have solved the difficulties of organ pickup and the organ programs from the Schenectady station are now among its finest transmissions. Lovers of organ music will be interested to learn that Elmer A. Tidmarsh, organist and choirmaster of All Saints Cathedral, Albany, and director of the Albany community chorus of one thousand voices, is giving a series of recitals on Tuesday nights.

Long hair and other revivals of woman's past glories will be worn by the heroines of this year's offering of the Princeton University Triangle club. The play, "Fortuno," which will be given in Pittsburgh December 23, will be broadcast by KDKA. The invisible audience may have some difficulty in distinguishing the ladies from the gentlemen.

The Copley Plaza orchestra, directed by W. Edward Boyle, is the new Sunday attraction at WRZ, Boston and Springfield, Mass. Its programs consist entirely of classical selections.

HOOVER TO HANDLE RADIO SEPARATELY

WASHINGTON, D. C.—Secretary Hoover will send a communication to congress early in the session in which he will transmit the resolutions of the fourth Radio conference together with any suggestions which he has to make. This is the reason that the secretary did not even mention in his annual report to the president the subject of Radio, but he will give a history of the past year's accomplishments or make recommendations for legislation. This is the first time, since Mr. Hoover has been secretary of commerce, that he has not mentioned the subject of Radio.

FANS GUESS COLOR OF SINGER'S HAIR

PARIS.—A very original competition has been opened by the editor of a French Radio journal. Listeners are to say what is the color of the hair of various singers being broadcast. To a correspondent who objected that this was a mere guessing contest, the organizer replied that this was not the case; science has established that blind persons can often tell the color of a speaker's or singer's hair by the sound of the voice, and the purpose of the competition is to determine whether ordinary persons, when deprived of sight of the speaker, can exercise a similar gift.

FAIR PORTIA IS NOW RADIO STAR



The soprano voice of beautiful Maria Kurenko, graduate of the law school of the University of Moscow and the Moscow Conservatory of Music, was recently broadcast in America when the celebrated Siberian singer appeared on an Atwater Kent program over the WEAf chain.

Classical Music Only on WHAP

New 500-Watt Will Also Give Opinions on Current and Social Questions

NEW YORK.—And still another station! The metropolitan district added another station to its number when WHAP recently went on the air, broadcasting under a 500-watt license on 240 meters.

Among those who appeared on the opening program were Percy Grainger, famous Australian pianist and composer; Mina Hager, distinguished contralto who is engaged to appear later this season with the New York symphony and other orchestras; Kitty Cheatham, well-known interpretative artist, who gave a number of recitations and songs, and the Stellar Male quartet.

This station is said to be solely for the service of the public, and is not identified with manufacturing or advertising interests. Believing that those who favor

jazz and comedy songs are receiving ample from other stations, WHAP will not broadcast music of this type.

In matters of civic and social questions, as well as of current opinion, WHAP will not be neutral in these matters as other broadcasting stations. It has definite convictions which will be expressed on the air, in the same sense that a newspaper's opinions are expressed on its editorial page. WHAP will foster and support those public policies and movements that it believes to be of benefit to the United States.

Leslie Joy, chosen as studio director of WHAP, is well fitted for the position by virtue of his long connection with broadcasters in this territory.

Radio Comes to Main Street

MINNEAPOLIS.—Sauk Center, former home of Sinclair Lewis and reputed to be the original "Gopher Prairie" of "Main Street," is now educating its school children in better music by means of Radio. The principal is having all the children in the grades report what they heard, the name of the songs, and what they learned about them, according to a letter sent to Gold Medal Station WCCO, Minneapolis-Saint Paul.

WOULD CLEAR ALL DISPUTES OF COUNTRIES

Claims Radio Would Do More to Prevent War Than Dozen Leagues

Fans Could Hear Parley

Leaders Talking Over Differences Would Fulfill Wilson's Hope of "Open Diplomacy"

OTTAWA, Canada.—The prediction that Radio will be a great factor in preventing future wars, was made by C. W. Horn, superintendent in charge of the Westinghouse broadcasting station, in a recent address delivered here.

"I feel that Radio will accomplish more in the prevention of wars than a dozen Leagues of Nations could do," said Mr. Horn. "Radio seems to be the means that is destined to bring into the very homes of the people of this world the thought and character of the people of the different nations."

"I can conceive of no greater event than the settlement of a dispute between two nations by a discussion of the problem and the presentation of facts by the leaders of these two nations, with the general public listening to it. It will be the fulfillment of the hope of our former President Wilson, expressed when he referred to 'open diplomacy.'"

WEAF CHAIN ADDS CHICAGO STATIONS

WGN and WLIB Put Great Programs of New York Broadcaster on Air

CHICAGO.—The Chicago Tribune station, WGN, and WLIB, the Liberty magazine broadcaster, are now linked in the WEAf chain and on a recent Sunday program gave Chicago listeners their first local broadcast of the chain program which featured an Atwater Kent hour.

For more than a year, listeners here have tuned to WOC, Palmer school, at Davenport, Iowa, to hear the great artists and even the advertising programs originating at WEAf.

W. G. "Bill" Hay, recently announcer of WOK and prior to that time announcer at KFKX, is now a member of the WGN staff and is heard over their mike every Sunday from 4 to 11 o'clock and on Wednesday, Thursday and Saturday evenings between 7 and 11 o'clock.

Station WLW to Give Big Christmas Frolic

Third Annual Festival Promises to Be Greatest of All

CINCINNATI.—The third annual Christmas festival for children will be given by Powel Crosley, Jr., in Music hall, Cincinnati, Tuesday evening, December 22, at 7 o'clock. Children in Greater Cincinnati are invited to be present and enjoy the antics of clowns, hear the funny minstrels and see the performing dogs, including the famous "Pup"; magic and music will be offered by theatrical stars. There will be candy for all.

The Radio audience will hear the festivities broadcast through the Crosley WLW station; special attention being given to this part of the show because it is impossible for more than 4,000 people to get into Music hall and the past two years' shows have filled the place to capacity.

London Hears Canada

LONDON, Eng.—Listening posts at the office of the Canadian National Railways in London, Manchester, and Southampton have reported the reception of items of the published program broadcast from the company's station, CNRA at Moncton, Canada.

Two Bills at KLX Sound Like KI-YI, China



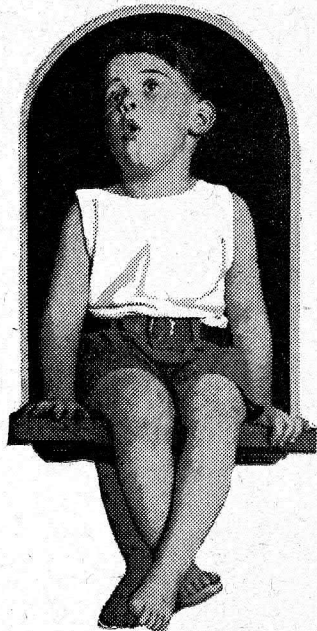
HIT the air at 508.2 meters almost any Monday night around 9 o'clock and you will get the most ding-awful gabble-gabble and clatter-quack from somewhere west of the Sierras that ever hopped off a self-respecting antenna.

But don't get excited and by all means preserve your temper. Put away your screw driver and don't worry about the inductance liver in your receiving cabinet—forebear kicking off the middle dial and just listen. Out of the cross-jangle of sounds you presently discover a thread of coherence. There's something Oriental and magic about it. Perhaps if you rub your loudspeaker just right the spiral vapor of a genii may twist its way upward from the interior. Ah—and three taps on the tip of the nose and you will catch a whiff of, of—sweet essence of chop suey!

"Ah-yah-ki-ya-aaa-ee-cho-goo-igggy-ko-lo-song-sooey—" or something like that comes to you in a sing-song tone. You hop up on the arm of your chair in sudden excitement. (Continued on page 10)

"Shet yo' mouf, yellow man," says Bill Boyle (right) to Bill Seroy, both of the KLX Ducks, Oakland, Calif., "foah ah vacuumizes yo' heah cleanah."

Christmas Comes for the Little Americano



"Oh-O-hear the herrul an-gels sing—" came the bird-like warble of the little Americano while bandit horsemen listened by the garden gate.

(Specially Posed)

SENORA Gomez untangled two tiny hands from the meshes of her black lace mantilla and tenderly lifted the little Americano down from her fat shoulder. For a moment she held him close to her ample bosom; then, with a playful shake, she balanced him on the rail of the veranda outside his father's rancho.

"Bravo Don Gallos!" she exclaimed as she stepped back to survey him on his narrow perch. "You are my little rooster. Let me hear you crow. And you must flap your wings to scare the bad, bad wolves away."

"I am not a rooster—you are a rooster," answered the little Americano with a pout and a frown.

"Crow just once like the big rooster and I will put you safely into the little window," pleaded the plump and jolly Mexican woman.

Still the boy refused and began edging his way along the rail, reaching out to a rose lattice and steadying himself by the swinging water jar, a big red jar the inside of which he always had longed to see—hanging there just above his head. Here he stopped and eyed his tormentor as she stood with arms akimbo and black eyes twinkling merrily. Her hand stole beneath her mantilla. A paper rattled suspiciously.

"I will not crow," the boy bargained, "but if you will give me a praline I will sing for you."

"All right," agreed the woman, "a praline you shall have and I will put you in the window besides."

As she transferred him to the little balcony window he thought of what he would sing.

"I will sing you about the little babe in the manger that my daddy told me about last night and the three men who followed the big star over the desert all night long to bring lots of nice presents to that little baby. And the herrul angels sang halla-loo-ya to the shepherds on the hill—all just because of that little baby in the manger. Want me to sing you about it? I will!"

To put down the words that he sang would mean nothing. They were inspired for the time and the occasion. Music it was—who cares what the words are when a little child sings—

Leaving the scene of their depredation the renegades galloped away and out of the smoking ruins of Topolobampo came a man leading a little boy by the hand. With other of the remaining refugees he sailed away to San Francisco. And the little boy grew up a great singer—Wilfred Glenn (right and below) of WEAJ, New York.



his voice a bit quavery but clear and true. "Oh hear the herrul an-gels sing," was much repeated and perhaps the "herrul angels" themselves were listening to the voice of the little one lifted up in the full glory of the joy of song. It was the song of the mocking bird and the thrush and the wren that sang in the little garden all woven in with the spirit of the wild flowers and the sunbeams and moonbeams down there in Topolobampo—a small American colony in Lower California during the early nineties.

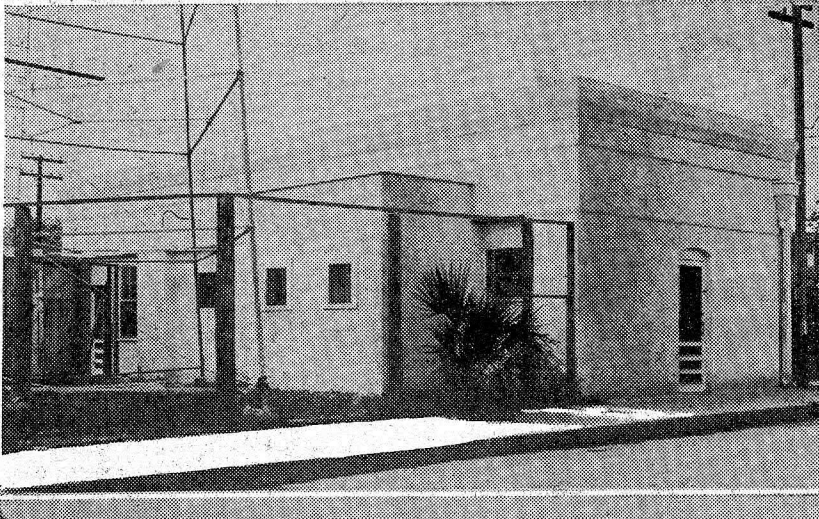
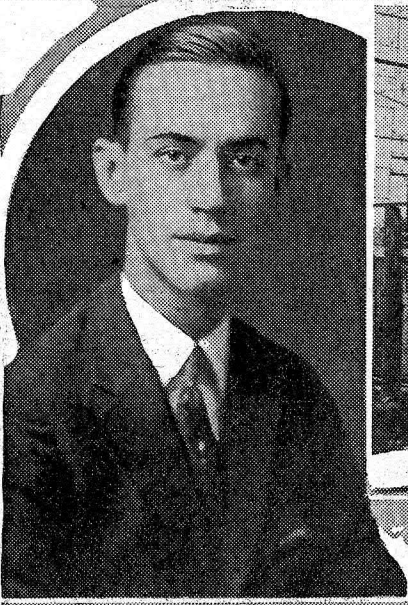
And as the little Americano sang his own Christmas carol to the dark skinned woman her jesting manner slipped away. Something fine and sweet came into her face and she felt humbled in the presence of a being that seemed almost divine. She turned her face to the red ball of fire that was sinking from sight over a distant sand dune. Tropical twilight soon faded into night.

Four idling horsemen came to a halt before the garden gate. Clanking spurs were stilled and through the deepening night came subdued murmurs of masculine voices in tones of admiration. A rabbit darted through the hedge. Swallows skimmed gracefully high in the evening sky.

Suddenly the four horsemen spurred their steeds and galloped away. In the distance from the direction whence they had come could be heard the steady loping of a horse nearing home after a long journey. But the boy did not cease his caroling to the enraptured woman until the horse had stopped and a tall shadowy form stood in the archway of the veranda. Then the little Americano recovered from his trance. Two chubby arms were held out to the tall form before him. The Mexican woman drew the mantilla over her head.

(Continued on page 10)

"Kum to the World's Winter Garden," KWWG



Wild oranges grow around the studio of KWWG (above) at Brownsville, Tex. "The Skipper," H. H. Philips (left), and Miss Florence Pierce (right), "assistant skipper,"—or what is that nautical term? "Ship's belle," maybe.

By Susan Haymes

THE hearty invitation given to Radio fans everywhere, to "Kum to the World's Winter Garden," was first heard from KWWG at Brownsville, Texas, the southernmost city in Continental United States, on May 16, 1925.

KWWG is fostered by the Brownsville Chamber of Commerce. In the short time it has been on the air, reports of reception have been received from twenty-two states and from three foreign countries. Many personal responses have been received to the hospitable solicitation; some have come from snowbound regions to make their homes in the land of perpetual sunshine; others have come to marvel and have gone away to sing the praises of the veritable paradise.

KWWG was deemed of sufficient importance to have a home devoted strictly to it—a stucco building of old Spanish mission architecture. Due to Brownsville's being the gateway to northern Mexico and situated amid semi-tropical vegetation, the style is uniquely fitting.

Standard Western Electric 500-watt equipment is used, on a wave length of 278 meters. Programs are broadcast at 8:30 p. m., central time, Tuesdays, Thursdays and Saturdays. The activities and influences of the churches are prominent factors in the lives of Brownsville and the towns of the valley, so no immediate need seems to exist for Sunday church services a la ether over KWWG.

The studio has been pronounced by experts as acoustically correct in every detail. Soft drapes of gray sateen, oriental rugs and graceful floor lamps lend that elusive something called "atmosphere" to the surroundings.

A large and comfortable reception hall, attractively furnished in mahogany, leads into the studio and provides a waiting room for guests and artists, many of whom come from a great distance. Mrs. F. C. Pierce is the charming hostess. To her also falls the lot of inspiring courage to shakey-kneed individuals before they face the formidable "mike."

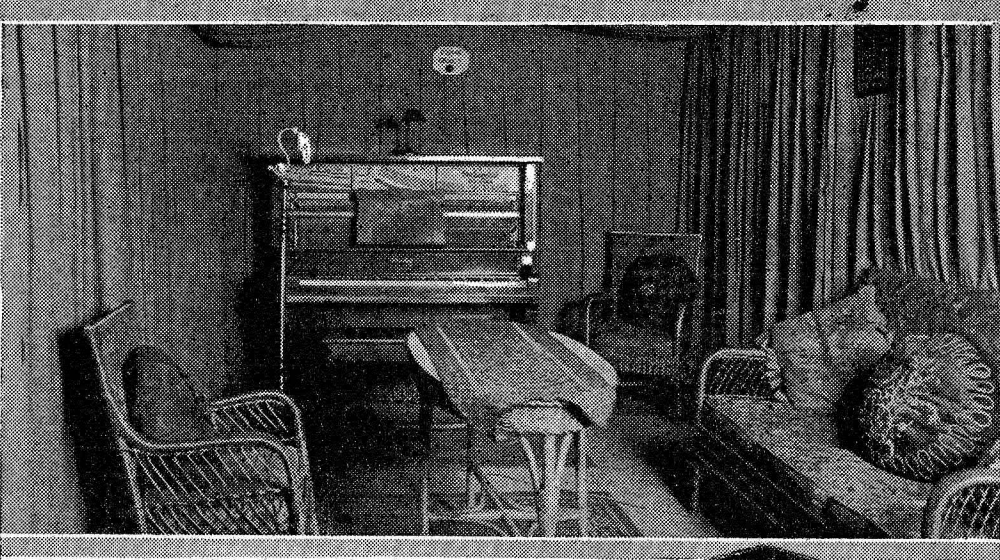
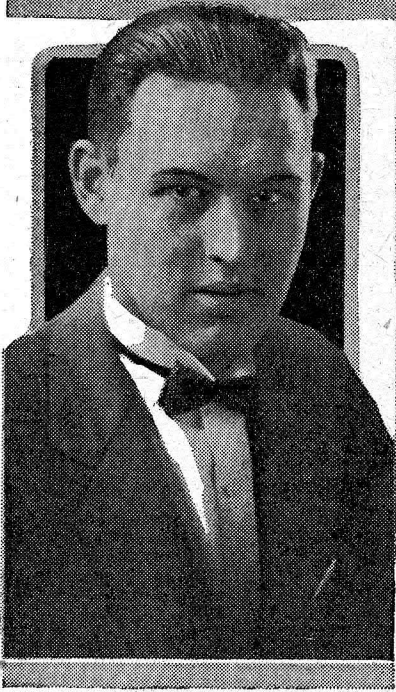
The transmitting room is back of and adjoining the studio. The operator in charge, Minor Wilson, is a dyed-in-the-wool Radio enthusiast. He doesn't get enough "operating" over KWWG, so he has a transmitter of his own. Yes, girls, he is single.

H. H. Philips is program director, announcer and station superintendent. Quite a number of positions for one man! But then, clever folks are ever being imposed upon! H. H. P., "The Skipper," is extremely popular; his diction is clear, his voice pleasing and his keen sense of humor ever evident; and when he says: "Kum to the World's Winter Garden," listeners may bank on it that a worth-while trip is in store. (Continued on page 10)



Shivering folk of the north states are urged to "Kum to the World's Winter Garden," the slogan of KWWG. Among the many who call through the ether here are the voice of Miss Marion Grisham (left, center) and the instruments of Miss Annie Ptegrate and Sergeant J. R. Callahan (lower).

“Radio Lighthouse,” a Jazz Storm Refuge



“Rock of Ages cleft for me—” and other songs that our grandmothers sang come from the Radio Lighthouse, near Lake Michigan. John E. Fetzer (left) is engineer-announcer and Paul N. Pearce (right) as station manager and program director guides the beams. Miss Clotilde James (below, left) is pianist and Miss Ruth Nelson (right) violinist. In the circle is Miss Letha Wenke, one of the lighthouse keepers who assists at announcing. Above is a corner of the old studio now being replaced by a new one. Below is a portion of the transmission panel.

DID you ever go groping through a dark DX night, touching the flickering rays of distant star beams here and there and from Minneapolis to New Orleans and from New York to San Francisco pick up the same syncopating ragtime hullabaloo until you almost turned from your wandering flight through the drift with the thought the whole nation is rocking in a storm-tossed ocean of ether jazz?

Then suddenly through the vibrating maze of “mam-mam-mammy’s lam—lam lamm’y yam; Sweet, potat-tat-tato” like a clear, white light from a familiar shore you caught the sound of a celestial choir as it sang to the shepherds of Bethlehem nearly two thousand years ago—

“Rock of Ages cleft for me
Let me hide myself in Thee—”

You thought of mother, of your childhood, the little village church with the vine-clad door, the village choir, the little black walnut organ with its yellow keys and the dials brought you down into a placid and comforting harbor.

If such was your experience it is quite likely you found yourself in the lee of the Radio Lighthouse located at Berrien Springs, Michigan—the “jazzless Radio station,” as it proudly broadcasts far and wide.

Here is a Radio station with a mission—not rampant with religious hymns scampering around in jazz clothing but old fashioned and undefiled by the worldly tendencies of the day. You like it because it appeals to the finer and holier feelings within. You sense that there is sincerity in the voices, that there is no

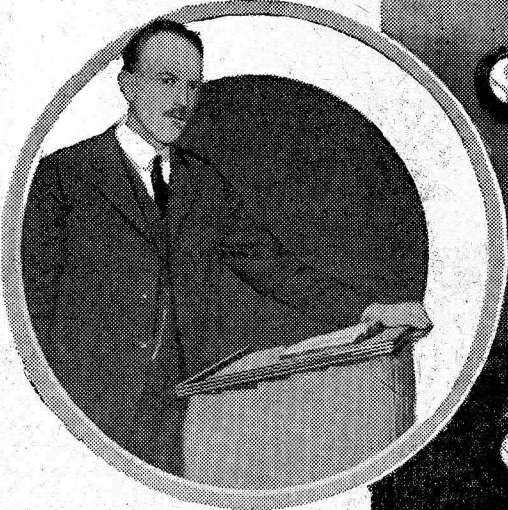


intent to dramatize sacred things of the soul just to play on your heart-strings.

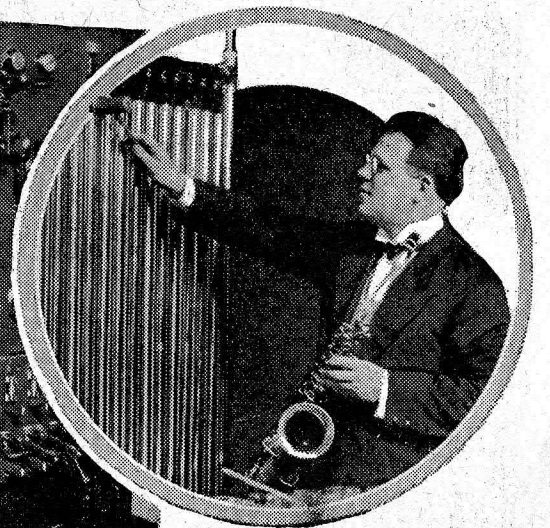
It is a Radio station with a mission because it is produced by an institution that lives and teaches its religion day by day. WEMC, the Radio Lighthouse—the name at its masthead—is broadcast by the Emmanuel Missionary college. The need for such a station was realized almost from the beginning of broadcasting by some religious institutions. A year ago two members of this small college obtained an endowment for the construction and maintenance of a 500-watt station. And forthwith the Rev. W. R. French, shepherd of the little flock at Berrien Springs, found that his fold had increased nation-wide, almost over night.

Thousands upon thousands of letters came from all sections of the country praising Emmanuel college for its piloting light from the whirlpool of fast night life. Shut-ins, invalids, those who bear the weight of years and are looking forward to reunion with those who have gone before, wrote feelingly and touchingly of the comfort that they had found through the Radio Lighthouse.

So the trustees of the college were awakened to a great work to be done. If so much could be accomplished within the limits of a 500-watt transmission power, how much more useful would a thousand-watt become? They read some more letters. Then they decided that 5,000 watts would not be extravagant—and 5,000 watts was decided upon. John (Continued on page 12)



Rev. W. R. French, who broadcasts Bible messages from the Radio Lighthouse at Berrien Springs, Mich., maintained by the Emmanuel Missionary college.



Professor T. H. Barritt, one of the versatile faculty artists who plays a saxophone or chimes but never, never any jazz from WEMC, the Radio Lighthouse.

PANATROPE IS NEW SOUND REPRODUCER

INVENTION IS BASED UPON ELECTRICAL WAVES

Device Uses Power of Batteries Rather Than Voice of Singer to Make Record

NEW YORK.—To break through the wonder-filled minds of the people of today and cause more than a common interest, to excite even a ripple of amazement, requires more than a mere strain upon credulity. But, nevertheless, a new and strange force has people wondering. Wondering what a "Panatrope" is. And the oddest thing of all is that that force is the panatrope itself.

Before a distinguished audience of scientists, musicians, and men and women prominent in society, the panatrope recently made its formal entry into the field of electrical reproduction of sound. It has been perfected by scientists of the Radio Corporation of America, the General Electric company, the Westinghouse Electric Manufacturing company and the Brunswick-Balke-Collender company and started upon its career at the Aeolian hall recently.

Incorporates New Principle

Through the panatrope it is possible to take an original sound, cause it to be changed to light waves and electrical waves and finally reproduce it again with a loss and distortion which is infinitesimal. It is not a new or improved phonograph but a musical instrument involving new inventions and new principles.

The name panatrope is composed of the Greek words "pan," meaning all, and "trope" which as applied to music, means octaves. The word in its entirety means "all octaves in music."

How It Works

The mechanical method of phonograph recording has been superseded in the panatrope by electric recording. The singer stands in front of a device which is analogous to the finest broadcasting microphones. This extremely accurate telephone transmitter produces electric currents which are amplified by vacuum tubes like those in a Radio receiving set, and the final output of these vacuum tubes operates a most precise cutting tool

LIKE CALLING FOR THE BUTLER



All one has to do to get a station is to press a button with that station's call letters upon it, and the machine pictured above automatically tunes in. The pressing of the button actuates electromagnets, which in turn cut in portions of the tuning coil. The set was displayed at several of the more recent Radio expositions.

which makes the master record. Note the absence of the sound-distorting horn and the fact that the energy for cutting the record no longer comes from the voice of the singer, but on the contrary, from the electric generators or batteries feeding the vacuum tubes.

In electric reproduction, as used in the panatrope, there is no sound box, and there is no horn. Instead the needle resting in the record groove actuates a tiny strip of metal in what is known as the electrical pickup, a small device enclosing the needle holder. The vibrations of a metal strip produces electrical currents which then pass through a powerful vacuum tube amplifier using the modern radiotrons. In most of these instruments the entire amplifier is operated from alternating current from the house lighting supply. The amplified output of the vacuum tubes is fed into a remarkable cone type loud speaker.

The panatrope in reproduction of sound, therefore, does not depend upon the record to supply the energy to produce the sound but also leaves that to the power plant, the batteries.

VOICE OF THE FAN IS NEED TO HELP RADIO

MANUFACTURER SAYS LISTENERS SHOULD RULE

Stations Aim to Please But They Need Views of the Public for Guidance

WASHINGTON.—A national clearing house through which Radio fans of the country may express themselves on Radio problems has been proposed by A. Atwater Kent, prominent Radio manufacturer of Philadelphia.

"I think the man on the other end of the air ought to have a stronger voice in Radio affairs," said Mr. Kent. "He is silent because he has no effective way to make known his grievances, troubles or desires. He is at the mercy of Radio because he cannot talk back to it.

"After all, the whole point of Radio is to please those who listen. I am sure it is the desire of broadcasting stations generally to please their respective audiences. It would be of immeasurable assistance to them if there were some medium through which listeners might help them solve the many problems that perplex the Radio industry.

Listeners Could Tell Much

"There are all kinds of questions to be answered. Are there too many stations broadcasting? Is there too much jazz, or too much classical music? Can announcing be improved?

To cooperate with the department of commerce in advancing Radio, there should be a committee, board or group of men and women, either official or unofficial, to whom listeners might make complaints and suggestions.

"This group should act as a clearing house and see that suggestions received are properly assigned for consideration, followed up and acted on. The listener should feel that he or she has a voice in governing Radio affairs and a feeling that he or she is contributing to the improvement of the industry. After all, Radio is of, by and for the people."

Station Changes

Last month the following broadcasters left the air: WCAZ, Carthage, Ill.; KOP, Detroit, Mich.; KFNV, Santa Rosa, Calif.; KFRZ, Hartington, Neb.; WEBB, Highland Park, N. J.; WNAR, Butler, Mo.; KFGX, Orange, Texas; WKAP, Cranston, R. I.; WQAC, Amarillo, Texas; KFFV, Lamoni, Iowa; WEBU, Monmouth, Ill.; KFQC, Taft, Calif.; KFRX, Pullman, Wash.; WDBQ, Salem, N. J.; KFIO, Spokane, Wash.; WBBA, Newark, Ohio; KFAW, Santa Ana, Calif.; KFVX, Bentonville, Ark.; WIBQ, Farina, Ill.; KFQT, Denison, Texas; WAAC, New Orleans, La.; KFDH, Tucson, Ariz.; WGBW, Spring Valley, Ill.; WBBG, Mattapoisett, Mass.; WRHF, Washington, D. C.; KFKQ, Conway, Ark. No new stations were licensed during the past week.



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many others

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MAKE-UP ENFOLDS BROADCASTS IN REALISM TO ATTRACT JADED EARS



"Winger's Crescent Park Entertainers, (left) go out "on location," as the moving picture producers say, when they put on this "Village Blacksmith" feature over WGR, Ridgeway, Ont., and listeners are made to feel that they are in a real blacksmith shop because the performers are in a real blacksmith shop. It's not hard for actors to pretend when they are in the midst of realities. Below is the famous movie star "Two Gun" Bill Hart and Bear Valley Charley, (left) and Charley Jones. All three are favorites over KNX, Los Angeles. They produce real cowboy stuff under actual ranch conditions with a cow to produce a mournful "moo."



"I T CAN'T be done without a make-up," a phrase often seen as the subject of a newspaper comic, applies more modernly to Radio entertainment. The Scotch bagpiper gets up before the microphone in his kilties. The "Bar X" cowboy fiddlers must have their proper accoutrements to get the twang of the cattle camp into their music. Even the village serenaders feel that they must have genuine atmosphere to get the right effect across the air to the Radio listener. Comparatively few people actually see the performers in the broadcasting studio and yet the actor or actress or concert musician generally feels that the actual audience conditions must be simulated.

WGR Blacksmiths Even Use Horse

The top picture on this page shows just how far "Winger's Crescent Park Entertainers" carry out the idea of the village blacksmith shop to get over what is called a convincing program. Listeners over WGR at Ridgeway, Ont., were entranced when they heard the actual clang of a real anvil. They could almost smell the scorching hoof as the sounds of the smithy's hammer could be heard fitting a horse shoe to the animal, seen in the background. (The WGR "mike" is on the floor in foreground.)

Even the wheezy bellows suggested the glowing flame of the forge. There was a drawling conversation between the village smarty and the old blacksmith that brought many a chuckle in town and country homes that were listening in. The entertainers had enough material in this program, with singing and guitars, to make up an intensely interesting evening program. They had a real blacksmith shop to work with.

Cow's "Moo" Broadcast

The California movie studios lend themselves admirably to the creation of atmosphere for broadcasting programs that must breathe of a special kind of setting. Bill Hart, Bear Valley Charley and Charley Jones are well-known microphone contributors at Station KNX. Bear Valley Charley and Charley Jones are real cowboy fiddlers and they stir the listeners by bringing them right into a cowboy's camp. Others of their pals intersperse the fiddling numbers with Will Rogers' repartee and occasionally a cow is heard mooing in the distance. For one of these programs a real cow, separated from her calf, was introduced to produce the realistic effect by her mournful lowing.

Bill Hart, of course, is just Bill Hart—"Two Gun" Bill. But he doesn't sound so hard over the microphone. Do you suppose they could get their "stuff" over without the sombreros and the rest of the typical western make-up? Write and ask 'em.

Listeners for hundreds of miles around the station, formerly known as KFRU, Bristow, Okla., knew what it was to go fishing every Tuesday night with Wilson's Catfish band. It was the real thing. The band actually took along a microphone with fishing paraphernalia and caught fish—all the sounds of an expedition of this sort being faithfully reproduced and conveyed to the listener.

Live Fish Flop in Mike

The sound of the fish being swished through the water, the splashing of oars, the rattle of the anchor chain, and thump of the stone in the bottom of the boat, were heard half way across the continent. Fortunately the uncaught fish did not hear the amplified sounds reproduced by the receiving sets.

Some of the leading studios have announced plans for developing this phase of broadcasting entertainment on a broader scale this season. The football games and the motor races have been heard. Now will come the winter sports; the ring of steel on ice, crack of the hockey sticks, rushing skurry of racing skaters will probably be heard soon.

One of the North Shore Chicago stations has been making plans to place a microphone in the Lincoln park bird house where there is a constant jamboree of raucous cawing, twittering, screeching and jabbering of every variety of the creatures of the air. It may not be beautiful but it will be realistic and may, perhaps, be set off by some real canary warbling. The microphone might even be carried to the lion house at feeding time where a roaring may be heard that never can be imitated by any man-made instrument.

WHAZ Enlarges Studio to Accommodate Symphony

TROY, N. Y.—Rensselaer Polytechnic institute WHAZ studio on the top floor of the Sage Electrical laboratory at the crest of the campus has been enlarged to double its former size and greatly improved. The enlargement was necessary to accommodate the students' symphony orchestra, one of the important student musical organizations of the country, numbering 44 members.

Toronto U. Quartet Aids in Encouraging Better Music

TORONTO.—For the purpose of encouraging good music, and also to develop superior Radio programs, an agreement has been entered into by the Syndics of Hart House, University of Toronto, and the Radio department of the Canadian National Railways, as a result of which the Hart House string quartet will visit studios of the company, and from them broadcast special programs.

No New Licenses Given Stations in Two Weeks

Department of Commerce Evidently Has Clamped Down Lid

WASHINGTON.—With the passage of two weeks without the licensing of a new broadcasting station, strength has been added to indications that the department of commerce has clamped down the lid for the time being at least.

The policy of the department seems to be that a mighty good reason for its existence will have to be provided by a proposed new station before a license will be granted.

Notwithstanding this policy and the recommendations of the fourth national Radio conference, applicants continue to pour in for licenses for new stations.

WEAF'S PIANOS GIVEN CONSTANT ATTENTION

Four Instruments of Station Get Weekly Going Over

NEW YORK.—There are many aspects of Radio broadcasting which rarely, if ever, come to the attention of the listeners but which are important factors in the enjoyment and reception of the programs being broadcast.

A case in point is the care which the studio staff of WEAF takes in keeping their four pianos tuned and in correct pitch. The pianos of WEAF are tuned regularly each Saturday, their tone is regulated once a month and constant vigilance exercised as to pitch. After a year's service, they are returned to the factory for complete and thorough overhauling of the hammers and action.

Minstrel Shows Are Popular

DENVER.—KOA officials express the belief that they have found the champion program for broadcasting—nineteenth century minstrel shows. This deduction is made following three minstrel performances given as a test feature.

PROGRESS IN PROBE OF ALLEGED TRUST

QUIZ STOCK OWNERSHIP OF RADIO CORPORATION

Federal Trade Commission Uncovers Stockholders in Testimony of Officials of Leading Companies

WASHINGTON, D. C.—During the course of hearings upon which to build a groundwork for its case against the Radio Corporation and others united in an alleged Radio monopoly, the federal trade commission, through its chief counsel, Edward L. Smith, brought out recently that the General Electric company owns 273,032 shares or 24 per cent of the common stock and 9 per cent of the preferred stock of the Radio Corporation.

The officials of the American Telephone and Telegraph company, the Westinghouse Electric and Manufacturing company and the United Fruit company were also examined.

Uncovers Stockholders of R. C. A.

It was testified at the hearings that the International General Electric company, which is the foreign selling organization of the General Electric company, owns 12,416 shares of preferred Radio Corporation stock and 75,074 shares of common stock.

The Westinghouse Electric Manufacturing company now owns, according to the testimony, 57,760 shares of common stock and 50,000 shares of preferred stock in the Radio Corporation. These shares were formerly owned by the International Radio Telegraph company which has since been dissolved.

A witness of the United Fruit company testified that that concern originally purchased 200,000 shares of common stock and the same amount of preferred stock of the Radio Corporation for which it paid \$1,000,000 cash. The common stock has been sold, it was stated, but the company now holds 18,000 shares of preferred stock of the Radio Corporation.

THE LITTLE AMERICANO

(Continued from page 5)

"My daddy." All thoughts of candy and other reward were forgotten. The woman dissolved into the darkness and the tall man gathering the lad into his arms entered the house.

An hour passed. All lights were out in the doctor's hacienda. The tousle-headed singer was tucked into his little bed and far away in dreamland astride the toy horse that he hugged to his breast, he was cantering, perhaps, with the wise men over the desert sands. The doctor, exhausted from a tiring trip into the foothills to attend the ailing parent of a Yaqui chieftan had fallen asleep in his chair.

Crack! Bang! Bang! Three rifle shots barked in quick succession down at the end of the narrow street of adobe huts. Quickly followed a shrilling screech of savage yells. Horses galloped by. More rifle shots. Cries of pain and anguish. A smell of smoke. Flames!

Topolobampo had suffered for the last time from Jose Garcia's murderous band. Aroused by the noise and the acrid smell of burning timber, Dr. Glenn struggled into full consciousness and a realization that he was being held down in his chair by four shadowy forms with clanking spurs. He was helpless. Things held him so that he could scarcely move. The leader told him to remain quiet and his home would remain unmolested.

Morning came with the skies still streaked with smoke from the smouldering embers. Out of 350 souls who had come from San Francisco two years before but 150 remained alive. Four days later a steamer floating the beloved Stars and Stripes appeared in the bay. And last to leave Topolobampo was the faithful doctor and the little singer of that terrible Christmas eve 30 years ago.

* * *

Roses bloomed again in San Joaquin valley where Doctor Glenn had taken up a ranch. The boy had grown to promising youth. Another Christmas tide. A brother from San Francisco was coming home. Wilfred was happy. He went into the orange grove where he had a secret trysting place with the little wild things of nature hidden away in the crotch of a sturdy tree.

At last the great day came. All the neighbors assembled in the community church to hear "that oldest Glenn boy" sing. And they were not disappointed. Never before had they heard "Hark! the Herald Angels Sing" as they did on that day.

In the afternoon the family gathered around the piano and everybody sang. Wilfred was almost afraid to let his voice go full strength for fear it would drown out that of his wonderful brother.

But the brother purposely diminished his own voice. He was being treated to a happy surprise.

"Wilfred, old man, you have a voice. You are a singer. You must have it cultivated at once. You are going back with me and enter the conservatory."

Wilfred could not believe his ears. His BROTHER had said that. Nothing on earth could have made Christmas happier for him that year.

* * *

And after all that is the "happy ever after" of this story. It isn't just a make believe story. It really happened, you know. Wilfred did go to the San Francisco conservatory and of course he came out a great success.

It was about the time of the earthquake and shortly thereafter he went to the inevitable East where his great bass voice made the vaulted chambers of the Cathedral of St. John the Divine ring with song so vibrant it rivaled the deep notes of the mighty organ itself.

People crowded to get in. Not half those who clamored to hear him were able to come near enough. So the phonograph companies sent his voice all over the world on their records. He traveled the country over in grand opera. His voice opened the famous Capitol theater in New York.

And now he is on the Radio. Listen in at WEAf during the Eveready hour (read the Radio Digest program pages for the exact time) and you will hear Wilfred Glenn, the boy singer of Topolobampo, the youth of the San Joaquin orange blossoms, the opera star and the Radio star.

Tune in WEAf or one of the links of its great chain for a million people may hear him sing now and they will hear a Christmas message as it was taught by the mocking birds and the thrushes.

Certainly! And they are very happy in their home on Long Island. Yes, there are two little ones and dad says they have the gift.

KLX DUCKS CHINA BOYS

(Continued from page 4)

"Hongkong, China, or I'm a son-of-a-cockeyed crocodile!" You exclaim.

Just as you are trying to get long distance to notify Secretary Hoover at Washington of your marvelous achievement you get another shock. Smashing through the obvious discord of a slant-eyed laundrymen's convention a clear, stentorian voice in unimpeachable English, says something like this:

"Just KLX putting on its frolic for all good Lake Merritt Ducks."

No wonder! So it's ducks broadcasting, huh!

You keep on listening and soon discover that the Tribune in Oakland, California, is headquarters for a wide-awake Radio club known as the Protective Order of Lake Merritt Ducks. That its purpose is "fun, sport and amusement." And down under the appesauce and persiflage there is a real object, good natured and perfectly acceptable propaganda to join hands through the air to protect the wild fowl from ruthless and useless slaughter.

They call themselves the Lake Merritt Ducks because Oakland has a little haven where wild ducks come for refuge during the open season. The ducks have learned this sanctuary and come back year after year to paddle around until the game laws sheath the gun again. Then they fly away—fly away to come again another day.

All ducks have bills. All of the duck vocal expressions are heard through their bills. Thus it is with the Protective Order of Lake Merritt Ducks. They have two bills—Bill Seroy and Bill Royle who make most of the noise for the Lake Merritt Ducks.

That's what you heard when you thought you had tuned in Station KI-YI, broadcasting from Hongkong, China. Their programs always start with that sort of static dialogue.

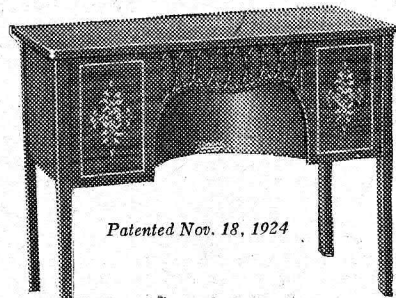
"So far, so good, but," you ask, "how

come all this China boy jabber?" You tell 'em—mebbe hatch-um quick from hard shell China egg; all-ee same much fowl talk by pidgin Engleesh.

There you are, there you are—you never can tell. The Oakland Tribune never has explained. It may be a complex brought on during adolescent childhood. Bill Seroy, according to well founded tradition, was born into a family that had two Chinese cooks at Bakersfield. He was brought up on chow mein and egg foo yong with chop suey between meals. Lem croaked at him in one ear and Lo gargled at him in the other. What could one expect? Is it any wonder Bill Seroy turned out the most loquacious pidgin English expert in the country?

As for Bill Royle—that was another case of early environment. While still an impressionable youth he was a member of the Portland, Ore., police force and assigned to Chinatown. Perforce he was thrown into continuous contact with a stream of visiting tourists who know the Chinaman best through the comic sections and for that reason had their pidgin English polished to the n-th degree. From

(Continued on page 12)



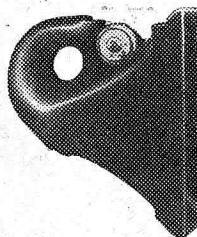
Patented Nov. 18, 1924

Windsor Loudspeaker Console

For EVERY Radio Set

A stunning piece of furniture that restores order in the room where you have your Radio! No more cluttered table-tops, nor litter of equipment under-foot.

No unsightly horn in evidence, either! This console has its own loudspeaker, in-built. It's out of sight, but with very apparent tonal superiorities. For it has the highest-developed type of unit. With horn built of special non-vibrating, extra-hard material. Produces clear non-vibrant tone.



Non-Vibrant Horn

The clearest tone producer on the market. Made of special composition which defeats vibration.

There's ample room for everything: space for A and B wet batteries—or battery eliminator—and for a big charging outfit, too.

Finished in mahogany, or walnut color. Dainty design of parqueterie on two front panels. Top, 38 in. x 18 in.

Additional pattern No. 128 (Special for Radiola No. 125) in two-tone finish. Top, 21 in. x 31 in. Fitted with doors for access to control switches of combination eliminator-charger.

The price, forty dollars, is for the complete console and includes the loudspeaker horn and unit. Thousands of dealers are showing this artistic addition to home radio equipment.

Rear View—Set Hooked Up



Price \$40 West of Rocky Mts., \$42.50

Windsor Furniture Co. 1434 Carroll Ave. Chicago, Ill.

Loud Speaker Sensation!



The KODEL MICROPHONE Loud Speaker

THE Loud Speaker that has the whole country talking. An exact replica of the microphone used in broadcasting stations.

The super-sensitive tone unit with the unique construction of the new snail-shell horn inside the microphone case, produces a veritable deluge of volume - - loud - - clear - - every note, every sound as pure and rich as when it enters the broadcasting microphone in the studio.

See the new Kodel Microphone Loud Speaker—hear it—at any radio dealer's. Two Models for your selection—one contains the highly efficient Kodel Junior unit, the other, the super-sensitive Kodel Giant unit.

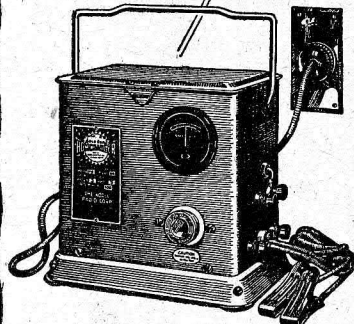
\$15 and \$20

Write for descriptive literature

THE KODEL RADIO CORPORATION
Owners of Broadcasting Station W K R C
509 E. PEARL STREET CINCINNATI, OHIO

DEALERS: Watch for the KODEL double-page advertisements appearing every other week in LIBERTY MAGAZINE.

Charges A or B Batteries 3 Times as Fast



The New 5 Ampere GOLD SEAL HOMCHARGER

NOW you don't have to wait for days while your batteries charge. The new 5-ampere GOLD SEAL HOMCHARGER charges A or B batteries three times as fast as old-fashioned 2-ampere chargers - - It fully charges the average radio battery OVERNIGHT!

There are no bulbs to break, no acids to spill, no extras to buy - - It is trouble-proof, shock-proof, fire-proof. Any radio dealer can show you the new 5-ampere GOLD SEAL HOMCHARGER.

Write for FREE booklet "The Secret of Distance and Volume in Radio"—16 pages of helpful radio information.

\$19.50

Manufactured Only By
The Kodel Radio Corporation
Owners of Broadcasting Station W K R C
509 EAST PEARL ST. CINCINNATI, O.

YULETIDE REQUIRES GALA HOME ATTIRE

BETTY CROCKER TELLS OF CHRISTMAS TABLE IDEAS

Toothpicks, Nuts and Raisins Are Basis for Edible Tree Decorations and Dinner Favors

By Betty Crocker
I WONDER if you all feel as I do, sort of excited and happy when the first decorations for Christmas appear in the store windows. And then a little later on when the twinkling lights of the Christmas trees and the huge wreaths and garlands of green adorn all the public buildings and streets—the whole world seems festive and gay.

The decorations in your homes will vary so much that it is almost impossible for me to make suggestions. A few well-placed wreaths with branches or garlands of green are much more effective than a house full of many things. We do not want our home to look like a department store or a bazaar even at holiday time. If you are temperamental or for any reason tire of so much red and green, an all-white frosty Christmas is very effective. You can use white candles, white snow balls suspended from the chandelier, frosty white wreaths with perhaps a single bow or candle, and the Christmas tree for the only bit of green.

An Edible Christmas Tree
The Christmas tree is the most important item in our scheme of decoration. In addition to the long strings of cranberries and popcorn, gingerbread men and animal cookies may take the place of the more expensive Christmas tree decorations, and will be much more acceptable to the children because they will like to eat them afterwards. Animal cookies always delight the children, and it is fun to write the names of the different members of the family on the cookies, using a toothpick and colored cake icing. Post card cookies make unusual place cards for the Christmas table.

Cut the cookies the size and shape of a post card and ice with plain icing. With

RADIO FRIENDS DROP IN FOR A VISIT



Mrs. Helen Downing, home economics specialist of the Calumet Baking Powder company, is shown above personally conducting a class in the Model Kitchen of the company. Mrs. Downing broadcasts regularly from the Calumet Baking Powder-Rainbow Garden station, WQJ.

a chocolate or colored icing, draw a line dividing the card into two parts. Place the name of the guest on the address side and a word of greeting on the other.

Decorating the Table

For the table decorations there is nothing prettier than a bowl or platter of assorted fruits for a centerpiece, with perhaps smaller bowls of nuts and candies. Nut cups may be made into funny snow men by using a ball of crepe paper for the body and a nut cup for the head. Each little man may wear a red cap and scarf. If covered with red petals, the nut cups make a gorgeous flower.

A tiny Christmas tree may make the center decoration for the table, and in the pile of cotton snow at its base may be hidden clever and funny little gifts attached to streamers extending from each plate. Or a gorgeous red Jack Horner pie may be made of a big red bell. Or a large round ball frosted with artificial snow may be the hiding place for the funny favors.

Children Can Make Funny Favors

The children will love to make funny

little favors out of fruits and nuts. A turtle is very easily made, using a date for the body, with head and legs of raisins attached with pieces of toothpicks. A funny giraffe may be made with a prune for the body, the long neck and legs being made of toothpicks. A nut may be used for the head of a funny lady, whose body is made of two prunes, one above the other, the nut and prunes being fastened together with toothpicks. Her

Michigan Woman Has Charge of Farm Series

Mrs. Dora Stockman Is Director of Rural Programs

EAST LANSING, Mich.—The legion of women now engaged in the Radio field received a notable addition recently when Mrs. Dora Stockman of the Michigan state board of agriculture inaugurated "Farm-erkins" bedtime stories as part of a farm program broadcast each Monday evening from 7 to 7:15 p. m., central time, over Station WKAR at the Michigan State college here. Following this feature the WKAR Radio school lectures, covering subjects of interest to farmers, will be put on the air.

arms and legs are of toothpicks covered with raisins. If the legs are placed at right angles to the body, this funny lady will sit up.

If you have individual cakes, you may like to place a single tiny candle on each one. College boys and girls have a custom which I think we might adopt occasionally at home. While the tables are being cleared and dessert served, they sing their college songs. Why not light all the candles on the little cakes and sing one or two of your favorite carols before dessert is served, or, perhaps, tune the Radio set to some station which is broadcasting a program of carols? The latter will be combining the modern with the ancient; that, we think, you will find an attractive feature.

Index to Women's Programs

Saturday, December 19				Eastern	Central	Mountain	Pacific
9:30 a. m.	8:30 a. m.	7:30 a. m.	6:30 a. m.	10:45 a. m.	9:45 a. m.	8:45 a. m.	7:45 a. m.
WWJ (352.7)	Tonight's dinner.			WCAE (461.3)	Gold Medal talk.		
11	10	9	8	WEAF (491.5)	Home service talk, Betty Crocker.		
WEAR (389.4)	Home service talk.			WFI (395)	Gold Medal Service talk, Betty Crocker.		
WHT (399.8)	Women's club.			WTAG (268)	Talk to Housewives.		
12:35 p. m.	11:35	10:35	9:35	11	10	9	8
KYW (536)	Table talk.			WHT (399.8)	Women's club.		
	2	1		WNYC (526)	Women's program.		
KJR (384.4)	Tonight's dinner.			12 n.	11	10	9
				WQJ (447.5)	Friday Fish dinner menu.		
				12:35 p. m.	11:35	10:35	9:35
				KYW (536)	Table talk.		
				12 noon	11	10	
				KPO (428.3)	Sewing talk.		
				4	3 p. m.	2 p. m.	1 p. m.
				WOC (483.6)	Home Management schedule, Aunt Jane.		
				WQJ (447.5)	Your Christmas Dinner.		
				4:30	3:30	2:30	1:30
				WLW (422.3)	Cooking school, hints.		
				7	6	5	4
				KFOA (454.3)	Today's recipes.		
				10:45	9:45	8:45	7:45
				KPDJ (282.5)	Financial Preparedness for the New Year.		
				11	10	9	8
				KFDJ (282.5)	What Is Your Best Color?		
Monday, December 21				Eastern	Central	Mountain	Pacific
9:30 a. m.	8:30 a. m.	7:30 a. m.	6:30 a. m.	9:30 a. m.	8:30 a. m.	7:30 a. m.	6:30 a. m.
WWJ (352.7)	Tonight's dinner.			WWJ (352.7)	Tonight's dinner.		
10	9	8	7	10	9	8	7
WJZ (454.3)	Women's hour.			WJZ (454.3)	Women's hour.		
WRC (468.5)	Women's hour.			WRC (468.5)	Women's hour.		
10:45	9:45	8:45	7:45	11	10	9	8
WCAE (461.3)	Gold Medal talk.			WEAR (389.4)	Home service talk.		
WEAF (491.5)	Home service talk, Betty Crocker.			WHT (399.8)	Women's club.		
WFI (395)	Gold Medal talk, Betty Crocker.			12 n.	11	10	9
11	10	9	8	WQJ (447.5)	The Midnight Supper.		
WEAR (389.4)	Home service talk.			12:35 p. m.	11:35	10:35	9:35
WHT (399.8)	Women's club.			KYW (536)	Table talks.		
WNYC (526)	Women's program.			1	12 noon	11	10
12	11	10	9	KPO (428.3)	Domestic science.		
WQJ (447.5)	Baking talk, Unusual Touches for the Christmas Table.			2 p. m.	1 p. m.	12 n.	11 a. m.
12:15	11:15	10:15	9:15	WGJ (379.5)	Christmas Candles.		
KYW (536)	Breakfasting with Santa.			4 p. m.	3 p. m.	2 p. m.	1 p. m.
12:35 p. m.	11:35	10:35	9:35	WOC (483.6)	Home Management schedule, Aunt Jane.		
KYW (536)	Table talk.			WQJ (447.5)	Christmas Night Supper.		
2:30	1:30 p. m.	12:30 p. m.	11:30	5	4	3	2
WGJ (379.5)	Cooking lesson; Household talks. How the Shopper Can Help the Sales Clerk.			KFOA (454.3)	Home helps.		
3	2	1	12 n.	KSD (545.1)	Women's Hour.		
WCCO (416.4)	Women's hour.			5:30	4:30	3:30	2:30
WSOE (246)	Cooking chats.			KOA (322.4)	Housewives' matinee.		
3	2	1 p. m.		6	5	4	3
WIP (508.2)	Market hints for housewives.			KOA (322.4)	Culinary hints.		
WOC (483.6)	Home Management schedule, Aunt Jane.			6:15	5:15	4:15	3:15
WQJ (447.5)	Winter Squash Dishes. The Care of the Hair.			KOA (322.4)	Fashion review.		
5	4	3	2	7	6	5	4
KJR (384.4)	Home helps.			KFOA (454.3)	Today's recipe.		
7	6	5	4	8:45	7:45	6:45	5:45
KFOA (454.3)	Today's recipe.			KYW (536)	Ideal Home Construction.		
KLX (508.2)	Women's club notes.						
KYAB (240)	Women's club notes.						
8:30	7:30	6:30	5:30				
KFMQ (299.8)	Serving the Christmas Dinner.						
Tuesday, December 22				Eastern	Central	Mountain	Pacific
9:30 a. m.	8:30 a. m.	7:30 a. m.	6:30 a. m.	9:30 a. m.	8:30 a. m.	7:30 a. m.	6:30 a. m.
WWJ (352.7)	Tonight's dinner.			WWJ (352.7)	Tonight's dinner.		
10	9	8	7	10	9	8	7
KDKA (309.1)	The art of sewing.			KDKA (309.1)	Home Economics, cooking.		
WIP (508.2)	Menu.			WJZ (454.3)	Women's hour.		
WJZ (454.3)	Women's hour.			WRC (468.5)	Women's hour.		
WRC (468.5)	Women's hour.			10:45	9:45	8:45	7:45
11	10	9	8	WCAE (461.3)	Gold Medal talk.		
WEAR (389.4)	Home service talk.			WTAG (268)	Food hints.		
WHT (399.8)	Women's club.			11	10	9	8
WMCA (340.7)	Homemaking hour.			WHT (399.8)	Women's club.		
WTIC (475.9)	Housewives' forum.			11:45	10:45	9:45	8:45
12 n.	11	10	9	WEAR (389.4)	Home service talk.		
WQJ (447.5)	Hats for the Winter Sports. Your Home.			12:35 p. m.	11:35	10:35	9:35
12:35 p. m.	11:35	10:35	9:35	KYW (536)	Table talk.		
KYW (536)	Table talk.			3	2 p. m.	1 p. m.	12 n.
1	12 noon	11	10	4	3	2	1 p. m.
KPO (428.3)	Domestic science talk.			5	4	3	2
2	1 p. m.	12 n.	11	KJR (384.4)	Home helps.		
WGJ (379.5)	Music for the Young of All Ages.			5:30	4:30	3:30	2:30
WLIT (395)	Household helps and hints.			KOA (322.4)	Housewives matinee.		
4 p. m.	3 p. m.	2 p. m.	1 p. m.	6	5	4	3
WOC (483.6)	Home Management schedule.			KOA (322.4)	Culinary hints.		
WQJ (447.5)	Christmas Dainties for Holiday Serving.			6:15	5:15	4:15	3:15
5	4	3	2	KOA (322.4)	Fashion review.		
KJR (384.4)	Home helps.			7	6	5	4
5:30	4:30	3:30	2:30	KFOA (454.3)	Today's recipe.		
KOA (322.4)	Housewives matinee.			8:30	7:30	6:30	5:30
6	5	4	3	KGO (361)	As a Woman Thinketh.		
KOA (322.4)	Culinary hints.						
6:15	5:15	4:15	3:15				
KOA (322.4)	Fashion review.						
7	6	5	4				
KFOA (454.3)	Today's recipe.						
8:30	7:30	6:30	5:30				
KGO (361)	As a Woman Thinketh.						
Wednesday, December 23				Eastern	Central	Mountain	Pacific
9:30 a. m.	8:30 a. m.	7:30 a. m.	6:30 a. m.	9:30 a. m.	8:30 a. m.	7:30 a. m.	6:30 a. m.
WWJ (352.7)	Tonight's dinner.			WWJ (352.7)	Tonight's dinner.		
10	9	8	7	10	9	8	7
WIP (508.2)	Menu.			KOA (322.4)	Culinary hints.		
WJZ (454.3)	Women's hour.			6:15	5:15	4:15	3:15
WRC (468.5)	Women's hour.			KOA (322.4)	Fashion review.		
11	10	9	8	7	6	5	4
WCAE (461.3)	Gold Medal talk.			KFOA (454.3)	Today's recipe.		
11:45	10:45	9:45	8:45	8:30	7:30	6:30	5:30
WHT (399.8)	Women's club.			WFAA (475.9)	Women's hour.		
12:35 p. m.	11:35	10:35	9:35	6	5	4	3
KYW (536)	Table talk.			KOA (322.4)	Culinary hints.		
3	2 p. m.	1 p. m.	12 n.	6:15	5:15	4:15	3:15
4	3	2	1 p. m.	KOA (322.4)	Fashion review.		
WCCO (416.4)	Women's hour.			7	6	5	4
4	3	2	1 p. m.	KFOA (454.3)	Today's recipe.		
WOC (483.6)	Home Management schedule, Aunt Jane.			8:30	7:30	6:30	5:30
5	4	3	2	KLX (508.2)	Women's hour.		
KJR (384.4)	Home helps.						
5:30	4:30	3:30	2:30				
KOA (322.4)	Housewives matinee.						
6	5	4	3				
KOA (322.4)	Culinary hints.						
6:15	5:15	4:15	3:15				
KOA (322.4)	Fashion review.						
7	6	5	4				
KFOA (454.3)	Today's recipe.						
8:30	7:30	6:30	5:30				
KGO (361)	As a Woman Thinketh.						

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KWWG AT BROWNSVILLE

(Continued from page 6)

Miss Florine Pierce renders invaluable service as accompanist on the Baldwin grand piano, besides being assistant program director.

Now, KWWG does not live for Brownsville alone. KWWG broadcasts in the interests of the entire Lower Rio Grande valley—a veritable big town, with a population of 185,000, stretched out over an area 64 miles long by 30 miles in width. One concert each week is given by Brownsville talent; the other two programs from other valley communities. A feature of each program is an address by some public-spirited person, setting forth advantages of his particular section.

The following cities of the valley have given most enjoyable programs, representing a mighty fountain of entertainment ready to be tapped at all times for the pleasure of untold millions: Mission, the home of the grapefruit; McAllen, Edinburg, Pharr, San Juan, Alamo, Donna, Weslaco, Mercedes, Stuart Place, Raymondville, Harlingen, San Benito, Rio Hondo. Programs from Houston (Gulf Coast Lines) have also been given; talent from Matamoros, Mexico, has also been represented. From the Fort Brown Military Post at Brownsville, the Twelfth Cavalry band under Director George A. Horton, has been the recipient of well-earned applause; Sergeant J. R. Callahan being an especially popular trombone soloist.

As noted above, KWWG is new. Many interesting innovations are planned; possibly the studio personnel will be augmented in the near future. A novel character, indigenous to this section of the country will be brought out and developed, in an effort to further individualize KWWG.

Let us digress from the path usually followed in a magazine devoted strictly to radio and answer the query most often asked of KWWG—"Just where is Brownsville?" Brownsville, a modern city of 18,000 is situated near the mouth of the Rio Grande, opposite the town of Matamoros, Mexico. Its geographical location may be further defined as being over 400 miles further south than San Diego, California, and on practically the same parallel of latitude as Key West, Florida. The Lower Rio Grande valley is really the delta of the Rio Grande; the rich soil deposits of the river have built up the land, giving it great fertility and suited to almost an unlimited variety of crops unequalled anywhere in the world.

Due to the proximity of the Gulf, a constant sea breeze tempers the heat of the southern sun, so that it is very delightful in summer. The average temperature in winter is 65 degrees. Read

that again, you who shiver and shake. Date palms, from which golden clusters hang temptingly, orange trees, lemons and grapefruit dot the land. More vegetables are produced than in any like given area in the United States.

Over the desk of the obliging manager of the chamber of commerce, G. C. Richardson, hangs a motto which reads: "The world is always looking for men to do things that have not been done." In our opinion, a generous number of those sort of men have already found their way to the valley—and there is room for more. The writer can only add, after a most enjoyable trip there: "Kum to the World's Winter Garden"—you'll want to stay!

WEMC ACHIEVES FAME

(Continued from page 7)

E. Fetzter, chief engineer, was sent to Europe last summer to study the high-power stations of England, Germany, France and Italy. He came back ready to begin work in the construction of a new transmission house and a station that would incorporate the best factors of all that he had gleaned abroad. That station now is almost completed and those who have never had the luck to cross the Radio Lighthouse beams before will be able to do so this winter. There are new studios nearing completion and plans are being made for a broader and even more helpful arrangement of programs.

Probably the most outstanding feature of this noteworthy station is the Friday evening program of old-fashioned hymns, as the announcer states, "which our grandmothers used to sing." These are sung by the Lighthouse choir and later comes a ration of manna from the Bible, "The Bible that our grandmothers used to read." And somehow heaven seems a little nearer when you spend an evening with this lighthouse crew. Sunday morning and Sunday evening comes the regular Radio chapel services. The Rev. W. R. French gives an earnest Bible talk in the morning and Rev. John Knox, famous evangelist, speaks at night. There is special singing by Miss Martha Hutchinson and Ernest Hurd.

But the programs at the Radio Lighthouse are not exclusively limited to the religious atmosphere. The Chameleon trio, the Hoot Owl quartet and the Collegian trio provide excellent features. Dr. Birt Summers, director of the school of music, provides a wide variety of talent for the week-day programs with the Music Makers on the air Mondays. Educational features are on the air with the music Wednesdays.

Paul N. Pearce, a member of the teaching staff, is the station manager. He arranges the programs, supervises the voluminous mail and directs the studio. Mr.

Pearce and John E. Fetzter constitute the announcing battery of the station. John is known to his listeners as "J. E. F., engineer-announcer," and Mr. Pearce signs off as "P. N. P., director-announcer." Miss Lilah A. Beamer is the secretary of the station. C. F. Clark and Charles Klinck, are student operators.

Among the Birch Hall feminine entertainers are Miss Ruth Nelson with her violin and Miss Clotilde James, pianist. Miss Letha Wenke sometimes assists at the microphone as announcer. Professor T. H. Barritt of Washington, D. C., and former KDKA artist, is occasionally heard at WEMC with various instruments.

And everybody at the Emmanuel Missionary college puts his heart and soul into the Lighthouse. It is more than a medium of entertainment for them. It almost might be called a part of their creed of doing unto others, of carrying a message to those who are seeking just that kind of a message. The have struck on a name that could scarcely be more apt. Who can ever estimate the comfort that far-reaching beam of light may carry to storm-tossed, world-weary souls who long ago have forgotten their Bible and the songs their mothers used to sing? Wait and watch for the WEMC announcements when it will again go on the air with its new high-power station and you will undoubtedly be well repaid with exceptional entertainment.

KLX DUCKS CHINA BOYS

(Continued from page 10)

the eastern tourists he learned his China boy talk, yes indeed.

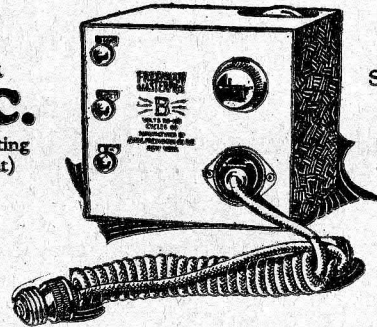
And then, somehow through the strange vicissitudes of this life below, they both took a leaning toward the air. Royle got his start when the war broke out. He became a pilot in the flying corps. Later he fought it out on the vaudeville stage—sometimes with chop sticks and sometimes with a cartridge belt loaded up with burnt cork. With kinky hair or a queue he was a scream. Seroy is a Radio manufacturer's agent in Oakland, and Royle, too, is now in the Radio business as a branch manager of the Gilfillan Brothers.

Fate, disguised behind a long, yellow bill and in front of a short, stubby tail and standing on two flat, web feet led these two gentlemen into the studio of KLX which eventually became the nesting pond of the Protective Order of the Lake Merritt Ducks. They have made one of the most distinctive hits in Radio.

Everybody tunes in when they are on the air because it's going to be a merry hour. Our picture shows Royle as a black duck and by the expression on his face it probably is fortunate for Bill Seroy the broom isn't a baseball bat. Anyway, the listener gets in on what a black duck thinks about when his progress is interrupted by a yellow one.

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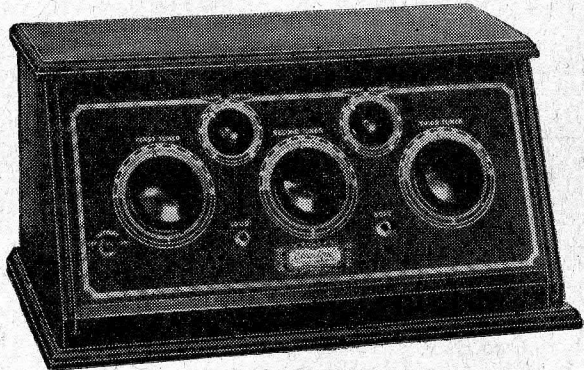
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CLEARTONE Complete RADIO SETS

ADVANCE PROGRAMS FOR THE WEEK

Saturday, December 19

Headliners Today

Eastern	Central	Mountain	Pacific
8:25 p. m.	7:25 p. m.	6:25 p. m.	5:25 p. m.
WVZ (454.3), WGY (379.5), WRC (468.5), New York Philharmonic symphony, 6:30			5:30
KDKA (309.1) Handel's "Messiah,"			
WBAS (399.8) Town club concert.			
WIP (508.2) "Lucia," Mascagni Opera company, 8:45	7:45	6:45	5:45
WPG (299.8) Kitty Mitchell's Irish Sunshine, 9:15	8:15	7:15	6:15
WSAI (326) Christmas program, 9:30	8:30	7:30	6:30
KSD (545.1) St. Louis symphony.			
WLVW (422.3) Christmas carol, reading, 10	9	8	7
WOC (483.6) Jolly Knights quartet, 10:55	9:55	8:55	7:55
KTHS (374.8) Violin recital, Natalie Arnoux, 11	10	9	8
WSM (282.8) American Legion program, 11:10	10:10	9:10	7:10
KGO (361.2) Glee club concert, 12:30 a. m.			11:30 a. m.
KHJ (405.2) Times Tom Cats frolic.			

Saturday, silent night for: CFAC, CFCA, CNRA, CNRC, CNRE, CNRM, CNRR, CNRT, CNRV, CNRW, KFD, KFEQ, KFMQ, KFMX, KFUD, KX, KFDJ, KMA, KOB, KSAC, KSO, KWSC, KTAB, WBAL, WBAP, WBZ, WCAD, WCAP, WCAU, WCX, WDD, WEAD, WEBJ, WEBW, WEEI, WGPC, WGR, WHAD, WHZ, WHB, WHN, WHO, WJAR, WJAZ, WKAR, WOAI, WOI, WOS, WTAG, WTIC, WJW.

Eastern Time Stations

CFCA, Toronto, Can. (356), 6:05 p. m., bedtime story for children, Mrs. Bertha E. Green.

CKNC, Toronto, Can. (356.9), 4 p. m., CKNC string quintet, Charles E. Bodley; Lois Erie Watson, contralto; 8-10, Charles E. Bodley and his dance orchestra; Paramount vocal quartet.

CMO, Ottawa, Can. (435), 7:30 p. m., Uncle Dick's cozy corner; Chateau Laurier concert orchestra; 9 concert, Cecilia society, Ottawa university; Henri Mongrain, tenor; Ubald Dupont, horn; Ottawa university choir; A. Lavalee and R. Godbout, cornet duo; Roland Sabourin, cellist; Master Jean-Paul Bourque, soprano; Master Justin Bogue, soprano; G. Boudreau, clarinet; Henri Davidson and Roland Sabourin, violin and cello; Roland Sabourin, baritone.

KDKA, Pittsburgh, Pa. (309.1), 7:15 a. m., morning exercises; 6:30 p. m., KDKA Little symphony orchestra; 8, farm program, National Stockmen and Farmers' studio; 8:30, "Messiah," artists from Anne Griffith's studio, KDKA Little symphony orchestra.

PWX, Havana, Cuba (400), 8:30 p. m., concert, Orfeon de la Agrupacion Artistica Guega.

WAFD, Port Huron, Mich. (275), 9-11 p. m., studio program; 11:30-2 a. m., Addison hotel musicale.

WAHG, Richmond Hill, N. Y. (315.6), 12-12:30 p. m., Joe Zimmerman, pianist; 12-1 a. m., dance orchestra.

WBBR, New York, N. Y. (272.6), 8-8:50 p. m., Prof. Charles Rohner, violinist; Fred Twarosch, tenor; Bible questions and answers, Judge Rutherford; Fred Twarosch, tenor; Prof. Charles Rohner.

WCAE, Pittsburgh, Pa. (461.3), 12:30 p. m., news; 3, Aldine theater, music; 6:30, concert, William Penn hotel; 7:30, children's period, Santa Claus; 8, Ralph Patterson and orchestra.

WCX, Detroit, Mich. (517), 6 p. m., dinner concert, Book-Cadillac hotel.

WEAF, New York, N. Y. (491.5), 6:45-7:20 a. m., "Tower Health Exercises" through WEHI, WCAP; 4-5 p. m., Cecil Newcorn and his orchestra; 6-7, dinner music, Waldorf-Astoria hotel; 7:50-8, Colonial Aces, Hawaiian trio; 8:00-8:15, Edgar Gruen, baritone; 8:15-8:30, Colonial Aces, Hawaiian trio; 8:30-8:45, Gordon male quartet; 8:45-9, Grosskopf trio; 9-9:15, Gordon male quartet; 9:15-9:30, Grosskopf trio; 9:30-9:45, Clarence Williams trio; 9:45-10, "Sadie Eskin," pianist; 10-10:10, Clarence Williams trio; 10:10-11, Florida string trio, Radio Dream Girl, 11-12, Vincent Lopez and his orchestra from Casa Lopez.

WEAR, Cleveland, O. (389.4), 11 a. m., home service talk; 7 p. m., Hotel Statler concert orchestra, Maurice Spitalny; 12, Warmac's singing syncopators.

WEEI, Boston, Mass. (348.6), 6:45 a. m., Tower health exercises; 7:45, Morning Watch, organ.

WFJ, Philadelphia, Pa. (395), 1 p. m., Srawbridge and Scholier theater, music; Four Leaf Shamrock orchestra; Kathryn Smith, soprano; 6:30-8, Bellefonte Stratford hotel concert orchestra; Bellevue Stratford hotel dance orchestra; features of the annual dinner dance given by the Granite Hosiery mills for their employees.

WGBH, Clearwater, Florida (266), 8:30 p. m., Harold Tucker, Howard J. Becker, saxophone team; Mrs. J. E. Becker, pianist; Bill Ewin, tenor.

WGBS, New York, N. Y. (313.6), 10-10:10 a. m., timely talk, Terese; music, Jack Cohen; 10:10-10:40, Cousin Eleanor, Kiddie Klub program; 10:40-10:50, Lilly Weinstein, pianist; 10:50-11, fashion talk, Mme. Hall Dean; 1:30-1:35 p. m., Scripture reading; 1:35-2, Chauncey Northern, tenor; 2-3, Montclair Senators; 3-3:20, "Children of Many Nations," Mrs. Edward Thomas; 3:20-3:30, talk, "How Lollie Girls Keep Beautiful," Mme. Mary Polly; 3:30-3:40, Joe Kahn, tenor; 3:40-3:50, Jennie Conell Brigham, "Talk on the Speaking Voice"; 3:50-4, Joe Kahn, tenor; 6-6:30, Uncle Geebee; 6:30-7, Vincent Sorey concert trio; 7-7:10, Arthur Murray, ballroom dance instructions; 7:30-8:30, County Fair club orchestra; 8:30-9:20, recital, Alice Frances Harper, dramatic soprano; Ray Lev, concert pianist; Philip Frank, violinist; 9:20-10:30, Warner's theater; 10:30-11:30, Arrowhead Inn dance orchestra; 11:30-12:30, Moscow Art Musical studio party, Mikail Mordkin's International School of the Dance.

WGR, Buffalo, N. Y. (319), 2:30 p. m., WGR's afternoon program.

WGY, Schenectady, N. Y. (379.5), 8:25 p. m., Fifth New York Philharmonic Society student symphony series, WJZ; 10:20, "Wheat, the King of Cereals," address, 10:30, dance program.

WJAR, Atlantic City, N. J. (275), 2 p. m., Seaside hotel trio; 7:30, lecture period; 8:45 a. m., exercises; 7, setting-up exercises; 10:30, special reducing exercises; 1 p. m., organ recital; 3, Fleetwood trio; 6:05, Benjamin Franklin concert orchestra, W. Irving Oppenheim; 7, Uncle Wip's bedtime story; 8, sport's corner, Dr. Francois D'Eliscu; 8:15, Popular Science lecture, "The Sign of the Skull and Cross Bones," Prof. Ivor Griffith; 8:30, Mascagni Hamilton; 8:35, Philharmonic "Radio Novel," Cosmo Hamilton; 8:35, Philharmonic society, WBC, WGY; 10:30, Paul Specht's Moulin Rouge orchestra.

WKAR, East Lansing, Mich. (285.5), 12:30 a. m., dance program.

WMAK, Lockport, N. Y. (266), 7:15 p. m., daily news items; 8-9, musical program by Isabelle Stranahan and friends; 9-10, musical program, Spruce Point Development company.

WMCA, New York, N. Y. (340.7), 6-6:30 p. m., Olcott Vail and his Hotel McAlpin string ensemble; 6:30-7:30, Elite orchestra; 8-8:15, current events; 8:30-8:45, Aeolian Walden, soprano; 8:45-9, Nina Frances Holmes, reader; 9-9:15, Ethel Henderson Newbold, pianist;



"Wealthiest girl" in Hollywood is the title given Ruth Roland. Wednesday night, December 23, and for several weeks after, she and G. Allison Phelps, "The Radio Philosopher," will present a very unique program from KNX, Hollywood. Unlike a number of screen stars, the fans can always depend upon Ruth Roland appearing. In spite of all her millions Ruth Roland feels the lure of the grease paint and kleigs and plans soon to return to film work.

9:30-10, Cinderella dance orchestra; 10-10:15, Ruth Friedman, pianist; 11-12, Ernie Golden and his Hotel McAlpin orchestra.

WNYC, New York, N. Y. (526), 7-8 p. m., Jean Ciro's orchestra; 8-9, studio features; 9-11:30, Banquet of the Pennsylvania society, Waldorf-Astoria, Charles M. Schwab and other speakers.

WOO, Philadelphia, Pa. (508.2), 11 a. m., grand organ; 12 p. m., luncheon music, Golden's Crystal tea room orchestra; 4:45, grand organ and trumpets; 7:30, dinner music, Hotel Adelphi roof garden orchestra.

WOR, Newark, N. J. (405.2), 3:15-4:15 p. m., Zit's Central Park Casino orchestra; 6:30-7:30, Hotel Shelton ensemble; 7:50-8, Van's Collegians; 11-12, Crystal Palace orchestra.

WPG, Atlantic City (299.8), 1:30 p. m., Hotel Morton music; 6:45-11 p. m., organ recital; Hotel Ambassador dinner music; studio program; Kitty Mitchell's Irish sunshine; Hotel Tyrampore concert orchestra; Nick Nichols' dance orchestra; dance orchestra, Elks home.

WRC, Washington, D. C. (468.5), 12 noon, organ recital; 1 p. m., Hamilton hotel orchestra; 6, Hamilton hotel orchestra; 6:30, zoological talk; 7, concert, U. S. Navy band, Charles Bender, director, WJZ; 8:10, Bible talk; 8:25, New York Philharmonic society, Willen Mengelberg, conductor, WJZ; 10:30, Crandall's Saturday Nighters; 12-1 a. m., Spanish Village orchestra.

WREO, Lansing, Mich. (285.5), 6-7 p. m., concert, Speed Wagon serenaders and Gold Standard ensemble; 10-12, dance program, by Speed Wagon serenaders.

High Lights of the Week

EVERYONE is invited to join in the Community Fireside sing Saturday, at WLW, which will be led by the chorus from the Cincinnati Conservatory of Music. Holiday music will be featured. After the sing, Dickens' well-loved "Christmas Carol" will be read by B. C. Van Wye.

Christmas music from many lands make the programs this week reminiscent of olden times. English carols, which will make the listener think of happy singers who sang their Christmas melodies under inviting windows, will be sung Sunday by the choir of the Emmanuel P. E. church at WBAL. Another headliner Sunday night is the return appearance of the Mozart choral club at WFAA, Dallas.

Fresh young voices will make the ether a pleasant place for listeners Monday night. Rensselaer high school students are giving their Christmas program at WHAZ. At WOS, Jefferson City, the Christian college for young women is broadcasting its Christmas program.

The Coast Guard Academy band will have R. L. Jackson, a full-blooded Indian, as special tuba soloist on the Tuesday program at WTIC, Hartford. He has played the tuba with many army bands. Male quartets are also competing for first place at WOC, Davenport, on Tuesday.

The fair ladies appearing in the play "Fortuno," Wednesday night at KDKA, E. Pittsburgh, will not seem as beautiful or feminine over the air as on the stage. All these charming leading ladies, vamps and ingenues are talented members of the Princeton University Triangle club. Tune in and see if you can distinguish the leading lady from the leading man. No Christmas season is complete without a cantata or two. Midwest fans by tuning in WDAF this same evening may hear the Junior College glee clubs sing their annual cantata.

Midnight mass will this year be broadcast over many stations. Two large churches, St. Patrick's church from WRC, Washington, D. C., and St. Peter's cathedral over WLW, Cincinnati, will make it possible for people unable to attend this beautiful service Christmas eve. To have the music brought to them. Earlier in the evening the Italian harp quintet, made up of five attractive young ladies (who are pictured on page 19), will attract the fan at WHB.

The children will again enjoy their annual Christmas day party at KHJ, Los Angeles, while also on Friday, the WGY players are giving three one-act Christmas plays which will attract the grownups who like the invisible theater.

WTAG, Worcester, Mass. (268), 10:30 a. m., miscellaneous program; 12:05-2 p. m., orchestra, "Will Hardy, director; "Twinkle Twinkle Story Teller,"

WTAM, Cleveland, Ohio (389.4), 12:15-1:15 p. m., lunch hour; 6-7, dinner hour, Hotel Hollenden orchestra, Carl Rupp, director; 8-9, miscellaneous program; 9-12, novelty program, Ev Jones and the Coe Coe club, selected artists.

WWJ, Detroit, Mich. (352.7), 9:30 a. m., tonight's dinner; 12:05 p. m., Jules Jelin's Hotel Statler orchestra; 3, Detroit News orchestra.

Central Time Stations

KFAB, Lincoln, Nebr. (340.7), 5:30-6:30 p. m., dinner concert, Belshaw's orchestra, Buick Little symphony; 8:30-10:30, Schmoller and Mueller musicale.

KFEQ, Oak, Neb. (268), 2-3 p. m., King's entertainers.

KFKX, Hastings, Nebr. (288.3), 5:30 p. m., KDKA dinner concert.

KGNF, Shenandoah, Iowa (266), 7 p. m., concert, Scotch trio, E. S. Dodds, director.

KFVE, University City, Mo. (240), 8:30 p. m., "Amusement Review," Romaine Fielding; dance numbers, Gene Witaker's orchestra; comedy and jazz.

KLDS, Independence, Mo. (441), 8 p. m., request program; Edith Tritchett, organist; Margaret Beane, soprano; T. A. Howard, tenor; C. A. Schulz, soprano; Herbert Fraher, baritone; Rozanne Clinton, violinist; Elizabeth Clinton, soprano; Christine Green, pianist.

KMA, Shenandoah, Iowa (252), 11:30 a. m.-12:30 p. m., rural program, garden talk; E. E. May, music; 6-7, Pollyana stories, Mrs. Nickols; Retailers' program, James & Hardy Candy Kitchen; 9-11, organ recital, William Howie.

KPRC, Houston, Texas (296.5), 12 m., Jack Willrich's orchestra; 12:30 p. m., public health talk, Dr. A. H. Flickwir; 5:30, Uncle Judd's kiddies' hour; 7:30, Universal Bible class, Rev. M. M. Wolfe; 8, Frank Hilton, blind boy wonder pianist; 11, midnight entertainment.

KSD, St. Louis, Mo. (541.1), 7-8:30 p. m., orchestral program and stage specialties, Missouri theater; St. Louis Symphony orchestra concert.

KTHS, Hot Springs, Ark. (374.8), 9-9:30 p. m., dance concert, New Arlington orchestra; 9:30-9:35, bedside story, representative Medical Intelligence bureau; 9:35-9:55, baritone solos, Louis Davis, artists from Little Rock; 9:55-10:30, Mrs. Natalie Brigham Arnour, violinist; 10:30-11, dance tunes with Clyde Foley and Tony Cochard, singers.

KYW, Chicago, Ill. (535.4), 6:30 a. m., morning exercises; 7:30, family worship; 11:35, a table talk, Mrs. Peterson; 12:05 p. m., Edison studio; 1, Congress hotel orchestra; 6, dinner music, KDKA; 7, bedtime story, Uncle Bob; 8:30-11, Congress classic; 11-1 a. m., Congress carnival.

WBAP, Ft. Worth, Tex. (475.9), 7:30 p. m., Sunday school lesson, Mrs. W. F. Barnum; musical numbers, Mrs. W. D. Smith.

WBCN, Chicago, Ill. (266), 10-10:30 a. m., shopping talk, Penny Wise; 3-5 p. m., tea time matinee; Clarence Jones, pianist and song writer; Cecelia and Johanna Arnes, violinist and pianist; Marie Wright, soprano; 10-11:15, jazz jamboree, Midway Dancing Gardens orchestra; Cameron and Felt, "The Harmony Wizards," harmony duo; Albert Blaba, concertist; Johnny Special, the harmonica acrobat; Elizabeth Emmett Malone, soprano; Jack Parker, tenor; 11:15-12, King Statie's court; Frank H. McDonald, "King Statie"; Mary Williams, "Queen Olive"; Harry A. Zook, Jr., "prime minister"; "Big Boy" Yagle, "court jester."

WCCO, Minneapolis-St. Paul, Minn. (416.4), 9:30 a. m., program for the day; 9:35, news bulletin; 12 m., concert, Golden Pheasant orchestra; 2:30 p. m., concert; 6:15, dinner concert, Wesley Barlow's orchestra; 8, fireside philosophies, Rev. Roy L. Smith; 8:15, musical program; 10:05, dance program, Wallie Erickson's Coliseum orchestra.

WDAF, Kansas City, Mo. (365.6), 3:30-4:40 p. m., Star's string trio; 6-7, school of the air; Roger W. Babson, personal messages; Pantages theater organ; Trianon ensemble; 11:45 p. m.-1 a. m., Plantation players; Billy Adair's and Orville Knapp's Kansas City club orchestra; Eddie Kuhn's Kansas City Athletic club orchestra.

WESH, Chicago, Ill. (370), 7-8 p. m., Oriole orchestra; Sunday school lesson; Dr. Herbert W. Wiersma; Howard Neumiller, pianist; 9-10, Oriole orchestra; James Murray, tenor; Marie Kelly, reader; Beulah Ladon, violinist; 11-1, Oriole orchestra; Frank Greif, tenor; Marie Kelly, reader; Rick and Snyder; Kay Ronayne, Wayne Myers.

WENR, Chicago, Ill. (266), 6-7 p. m., daily dinner concert, Roland Lyric trio, Frank Westphal, Santa Claus letters, Marie Tully; 8-10, All-American Floreners, Floyd Falch, Al Tweed, Walter Peterson, John Papa, concertina soloist; 12 m.-2 a. m., All-American Pioneers, Art Bliquist, Al Tweed and Walter Peterson, Hawaiian guitar and harmonica players; Mary Biehor and Rita McFann, vocal duets.

WFAA, Dallas, Texas (473.9), 6:30-7:30 a. m., health exercises, R. H. Schulze; 12:30, Ernest Walsand, pianist, Pat Wilds and Johnny Welsh, ukulelist and singers; 3:30-4, Western Electric Four; 6:30, Don Bestor's orchestra; 8:30, Mozart Choral club recital; 11, Adolphus hotel orchestra.

WGES, Oak Park, Ill. (250), 5-7 p. m., basso, organ, orchestra; 8-9, orchestra; organ selections; 11-1 a. m., violin, comedian, uke girl, organ, orchestra.

WGN, Chicago, Ill. (370.2), 12 m., household service program; 12:50 p. m., luncheon concert, Drake hotel concert ensemble and Blackstone string quintet; 3, rocking chair time, music, excerpts from Chicago Tribune and Liberty magazine; 3:30, tea time music, Marshall Field's tea room orchestra; 4:30-5, twilight musical; 5:30, Skeezix time, members of National Kindergarten and Elementary college; 6:30-7, dinner concert, Drake concert ensemble, Blackstone string quintet; 8-9, music, Drake concert ensemble and vocal artists; 10-11, dance program, Jack Chapman's and Blackstone hotel dance orchestras, assisted by popular artists.

WHAD, Milwaukee, Wis. (275), 11 a. m., pianologue, Andy Hertel; story for children, Faye McBeath; Margaret Cunningham, pianist; Willard Kaleibe, tenor band soloist.

WHAS, Louisville, Ky. (399.8), 4-5 p. m., concert, direction Susie Elvira Williams; songs; reading, Martha Pope Robinson; 5:30-9, concert, Town club, Joseph Henry, pianist.

WIBO, Chicago, Ill. (226), 2-4 p. m., shut-in program; Jack Spratt and the Carl Sulzer orchestra; Ted Florito, piano; Victor Young and Dan Russo, violinists; Vernon Hayes, saxophonist; 6-8, Walter Preston, request night; Eugene Wallentus, tenor; Frances Schieb, soprano; Ruth Buhl Flick, reader; old fashioned trio; male quartet.

WKAF, Milwaukee, Wis. (261), 8:30-10 p. m., program; 11:30-1 a. m., varied program.

WKRC, Cincinnati, O. (422.3), 10-10:45 p. m., Marion McKay and orchestra; studio features; Marion McKay and orchestra.

WLIB, Chicago, Ill. (308.2), 7-8 p. m., dinner concert; 9-10, program, Fred Hamm's Liberty orchestra, assisted by popular artists; 11-12, dance program, Jack Chapman and Blackstone hotel dance orchestras.

WLS, Chicago, Ill. (535.4), 12-12:45 p. m., Junior B. F. D. Roundup program; trapping series, S. T. Keshen; 7, lobby time, Ford and Glenn; 7:20-12, WLS Cornhuskers revue; request and dance program; Brook Sisters, Ford and Glenn; Joe Bren's Minstrels; Maurice Sherman orchestra.

WLW, Cincinnati, Ohio (422.3), 7 p. m., organ concert, Johanna Grosse; 7:40, Secretary Hawkins; 8, Community Fireside sing, chorus from Cincinnati Conservatory of Music; 8:30, the Christmas Carol, reading, B. C. Van Wye; 9:30, Bernadine, the "Little Rae Samuels" of the air.

WMAQ, Chicago, Ill. (447.5), 6-6:30 p. m., Chicago theater organ; Hotel La Salle orchestra; 8, Russell Pratt and Frederick Daw; 8:30, "Winter Sports Chicago," Ransom Kemlock; 9, Chicago theater revue.

WMBB, Chicago, Ill. (250), 7-8 p. m., Trianon duo, Ralph Elliott, Preston Graves, semi-classical program; 9-11, Trianon orchestra, Dell Lampe, Woodlawn theater orchestra, Armin F. Hand, Lionel Carter, Ed Hines, Scotty Welsh and Madison Sisters, Cecil and Esther Ward, M. P. Hughes.

WMC, Memphis, Tenn. (490.7), 7:15 p. m., bedtime stories; 8:30, Memphis Pictograph orchestra.

WOAW, Omaha, Neb. (526), 6 p. m., Sandman's visit; Val McLaughlin; 6:20, Rialto orchestra; 7, after-dinner

MOZART CHORAL CLUB SINGS AT WFAA

Saturday, December 19

hour; 9, DeLuxe program; 10:30, Frank Hodék and his Nightingale orchestra; 11, Arthur Hays and his organ jubilee, Dr. Applause announcing.

WOC, Davenport, Ia. (484), 5:45-6, chimes concert; 6:30-6:50, bedtime stories; 9-10, Jolly Knights quartet, Harold Puls, baritone, Harry Maher, tenor; 11-12, LeChaire hotel orchestra program, Peter MacArthur, baritone.

WOL, Ames, Ia. (270), 12:30 p. m., college chimes; 12:45, "Problems Relating To Soils—Questions and Answers," Prof. W. H. Stevenson.

WOK, Chicago, Ill. (217.9), 5-7 p. m., Gus C. Edwards and his orchestra; Capitol theater organ; Howard Will, tenor; Bob Mokrejs, pianist; 10-11 a. m., Gus C. Edwards and his orchestra; Husk O'Hare's Coconut Grove orchestra; Tierney's Town club orchestra; Capitol theater program; Fred Witmer, pianist; Harold Morava, tenor; Herman Sinaiko, violinist; George Allen, tenor; Harriet Lee, contralto; Bill Hay, bass; Honolulu Sorenson.

WOL, Chicago, Ill. (447.5), 11-12 noon, home economics program, Helen Harrington Downing, director; "The Christmas Story in Pictures," Marjorie Curry; "Better Diction," Peggy Richter; 3-4 p. m., Koffee Klatsch program; special musical features; Jerry Sullivan; Rose Vanderbosch, soprano and pianist; Hal Lansing and his uke; 7-8, dinner concert, Ralph Williams and his Rainbo Garden orchestra; Gertrude Quentin, soprano; Eleanor Wasserstrass, whistler; Ralph Keim, pianologist; Anne Keim, mezzo-soprano; 10-3 a. m., Ralph Williams and his Rainbo Skylarks; Jerry Sullivan; Rose Vanderbosch, pianist and soprano; Hal Lansing and his uke; Bert Davis, Everett George Orie, character actor; Clarence Thiers, tenor; Ritz, McFawn and Mary Bieber, harmony duo; Ila Shannabrock, soprano; George Thurn, kazoo and uke soloist; Anita Chellis, comedian; Joey Stool, tenor; Ed Vogel, baritone; Brundage and Kraemer, harmony duo; Thelma Pfefferle, soprano.

WSAI, Cincinnati, Ohio (326), 7:45-9:15 p. m., children's stories, Mrs. Ethel Knapp Behrme; chime concert, Robert Badgley; "Christmas Program," Bicycle Playing Card sextet; U. S. Playing Card weekly news review, Allison F. Stanley; Bicycle Playing Card sextet, soloist.

WSB, Atlanta, Ga. (428.3), 8 p. m., entertainment; 10:45, entertainment.

WSM, Nashville, Tenn. (282.8), 6:30 p. m., Francis Craig and his orchestra; 7, bedtime story interlude; 10, studio program, American Legion.

WSUI, Iowa City, Ia. (484), 7:30 p. m., musical program, Mrs. Mildred B. Paddock, vocalist, Mrs. Verne Fraser Buch, pianist.

Mountain Time Stations

KFWA, Ogden, Utah (261), 5-6 p. m., Radio dealers' program; 9-10:30, Oie Reeves and orchestra.

KOA, Denver, Colo. (322.4), 12:15 p. m., Rialto theater musicale; 7:30, Fred Schmitt's Super-Syncopators; 9, Wurtzbach's orchestra.

Pacific Time Stations

KFOA, Seattle, Wash. (454.3), 8:30-9:30 p. m., program; 9:30-11:30, Eddie Harkness and his orchestra.

KFWB, Hollywood, Calif. (252), 7:45 p. m., Microphone brevities; 8-10, Radio Doings Revels; Bill Blake, tenor; Hollywood string trio; Emma Kimmel, soprano; 10-11, Warner Brothers' frolic, direction Charlie Wellman; 11-12, Hollywood Roof dance orchestra.

KGO, Oakland, Calif. (361.2), 7:15-7:30 a. m., health training exercises, Hugh Dobbs; 7:45, Pep club; 8:15-8:30, exercises; 11:50-1 p. m., luncheon concert; 4-5:30 p. m., concert orchestra, Hotel St. Francis; Vinton LaFerra, conductor; 8:10, concert, San Francisco Real Estate Board glee club, Eugene Blanchard, director; J. L. Elmquist, accompanist; Barbara Blanchard, soprano; Richard J. Jose, contra-tenor; Edwin Imhaus, tenor; program, Sigmund Anker, violonist; Evelyn Bieschelm, pianist; Anker string quartet; 10-12, dance music, Hotel St. Francis.

KGW, Portland, Ore. (491.5), 10:30 a. m., Town Crier; music, news items and shopping guide; 12:30-1:30 p. m., Rose City trio; 6-7, dinner concert; 9-12, dance music.

KHJ, Los Angeles, Calif. (405.2), 6-6:30 p. m., Leighton's Arcade cafeteria orchestra, Jack Cronshaw, leader; 6:30-7:30, history story, Prof. Hertzog; Annie Hooker, readings; Henrietta Poland and Uncle John; 7:15-7:45 p. m., Christmas carols, pupils of Lida Helen Thompson; 8-10, program, Young's Market company; 10-11:30, Don Clark's Billmore hotel dance orchestra; 11:30-2 a. m., Times To Go, frolic first birthday party.

KMTR, Hollywood, Calif. (238), 8-10 p. m., KMTR concert hour, Turner orchestra, Loren Powell, director.

KNX, Hollywood, Calif. (336.9), 5-5:30 p. m., Sunny Jim's talk to children; 5:30-6:15, Wuritzer pipe organ studio; Town Tattler; 6:15, travel talk, W. F. Alder; 6:30-7, Atwater Kent concert orchestra, Paul Pfenstein, leader; 7, talk on insect life, H. W. McSpadden; 7:15, church announcements; 8-10, program, Commercial Construction company; 10-11, Bay West's Coconut Grove dance orchestra; 11-2 a. m., Filmland frolics, direction Chet Boone.

KPO, San Francisco, Calif. (428.3), 7:30, 8 a. m., daily dozen exercises, direction Y. M. C. A.; 10:30, "Ye Towne Cryer," and amusement information service; 12 noon, reading of the Scriptures; 1-2, Rudy Seiger's Fairmont hotel orchestra; 2:30, special matinee program; 3:30, Palace hotel concert orchestra; 6:30, "Ye Towne Cryer," and amusement information service; 6:35-7:30, Waldemar Lind and the States restaurant orchestras; 8-12, Cabrera cafe orchestra; Ben Berman, tenor.

KTAB, Oakland, Calif. (240), 9-9:30 a. m., prayer service, Rev. E. L. Spaulding.



A royal entertainer is young Celia Turrill who has often sung for the English king and queen. Before she came to America to become a member of the "Capitol Family," Miss Turrill's mezzo-soprano voice was often heard at the Royal Opera at Covent Garden. She is now singing every Sunday over WFAA and Chain.

KDKA, Pittsburgh, Pa. (309.1), 11 a. m., church service; 4 p. m., organ recital, Charles Heinrich, director; 4:45, vesper service, Shady-side Presbyterian church, Rev. Hugh Thomson Kerr, pastor; 6:30, dinner concert; 7:45, church service.

WAED, Port Huron, Mich. (275), 10-11:30 a. m., church services; 7:30-8:30 p. m., musical program, Addison hotel.

WBAL, Baltimore, Md. (375), 6:30-7:30 p. m., twilight program, WBAL concert orchestra, Gustav Klemm, conductor; soloist, John Wilbourn, tenor; 8, program of old English carols, choir of Emmanuel P. E. church, Frederick L. Erickson, organist and choir director.

WBBR, New York, N. Y. (272.6), 10 a. m., Watchtower orchestra; 10:20, Fred Twaroschik, tenor; 10:30, Bible lecture, Judge Rutherford; 11, Fred Twaroschik, tenor; 11:10, Watchtower orchestra; 9 p. m., I. B. S. A. choral singers; 9:10, violin duets, Prof. Charles Rohmer, Carl Park; 9:20, I. B. S. A. choral singers; 9:30, Bible lecture, Judge Rutherford; 10, I. B. S. A. choral singers; 10:10, violin duets; 10:20, I. B. S. A. choral singers.

WEZ, Springfield, Mass. (333.1), 10:50 a. m., services, South Congregational church, Rev. James Gordon Kiley, pastor; Prof. Wilson P. Moog, organist; 2:45 voice choir; quartet; 7 p. m., dinner concert, Copley Plaza orchestra, W. Edward Boyle, director; Marjorie Warren Leadbetter, soprano; 8, "Some Phases of the Prison Problem," Rev. M. J. Murphy; 8:30, "The Other Wise Man," Gladys Ruth Bridgman; organ accompaniment, Herbert Boardman; 9, organ, sections, Herbert J. Irvine.

WCAE, Pittsburgh, Pa. (461.3), 3:45 p. m., Dr. S. P.

Cadman, WFAA; 6:30, dinner concert, William Penn hotel; 7:20, Capitol theater gang, WFAA; 9:15, Atwater Kent.

WCAU, Philadelphia, Pa. (277.6), 5:20 p. m., Robert Fraser, blind Gospel singer; undenominational Radio church service, Rev. John W. Stockwell; 5:45, "Book of the Shepherd," Rev. John W. Stockwell; recital; 6:05, "The Best Christmas Anyone Can Have," Rev. John W. Stockwell; 6:45, Clarence Seaman and orchestra; 7:45, Cathay concert orchestra; 8:30, Bonwit Teller light opera company; 9, Potash & Perlmutter.

WCX, Detroit, Mich. (517), 10:30 a. m., services, Central Methodist Episcopal church.

WEAF, New York, N. Y. (491.5), 2:45-3:45 p. m., Radio services, auspices of Greater New York Federation of Churches, Dr. William B. Millar, presiding; 3:45-5:30, Men's conference in the Bedford Branch, Y. M. C. A., Brooklyn, N. Y., Mr. H. Walter Riland, presiding, also through WEAF, WEEL, WTAG, WCAE, WSAI; 7:20-9:15, musical program, Major Edward Bowes and the "Capitol Family," WEAF, WEEL, WCAP, WJAR, WTAG, WWJ, WCAE, KSD; 9:15-10:15, Atwater Kent Radio hour, Jeanette Vreeland, soprano; Elsie Baker, contralto; Lambert Murphy, tenor; William Simmons, baritone—WEAF, WEEL, WCAP, WJAR, WCAE, WSAI, WWJ, WOC, WCCO, WTAG, KSD, WEAB.

WEAR, Cleveland, Ohio (389.4), 3:30 p. m., Goodyear concert orchestra; 7, Park theater orchestra, Angelo Vitale director; 7:45, Fireside hour; 8:30, Vincent Percy organist; 9:15, Atwater Kent hour, WEAF.

WEEI, Boston, Mass. (348.6), 10:50 a. m., morning service, Old South church; 2:30 p. m., organ recital; 3:45, Dr. S. Parkes Cadman; 7:20, Major Bowes and his Capitol theater family; 9:15, Atwater Kent Radio hour.

WGBS, New York, N. Y. (315.6), 3:30-4:30 p. m., Warner's theater program.

WGR, Buffalo, N. Y. (319), 3 p. m., vesper service; 7:45, Central Presbyterian church service; 9:15, jointly with WEAF, Atwater Kent program.

WGY, Schenectady, N. Y. (379.5), 10:45 a. m., services, First Baptist church, Rev. Clarence Hill Frank, pastor; 5 p. m., organ recital, Dr. Frank Hill Rogers; 7, carillon program, Park Avenue Baptist church, WJZ; 7:30, services, First Baptist church; 9, WJZ studio program; 10, Gregory Ludlow, violinist, WJZ.

WHAR, Atlantic City, N. J. (275), 10:45 a. m., morning service, Chelsea Baptist church; 2:15 p. m., sacred recital, Seaside hotel trio; 2:45, sermon, Louis E. Wein; 7:50, Chelsea Baptist church; 9, "An Hour with the Classics," Seaside hotel quartet; 11:15, Strand theater organ recital.

WHN, New York, N. Y. (361.2), 5:30 p. m., Roseland dance orchestra; 10:45-11:15 p. m., Janssen's Hotburn orchestra; 12-12:30 a. m., Harry Richman and his Club Richman entertainers.

WIP, Philadelphia, Pa. (508.2), 4 p. m., "Is Prohibition Worth Enforcing?" Gifford Gordon; 7:15, service, Holy Trinity church, Rev. Floyd W. Tomkins, rector; 10, "The Barber of Seville," opera, Germantown theater; Ben Stutz and his Little symphony orchestra.

WJAR, Providence, R. I. (305.9), 7:20 p. m., Major Bowes and the Capitol family; 9:15, Atwater Kent hour.

WMCA, New York, N. Y. (340.7), 11 a. m.-12 m., services, Fourth Church of Christ Scientist; 6-7 p. m., Roemer's Homers; 7-7:30, Ernie Golden and his Hotel McAlpin orchestra; 7:35-8, Olcott Vail and his Hotel McAlpin string ensemble; 10:30-11, Daven Radio artists.

WOO, Philadelphia, Pa. (508.2), 10:45 a. m., services, Bethany Presbyterian church; Rev. A. Gordon MacLenna, pastor; 2:30 p. m., musical exercises, Bethany Sunday school; grand organ recital.

WREO, Lansing, Mich. (285.5), 10 a. m., chimes from belfry, Plymouth Congregational church; 10:30, services, First Baptist church, Rev. Ralph W. Hobbs, pastor; 7 p. m., services, Central M. E. church, Rev. Frank Kingdon, pastor.

WTAG, Worcester, Mass. (268), 3:45-5:30 p. m., men's conference, Bedford branch, Y. M. C. A., Brooklyn, N. Y., address by Dr. S. Parkes Cadman, answers to questions by Dr. Cadman; mustang orchestra; 7:20-9:15, musical program by Major Edward Bowes and "Capitol Family" from Capitol theater, WEAF; 9:15-10:15, Atwater Kent Radio hour.

WTIC, Hartford, Conn. (475.9), 8:15 p. m., First of a series of Sunday concerts, Metropolitan artists, ensemble.

WWJ, Detroit, Mich. (352.7), 11 a. m., services at St. Paul's Episcopal cathedral; 2 p. m., Detroit News orchestra; 7:20, Capitol theater gang, WEAF.

Central Time Stations

KFAB, Lincoln, Nebr. (340.7), 4-5 p. m., vesper service, sermon, musicale.

KFDM, Beaumont, Texas (315.6), 11-12 a. m., church services; 8-9 p. m., church services.

KFEQ, Oak, Nebr. (268), 4:30-6 p. m., Steele City band; 9-10:30, King's entertainers.

KFKX, Hastings, Nebr. (283.3), 7:30 p. m., Christmas musicale, choir First Methodist church, Edith Mays director.

KFMX, Northfield, Minn. (337), 7-8 p. m., college vesper service.

KFNW, Shenandoah, Iowa (266), 10:45 a. m., morning worship, First M. E. church; 2:30 p. m., Golden Rule song service; 8, Men's Glee team; 6-9, regular services, Golden Rule Circle; 7:30, Christian church services.

KFUO, St. Louis, Mo. (545.1), 4 p. m., "I Am Come Down from Heaven," Prof. M. Sommer, music and songs; 9:15, "The Messiah Will Come," Prof. W. Arndt, music and songs.

KLDS, Independence, Mo. (441), 11 a. m., Stone church services, Robert Miller, organist; Christmas solo, Lily Bell Allen; chorus, choir; Albert Brackenbury, baritone; sermon, Elbert A. Smith; 3 p. m., sacred program; 6:30, vesper services; Christmas carols, quartet; I. A. Smith, soprano; S. A. Burgess, contralto; George Anway, tenor; Frank Russell, bass; sermon, Ralph W. Farrell; 9, Christmas program, Pauline Becker, Etzenhauser, organist; Lillian Green, violinist; George Anway, tenor, organ, violin, and piano accompaniment; Bertha and Alice Burgess, duettists; sermon, Dr. Frederick M. Smith.

KMA, Shenandoah, Iowa (252), 4-6 p. m., vesper services, music; talk, G. H. Van Houten.

KSD, St. Louis, Mo. (545.1), 6:15 p. m., WEAF "Good Will" program.

KTHS, Hot Springs, Ark. (374.8), 11-12:15 a. m., services, First Presbyterian church, Rev. Chauncey Hickok, pastor; 9-10 p. m., classic hour de luxe program, Meyer Davis New Arlington grand ensemble; 10-11, "Arkansas Traveler" frolic by Benny Ford and orchestra.

KYW, Chicago, Ill. (536), 11 a. m., Central church service, Orchestra hall, Rev. Frederick F. Shannon, pastor; 2:30 p. m., chapel service, Chicago Church Federation; 4:30, concert, direction Edwin Harper; 7, Sunday Evening club Orchestra hall; 9:30, classical concert, direction Commonwealth Edison company.

WBAP, Fort Worth, Tex. (475.9), 11 a. m., complete service, First M. E. church, Rev. E. B. Hawk, pastor; 12:30 p. m., "Kiddies Hour," Uncle Billy; 11-12, popular concert.

WBBM, Chicago, Ill. (226), 12:30-2 p. m., classical program, Edna Wheeler Ballard, harpist; Harry Sosnik and Sandy Meek; Moulins Rouge quartet; 4-6, Ziegler sisters; Jack Garcia, Hawaiian guitarist; Harold Anderson, accordionist; orchestra; Lew Russell; xylophone trio; 8 p. m., trio; 8-10, Philip Miles, tenor; Sunset quartet; Moulins Rouge orchestra; 12-2 a. m., Nutty club; Moulins Rouge orchestra.

WBCN, Chicago, Ill. (266), 10:30-12 m., morning service, People's Liberal church; talk, Rev. Rufus A. White; 4-5 p. m., Dain & Son classical hour; Velma Cook, soprano; Oriental quartet; male harmony group; Robert Stromach, pipe organist; 7:45-9:15, evening service, Thoburn M. E. church, 40-piece Thoburn semi-symphony orchestra; 80-voice choir, special vocal soloists; speaker.

WCBZ, Zion, Ill. (344.6), 8 p. m., musical program by a quartet on celestial bells and mixed quartet; Alice Peters, violinist; Miriam Hollingshead, flutist; Mrs. John B. Thomas, soprano; Mrs. P. M. LaRose, contralto; D. P. Barton and J. D. Thomas, duets; Mrs. Hester Robinson, reading; Mrs. Athol Heath, pianist.

Sunday, December 20

Headliners Today

Eastern	Central	Mountain	Pacific
4:15 p. m.	3:15 p. m.	2:15 p. m.	1:15 p. m.
WHAD (275)	Milwaukee Turnverein, symphony orchestra.		
8	7	6	5
WBAL (375)	English carols.		
8:15	7:15	6:15	5:15
WTIC (475.9)	Metropolitan artists, ensemble.		
9:15	8:15	7:15	6:15
WEAF (491.5)	WEEL (348.6)	WGR (319)	WCAE (461.3)
WCAP (468.5)	WJAR (305.9)	WTAG (268)	KSD (545)
WCCO (416.4)	WOC (483.6)	WFI (394.5)	WLIB (302.8)
WSAI (326)	WEEI (348.6)	9:30	8:30
7:30	6:30		
WFAA (475.9)	Mozart choral club.		
10	9	8	7
KTHS (374.8)	Famous ballad numbers.		
WIP (508.2)	"The Barber of Seville," opera.		
10	9	8	7
KTHS (374.8)	Arkansas Traveler frolic.		
12 m.	11	10	9
KFWB (252)	Movie frolic.		
KNX (336.9)	Calmon Luboviski, violinist.		

Sunday, silent night for: CFAC, CHIC, CKNC, CNRA, CNRC, CNRE, CNRM, CNRO, CNRR, CNRT, CNRV, CNRW, KFAB, KFAU, KFDJ, KFMQ, KFOA, KFVE, KFWA, KMA, KMTR, KOB, KSAC, KSD, KWGC, FWX, WAH, WBAP, WCAP, WCAE, WCCO, WCF, WFAA, WFAE, WFB, WGB, WGS, WGPC, WGBE, WHAD, WHAS, WHAZ, WJAZ, WJJD, WKAR, WLIT, WMAQ, WMC, WNYC, WOI, WOR, WRC, WSAI, WTAM, WTIC.

Eastern Time Stations

CFCA, Toronto, Can. (356), 11 a. m., service, St. Paul's Anglican church, Canon H. J. Cody; 7 p. m., service, Walmer Road Baptist church, Dr. John Mac Neill.

Atwater Kent Program, December 20, over WFAA and Chain*

Artists will be Jeannette Vreeland, soprano; Elsie Baker, contralto; Lambert Murphy, tenor; William Simmons, baritone. Charles Albert Baker at the piano.

- a. "Sing O Heavens".....Tours
 - b. "Silent Night".....Franz Gruber
Vreeland, Baker, Murphy and Simmons
- II
- a. "Jesus of Nazareth".....Charles Gounod
 - b. "The Angels' Song".....William Stickles
William Simmons
- III
- a. "Ave Maria".....Charles Gounod
 - b. "Rejoice Greatly Messiah".....Handel
Jeannette Vreeland
- IV
- a. "No Candle Was There and No Fire".....Liza Lehmann
 - b. "The Birthday of a King".....Meidlinger
Elsie Baker
- V
- a. "The Star of Bethlehem".....Stephen Adams
 - b. "There Is No Death".....Geoffrey O'Hara
Lambert Murphy
- VI
1. "Holy Night".....Adolphe Adam
 - b. "Little Town of Bethlehem".....Homer Bartlett
Vreeland, Baker, Murphy and Simmons

*The WFAA chain for the Atwater Kent hour (9:15 p. m., eastern, 8:15 p. m., central time) includes WEAF (491.5), WGR (319), WCAE (461.3), WCAP (468.5), WJAR (305.9), WTAG (268), WLIB (302.8), KSD (545), WCCO (416.4), WOC (483.6), WOO (508.2), WSAI (326), WEEI (348.6).

KDKA BROADCASTS PRINCETON PLAY

Sunday, December 20

WCCO, Minneapolis-St. Paul, Minn. (416.4), 10:50 a. m.: Plymouth Congregational church, Rev. H. P. Dewey, pastor; 1:45 p. m., Christian Endeavor program; **WEAF, Rev. Daniel Poling, speaker; 4:10, House of Hope Presbyterian church, St. Paul, Rev. H. C. Swearingen, pastor; 6:20, Second Church of Christ Scientist, Minneapolis; 8:15, Atwater Kent program, WEAF.**

WDDO, Chattanooga, Tenn. (256), 7:30-9 p. m., church service.

WEBH, Chicago, Ill. (370), 10:45 a. m., Seventh Church of Christ Scientist; 5-6, twilight musicale; 7-9, artists' program.

WEBW, Beloit, Wis. (263), 4:30 p. m., regular College vesper service.

WENR, Chicago, Ill. (266), Rauland lyric trio, soprano solos, sacred selections; 9:30-11:30 p. m., All-American Pioneers, Hal Laige, saxophone, Frank Westphal, pianist, vocalists.

WFAA, Dallas, Tex. (475.9), 2:30-4 p. m., Sunday hour for farmers; 6:30-11, Radio Bible class, Dr. William M. Anderson; service of First Methodist Episcopal church, Dr. Carl C. Gregory, pastor; male quartet and chorus from Cliff Temple Baptist church; Tom D. Collins and orchestra.

WGES, Oak Park, Ill. (250), 10:15 a. m.-12 noon, services, Austin M. E. church, choir, pipe organ; 5:40 p. m., Moody Bible school program, features; 11-12, mixed features.

WGN, Chicago, Ill. (370.2), 12 m., Uncle Walt reads the comics to the children; 12:45 p. m., program from Chicago theater; 2:30-3:30, Lyon and Healy organ recital; 3:30-5, Chicago Musical college concert from Central theater; 9-10, hour of music, Blake H. Wilson, baritone.

WHAD, Milwaukee, Wis. (275), 3:15 p. m., Turnverein symphony orchestra.

WHAS, Louisville, Ky. (399.8), 9:57 a. m., organ music; 10, church service, Broadway Christian church, Rev. W. N. Briney, pastor; 4 p. m., George Latimer, organist; 4:30-5:30, evensong choral service, Christ Church cathedral, the Very Rev. Richard L. McCready, dean, assisted by Rev. Frank W. Hardy, senior canon, Rev. J. M. Nelson, canon missionary, boys' choir.

WHB, Kansas City, Mo. (365.6), 9:00-10:45 a. m., services, Linwood Boulevard Christian church, Rev. B. A. Jenkins, minister; Rev. E. A. Blackman, co-minister; 11-12:15 p. m., services representative church; 8-9:15, program Linwood Forum, Rev. E. A. Blackman, chairman.

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

WIBO, Chicago, Ill. (226), 2-4 p. m., concert; Ted Fiorito, Victor Young, Dan Russo; 6-8, Walter Preston, sacred songs; Fred Nobel, cornetist; Earl Raymond Bigelow, R. G. Ball, Raymond Barker, Helen Snyder; 10, program, Hamilton Club of Chicago.

"Ernie, the Man with the Carborundum Voice" is really E. J. Clare, below. Every Friday he directs "The Village Blacksmith Shop" and "Thirty Minutes of Something Different" at WGE, Buffalo.



Swindell, conductor; Erwin Holbrook, May Chambers, and Elsie Haak-Schroeder, operatic soloists.

WOK, Chicago, Ill. (217.3), 1-2 a. m., Tierney's Town club orchestra; Husk O'Hare's Coconut Grove orchestra; Harriet Lee, contralto; Herman Sinaiko, violinist; George Allen, tenor; Bob Mokrejs, pianist; 6 p. m.-1:30 a. m., Gus C. Edwards and his orchestra; Husk O'Hare's Coconut Grove orchestra; Tierney's Town club orchestra; Capitol theater musical program; WOK mixed quartet; Herman Sinaiko, violinist; Harriet Lee, contralto; George Allen, tenor; Bob Mokrejs, pianist; Bill Hay.

WQQ, Kansas City, Mo. (278), 11 a. m.-12:30 p. m., services; 7-7:45, services.

WORD, Batavia, Ill. (275), 10 a. m., hymns and sacred songs; 10:15, Bible lecture, C. W. Apgar; 9 p. m., hymns and sacred songs, I. B. S. A. choral singers; 9:15, Bible lecture, E. G. Wylan; 9:40, Betty Butz, pianist.

WOS, Jefferson City, Mo. (440.9), 9:30 a. m., services, First Christian church, Rev. Haushalter, pastor; 7:30 p. m., services, First Christian church, Rev. R. M. Talbert, pastor.

WQJ, Chicago, Ill. (447.5), 9:30-11:30 a. m., services, People's church; address, Dr. Preston Bradley; Clarence Eddy, organist; 3-4 p. m., concert hour, Jerry Sullivan, director; Leonard F. Keller, violinist; Elsa Blasgen, lyric soprano; John Zwick, pianist; Grace

Presbyterian church; 7:25-9 p. m., First Presbyterian church.

KHJ, Los Angeles, Calif. (405.2), 4-5 p. m., musicale, Western Auto Supply company; 6:30-7, Leighton's Arcade cafeteria orchestra, Jack Cronshaw, leader; 7-7:30, First Methodist Episcopal church; 8-10, program; Martin Music company, John Martin, concert pianist; Ruth Pitts, soprano.

KNX, Hollywood, Calif. (336.9), 2-4 p. m., broadcast to nine city parks, Los Angeles Park Board; 7-8, First Presbyterian church of Hollywood; 8-9, Ambassador hotel concert orchestra, Josef Rosenfeld, director; 9-10:30, program; Beverly Hills Nurseries; Calmon Luboviski, master violinist; Raquel Nieto, coloratura soprano.

KPO, San Francisco, Calif. (428.3), 9:45-10:45 a. m., "The Challenge of Bethlehem," Dr. H. H. Bell; contralto solos, Verna Lorraine Day; Uda Waldrop, organist; 5-6 p. m., organ recital, Marshall W. Giselman; 6-6:30, Waldemar Lind and the States Restaurant orchestra; 6:35-7:30, Palace hotel concert orchestra, Cyrus Trobde, director; 8-8:30, Palace hotel concert orchestra, Cyrus Trobde, director; 8:30-10, Rudy Selger's Palmont hotel orchestra.

KYAB, Oakland, Calif. (240), 9:45-10:45 a. m., Bible lecture, Prof. E. G. Linsley; 11 a. m.-12:30 p. m., church service; 7:45-9, church service; 9:30-11, after-service concert.

Jacquillard, soprano; 8:30, Rialto club orchestra; 9-9:05, Radio Santa Claus; 9:05-9:15, Charles Brass, tenor; 9:15-9:45, Synchronphase trio; 10-10:15, Jevva Blix, Norwegian contralto; 10:15-10:45, Joe Zimmerman's orchestra; 12-1 a. m., dance orchestra.

WBAL, Baltimore, Md. (375), 6:45-7:45 p. m., dinner program, WBAL dinner orchestra, Robert P. Iula, conductor; 8-9, musical program, Eugenia Earp Arnold, contralto; Conner Turner, baritone; Catherine Costello, pianist; 9-9:10, Gen. Lawrason Riggs, president Peabody Institute; 9:10-10, musical program, Douglas McComas, tenor; Elizabeth Duncan McComas, soprano; Robert Lee, violinist.

WBBR, New York, N. Y. (272.6), 8 p. m., Irene Kleinpeter, soprano; 8:10, World News digest; 8:20, George Twarosch, violinist; 8:30, Bible instruction; 8:40, George Twarosch, violinist; 8:50, Irene Kleinpeter, soprano.

WBZ, Springfield, Mass. (333.1), 6:10 p. m., Santa Claus; 6:30, announced; 7:30, Capitol theater orchestra; 8, concert, Copley Plaza orchestra, W. Edward Boyle, director; 8:30, organ recital, Rene Dagenais, 9, Aleppo drum corps, Shriners' Band concert; 9:30, Leslie Stearns, tenor; Alwyn E. W. Bach, baritone; Katherine Gravelin, pianist; 10:05, Leo Reisman's Hotel Brunswick orchestra.

WCAE, Pittsburgh, Pa. (461.3), 10:45 a. m., Gold Medal talk; 3 p. m., program, Loew's Aldine theater.



One Christmas gift from KGO, Oakland, will be the broadcasting of the beautiful voice of Edna Lister, lyric-soprano, (above). Between 3 and 4 p. m., pacific time on Christmas day she will provide music for new and old fans to tune in. Ina Rains, left, is a Denver prima donna who sings often during the housewives' matinee Fridays at KOA. She is shown here as Leonora in the prison scene from "Il Trovatore."

6:30, dinner concert, William Penn hotel; 7:30, Santa Claus; 8, Nixon orchestra; 9, studio concert; Jessie Santmyer, soprano; 10, grand opera; 11, Loew's Aldine theater program.

WCAU, Philadelphia, Pa. (277.6), 8 p. m., Edwin Evans program; 8:45, Barry O'Moore and the American Radio trio; 9:10, Royal P. MacLellan, tenor; 9:30, Delaware County serenaders; 10, Tom Houston, Jimmy Loughrey, Don Traveline; 10:30, Parodians.

WCX, Detroit, Mich. (517), 6 p. m., dinner concert, Book-Cadillac hotel; 8, musical program.

WEAF, New York, N. Y. (491.5), 6:45-7:20 a. m., "Tower Health Exercises," WEAF, WEEL, WCAP; 10:45-11:05, Betty Crocker Gold Medal Flour home service talk; 11:05-11:15, Marion Schott, pianist; 11:15-11:30 a. m., "Parents Who Have Forgotten Their Own Childhood," Mrs. Rollin Lynd Hart; 11:30-12:00 m., lecture, Columbia university; 4-4:10 p. m., Miriam Witkin, soprano, accompanied by Dorothy Longacre; 4:10-4:20, Flo Wagner, pianist; 4:20-4:30, Miriam Witkin, soprano; 4:30-4:45, Flo Wagner, pianist; 4:45-5, "The Irish Poets," John Murphy; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:30, "Moment Musicale," Colonial Aces; Paul Jenlenek, pianist; 7:30-7:45, Colonial Aces; 7:45-8, Paul Jenlenek, pianist; 8-8:45, carol service, choir of Memorial Presbyterian church, WOO; 8:45-9, "Tower Health Talk," WEEL, WCAP; 9-10, A. & P. Gypsies, WEEL, WCAP, WWJ, WJAR, WOO, WSAI; 10-11, grand opera, "Tales of Hoffman," WEAF Grand Opera company, WOO, WCAE, WJAR, WCAP, WTAG; 11-12, Ben Bernie and his orchestra, Hotel Roosevelt.

WEAO, Columbus, Ohio (293.9), 1:15 p. m., "Timely Economic Information for the Farmer," C. J. West.

WEAR, Cleveland, Ohio (389.4), 11 a. m., Betty Crocker home service; 11:30, farm talk; 7 p. m., Allen theater orchestra, Maurice Spitalny, director.

WEEL, Boston, Mass. (348.6), 7:45 a. m., morning watch; 2 p. m., Happy Hawkins and his orchestra; 3, Disabled Veterans' Christmas stocking program; 6:45, Big Brother club; 7:30, Santa Claus; 8, E. B. Rideout, meteorologist; 8:15, program, Marjorie Possett; 8:45, "Tower Health Talk"; 9, A. & P. Gypsies; 10, Scotty Holmes and his orchestra; Imperial Marimba band.

WGBS, New York, N. Y. (315.6), 10-10:20 a. m., timely talk with Terese, music by Jack Choen; 10:20-10:40, Dorothy Herzog, talk on interior decorating; 10:40-10:50, fashion talk, Lillian Regan; 1:30-1:35 p. m., Scripture reading; 1:35-2, Herbert Medel, jazz pianist; 2-2:30, Wallace Winelin, tenor; 3-3:10, talk, Ruth Pickering (Mrs. Amos Pinchof), National Women's Party program; 3:10-3:20, George F. Maden, tenor; 3:20-3:30, George Junior Republic program; 3:30-3:40, George F. Maden, tenor; 3:40-3:45, League of Women Voters program; 3:50-4, George F. Maden, tenor; 6-6:30, Uncle Geebee; 6:30-7, Premier club orchestra.

WGHB, Clearwater, Fla. (266), 6-7 p. m., Fenway hotel orchestra; 8:30-10, McVey and Hoar, piano and vocal team; Madame Bowen, opera star; F. L. Hanson, baritone; 11:45-1, 2 a. m., orchestra entertainers.

WGR, Buffalo, N. Y. (451), 2:30 p. m., WGB's afternoon program; 6:30, Cliff Dwellers orchestra; 8:45-9, Bernice Riggs, pianist; 9, Howard Glenn Boice, pianist; 9:45, Pilgrim male quartet; 10:15, Bertha Drescher and W. H. F. Tenney, popular program; 11-1 a. m., Vincent Lopez' Hotel Statler dance orchestra, Harold Gleser, director.

WGY, Schenectady, N. Y. (379.5), 2 p. m., Asia restaurant orchestra; 2:30, music, household talks, cooking lessons, Jessie E. Lane; "How the Shopper Can Help the Sales Clerk," Beatrice Hunter; 6:30, Santa's half hour with the kiddies; 7, WGY agricultural program; 7:45, "Literary Appreciation Series," William L. Widdemer; program.

WHAR, Atlantic City, N. J. (275), 2 p. m., Seaside hotel trio; 7:30, fashion revue; 8, Seaside hotel trio.

WHAZ, Troy, N. Y. (379.5), 9 p. m., Christmas program, Rensselaer high school students, Prof. W. S.

Monday, December 21

Headliners Today

Eastern	Central	Mountain	Pacific
8:30 p. m.	7:30 p. m.	6:30 p. m.	5:30 p. m.
WOR (405.2)	Al Reid's hour.		
9	8	7	6
WHAZ (379.5)	Christmas program.		
WOS (440.9)	Christmas program.		
9:30	8:30	7:30	6:30
WHO (526)	Male chorus.		
10	9	8	7
WEAF (491.5), WGR (319), WCAE (461.3), WCAP (468.5), WJAR (305.9), WTAG (268), WOO (508.2), "Tales of Hoffman," Grand opera.			
WOAW (526)	Skeen trio.		
11	10	9	8
WSAI (326)	Community night.		

Monday, silent night for: CHIC, CNRA, CNRC, CNRE, CRNM, CNRD, CNRR, CNRT, CNRY, CNRW, KFDM, KFEE, KFEX, KHJ, KLDS, KYW, FWX, WBBM, WCAD, WCBD, WEAO, WEBB, WEBJ, WEBW, WENR, WGBS, WGES, WGN, WHAS, WHT, WIP, WJAZ, WJJD, WLBB, WLS, WMAQ, WMBB, WOAI, WOC, WOK, WORD, WQJ, WRC, WROE.

Eastern Time Stations

CKNC, Toronto, Can. (356.9), 8-11 p. m., Little symphony orchestra, Charles E. Bodley, director; Aeolian vocal quartet; Schuch concert singers.

KDKA, Pittsburgh, Pa. (309.1), 7:15 and 8 a. m., exercises; 5:45 p. m., children's period; 6:30, dinner concert; 9, Spear's Happy Home hour.

WAFD, Port Huron, Mich. (275), 9-10 p. m., studio program; 10-12, musical program, Addison hotel.

WAHG, Richmond Hill, N. Y. (315.6), 12-1 p. m., musical program; 7:30-7:45, George Wooley, saxophonist; 7:45-8:15, Synchronphase trio; 8:15-8:30, Augustine

Mountain Time Stations

CFAC, Calgary, Can. (435.8), 11 a. m., First Baptist church, Rev. Dr. H. H. Bingham.

KFXF, Colorado Springs, Colo. (250), 7:30-9 p. m., services, First Methodist church.

KOA, Denver, Colo. (322.4), 11 a. m., service, Trinity M. E. church, Dr. Loren M. Edwards, pastor; 3 p. m., Clarence Reynolds, organist; 7:45, service, Trinity M. E. church.

Pacific Time Stations

KFWB, Hollywood, Calif. (252), 9-11 p. m., late news, Warner Brothers movie frolic, California serenaders; California Blue Boys; Jack Kurtz, whistling pianist; Albert Keglovich, violinist; surprise visitors from the movie studios.

KGO, Oakland, Calif. (361.2), 11 a. m., services, First Congregational church, Rev. James L. Gordon, pastor; 3:30 p. m., concert, KGO Little symphony orchestra, Carl Rhodehamel, conductor; Arth S. Garbett, writer; Helen d'Asalena, soprano; 7:45, services, First Congregational church, Rev. Gordon, pastor.

KGW, Portland, Ore. (491.5), 10:25 a. m.-12 m., First

WKAF, Milwaukee, Wis. (261), 4-6 p. m., tea time program de luxe.

WKRC, Cincinnati, Ohio (422.3), 6:45 p. m., songs and service, Walnut Hills Christian church, Dr. J. J. Castleberry, pastor; 10, classical program, vocal and instrumental.

WLBB, Chicago, Ill. (306.2), 4-5 p. m., Chicago Philharmonic orchestra; 5-6, program, Fred Hamm and Liberty orchestra; 6-6:30, Edward Benedict, organist; 8:15-9:15, program, WEAF.

WLS, Chicago, Ill. (344.6), 6-7:55 p. m., The Little Brown church in the Vale Sunday evening service.

WLW, Cincinnati, Ohio (422.3), 9:30 a. m., school editorial staff of Sunday School Publications, Methodist Book concern; 11, morning worship, Seventh Presbyterian church, Jesse Halsey, minister; 3 p. m., special organ recital series, Adolph H. Staderman; 4, concert of carols, girls' glee club of Woodward high school, direction of E. Jane Wisenall; 7:30, services, Emmanuel Lutheran church, Rev. F. L. Dannenfeldt, pastor; 8:30, the H. & S. Pogue company concert, Walter Esberger, director.

WMBB, Chicago, Ill. (250), 3-5 p. m., Trianon orchestra, Dell Lampe, Woodlawn theater orchestra, Armin F. Hand, Walter Duffy, Billie Allen Hoff, A. Cayanaugh; 7:40-9, services, Fifth Church of Christ Scientist; 9-11, Trianon orchestra, Dell Lampe, Woodlawn theater orchestra, Armin F. Hand, David Boyd, Scotty Welsh and Madison Sisters, Walter Duffy, Billie Allen Hoff.

WOAI, San Antonio, Tex. (394.5), 11 a. m., services, First Presbyterian church, Rev. P. D. Hill, pastor; 7:45, services, Central Christian church, Rev. Hugh McLellan, pastor.

WOAW, Omaha, Nebr. (526), 9 a. m., services, Omaha Gospel Tabernacle of Christian and Missionary Alliance, Rev. R. R. Brown; 2 p. m., Christmas cantata, "From Prophecy to Manger"; 6, Bible study period, Mrs. Carl Gray, director; 9, a cappella choir, Walter B. Nielson, director.

WOC, Davenport, Iowa (483.6), 1-2 p. m., orchestra concert, Palmer Little symphony; Erwin Swindell, conductor; Paul J. Yiperman, tenor; 6:30-7, services, Lutheran church; "God's Gift to the World," Rev. Alfonso A. Marohn; 8:15-9:15, Atwater Kent artists, WEAF; 9:45-11:45, Palmer Little symphony; Erwin

SPECIAL CHRISTMAS FEATURES PROMI

Index to Popular Concerts

Saturday, December 19

Eastern	Central	Mountain	Pacific
7:30 p. m.	6:30 p. m.	5:30 p. m.	4:30 p. m.
WFAA			
8	7	6	5
WLS			
9	8	7	6
WBBM, WFAF, WENB, WGBS, WLS, WMAQ, WNYC			
10	9	8	7
KFAB, KPRC, WBBM, WENB, WGN, WLS, WMBB, WBEQ			
11	10	9	8
KFVE, KFVB, KNX, KHHS, WBBM, WMBB, WOK, WQJ, WIC			
12	11	10	9
KNX, KOIL, KPO, KPRC, WBBM, WLS, WOAW, WOK, WQJ			
1 a. m.	12 m.	11	10
KFWB, WDAF, WBBM, WEBB, WENR, WOK, WQJ, WSAI			
2	1 a. m.	12 m.	11
KNX, WBBM, WENR, WQJ			

Sunday, December 20

Eastern	Central	Mountain	Pacific
9 p. m.	8 p. m.	7 p. m.	6 p. m.
WBBM			
10	9	8	7
WBBM, WMBB			
11	10	9	8
WMBB			
12	11	10	9
KNX, KHHS			
1 a. m.	12 m.	11 p. m.	10
KFWB, WBBM			
2	1 a. m.	12 m.	11
KFWB			

Monday, December 21

Eastern	Central	Mountain	Pacific
7 p. m.	6 p. m.	5 p. m.	4 p. m.
WBBM, WFAA, WOAW			
8	7	6	5
WGBS			
9	8	7	6
WCAU, WFAF, WGR, WKRC, WOK			
10	9	8	7
KFAB, WGR, WKRC, WMCA, WOAW, WOK, WSQB			
11	10	9	8
KFAB, KFVE, WOK			
12	11	10	9
KLX, KNX, KOIL, WHO, WOK			
1 a. m.	12 m.	11	10
KFWB, KLX, WAHG, WDAF, WHT, WKRO, WOK			
2 a. m.	1 a. m.	12 m.	11
KFWB			

Tuesday, December 22

Eastern	Central	Mountain	Pacific
7 p. m.	6 p. m.	5 p. m.	4 p. m.
WMAA, WOAW			
8	7	6	5
WBBM, WEAR			
9	8	7	6
WBBM, WEAR, WBZ, WSB			
10	9	8	7
WBBM, WMBB, WOAW			

Monday, December 21

Clark, director; 10, address, Dr. Robert A. Patterson; 10:15, Troy Salvation Army band.

WHN, New York, N. Y. (361.2), 6-6:30 p. m., Little's orchestra; 6:30-6:45, "Daddy Dingle and his Jingle Machine"; 6:45-7, "Littman's dinner music"; 7-7:30, Marlboro state trio; 7:30-8, Joe Ward's Swane entertainers; 8-8:05, "Storage Batteries"; H. B. Shontz; 8:05-8:30 p. m., Roseland dance orchestra; 8:30-9, Guardian entertainers; 10:30-11, Frivolity orchestra; 11-11:30, Cotton club orchestra; 11:30-12, Silver Slipper orchestra; 12-12:30 a. m., Ted Lewis and his Parody club orchestra.

WIP, Philadelphia, Pa. (508.2), 7 a. m., setting-up exercises; 1 p. m., Gimbel tea room orchestra; 3, artist recital; 4, market hints to housewives, W. R. Whitacre; 6:05, Benjamin Franklin concert orchestra; 7, Uncle Vin's bedtime story and roll call, dance lesson.

WIAR, Providence, R. I. (305.9), 10 a. m., Housewives' Radio exchange, Mrs. Wood; 1:05 p. m., program; 8, Phillips Memorial Choral association; 9, A. and P. Gypsies; 10, WFAF grand opera, "The Tales of Hoffman."

WMCA, New York, N. Y. (340.7), 6-6:30 p. m., Olecott Vail and his Hotel McAlpin string ensemble; 6:30-7:30, Ernie Golden and his Hotel McAlpin orchestra; 7:30-7:45, Elvira Books, reader; 8-8:30, Knickerbocker Family Circle; 8:30-9, Kurtz Carnival Kings; 9-10, Christian Science lecture; 10:30-11:30, Barclay Radio program; 11:30-12, Jack Cohen, popular pianist.

WNYC, New York, N. Y. (526), 6:30-7 p. m., German lessons; 7:35-8:30, dance program; 8:30-10, program, Citizens of Great Kills, Staten Island; 10:10-10:30, lecture.

WOOD, Philadelphia, Pa. (508.2), 11 a. m., grand organ; 12 m., luncheon music, Golden's Crystal tea room orchestra; 4:45 p. m., grand organ and trumpets; 7:30, dinner music, Hotel Ritz-Carlton concert orchestra; 8, brook services, choir, Memorial Presbyterian church, Brooklyn, direction S. Lewis Elmer, organist; 9, music, A. and P. Gypsies; 10, grand opera, "Tales of Hoffman"; WBAF; 11, dance music, Hotel Sylvania orchestra.

WOR, Newark, N. J. (405.2), 3:45-4 p. m., Charm Magazine talk; 6:15-6:30, sport talk, Bill Wathey; 6:30-7:15, Hotel Shelton ensemble; 7:30-8, Crystal Palace orchestra; 8:30-9:30, Al Reid's hour; 9:45-10, travel talk, Edward H. Bierstadt; 10:15-10:30, piano talk, Ballin and Race; 10:45-11, piano talk, Ballin and Race; 11-11:30 p. m., Archie Slater's orchestra; 11:30-12 p. m., New Hofbrau Haus orchestra.

WRO, Washington, D. C. (468.5), 10 a. m., women's hour, WJZ; 12 m., organ recital, Henri Schmidt-Gregor; 1 p. m., Shoreham hotel orchestra, Sidney Seidenman, director; 4:30, musical program.

WTAG, Worcester, Mass. (268), 10:30 a. m., musical selections; 10:45, address, Marjorie Woodman, Sherry staff nurse; 12:05-2 p. m., luncheon music, Will Hardy's orchestra; 7, science talk, Fred D. Aldrich; 7:15, "Twinkle Twinkle Story Teller"; 7:45, official Scout news, Mr. Wadleigh; 8-10, Robin Hood's orchestra; 10-11, grand opera, "Tales of Hoffman"; WFAF.

WTAM, Cleveland, Ohio (389.4), 12:15-1:15 p. m., lunch hour; 6-7, dinner hour; 8-10, concert, Willard Ladies' ensemble, Annabelle Hess, Harmonie mate quartet; 10-11, organ recital; 11-1 a. m., dance music, Guy Lombardo and his Royal Canadians.

WTIG, Hartford, Conn. (475.9), 8:30, Emil Heinberger's Hotel Bond trio; 7:45, "Human Machine and Aviation," Prof. Edward C. Schneider.

WJL, Detroit, Mich. (352.7), 7:30 and 8 a. m., setting-up exercises, E. J. Horton; 9:30, "Tonight's Dinner" and special talk by the woman's editor; 12:05 p. m., Jules Klein's Hotel Statler orchestra; 3 p. m., Detroit News orchestra; 6, dinner concert; 8, News orchestra and soloists; A. and P. Gypsies, WFAF.

Central Time Stations

KFAB, Lincoln, Nebr. (340.7), 5:30-6:30 p. m., Santa

Eastern	Central	Mountain	Pacific
11 p. m.	10 p. m.	9 p. m.	8 p. m.
KFVE, KFVB, KNX, WBBM, WHT, WMBB, WOK, WQJ			
12 m.	11	10	9
KNX, KOIL, KPO, WBBM, WFAA, WKRC, WMC, WOK, WQJ			
1 a. m.	12 m.	11	10
KFWB, KNX, WFAA, WHT, WOAW, WOK, WQJ			
2	1	12 m.	11
KFWB, WQJ			

Wednesday, December 23

Eastern	Central	Mountain	Pacific
8 p. m.	7 p. m.	6 p. m.	5 p. m.
KFNE, WAHG, WEBJ, WEEL, WMCA			
9	8	7	6
WBBM, WEBJ, WGCP, WNYC			
10	9	8	7
KFAB, KPRC, WBBM, WGCP, WHO, WMBB			
11	10	9	8
KFAB, KFVE, KGW, KPO, KYW, KYW, WBBM, WEN, WMBB, WOK, WQJ			
12 m.	11	10	9
KFWA, KFVB, KNX, KYW, WOK, WQJ, WSAI			
1 a. m.	12 m.	11	10
KNX, KYW, WBBM, WHT, WOK, WQJ			
2	1 a. m.	12 m.	11
KFWB, KNX, WBBM, WOK, WQJ			

Thursday, December 24

Eastern	Central	Mountain	Pacific
8 p. m.	7 p. m.	6 p. m.	5 p. m.
WCAE, WFAF, WJAR, WMC, WOC, WSAI			
9	8	7	6
WBBM, WHAD			
10	9	8	7
KMA, WBBM, WEEL, WHAD, WHN, WMBB, WMC, WNYC, WOAW, WSQE			
11	10	9	8
KHJ, KMA, KYW, WBBM, WMBB, WOK, WQJ			
12 m.	11	10	9
KHJ, KTAB, KOIL, WBBM, WDAF, WEA, WKRC, WOC, WOK, WQJ			
1 a. m.	12 m.	11	10
KFWB, KHJ, WHT, WOK, WQJ			
2	1 a. m.	12 m.	11
KNX, WQJ			

Friday, December 25

Eastern	Central	Mountain	Pacific
8 p. m.	7 p. m.	6 p. m.	5 p. m.
WGCP, WJR			
9	8	7	6
WBBM, WGR, WLS			
10	9	8	7
KFAB, WBBM, WMC, WDAF, WHAD, WMBB, WOAW, WSQE			
11	10	9	8
KFVE, KFVA, KHJ, KLX, KYW, WMBB, WOK, WQJ			
12 m.	11	10	9
KFWB, KHJ, KNX, KOIL, WMC, WOK, WQJ			
1 a. m.	12 m.	11	10
KFWB, KHJ, WDAF, WHT, WOK, WQJ			
2	1 a. m.	12 m.	11
KNX, WQJ			

Claus, Monte Munn, Belshaw's orchestra; 8:30-10:30, Fred Churchill, accordionist; Belshaw's orchestra; Gloomy Gus's nonsense; G. Ellington, songbird; Bell boys, violin and guitarist; Jack Marshall, pianist; Mart Grauehorst, banjoist.

KFKX, Hastings, Nebr. (288.3), 1 p. m., "Mineral Mixtures That Pay," J. M. Eward; Dick Rutherford and the Ramblers orchestra; 5:30, KDKA dinner concert; 8, Nebraska State hospital orchestra; George McPherson, pianist.

KFMQ, Fayetteville, Ark. (299.8), 7:30 p. m., Farmers' night; Farm Philosophy, Cy Adams; "Feeding Stock in Winter," E. B. Whitaker; "Preventing Winter Livestock Losses," S. J. Schilling; "Serving the Christmas Dinner," Minnie Allen.

KFNE, Shenandoah, Iowa (266), 7 p. m., concert, Henry Field Seed company.

KFUO, St. Louis, Mo. (545.1), 8 p. m., "The Young People Prepare Their Christmas Gifts"; "The Myth of Repentance," Rev. J. Oppiger.

KFVE, University City, Mo. (240), 9:15 p. m., "Amusement Review, Romaine Fielding; Orchestra Romaine.

KMA, Shenandoah, Iowa (252), 11:30 a. m.-12:30 p. m., rural program; travelog; G. H. Van Houten; musical saw selections, J. A. Showers; 6-7, Pollyanna stories, Mrs. Nichols; 9-11, Farnham trio; How Do You Do Boys, Grady and Doc.

KSD, St. Louis, Mo. (545.1), 7 p. m., "Fur Hour," Mme. Graziella Pampari, harpist; 7:30, program, Pullman porters' quartet; 9, orchestra concert, Max Standard, conductor.

KSO, Clarinda, Iowa (242), 7-9 p. m., old time music.

KTHS, Hot Springs, Ark. (374.8), 9-9:45 p. m., orchestral offerings, Meyer Davis ensemble; George G. Heyn, pianist; Charles Garden, saxophone; 10-11, "Rainbow Garden 555 Hour" from Little Rock, California serenaders.

KYV, Chicago, Ill. (536), 6:30-7 a. m., morning exercises, Paul A. Leonhardt; 7:30, family worship, Y. M. C. A. cooperation Chicago Church Federation; 11:15, "Breakfasting With Santa Claus," John C. Curtins; 11:35, table talk, Mrs. Anna J. Peterson; 12:05 p. m., noonday concert, Commonwealth Edison station; 1, luncheon concert, Congress hotel, Joska DeBabary's orchestra; Coon Sanders' Original Nighthawks; 6-7, dinner music, KDKA; 7:05, bedtime story, Uncle Bob.

WBAP, Fort Worth, Tex. (475.9), 12:05-12:30 p. m., musical program; 6-6:30 p. m., dinner music, Texas hotel Tokio Royals; 7:30-8:30, program, Fine Arts department, Texas Woman's college, direction Prof. Carl Venth; 9:30-10:45, "Train Blazers," Montgomery Ward company orchestra, direction Frank Macosky, 11, entertainment by stars of Majestic theater.

WBBM, Chicago, Ill. (226), 4-6 p. m., Irene Beasley, Harry Sosnick; Sandy Meek; Valentino orchestra; Jack Penwell, twin six guitar; Court Banks; Joe McManus; Edna Wheeler Ballard, harpist; 6-7 p. m., Harold Anderson, accordionist; Kristine Gallen, cellist; Phillip Niles, tenor; Marie Margott, harpist; George Marchbach, tenor; Ziegler sisters; Two Jays; Moulin Rouge orchestra; Seaburg and Mowers, pianists.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 9:30 a. m., program for the day; 9:35, news bulletin; 12 m., concert, Donaldson's orchestra; 2:00 p. m., woman's hour; 2:30, concert; 4:00, Readers' club, Mrs. Walter Stevens; 5:30, children's hour; 6:30, dinner concert, Gordon Cooke ensemble; 7:45, farm lecture, "Swine raising"; 8:00, University of Minnesota program; 9:00, classical concert.

WDAF, Kansas City, Mo. (356.6), 10:45 a. m., Betty Crocker, home service talk; 6-7, school of the air, dialect readings, C. M. Ragon; the Tell-Me-a-Story lady; Trianon ensemble; 8-9 p. m., Topeka, Kans., program, Earle Brown, director; 11:45-1 a. m., Nighthawk frolic; Carl Nordberg's Plantation players; Ted Meyn, organist; Eddie Kuhn's orchestra; Earl Coleman's orchestra.

WOOD, Chattanooga, Tenn. (286), 6:30-7 p. m., organ music, Tiwoli theater; 7-8, Hotel Patten orchestra; 8:15, special features.

WFAA, Dallas, Tex. (475.9), 6:30-7:30 a. m., three 20-minute periods of health exercises, R. H. Schulze; 12:30-1 p. m., Schubert Junior Choral club; 5:30-6, story hour; Peggy Cooper; 6:30-7:30, Artie Collins and orchestra; 8:30-9:30, Sears-Roebuck Agricultural Foundation program.



The dainty little lady below will appear on the Christmas program Sunday of the Atwater Kent company at WFAF and chain. She is Jeannette Vreeland, soprano. Another member of "Capitol Family" is Gladys Rice, right. She has been entertaining with this group since it first began broadcasting at WFAF. KLDS, Independence, Mo., plans to give Handel's "Messiah" Sunday, December 27. Paul N. Craig, left, is the director. In the upper right corner is George Perkins Raymond, New York tenor, who will be the feature of the community program Monday night at WSAI, Cincinnati.



WGES, Oak Park, Ill. (250), 5-7 p. m., pipe organ, orchestra; Moody Bible program.

WGN, Chicago, Ill. (370.2), 12 m., household service program; 12:40 p. m., luncheon concert, Drake concert ensemble and Blackstone string quintet; 2:30, Lyon and Healy artist series; 3, rocking chair time, featuring John Reed Tyson; 3:30, tea time music, Marshall Field's tea room orchestra; 4:40-5, twilight musical; 5:30, Skeezix time, members of National Kindergarten and Elementary college; 6:30-7, dinner concert, Drake concert ensemble and Blackstone string quintet.

WJAD, Milwaukee, Wis. (275), 11 a. m., pianolog, Andy Hertel; 4 p. m., Trixy Ann Troy, ukulele; 6:15-7, Bill Benning's Milwaukee Athletic club orchestra; 8-10, Marquette university studio program.

WHAS, Louisville, Ky. (399.8), 4-5 p. m., musical selections, direction Harry S. Currie, assisted by Leroy Hobb, Music Box; readings, news bulletins, fashion talk, Peggy True.

WHB, Kansas City, Mo. (365.6), 2-3 p. m., ladies' hour program; music, Sweeney Radio trio; 7-8, orchestral selections, Sweeney Radio orchestra, direction, Glen Durrell; Milo Finley trio.

WHO, Des Moines, Iowa (526), 7:30-8:30 p. m., Stewart Watson, baritone; Amelia Reinke, soprano; Iva Hamilton Butler, pianist; C. E. Lee, bass; 8:30-9, male chorus; 11-12, Bankers Life Corn Sugar orchestra.

WIBO, Chicago, Ill. (226), 2-4 p. m., shut-in program; 8-9, program, Robert E. Bentley Post; 12-12:30, theatrical stars; Wesley Helvey's troubadours.

WLS, Chicago, Ill. (344.6), 12 m., WLS Studio trio; 6-7 p. m., WLS Blue Ribbon Artists' concert.

WLW, Cincinnati, Ohio (422.3), 7:30 a. m., exercises, William Stradman, Y. M. C. A.; 7:45, morning devotions, auspices of Parkway Y. M. C. A.; 12 m., service, Rev. George H. Kase; 4 p. m., children's musical hour, Conservatory of Music; 4:45, talk, "Mental Evolution," M. Y. Whitacre, psychologist; 7, dinner hour concert, Hotel Gibson, Robert Visconti, director; 7:30, basketball talk, G. A. Richardson; 7:40, Hotel Gibson concert; 10, the Cincinnati Times-Star concert, William J. Kopp, director.

WMAQ, Chicago, Ill. (447.5), 12:45 p. m., farm school; 2, "Shut-in program"; 4, Mothers in Council; 4:30, "Fables of the Moment," Mrs. Graham Aldis; 4:40, Glenn Dillard Gunn School of Music; 5, children's games, Glenn Adams; 5:15, Topsy Turvy time; 6, Chicago theater organ recital; 6:30, Hotel LaSalle orchestra; 6:40, Family Altar league.

WMC, Memphis, Tenn. (499.7), 7:15 p. m., bedtime stories, Pan and Tinker Bell; 7:30, farm talk, C. W. Watson; 8:30, dance program, Malcolm Burks' Original Seven.

WQAI, San Antonio, Tex. (394.5), 3 p. m., musical program.

WOAW, Omaha, Nebr. (526), 12:45 p. m., Randall's Royal Fontenelle orchestra; 6, "Sandman's Visit," Val McLaughlin; 6:20, popular song period; 6:45, Randall's Royal Fontenelle orchestra; 9, Skeen trio; 9:45, classical.

WOC, Davenport, Iowa (483.6), 12:15-12:25 p. m., farm school; Hog Day—Mineral Mixtures That Pay, John M. Eward; 8:30, Home Management schedule, Aunt Jane; 5:45-6, chime concert.

WOI, Ames, Iowa (270), 12:30 p. m., college chimes; 12:45, dairy production; Prof. Earl Weaver; 7:30, poultry short course, Prof. H. A. Bittenbender; "Hard Coal or Feathers"; 7:50, program.

WOS, Jefferson City, Mo. (440.9), 8 p. m., "Forestry in Missouri," Frederick Dunlap; Christmas program, faculty of Christian college.

WQJ, Chicago, Ill. (447.5), 11-12 noon, home economics program, Helen Harrington Downing; "Baking," Cleve Carney; "Unusual Touches for the Christmas Table," Jean Rich; 3-4 p. m., "Winter Squash Dishes," Helen Harrington Downing; "The Care of the Hair," Madame Huntingford.

WSAI, Cincinnati, Ohio (325.9), 7-8 p. m., Christmas carols, Joseph Fehring, director; 8-9, A. & P. Gypsies, WFAF; 9-10, WFAF Grand Opera company, "Tales of Hoffman"; Cesare Sodero, director; 10-12, Cincinnati community program; symphony orchestra; George Perkins Raymond, tenor; Roy Van Leuven, futeist; Karl Kirksmith, cellist; Joseph Vito, harpist.

WSM, Nashville, Tenn. (282.9), 6:30 p. m., concert, Beasley Smith and his orchestra; 7, bedtime story; 7:30, community program, First Presbyterian church; 10, program, Vito Felletieri and his orchestra.

WSUI, Iowa City, Iowa (484), 12:30 p. m., Harry Thatcher, Jr., pianist; "How Large Is Your Vocabulary," Dr. Ernest Horn; 4, current events comments, Prof. Stephen H. Bush; 7:30, correspondence course lectures; 8, Ann Pierce, vocalist; Mrs. C. L. Robbins, pianist.

Mountain Time Stations

CFAC, Calgary, Can. (435.8), 9 p. m., special sunshine program, Jack Rushton's serenaders.

KFA, Lincoln, Nebr. (340.7), 5:30-6:30 p. m., Santa

KFAB, Lincoln, Nebr. (340.7), 5:30-6:30 p. m., Santa

KFVE, KFVB, KNX, WBBM, WHT, WMBB, WOK, WQJ

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KFAB, KPRC, WBBM, WGCP, WHO, WMBB

KFAB, KFVE, KGW, KPO, KYW, KYW, WBBM, WEN, WMBB, WOK, WQJ

KFWA, KFVB, KNX, KYW, WOK, WQJ, WSAI

KNX, KYW, WBBM, WHT, WOK, WQJ

KFWB, KNX, WBBM, WOK, WQJ

WGCP, WJR

WBBM, WGR, WLS

KFAB, WBBM, WMC, WDAF, WHAD, WMBB, WOAW, WSQE

KFVE, KFVA, KHJ, KLX, KYW, WMBB, WOK, WQJ

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KNX, WQJ

WCAE, WFAF, WJAR, WMC, WOC, WSAI

WBBM, WHAD

KMA, WBBM, WEEL, WHAD, WHN, WMBB, WMC, WNYC, WOAW, WSQE

KHJ, KMA, KYW, WBBM, WMBB, WOK, WQJ

KHJ, KTAB, KOIL, WBBM, WDAF, WEA, WKRC, WOC, WOK, WQJ

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KFWB

WBBM, WFAA, WOAW

HARP MUSIC YULETIDE GIFT OF WHB

Wednesday, December 23

Sam Siegel, mandolinist; 9:15-9:30, talk, Dr. Vize-telly; 9:45-10, Sam Siegel, mandolinist; 11-12, Vincent Lopez' Pennsylvania orchestra.

WRC, Washington, D. C. (468.5), 10 a. m., women's hour, WJZ; 12 m., organ recital, Gertrude Small-wood; 1 p. m., Lee House trio; Sam Udryn, director; 5, Meyer Davis' New Willard Hotel trio; 6, "Things Talked About," Nina Reed.

WTAG, Worcester, Mass. (268), 10:30 a. m., musical selections; 10:45, talk to housewives, Mrs. Lydia Planders; 12:05-2 p. m., luncheon music, WJL Hardy's orchestra; 7, talk, Robert M. Shaw; 7:15, "Twinkle Twinkle Story Teller"; 7:30, "Crimes or Retail Salesmen," Harold Whitehead; 7:45, Spanish lesson, Mrs. De La Parra; 8-10, concert program; 10-11, "Roxy and His Gang," R. S. Rothafel, WDAF.

WTAM, Cleveland, Ohio (389.4), 12:15-1:15 p. m., lunch hour; 6-7, dinner dance music, Guy Lombardo and his Royal Canadians; 8:10, concert program; 10-11, the Hollenden hour, Carl Rupp and his Hotel Hollenden orchestra; 11-1 a. m., dance music, Guy Lombardo and his Royal Canadians.

WTF, Hartford, Conn. (475.9), 6:30 p. m., Hotel Bond trio and vocalists; 10, Emil Heimberger's Hotel Bond orchestra.

WWJ, Detroit, Mich. (352.7), 7:30 and 8 a. m., setting-up exercises, R. J. Horton; 9:30, "Tonight's Dinner," and a special talk by the woman's editor; 12:05 p. m., Jules Klein's Hotel Statler orchestra; 3, Detroit News orchestra; 6, dinner concert; 8, News orchestra and carolers; 9, dance program.

Central Time Stations

CNRW, Winnipeg, Man. (384.4), 7:30 p. m., Aunt Aimee's bedtime story and Santa Claus; 8, musical program, Fort Garry hotel orchestra; 8:40, program, Canadian National Railways' Transcona shops brass band, direction J. T. Coking; A. Leslie Garside, baritone; 10, supper-dance program, Fort Garry hotel orchestra; selections by Al Kilgour.

KFAB, Lincoln, Nebr. (340.7), 5:30-6:30 p. m., concert, Belshaw's orchestra, Buick Little symphony; 8:30-10:30, Belshaw's orchestra; Ralph Hall, banjo, ukelele and voice; Olive Fletcher and Ruby Teater, double piano; "Slick" Merriam, pianist; Mardeline Schmidt, blues singer.

KFKX, Hastings, Nebr. (288.3), 1 p. m., "A Radio Dairy Cow Selection," H. G. Van Pelt; 5:30, KDKA dinner concert; 9, University School of Music.

KFMX, Northfield, Minn. (337), 9-10 p. m., musical program.

KFNH, Shenandoah, Ia. (266), 7 p. m., concert, Pullman Porter quartet.

KFUO, St. Louis, Mo. (545.1), 9:15 p. m., "Advent and Christmas Hymns," Prof. W. Polack; "The Angels' Christmas Song," Rev. P. Koenig; songs and music.

KFVE, University City, Mo. (240), 9:15 p. m., "Amusement Review," Romaine Fielding; Paul and Jack Snyder.

KMA, Shenandoah, Iowa (252), 11:30 a. m.-12:30 p. m., rural program; bird talk, Blanche Alden; garden talk, Earl E. May; music; 5:30, talk, G. H. Van Houten; 6-7, Domestic Science talk, LeOna Teget; 9-11, familiar songs, music; songs and clog dance, Bobbie and Babe Riddle; chimes, William Howie.

KSD, St. Louis, Mo. (545.1), 6:30 p. m., "Fur Hour"; program, Hotel Statler orchestra; 7:30, James Rohan, tenor; 8, WDAF "Good Will" program.

KSO, Clarendon, Ia. (242), 7-9 p. m., vocal and instrumental program, Mrs. Scroggs, director.

KTHS, Hot Springs, Ark. (374.8), 9-9:45 p. m., concert, New Arlington hotel orchestra; 9:45-10, Lawson Reid, organist; 10-11, "Pooley Hour Players," from Rainbow Gardens, Little Rock.

KYW, Chicago, Ill. (536), 6:30-7 a. m., morning exercises, Paul A. Leonhard; 7:30, family worship; 11:35, table talk, Mrs. Anna J. Peterson; 12:05 p. m., noon-day concert, Commonwealth Edison company; 1, luncheon concert, Congress hotel; 6, dinner music, KDKA; 7:05, bedtime story, Uncle Bob; 7:30-8, half hour of music; 8-9, musical program, Sherwood School of Music; 10-12:30, midnight revue, Paul Ash and orchestra will be heard at 10; Coon Sanders Original Nighthawks at 10:40 and 11:10; 1, Insomnia club.

WBAP, Ft. Worth, Tex. (475.9), 6:30-7:30 p. m., musical program; 6-6:30, dinner music, Texas Hotel Tokio Royals; 7:30-8:30, Penther Hawaiian trio; 9:30-10:45, dance music, Texas Hotel Tokio Royals.

WBBM, Chicago, Ill. (226), 4-6 p. m., Harry Sosnik, Sandy Meek, Valuing inn orchestra; Edna Wheeler Ballard, harist; Harold Morava; Johnny Black; Court Banks; 8-10, WBBM, string trio; Moulin Rouge orchestra; Sunset quartet; 12-2 a. m., Farwell duo, banjo and piano; Russell Duke, piano and songs; Jack Seeley; Harry Sosnik, Sandy Meek; Lew Russell; Sue Olmstead; Nate Caldwell; Charlie Garland; Two Jays, Jeske and Jordan, Harold Anderson, accordion; Moulin Rouge orchestra; xylophone trio.

WBCN, Chicago, Ill. (266), 10-10:30 a. m., Penny Wise, the shopper's ready helper, shopping talk; 7-8, classical hour; Emily Stone, violinist; Ada Mae, tenor; Ethel Eaves Price, soprano; Alice McMahon Stone, accompanist; Lemmyon Amoureux, French tenor; Ethel Eaves Price, soprano; Alice McMahon, contralto; Margaret McArthur, pianist; John Williams, baritone; 10-1 a. m., Elmer Jordan & Co., Owl matinee.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 9:30 a. m., program for the day; 9:35 a. m., news bulletin; 2 p. m., Minneapolis Council of Social Agencies, "Christmas in Community Fund Homes," Paul S. Bliss; 2:30, concert; 4, Readers' club, Eleanor Poehler; 5:30, children's hour; 7, Midweek church service, Rev. Phillips E. Osgood; 8, program, WDAF, Ipana troubadours; 9, traffic safety talk; 10:05, dance program, Wallie Erickson' Coliseum orchestra; 11:30, Eddie Dunstedter, organist.

WDAF, Kansas City, Mo. (365.6), 10:45 a. m., talk, Betty Crocker; 6-7 p. m., school of the air, address, auspices of Health Conservation association; address, Ralph E. Herrick; the Tell-Me-a-Story lady; Trianon ensemble; 8-9:30, Christmas cantata, Glee clubs, R. M. Riley, director; 11:45-1 a. m., Nighthawk frolic; The Plantation players; Eddie Kuhn's orchestra; Earl Coleman's orchestra.

WDDO, Chattanooga, Tenn. (256), 6:30-7 p. m., Tivoli theater organ; 7-8, Hotel Patton orchestra; 8:15, special features.

WEBH, Chicago, Ill. (370), 7-8 p. m., Oriole orchestra;



The lovely harp music which has been pleasing fans listening to WGY, Schenectady, comes from the skillful fingers of Margaret DeGraff, above.

Florence Behrend, soprano; Frank Greif, tenor; 9-10, Oriole orchestra; Florence Behrend, soprano; Frank Bordner, baritone; 11-1, Oriole orchestra; Irene Beasley, the girl from Dixie; Florence Behrend, soprano; Oriole orchestra.

WENR, Chicago, Ill. (266), 6-7 p. m., daily dinner concert, Rauland lyric trio; R. Hendrickson, cellist; Santa Claus letters, soprano solos; 8-10, All-American Pioneers; Archie Rawls, tenor; J. E. Peterson, basso; Floyd Falsh, baritone; Art Bilquist, popular songs; 12-2, All-American Pioneers, Marie Tully.

WFDA, Dallas, Tex. (475.9), 6:30-7:30 a. m., three 20-minute periods of health exercises, R. H. Schulze; 12:30-1 p. m., Sears-Roebuck Agricultural Foundation program.

WGES, Oak Park, Ill. (250), 5-7 p. m., violin, pipe organ; 8-9, orchestra; Tiffin theater organ; 11-1 a. m., Coyne serenaders, organ, comedian, features.

WGN, Chicago, Ill. (370.2), 12 m., household service program; 12:40 p. m., luncheon concert, Drake concert ensemble and Blackstone string quintet; 2:30, Lyon and Healy artist series; 3, rocking chair time, featuring the bridge game; 3:30, tea time music, Marshall Field's tea room orchestra; 4:30-5, twilight musical; 6:30-7, dinner concert, Drake concert ensemble and Blackstone string quintet; 8-9, Drake concert ensemble and vocal artists; 10-11, dance program, Jack Chapman's and Blackstone hotel dance orchestras, assisted by popular artists.

WHAD, Milwaukee, Wis. (275), 11 a. m., pianologue, Andy Hertel; the Housewife; 4 p. m., "With the Humorists," John R. Wolf; Mrs. Marie Weiss, pianist; Linda Hering, saxophone; 6:15-7, Arthur Richter, organist; 10:30-11:30, popular dance hits, Dexter's Wisconsin and Elger's Creole roof orchestras; 11:30-12:30 a. m., Edmund Fitch, organist.

WHAS, Louisville, Ky. (399.8), 4-5 p. m., musical selections, direction Harry S. Currie, from Music Box, assisted by Leroy Hobb; readings, editorials, news bulletins; 7:30-9, concert, K. & I. Terminal railway orchestra; readings, Sudie Harris.

WHB, Kansas City, Mo. (365.6), 2-3 p. m., ladies' hour program; Morrell Moore, organist; 7-8, Milo Finley's trio; automotive extension lessons; John Burns, vocal numbers.

WHO, Des Moines, Ia. (526), 6:30-7:30 p. m., Reese-Hughes orchestra; 7:30-9, talent from Capitol theater; talk by "Santa Claus"; Greta B. McIntosh,

whistler; Smith Sisters; Cole and Kirkwood; 9-11:30, dance program, Cottillon ballroom.

WIBO, Chicago, Ill. (226), 2-4 p. m., shut-in program; Jack Sprat and the Carl Sulzer orchestra; Ted Florito, pianist; Victor Young, Dan Russo, violinists; Vernon Hayes, saxophonist; "Home Economics," Grace Viall Gray; 6-8, Walter Preston, popular American ballads; Dorothy Rae, soprano; Earl Raymond Bigelow, pianist; Charlotte Edwards, contralto; Joe North, baritone; Shepard Levine, tenor; 10, Erwin Cornelius, ukelele, male quartet; William Molnair, tenor; Hickey and Johnson; Alma Adair, soprano; Dorothy Aubrey, contralto; Fred Jacobsen; Dorothy Davie Dillow.

WKAF, Milwaukee, Wis. (261), 10-11 p. m., studio program.

WKRC, Cincinnati, Ohio (422.3), 8-9 p. m., weekly book review; Marion McKay and orchestra; popular songs; J. Henry Koenig Little Symphony orchestra, Robert M. Visconti, tenor.

WLIB, Chicago, Ill. (308.2), 7-8, dinner concert; 9-10, program, WDAF; 11-12, dance program, Jack Chapman and Blackstone hotel dance orchestra.

WLS, Chicago, Ill. (344.8), 12 m., Ford and Glenn; 6:15 p. m., announcements; 6:30, Ralph Emerson, organist; 7, Ford and Glenn, lullaby time; 7:15, WLS trio in popular concert; 7:45, WLS theater production; 8:15, Rhodeheaver program; 8:45, Chicago Defender band; 9:30, Nurses' Glee club, Wesley Memorial hospital; 10, the Thaviu Brass sextet; 10:30, The Amoson quartet; 11-2 a. m., WLS Circus with WLS Circus band-W. S. Clown band, Ford and Glenn, Ralph Emerson.

WLW, Cincinnati, Ohio (422.3), 7:30 a. m., exercises, William Stradtman, Y. M. C. A.; 7:45, morning devotions, auspices of Parkway Y. M. C. A.; 12 m., musical program, Irene Downing; 3:30 p. m., Crosley cooking school, Mrs. Ralph H. Auch; 4, shut-in program, William Duming; 6, Santa Claus and his helpers; 6:40, Art Gillham, the whispering pianist; 7, dinner hour concert, Hotel Gibson; Robert Visconti, director; 7:30, talk, representative of the National Farm Radio council; 7:40, Hotel Gibson concert; 10, piano memories, Mary Louise Woseczek; 10:20, Christmas on the plantation, Paul Lawrence Dunbar; reading by Charles Meade; 10:30, Christmas recital, Ralph Thomas, tenor; Charles Ridgeway, pianist; 11, the Crosley male quartet; 11:15, Johanna Grosse, organist; 11:30, pianologue, Carl Bamberger.

WMAQ, Chicago, Ill. (447.5), 12:45 p. m., farm school; Chicago Association of Commerce luncheon; 2, Shut-in program; 4, recipes, E. O. Miller; 4:30, pupils, Cosmopolitan School of Music; 6, Chicago theater organ recital; 6:30, Georgene Faulkner, story lady; 8, lecture, Northwestern university; 8:30, musical program; 9, WMAQ players; 9:20, Indian program, Galiwahgawah.

WMBB, Chicago, Ill. (250), 7-8 p. m., Trianon duo, Helen Smith, in semi-classical program, and short talk on finance; 9-11, Trianon orchestra, Dell Lampe, Woodlawn theater orchestra; Arnie E. Hand, Ormsby and Davis, Walter Duffy, Ed Hines, musical program; 8:30-9:30, Army night, musical program, Ft. Sam Houston.

WOAW, Omaha, Nebr. (526), 12:45 p. m., Phyllis Griswold, organist; 5:30, Sandman's visit, Val Leughlin.

WOC, Davenport, Iowa (483.6), 4-4:45 p. m., musical program; Clayton Meyer, baritone; Fay Paarmann, pianist; Ann Bradford, reader; 5:45-6, chime concert; 6:30-6:50, Sandman; 9-10, Erwin Swindell, organist; Marcus H. Cohen, tenor.

WOL, Ames, Iowa (270), 12:30 p. m., college chimes; 12:45, poultry husbandry, Prof. H. A. Bittenbender.

WOL, Chicago, Ill. (217.3), 5-7 p. m., Capitol theater organ; Ed Kemp, tenor; Bob Mokrejs, pianist; Bryce Tibbot, baritone; 10-1:30 a. m., Bernie Cumming' Town club orchestra; Capitol theater program; Ned Miller, tenor; Harriet Lee, contralto; Herman Sinaiko, violinist; George Allen, tenor; Bob Mokrejs, pianist.

WORD, Batavia, Ill. (275), 8 p. m., Webster hotel concert trio; 8:15, hymns and sacred songs, I. B. S. A. choral singers; 8:25, fourth lecture on Great Pyramid, "The Well," C. H. Swinging.

WOS, Jefferson City, Mo. (440.9), 8 p. m., "Christmas, Then and Now, in Missouri," George A. Picken; musical program; address, Hon. L. D. Thompson.

WQJ, Chicago, Ill. (447.5), 11-12 noon, Friday fish dinner menu, Frank Wendt; 3-4 p. m., "Your Christmas Dinner," Helen Harrington Downing; LeVina, Price, pianist; "Cheer," Mrs. Guy Connolly; 7-8, dinner concert, Ralph Williams and his Rainbo Gardens orchestra; Hazel Ewald, soprano; Edith Phillips Heller, pianist; Herman J. Techtentine, baritone; 10-1 a. m., Ralph Williams and his Rainbo Skylarks; Helen Holman, soprano; Melodians; Clarence Theiders, tenor; J. Edwin Peterson, basso; Joey Stool, tenor; Eddie Vogel, baritone; George Thurn, basso and uke soloist; Anita Chelis, comedian; Harry Kendall, guitarist and harmonica soloist; Thelma Jefferle, soprano; 1-2, Ginger hour, Ralph Williams and Little Skylarks.

WSAI, Cincinnati, Ohio (325.9), 7:45 p. m., art talk, Mary Alexander; 8-9, Ipana Troubadours, WDAF; 9-10, program; 10, talk; 10:15, Congress Playing Card string quartet.

WSM, Nashville, Tenn. (282.8), 6:30 p. m., concert, Francis Craig and his orchestra; 7, bedtime story, 8, Roger William university quartet; soloists; 10, program, Daisy Hoffman, Mary Malone.

WSUI, Iowa City, Ia. (484), 7:45 p. m., correspondence course lectures.

Mountain Time Stations

CFAC, Calgary, Can. (435.8), 4 p. m., Red Cross address; 8-9, studio program.

KFWA, Ogden, Utah (261), 4-5 p. m., organ recital, Paramount theater; 5-6, Ogden Radio Dealers program; 9-10:30, dance music, Olie Reeves orchestra.

KOA, Denver, Colo. (322.4), 12:15 p. m., Rialto theater musicale; 6:27, National Farm Radio council talk; 6:30, dinner concert, Brown Palace string orchestra; 7:30, Book of Knowledge; 8, orchestra; readings, Theodore H. Bird; Carleton Bowman, baritone; "The Christmas Spirit," Rev. Elmer E. Freed; Christmas carols and hymns, Corona Presbyterian church quartet; 10, dance program, Harmony Peerless orchestra, Colburn hotel.

Pacific Time Stations

KFDJ, Corvallis, Ore. (282.5), 7:30 p. m., musical selections; 7:45, "Financial Preparedness for the New Year," Emma S. Weld; 8-8:15, "What is your Best Color?" Alma Fritcheff.

KFWB, Hollywood, Calif. (252), 5-6 p. m., children's hour, Big Brother of KPWB; 7-7:30 p. m., Mutual Motors mirth contest; 7:30-8, microphone brevities; 8-9, program, Cheek-Neal Coffee company, Maxwell House Coffee string quartet; Charles Beauchamp, tenor; Lee Kent and her terapache; 9-10, program, Hoot Owl Harbort of Santa Monica, Bill Hatch's orchestra; Peggy Mathews, blues singer; Frank Stever, baritone; 10-11, Warner Brothers frolic, direction Charlie Wellman; 11-12, Hollywood roof ballroom orchestra.

KGO, Oakland, Calif. (361.2), 7:15-7:30 a. m., health training exercises; 7:45, Pep class; 8:15-8:30, exercises; 8:45, inspirational songs, Elfrida Wynne; 11:30-1 p. m., luncheon concert; 3-4, Mme. Charlie Poulter, soprano; Edna Linkowski, pianist; speaker; 4-5:30, concert orchestra, Hotel St. Francis, Vinton LaFerra, conductor; 5:30, Mr. Fix-it; 6-7, dinner concert, Sherman, Clay and company.

KGW, Portland, Ore. (491.5), 12:30-1:30 p. m., Rose City trio; 6-7, dinner concert; 8-9, concert; 10-11, Sherman, Clay and company studio.

KHJ, Los Angeles, Calif. (405.2), 6-6:30 p. m., Leighton's Arcade cafeteria orchestra, Jack Cronshaw, leader; 6:30-7:30, history story, Prof. Hertzog; Dick Winslow, juvenile reporter; Mickey McBan, screen juvenile; Carl Eastwood and Vivian Marple; 8, Dr. Mars Baumgardt, scientific lecturer; 8:30-9, deluxe program, J. Howard Johnson; 10:30-11:30, Don Clark's Biltmore hotel dance orchestra.

KMTR, Hollywood, Calif. (238), 5-6 p. m., home hour, Mammy Simmons and pupils of Geraldine Kasal; 8-10, KMTR concert hour, the Turner orchestra, Loren Powell, director; Rondeau male quartet.

KNX, Hollywood, Calif. (396.9), 5-5:30 p. m., Sunny Jim's talk to children; 5:30-6:15 p. m., Wurilizer pipe organ studio, Town Tattler; 6:15, travel talk, W. F. Alder; 6:30-7, Atwater Kent concert orchestra, Paul Finstein, leader; 7-8, Ambassador hotel concert orchestra, Josef Rosenfeld, director; 8-9, KNX feature program; 9-10, program, W. W. Rainey organization; 10-11, Ruth Roland, screen star, and G. Allison Phelps, the Radio philosopher.

KPO, San Francisco, Calif. (426.3), 7, 7:30 and 8 a. m., daily dozen; 10, sewing talk, Betsy Ross; 1-2 p. m., Rudy Seiger's Fairmont hotel orchestra; 2:30, matinee program; fashion talk, Ninon; 5:30-6:15, Book of Knowledge, Big Brother; 6:40-7, Waldemar Lind and the States restaurant orchestra; 7-7:30, Rudy Seiger's



Heavenly music from golden harps will float upon the ether Christmas Eve. A quintet of harp players, Velma Beard, Marjorie Carpenter, Ona Miller Briefer, Eva Beard and Ruby Beard will visit WHB, Kansas City. They will play old time Christmas carols and classical favorites. This program brings Yuletide spirit into the home.

Wednesday, December 23

Fairmont hotel orchestra; 8-9, Abwater Kent artists, Ernest Ingold, Inc., director; 9-10, dance program, Goodrich Silvertown Cord orchestra; 10-11, Waldemar Lind and the States restaurant orchestra.

Thursday, December 24

Headliners Today

Table with columns: Eastern, Central, Mountain, Pacific. Lists radio stations and their programs for the day.

Eastern Time Stations

CFCA, Toronto, Can. (356), 11 p. m., special Christmas eve program. Sportsman's Patriotic association.

AN EVENING AT HOME WITH THE LISTENER IN EASTERN TIME

Main table listing radio stations by location and their broadcast schedules for Saturday, Sunday, Monday, Tuesday, Wednesday, Thursday, and Friday.

of Philadelphia Institute of Music; 10:05, "Believe In and Invest in Philadelphia," member of the Philadelphia Real Estate Board; 10:15, Christmas carols, Eastern State Penitentiary; 11, Pagoda cafe orchestra.

ANNUAL CHILDREN'S PARTY AT KHJ

Thursday, December 24

STATIONS IN ORDER OF WAVE LENGTHS USED

WHAS, Louisville, Ky. (399.8), 4-5 p. m., musical selections, direction Harry S. Currie, from the Music Box, assisted by Leroy Hobb; readings, editorials, 7:30-9, concert, auspices Mrs. Harriet Kuesterstein; Sunday school lesson; Welfare talk.
WB, Kansas City, Mo. (365.6), 2-3 p. m., ladies' hour program, Sweeney Radio trio; 7-7:30, Morrill Moore, organist; 8-10, Italian harp ensemble; Athenium ladies' quartet; Sherman Preffer, baritone; Mary Roach Ryan, violinist; Christmas address, Dr. James W. Field.

Table with 6 columns: Meters Call, Meters Call, Meters Call, Meters Call, Meters Call, Meters Call. Lists radio stations and their frequencies.

20-minute periods of health exercises, R. H. Schulze; 12:30-1 p. m., Dr. H. M. Whaling, Sunday school lesson; Alex Hughes, pianist; 3:30-4, Sears-Roebuck Agricultural Foundation program; 4:30-5, woman's hour, literary review; 5:30-6, story hour, Peggy Cooper; 6:30-7:30, Haulea school Hawaiian music.
WGES, Oak Park, Ill. (250), 5-7 p. m., feature Christmas program, quartet, ensemble; piano, violin, flute duo, pipe organ selections; 8-9, pipe organ, orchestra; 11-1 a. m., Coyne orchestra, comedian, features.

Friday, December 25

Headliners Today

WMBB, Chicago, Ill. (250), 7-8 p. m., Trianon duo, Preston Graves, semi-classical program and short talk on finance; 9-11, Trianon orchestra, Dell Lampe, Woodlawn theater orchestra, Armin F. Hand, Walter Cavanaugh, Scotty Welsh and Madison Sisters, Clyde Hager.

Table with 4 columns: Eastern, Central, Mountain, Pacific. Lists headliner stations and their frequencies.

WMBB, Chicago, Ill. (250), 7-8 p. m., Trianon duo, Preston Graves, semi-classical program and short talk on finance; 9-11, Trianon orchestra, Dell Lampe, Woodlawn theater orchestra, Armin F. Hand, Walter Cavanaugh, Scotty Welsh and Madison Sisters, Clyde Hager.

Mountain Time Stations

Central Time Stations

CFAC, Calgary, Can. (435.8), 7 p. m., bedtime story, Radio Lady; 9, CNRW; 10:30, City of Calgary, Mayor Webster.

KFAB, Lincoln, Neb. (340.7), 5:30-6:30 p. m., Santa Claus, Monte Munn, Belshaw's orchestra; 8:30-10:30, Jos. J. Van Ackeren, violinist; Joe Bruhl and Victorians orchestra; Gordon G. Deiney, flutist; Richard Low, Chinese baritone; Mabel and Julius Ludlum, violinist and pianist; Deiney and Hember, flutists; Rose Neff, operatic whistler.

Pacific Time Stations

Eastern Time Stations

KFAB, Lincoln, Neb. (340.7), 5:30-6:30 p. m., Santa Claus, Monte Munn, Belshaw's orchestra; 8:30-10:30, Jos. J. Van Ackeren, violinist; Joe Bruhl and Victorians orchestra; Gordon G. Deiney, flutist; Richard Low, Chinese baritone; Mabel and Julius Ludlum, violinist and pianist; Deiney and Hember, flutists; Rose Neff, operatic whistler.

KFAB, Lincoln, Neb. (340.7), 5:30-6:30 p. m., Santa Claus, Monte Munn, Belshaw's orchestra; 8:30-10:30, Jos. J. Van Ackeren, violinist; Joe Bruhl and Victorians orchestra; Gordon G. Deiney, flutist; Richard Low, Chinese baritone; Mabel and Julius Ludlum, violinist and pianist; Deiney and Hember, flutists; Rose Neff, operatic whistler.

Mountain Time Stations

CNRE, Edmonton, Alta. (516.9), 6-8 p. m., Christmas carols, John Bowman and orchestra; 8-9:30, special Christmas music by local artists, Christmas tree novelty, Santa Claus announcing.

Pacific Time Stations

KFOA, Seattle, Wash. (453.3), 6:45-8:15 p. m., Sherman Clay and company, studio; 8:30-10, Times studio program; 10-11:30, Eddie Harkness and his orchestra.

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

Part I—The Circuit and the Parts Required

By A. Christen and Jacques Fournier

THESE HAS, for a long time, been a demand for a super-heterodyne receiver that could successfully be used with an outside antenna. Practically all supers that are presented the set builder are for use on loop only and those which include a means of connection to antenna and ground are woefully deficient in the element of selectivity. The well-built loop operated super-heterodyne does wonderful things, cuts through a maze of local stations with clean precision, and brings in far away stations with pretty fair consistency. The volume on these DX stations may, however, be clear and enjoyable one evening but weak and fading the next. The owner of such a set feels, logically, that if he could just pick up a little more energy the "happy hunting ground" would be attained.

The first solution of this difficulty was the addition of an antenna coupler in front of the usual "mixer" or first detector, by connecting the variable condenser across the secondary, the primary consisting of six to twelve turns coupled to this secondary. Three factors made this solution unsatisfactory to users: a single tuned circuit at this point was not enough, the couplers were high in losses,

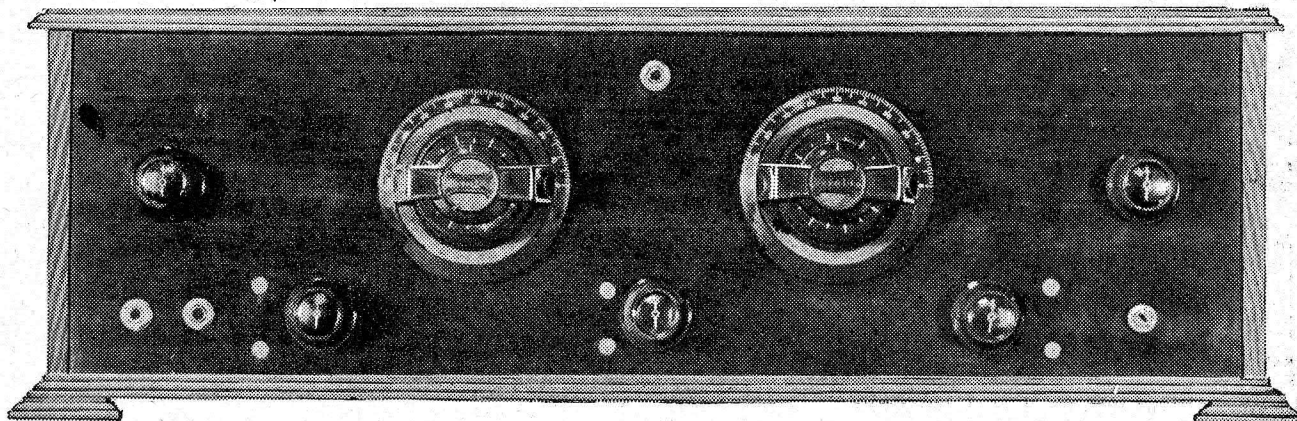


Figure 1

power Radio telephone transmitters. V is an oscillator tube in which the grid and plate circuits are coupled together to produce oscillation. The microphone M is connected through the power source D to the primary winding of a telephone

transformer (which constitutes the heterodyne modulation), if the frequencies of the incoming signal and the oscillator tube are close, the output will consist of beats of a frequency that is the difference between the two. This same beat note frequency may be had whether the generated frequency is greater or less than the frequency of the incoming program.

If desired, the tube V1 could be made regenerative by insertion of a feedback

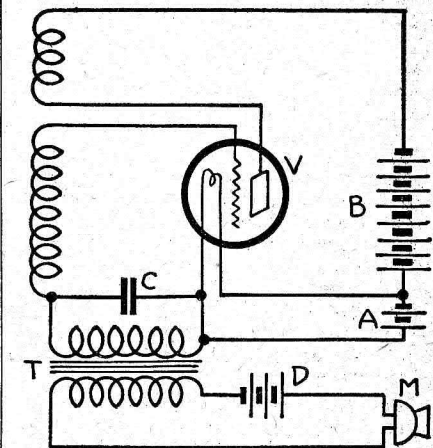


Figure 2

coil in the plate circuit coupled to L2 but we do not recommend this. In order (Continued on page 24)

LIST OF PARTS

2 Orthometric Cond., .0005 mfd.	Karas Electric Co., Chicago	\$14.00
4 Victoreen No. 170 R.F. Trans.	George W. Walker Co., Cleveland	28.00
8 Clar-a-tonè A type Sockets	Benjamin Elec. Mfg. Co., Chicago	8.00
1 Pair Benjamin Brackets	Benjamin Elec. Mfg. Co., Chicago	.70
2 Carter Imp 400-ohm Potentiom.	Carter Radio Co., Chicago	2.50
2 Carter Imp 30-ohm Rheostats	Carter Radio Co., Chicago	2.00
1 Carter Imp 10-ohm Rheostat	Carter Radio Co., Chicago	1.00
2 Carter Model 104 Jacks	Carter Radio Co., Chicago	2.00
1 Carter Model 101 Jack	Carter Radio Co., Chicago	.70
2 Meloformer Audio Trans.	Robertson-Davis Co., Chicago	8.00
3 Amperites for A tubes	Radiall Company, New York City	3.00
1 Formica Panel, 7x24x3/16	Formica Insulation Co., Cincinnati	3.36
1 Formica Sub Base, 7x23 1/2 x3/16	Formica Insulation Co., Cincinnati	3.30
1 Cutler-Hammer Lock Switch	Cutler-Hammer Mfg. Co., Milwaukee	.60
1 Daven Leakandenser, No. 24	Daven Radio Corp., Newark, N. J.	1.00
1 Set Special Diamond Coils	See Article For Manufacturers	3.50
1 Set Walnut Binding Posts	Walnut Electric Mfg. Co., Chicago	.80
1 Potter .5 mfd. Bypass Cond.	Potter Mfg. Co., North Chicago	.90
1 Erla .002 mfd. Fixed Cond.	Electrical Research Lab., Chicago	.35
1 Cabinet, 7x24	Make carried by Dealer	9.00
2 Micro-Dials	Jewett Radio Co., Pontiac, Mich.	7.00
Miscellaneous, such as Bus Bar, Spaghetti, Screws, etc.		
Total Cost		\$101.71

Suggested Accessories

1 Prest-O-Lite Storage Battery	Prest-O-Lite Co., Indianapolis	
2 Eveready No. 436 B Batteries	National Carbon Co., New York City	\$11.00
1 Eveready No. 771 C Battery	National Carbon Co., New York City	.60
1 Balkite Trickle Charger	Fansteel Prod's Co., North Chicago	10.00

and the coupling between primary and secondary was far too tight, or close. This third point could not be altered because, if the primary or antenna circuit were removed more than one-half inch from the secondary, too little energy got through to actuate the mixer tube.

Christen Explains Circuit

In the Armstrong super-heterodyne, the first tube is a mixer and, by means of a pick-up coil, the energy from the antenna circuit and the energy from the oscillator tube are mixed and passed on to be amplified at a lower frequency. In the ultradyne receiver, the plate of the first tube is supplied the energy from the oscillator and, with the energy of the incoming signal, produces a beat note which is of a lower frequency that is passed on to be amplified.

Although the Straight-8 receiver is also a super-heterodyne, it does not work on the same principle as the others. Figure 2 shows the modulation system called "grid control method" often used in low-

transformer T. The secondary, connected in series with the grid circuit of the oscillator, is shunted with a bypass condenser C as otherwise it would present a very high resistance to the radio frequency currents.

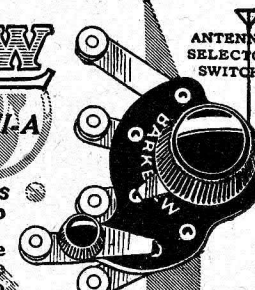
When the microphone is spoken into, the variations in the primary circuit produce induced voltages in the secondary of the transformer, and these voltages, being impressed on the grid of the tube, change the amplitude or swing of the radio frequency alternations. Thus, in the plate circuit, we have a radio frequency output modulated by speech.

Heterodyne Modulation

Now suppose the phone transformer is replaced by a radio frequency transformer, the primary of which is supplied with the energy from an antenna tuned to a broadcasting station (see figure 3). As in the former circuit, this current acting on the grid of the oscillator tube will modulate the plate current in accordance with the music or speech. Further (and

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The full range of antenna adjustments can be made by simply turning the two knobs and without loosening a nut. Remove the knurled nuts, slip the switch on the binding posts and replace the nuts. The antenna wire attaches to the one binding post on the rear.

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This post will take any number of head sets from one to four and all in series. It is equipped with prongs that push through the phone holes in the face of the panel.

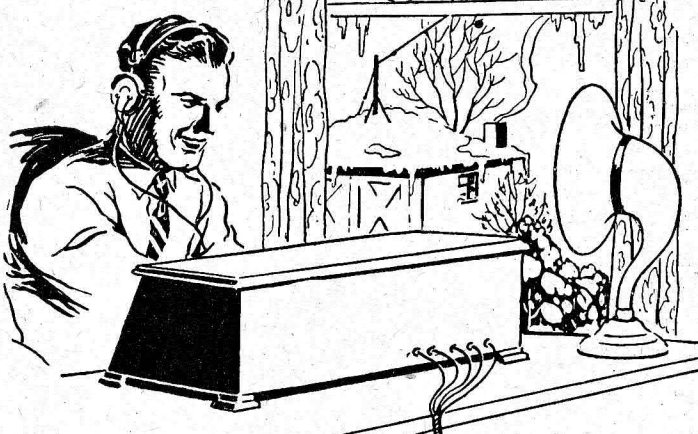
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A Beldenamel Aerial is a stranded aerial wire, each strand being coated with several layers of baked Beldenamel. This coating prevents oxidation and corrosion of the copper conductors, and thus insures a low aerial resistance, even after the Beldenamel Aerial has been in service for a long time.

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Please send me your booklet entitled "Helpful Hints for Radio Fans."

Name.....

Address.....

STRAIGHT-8 SUPER-HET

(Continued from page 23)

to obtain the same amplification over the whole wave length range we have increased the number of turns on L3 and used a potentiometer P1 to avoid oscillation on short waves. The tube V1 might also be neutralized by the Hazeltine process or its capacity compensated by any of the numerous bridge arrangements. Again, if one prefers, a C-R-L unit of 200,000 ohms can be inserted in the B return lead as in Mr. Fournier's Fireside set.

Our aim has been to realize in

is a filter and the secondaries must be tuned with capacities to resonance. Personally, I prefer the latter units and older Digest readers may recall the four filter super described last spring. The Victoreen intermediate transformers are air core and tuned, the accuracy of this being guaranteed by the makers to be 1/3 of 1 per cent.

Meloformers Are New

The Meloformers are something new to readers of Radio Digest and their construction will be a distinct shock. All one's predetermined ideas of correct design are jolted. There is no large rectangular cross section core, no center leg

mechanical strength and electrical properties are surpassed by no other material available. Important from the appearance standpoint, the luster of its finish will be there years from now as beautiful as it is when the panel is put in. Since Straight-8 is about the last word in receivers and is not likely to be replaced by anything for a number of years, this permanence of the panels is important. The walnut markings used on the panel of my Straight-8 are most realistic and it takes close inspection to determine that the panel is not really wood.

The coils are the only units incorporated that are not standard on the market

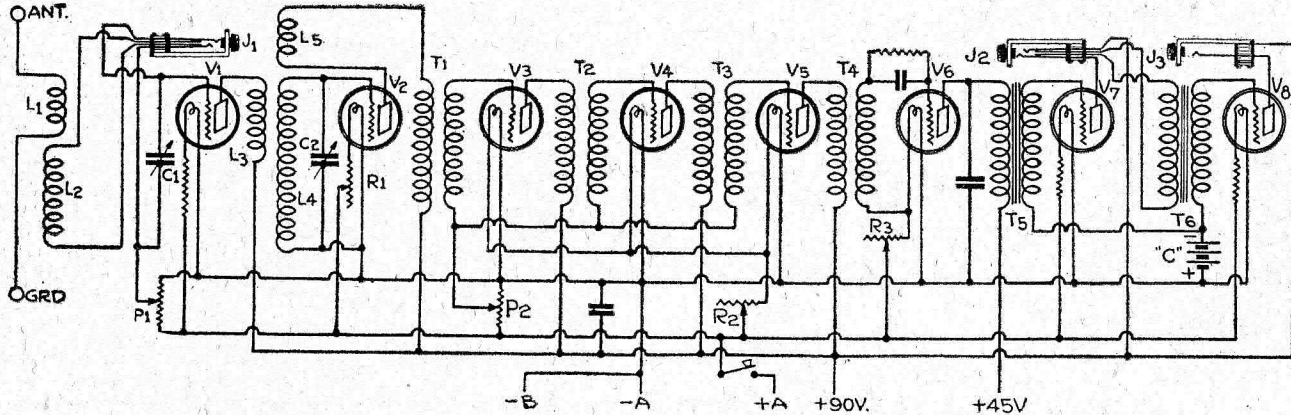


Figure 4

Straight-8 a perfect selectivity when using an outside antenna, without at the same time diminishing equally the strength of the apparatus. Those who will construct this receiver strictly along these lines will find themselves able to do that which neither they nor their friends have been able to do before. The home builder who has already constructed a super will have no difficulty with Straight-8. It is but the work of a few hours to transform one already built. He who is not so familiar with this type of set, but desires to join the ranks of those who are owners of a "Rolls Royce of Radio," will have less difficulty with Straight-8 than any other.

Fournier Chooses the Parts

The development of this system which he chooses to call "hyperdyne" is the work of Mr. Christen, as is the design of the coupling coils used. This set won second prize in the Radio Digest contest last spring and, if performance alone had been considered, would probably have won first. The designing of a receiver of this type which Radio Digest readers might build, and the description of the building, is up to me. Straight-8 is the development, in standard parts, of the original "hyperdyne" and it performs fully up to the standard set by the original. I feel sure that the home builder likes to be let behind the scenes in the designing of a set and the use of various pieces of apparatus from all the parts on the market, so I am going to take some space to go into this.

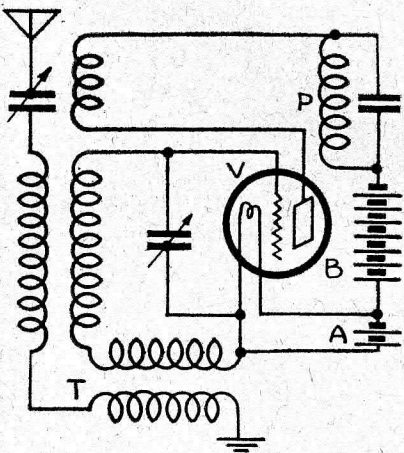


Figure 3

Karas Orthometric condensers have been chosen for this receiver for two reasons. Naturally, efficiency was considered first but, after this had been narrowed down to several makes, shape was next in importance. We have plenty of panel space lengthwise and are trying to keep this set within reasonable limits as to depths. Karas takes up some room back of the panel but makes up for this in being very shallow. From the efficiency standpoint it is truly a straight line frequency condenser, is made of brass throughout, and rigidity and alignment have been taken care of. The rotor is provided with a strong flexible copper pigtail, in preference to bearing contact, and the bearings are such that these condensers turn easily and smoothly, without sticking.

There are two types of intermediate transformers available; iron core and air core. In the system using the first named type, three transformers are provided with small laminated iron cores, which has certain advantages but broadens the tuning, and a filter or air core, tuned transformer is necessary. In the system using the air core units, each transformer

with huge winding. Instead, there is a solid iron core made in spool shape on which the primary and secondary are random wound with over a mile of wire. A shell 1/8 inch thick covers core and windings so that the wire is embedded in a solid mass of iron—shielding to the nth degree. I'll admit I was one of those who scoffed at first and said it was impossible—yet these little units reproduce with a fidelity that is amazing and there is no discussion possible against the facts of performance. Although this feature is not utilized in Straight-8, it is perfectly possible to use three of these units with as many tubes and get tremendous volume without howl.

The front and sub base panels are Formica. Experience has shown that its

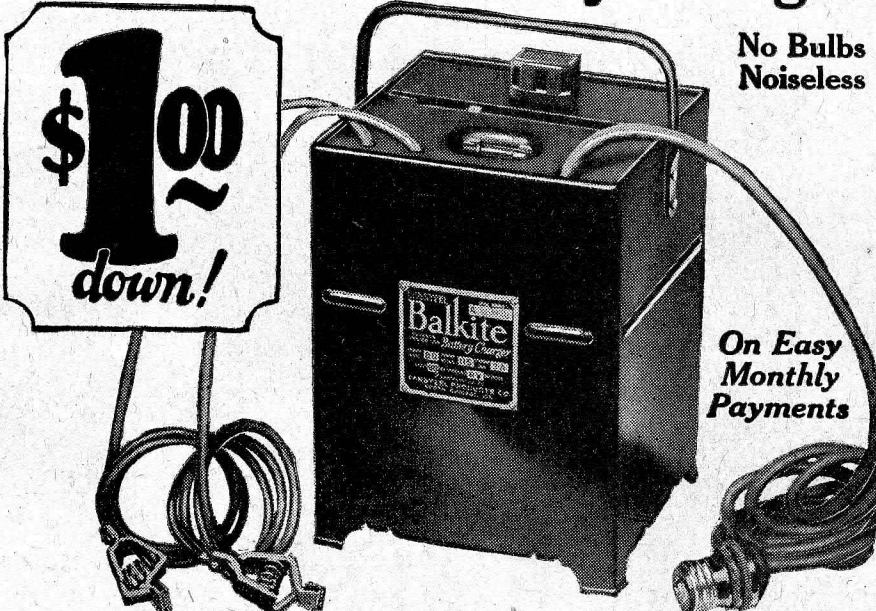
and Radio Digest has arranged for two different concerns to supply these, one in the East and one West. In Chicago, the McConnell Cable & Specialty Co., 424 South Clinton street, have built units exactly according to the specifications given below and can ship you a set of four coils for \$3.50. In the East the F. W. Sickles company, Springfield, Mass., are also prepared to ship these coils on order.

Coil Construction

Should you be in a position to wind your own, the procedure is as follows: The form consists of a wood or fiber cylinder 2 inches in diameter and 1 inch long. Around the outer surface drill 15 holes equidistant apart and 1/4 inch in diameter. For insertion in these holes, 15

(Continued on page 26)

Genuine Fansteel Balkite Battery Charger



For Radio and Automobile Batteries

Radio Fans! Auto Owners too. You may now own a Genuine Fansteel Balkite Battery Charger on a most amazing, easy payment offer. Only \$1.00 with coupon below and we will send it to your home on approval. The Balkite charger will charge the ordinary 6 volt radio "A" battery, "B" batteries (of the lead type) or automobile batteries from 110-120 AC, 60 cycle current. Has no bulbs, vibrators or moving parts; absolutely noiseless. Will charge your battery while radio is in use without creating disturbance in set. The Balkite charger has nothing to adjust, break or get out of order. Requires no attention except filling with distilled water. Never deteriorates. Will charge even a completely discharged battery. Simple—efficient. Measures 8x6x6 1/2 in. Shipping weight about 22 lbs.

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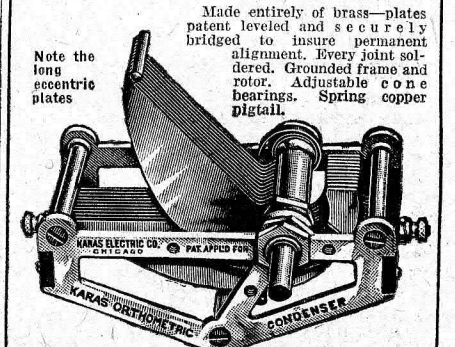
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Ordinary Condenser Arrangement of Wavelengths
Ordinary straight capacity condensers crowd 70 of the 100 wavelengths into the first 30 points of the dial.

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With straight-line-wavelength condensers 57 of the 100 wavelengths are crowded into the first 30 points on the dial.

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Karas Orthometric Condensers insure absolutely equal dial separation of all wavelengths, 200 to 600 meters.

If your dealer hasn't secured a stock of Karas Condensers
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Most good dealers everywhere, sell Karas Orthometric Condensers. If your dealer happens to be one who hasn't secured them, we will supply you direct on our 30-day Money-Back Guarantee. Just fill in and mail this coupon at once. Send no money. Pay your postman on delivery.

SIZES AND PRICES

23 plate, .0005 mfd.....	\$7.00
17 plate, .00037 mfd.....	6.75
11 plate, .0025 mfd.....	6.50
5 plate, .0000972 mfd.....	6.50

Karas Electric Co.,
4049 N. Rockwell St., Chicago

Please send me..... Karas Orthometric Condensers, size..... at \$..... each. I will pay the postman the list price, plus postage, on delivery. It is understood that I have the privilege of returning these condensers any time within 30 days if they do not prove entirely satisfactory, and you will refund my money at once.

Name.....
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Dealer's Name.....
If you send cash with order, we'll send package postpaid

Applied ABC Principles of Radio Receivers

Part I—In Which You Become a Train Dispatcher

By Carl Patterson

TO THE greater part of the American public, Radio is among life's deep mysteries—one of several which we just accept as contributions to our entertainment and happiness—content to let it give forth music, humor or knowledge, without thought of the "why" behind it all. Every day 12,000,000 people listen to all or part of a broadcast program that may emerge from the loud speaker with close fidelity to the original rendition, or may be blurred, distorted and screechy. When Radio broadcasting was a new-born child we were content to listen to it in any form and marvel at the wonder of it all—"nothing in between." Now, however, the thrill has worn off and Radio has, for most of us, been reduced to the commonplace. And we expect the obedience of our will or whim that we get from other instruments with which we are more familiar.

The babe has grown—grown to a size where it can take its place, in might at least, with older and very powerful industries. In its ability to take its place in any and all society and mix well it is still the child and we should treat it with some consideration and much patience. Its advance notices are frequently somewhat misleading and, as is the habit with publicity men, apt to be a little exaggerated.

Any point in the United States, North America or the world is not at one's finger tips with any set. You cannot just touch a lever or knob and listen to a soprano, violinist or dance orchestra—anywhere—that you happen to know is broadcasting at the moment. That is a sweet dream that will undoubtedly come true at a not far distant date—the child is learning every day—but you cannot do it now.

You can, though, get hours of worthwhile enjoyment from Radio as it now stands—providing you will coddle it just a little—will try to understand its moods and disposition. Many have tried to explain, in simple words, the complex make-up of the prodigy, so that you, Mr.

Average Set Owner, can handle this youngster. It will be my object in this series to try and get behind the panels and cabinets for you, with similes to everyday matters, and give you a new picture of young Mr. Radio.

Enlarge your perspective, for the moment, beyond the walls of your room, the home you occupy so snugly, the city in which you live, and picture a great railroad system—imaginary of course—with all lines leading to your neighborhood. Roads lead out in all directions to all the

such as you wish and getting them onto your unloading track one at a time.

Looking at Radio in this way, you at once wonder why there have to be so many lines, why there must be so many trains, why the system must be so complicated. That is a problem you cannot, individually, do anything to alter. You and a million others, all faced with the same difficulty, might raise your voices in one great protest and secure a remedy. Otherwise, it is up to you to settle your own difficulties and learn Radio

broadcaster sends out hundreds of thousands of identical trains simultaneously but only one interests you.

To help you sort out your trains from all the stations, unload them without damage and handle the contents to your satisfaction, many types of receivers have been developed. They are available under many names, in an amazing variety of shapes and sizes, yet in one respect they are all alike. Each contains a unit essential to unloading the trains which is called a "detector." This may be a small piece of mineral resembling a piece of coal or precious ore, and it may resemble an electric light bulb, but it is somewhere in every set to enable you to take the program off the train. What then happens to the train is of no importance, it disappears after the voices and music are removed.

Since long distance Radio trains cannot have coaling points on the route, they are pretty well depleted in energy when they reach you. Very likely they can just get into the outer yards and would never make the final track through the maze of switches if not given new fuel. For that purpose, some sets are provided with bulbs for the purpose of refueling the train desired, before it is unloaded, and these the Radio man terms "radio frequency amplifiers" or "R.F. stages." It should be kept in mind that these serve only to refuel the train (our carrier wave) and, properly handled, do not affect the contents.

Such bulbs are found in four tube (bulb) sets, five tube sets and many of six tubes. There are occasional combinations where they are found in three tube outfits, but that is a special case to be considered later. If a receiver has seven, eight or nine tubes, you know it has these refuelers, but here they are, in effect, refueling trains of your own that go out and help a very exhausted train that might otherwise never get even to the outer limits of your yards.

This year, all receivers worthy of the name, and costing from about \$20.00 up, (Continued on page 26)

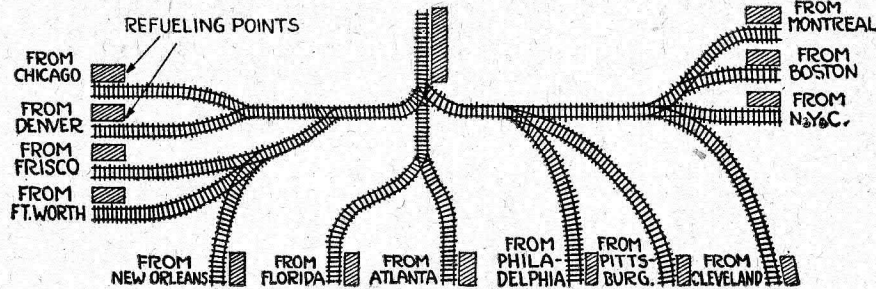


Figure 1

great cities, Chicago, St. Louis, New York, San Francisco, New Orleans, Denver. In some cases you have several parallel lines to the same metropolis. In addition, you have scores of other tracks radiating out to smaller, but just as important points, such as Schenectady, Troy, Columbus, Louisville, Lansing and Davenport.

Around your home you have a complicated network of switches and yards, into which all lines merge, several lines combining first into one, then combinations joining to cut down the total and, at last, one single unloading track and platform. You stand then at a great terminus of lines, peculiar in that all trains come in and none go out—peculiar also in the fact that you cannot telegraph to distant points and order trains started as you wish; they are all rushing toward you and you have the problem of accepting

railroading. As our laws stand at present, the department of commerce cannot refuse a license to broadcast and we have, more and more, the division of time in a locality on each wave channel. Getting back to our railroad, a line is operated by one lessee for an hour or two and then, for awhile, by another user.

To understand something of the underlying principle behind Radio, let us take our railroad comparison yet further. A broadcasting station starts a train, which you desire to get safely to your terminus. Now a railroad does not move trains just for the pleasure derived—neither does a broadcaster. It is what the trains carry that counts. The broadcaster sends a train that is called a "carrier wave"—very apropos in view of our comparison—and on this carrier wave is loaded a shipment of music and messages. True, the

TONE

Full, sweet, mellow and natural, without the slightest indication of distortion, is another achievement that is making the APEX SUPER FIVE the most popular of all receiving sets.



VOLUME

That supplies dance music or entertainment without any loss, is a feature for which the APEX SUPER FIVE is world famed.



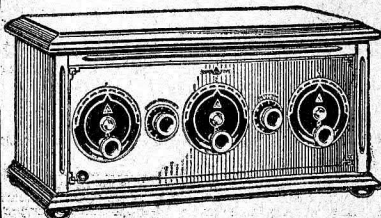
DISTANCE

Lends added enjoyment to radio with an indescribable fascination of tuning-in far away stations, which is always possible with the APEX SUPER FIVE.

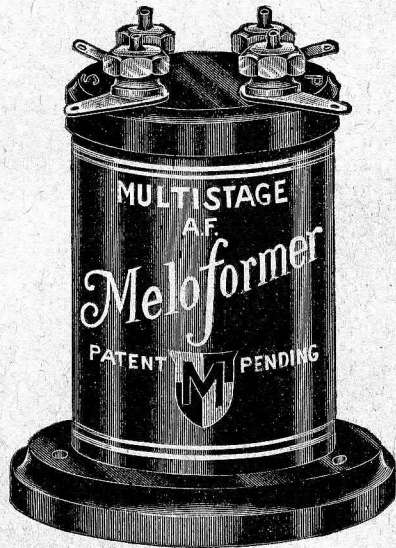
Ask your dealer for a demonstration. Your eyes and your ears will tell you that APEX stands at the high point of perfection in both performance and appearance. \$60—without accessories.



SUPER 5



APEX ELECTRIC MFG. CO.
1410 W. 59th St. Dept. 1205-A
CHICAGO



New Standards of
AUDIO AMPLIFICATION
provided

by entirely new SCIENTIFIC methods used in constructing the

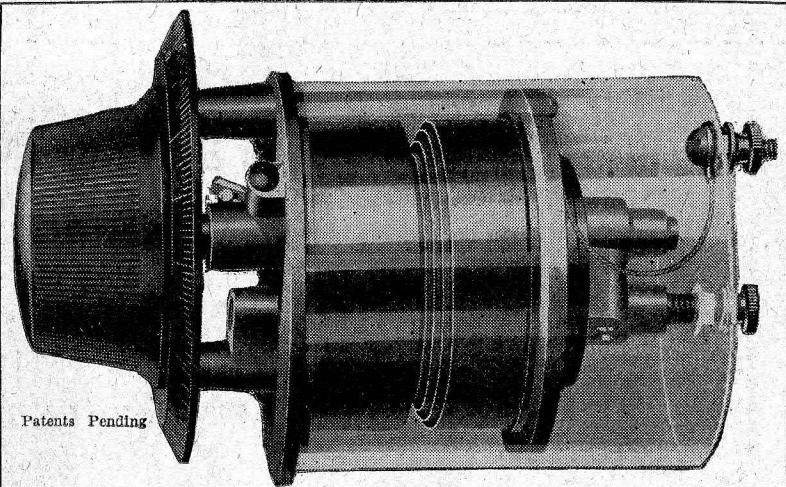
MELOFORMER

Messrs. Hansen and Fournier used MELOFORMERS in their Straight-Eight Super described in this issue of Radio Digest.

DISTORTION is not necessary, perfect reproduction is possible—let the MELOFORMER prove it.

\$4.00 Each

ROBERTSON-DAVIS CO., Inc.
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*FURNELL stands alone
in SLF condensers*

BASED on an entirely new and simplified principle—the Furnell is the most practical and efficient condenser ever designed for Straightline Frequency tuning.

The Furnell replaces open multiple plates with two shielded plates, each coiled in the form of an evolute. Assures clean-cut separation of stations, tone clarity and scientific precision heretofore impossible. Dust-proof, moisture-proof, damage-proof.

Each condenser complete with special 4-inch Bakelite 360 degree Dial and enclosed in a transparent Dust-proof case.

Exclusive Sales Franchises Available to Reputable Jobbers in Locations Still Open

Write for Literature

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FURNELL

360° TAPER COIL

CONDENSERS

APPLIED RADIO A-B-C'S STRAIGHT-8 SUPER-HET

(Continued from page 25)
provide a means of putting the voices and music onto a loud speaker. Whether refueling tubes are incorporated or not, the program would be so faint after being unloaded by the detector, that it could be heard only in a pair of head receivers. Means must be provided for strengthening the program (not the carrier remember) so that it will actuate a speaker and, for this purpose, two or three tubes identical with the refueling tubes and that used for the detector or unloader, are provided. These, to the Radio world, are called "audio frequency amplifiers." It is not a difference in construction or appearance of the tubes but one of use. So much for the bulbs or tubes.

We have not as yet considered anything that will help you stop unwanted trains in your switchyards and bring through the trains carrying the load desired. This series of operations, by the way, is known as tuning. Its counterpart in railroading includes the switch towers and their operators, the telephoning back and forth from these towers to the central office, and the green and red lights notifying when to go and stop. In our Radio set we have apparatus paralleling all this, which is controlled from the front of the panel with you as the central office—the train dispatcher. It is up to you how well the trains come in—whether those that have come a long way are properly refueled—whether those still full of energy because from nearby points are kept out until wanted—whether they are unloaded as carefully as they should be.

If you have an average three tube receiver—and note I say average to distinguish such a set from the special type called reflex—you are not particularly well equipped to handle much traffic. Such a set, however, does not have refueling tubes and many exhausted trains disappear at your outer yard limits. Thus there are not as many trains to handle with your limited switching arrangements. Only one of the group of switches and derailleurs is provided before the unloading platform—and this is called the detector.

(The various types of sets available and what you can do with them and why will be continued by Mr. Patterson next week. Suggestions for improvement of equipment and pointers on train dispatching will follow in natural order.—Editor's Note.)

(Continued from page 24)
rods of wood, bakelite or brass (preferably the latter) should be cut 3 inches long and so they will slide in and out of the holes fairly easily. There should be just enough "stick" so they will not drop out without pull. Each coil is started by securing the wire, number 20 dcc., to one of the pegs close to the core, then passing on one side of two pegs, then on the opposite side of the next two, and so on around and around until the proper number of turns have been put on.

Four coils, consisting of five windings in all, are to be used. Coil L1 has 10 turns, L2, has 52 turns, L3 has 25 turns. The coils L4 and L5 are wound together. L5 is at the center and contains 25 turns; outside of it wind L4 with 45 turns. At the finish of each winding, it can be secured by wrapping the wire twice around the last peg. To give each coil its necessary rigidity it should be given two coats of special varnish before removing from the form.

This varnish can be any of the Radio cements on the market or can be made by dissolving photographic films (from which the gelatine has been removed) in acetone. If more readily available, celluloid can be dissolved in acetone; however, I would suggest the use of any of the prepared cements on the market. For mounting, I have used 1/16-inch fiber sheet cut into small elongated triangles, the point of which is inserted up into one of the diamond shaped openings with a base width of about 3/8 inch. Small right angle brass brackets, secured to this broad base portion, enable one to readily secure the coil as to be shown later. As purchased from McConnell these coils are equipped with the mounting just described.

(In the next issue, Mr. Fournier will continue the construction of Straight-8 with the drilling of the panel and sub base, and the assembly on them of the parts listed.—Editor's Note.)

would have to lay off on that night but he has to now wherever they have local silent nights.

And would it be impossible to force all 100-watt or smaller stations to broadcast only in daylight hours? They cannot expect to get very far anyway except in some freak reception cases.

Would appreciate your opinion on the above.—F. W. K., Portland, Ore.

Just One Word

You have accomplished some splendid results for Radio listeners. Here is something that will be of as great benefit as anything you have done.

Make it a rule for every announcer to announce his station, instantly, at the close of each number. For instance:

"WOK—Chicago." Nothing more, nor less.

Announce the letters slowly, and clearly.—E. S. L. St. Louis.

Music Hungry Westerners

A recent copy of the Digest expressed the desire to know how the Atwater Kent

Sunday evening programs were being received and I take this opportunity to express the sentiments of my household.

My command of the English language is not sufficient to express how much we enjoy these programs. We live 300 miles from the nearest city that could afford to have these artists. It has been a number of years since either of us have been privileged to hear real artists.

We also appreciate the pictures of the artists as published in your magazine, while hearing them it is not a difficult thing to imagine one sees the artists also. Extend our appreciation to these artists from some music hungry westerners.—Mr. and Mrs. G. C. B., Long Pine, Neb.

Just What Was Needed

Your article on "Race Track" announcing was good. Just what we needed. Have already congratulated Henry Field of KPNE and Billy Knight of WIL on their change of pace. Please get Dielectric a two tube super-heterodyne so he can reach more points.—V. K. Y., St. Louis.

The Reader's View

We'll Leave It Up to Hoover

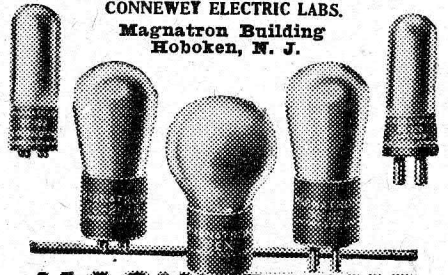
As I believe you are trying to get the viewpoint of all Radio listeners, I want to tell you mine. I would really like to know why we cannot have "time zone silent nights"—the crystal set owner

MAGNATRONS in your set will give sweet purity of tone—clear and complete rendition of all the wealth of overtones. Music and speech come from the loudspeaker of the Magnatron equipped set with rich fidelity and generous volume, recreating in your home the actual performance itself, whether it be ten or a thousand miles away.

There's a Magnatron for every purpose. The DC-201A, the DC-199 [large or small base], the DC-120 [for super volume], and the Rex [for B Eliminators]. All list for only \$2.50 each.



now we'll have clear music

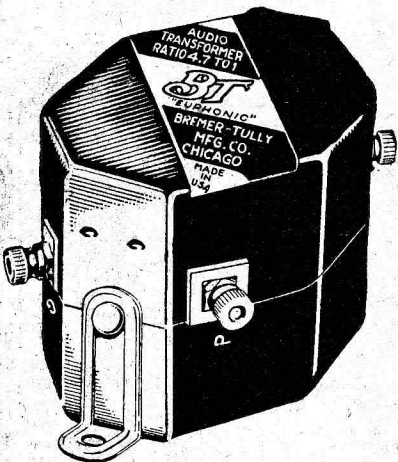


CONNWEY ELECTRIC LABS.
Magnatron Building
Hoboken, N. J.

MAGNATRONS

Complete factory stock for Pacific Coast carried at Pacific Radio Labs., 256 So. Los Angeles St., Los Angeles, Cal.

The Season's Biggest Hits



2.2 to 1.....\$5.00
4.7 to 1.....\$5.75

B-T Torostyle Transformer

There are many "toroids,"—but only one B-T Torostyle,—invented and patented by Harry A. Bremer, whose Nameless and Counterphase Circuits are acknowledged triumphs.

The B-T Torostyle R. F. Transformer is the heart of the Counterphase.

B-T 9-color wiring diagrams have never been approached in Radio. They are included with Kits or sold separately for 75c.

5-tube Counterphase Kit \$28.50

6-tube Counterphase Kit \$38.00

An excellent 4-tube set using Counterphase principles is described in January Radio Age.

"Better Tuning" 9th Ed. gives complete Hook-ups, instructions, tuning information. Postpaid 10c. Circulars free.

BREMER-TULLY MFG. CO. CHICAGO
532 S. Canal Street

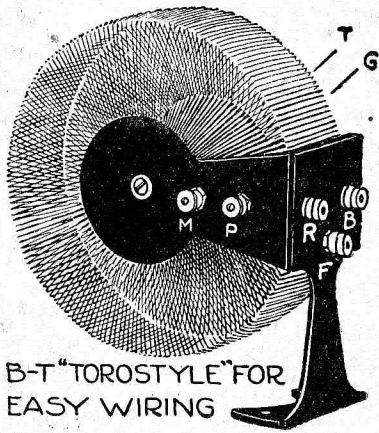
B-T

AUDIO TRANSFORMERS

No B-T product ever became such an instant national success,—and B-T have never marketed any but successful products.

B-T Reputation is your best insurance

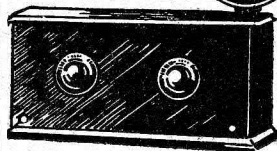
Insist on EUPHONICS



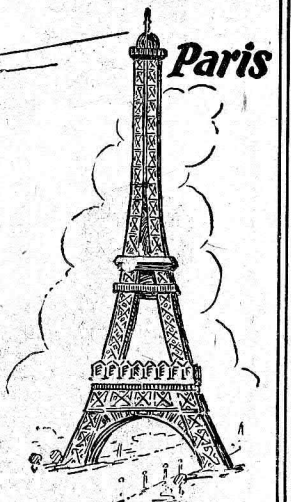
B-T "TOROSTYLE" FOR EASY WIRING

3-Styles, individually or in Counterphase Kits

Cadiz, O.



Verified Reception from Paris by Cadiz, Ohio, Radio Fan



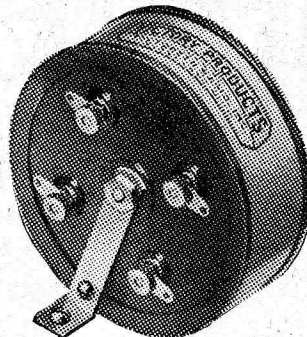
Coast to Coast On a Loop
is easy with a

Victoreen Super-Heterodyne

4—No. 170 R. F. TRANSFORMERS at \$7.00 each and

1—No. 150 Oscillator Coil at \$5.50

Constitute the Heart of the Circuit



No oscillations, howls or squeals—no matching of tubes.

Complete parts to build the "Victoreen" can be purchased of your dealers for between \$50.00 or \$75.00—depending on quality of material selected.

Ask your dealer for free "Victoreen" folder which contains hook up and complete information, or write us direct.

Victoreen No. 170 R. F. Transformer—Neat and Compact 3" in diameter, 1" thick.

THE GEORGE W. WALKER CO.
6548 Carnegie Ave. Cleveland, Ohio

Branch Sales Offices Are Located at

- 50 Church St., New York City
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- 508 So. Dearborn St., Chicago, Ill.
- 45 Ruggery Bldg., Columbus, Ohio
- 443 So. San Pedro St., Los Angeles, Calif.

OPERATING AND TROUBLE SHOOTING

OPERATING and Trouble Shooting, is a Radio Digest feature the purpose of which is to give practical information on the operation, care and cure of simple troubles in every kind of receiver. Standard Radio receivers of wide distribution and use are studied from the standpoint of instructions for installing and connecting, tuning and operating, and remedying little difficulties. The suggestions below, if executed faithfully, will make winter broadcast listening yield all there is to yield to the reader and give your set a fair chance to show its worth.

For the Owner of a Jewett Radio Receiver

THE Jewett is a 5-tube receiver of exceptionally handsome appearance and embodying all the latest refinements known to a set of this type. Two of the dials customarily found on a 5-tube receiver have been combined by ingenious arrangement exclusive with the Jewett, so that on the front of the panel there are only two tuning dials, the meter, the filament switch and a volume control. The control which regulates the brilliancy of the filaments in the tubes has been placed inside the cabinet, and once it is set at the voltage specified by the Jewett company it may be left alone. There are two methods incorporated to improve the selectivity in a congested territory where difficulties might be experienced in sepa-

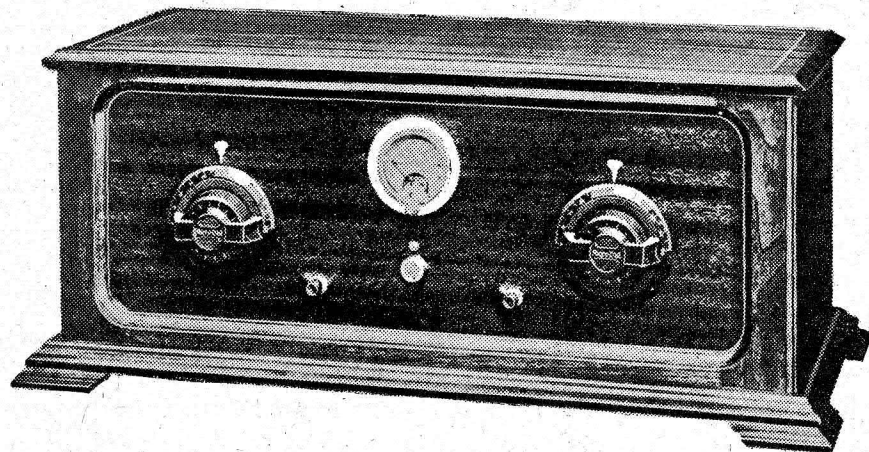


Figure 1

rating a number of powerful locals or eliminating a single powerful local.

The Jewett company has taken exceptional care that the beautiful finish on the cabinet of this receiver shall not be damaged in transit, and when you come to unpack this set, a suggestion may not be amiss. The writer found that the best way to get this set out of its container was to place the container on its side and remove the heavy, corrugated board pads at both top and bottom. You can then push the set through from one side or the other and remove the protecting layer of paper.

The receiver should be placed as close to the point where the aerial and ground enter the room as is possible, so that these leads may be kept short. The loud speaker may be placed on the same table with the set, or, if the speaker is provided with a felt base, it can be placed on top of the receiver cabinet. The batteries are presumably going to be placed on the lower shelf of the table or within some sort of a cabinet below the set, but they cannot be placed beyond the length of the cord provided with this receiver. The cable tips are clearly marked for con-

nection to the batteries, and little difficulty should be experienced in hooking up this set. The Crowe cable marker labeled "A+" is to go to the positive terminal of a 6-volt storage battery, and this terminal can be identified on the battery either by the letters POS. or a touch of red paint on the terminal itself. The wire identified with "A—" is to go to the other terminal of the storage battery.

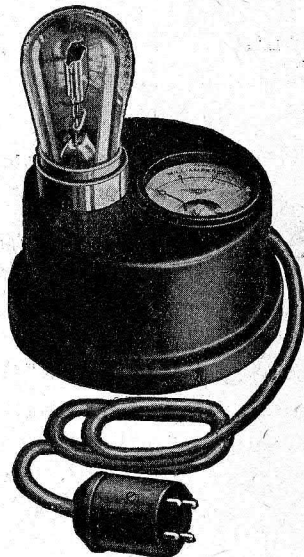
The B battery should consist of two 45-volt units, either dry cell or storage battery. The wire from the set, identified as "B—," should go to the negative terminal on one of the 45-volt units, and the plus terminal of the same unit should be connected to the negative ter-

terminal of the second unit. The positive terminal on the second unit is to be connected to the remaining wire from the receiver, contained within the cable, and identified as "B+."

The antenna lead-in is to be brought into the rear of the cabinet through the hole nearest the left end, and the binding post for its connection will be found at the left end of the shelf. The ground connection is brought in through the second hole from the left for connection to the large nickel binding post about midway of the rear edge of the shelf, close to which there is the letter "G" engraved on the shelf. The cord from the speaker is brought in through the third hole and the tips are inserted in the two little nicked jacks right close to the ground binding post. It makes no difference which speaker tip goes in which jack, as the Jewett circuit makes this of no consequence.

Five tubes of the "A" type are required in this receiver, and they can now be inserted in the sockets by pushing each one down gently and then giving it a slight twist to the right. The small control knob near the bottom and to the left of set should now be turned to the right, and the five tubes should light up. The pilot light provided in the exact center of the set should also light. The rheostat for regulating filament brilliancy is found at the left end of the shelf inside the receiver and, if all tubes do not light up when the filament switch on the panel is turned, rotate the rheostat knob with a right, that is, a clockwise motion. This should cause the tubes to light, presuming the storage battery is charged.

(Continued on page 28)



No. 107

JEWELL JUNIOR TUBE CHECKER

"Test your tubes at home"

Your set is no better than the poorest tube in it. With a Jewell Junior Tube-Checker you can test your tubes at home and thus save a lot of trouble and disappointment.

Send for special circular No. 735. Order from your dealer.

JEWELL ELECTRICAL INSTRUMENT CO.

1650 Walnut Street—CHICAGO

Swooping Down on Static

As an eagle swoops down on its prey, devouring it hungrily, so does

AERO-LOOP

devour static, consume interference, and swallow up regenerative squeals.

Unleash the hidden power in your radio set! Give it a chance to perform at maximum efficiency.

Attach this "loop-within-a-loop." The inside loop is stationary, acting as a booster, while the outer loop is adjusted by rotation.

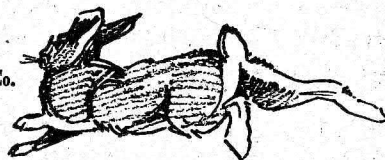
Used with—or to replace—outside antenna.

Ask your dealer. If he does not carry it yet, we will ship direct, express prepaid, on receipt of price. Be sure to specify the set with which it is to be used and please give your dealer's name.

Sells for
\$12.50

Write now for Descriptive and Diagramatic Booklet. Your Copy Mailed Free.

MANUFACTURED BY
Utt-Williams Electrical Products Co.
Santa Ana, California



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Dimensions
30 in. x 8 x 7 in.



SCOTT SALES COMPANY
National Distributors

443 SOUTH SAN PEDRO ST. - LOS ANGELES, CALIFORNIA

THE JEWETT RECEIVER

(Continued from page 27)

At the bottom of the meter, and included as part of it, there is a small switch which can be pushed to the left or right. You should now turn this small handle to the left. This will enable you to read on the scale the voltage being supplied the tubes, and the rheostat should be adjusted until the scale shows 4.8 volts. The receiver is now ready for operation.

will, however, also have the tendency to decrease the volume, and a compromise position should be found where sufficient volume is still heard from out-of-town stations yet you are able to go through the local broadcasters.

The small control knob near the bottom of the front panel and to the right of the set is a sensitivity and volume control. When this is turned to the right, both the range and volume are increased, but, if it is turned too far, distortion will

at which a number of stations were found on the dials, and may make tuning somewhat easier for the reader when first looking for stations. The relation of dial number 1 to dial number 2 will vary with each antenna installation, and it will be noted that, with the conditions stated above, dial number 1 ran about eight points below dial number 2 throughout the scale.

There are a number of suggestions which the writer would like to give the newcomer in Radio to keep this set functioning at its best. A storage battery is tested with a device called a hydrometer, which can be purchased for about \$1.50 at any Radio or automobile supply store. One of the caps on the storage battery

should be removed for testing, and the small tip of the hydrometer is inserted through the hole into the liquid. The rubber bulb is pressed and then released, which will draw liquid up into the large glass portion of the hydrometer. Within this glass cylinder there is a small float with a scale reading from 1100 to 1400. The battery is fully charged when the surface of the liquid within the hydrometer is at 1300 to 1325 on the scale, and the battery is considered discharged when the reading is 1100 to 1125. It is better practice to charge the storage battery often, and keep it close to the fully charged point, than to try letting the battery go too long at a time and compensat-

(Continued on page 30)

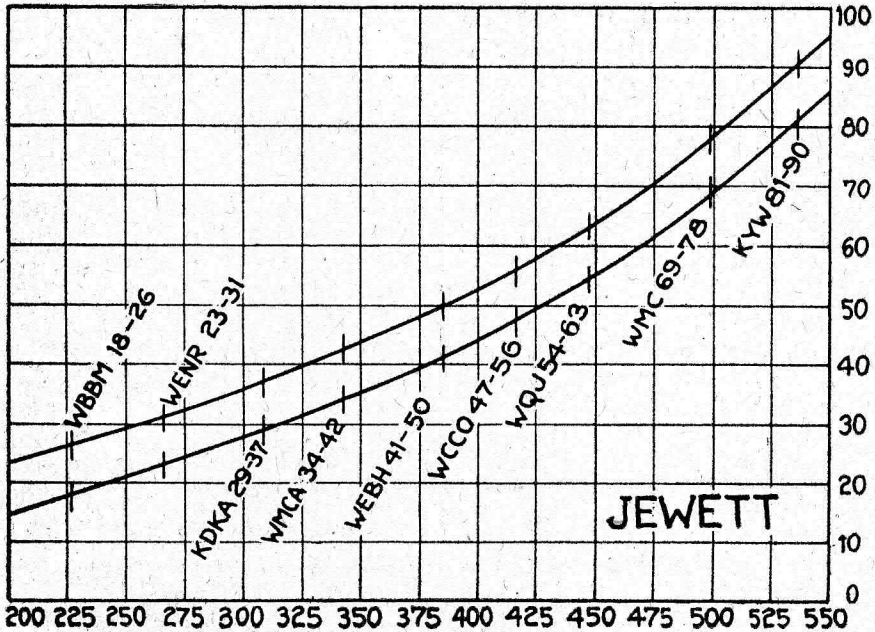


Figure 2

but before going further it might be a good idea to test the B batteries, which can be done by turning the meter switch to the right. The upper scale on the meter should indicate between 88 and 100 volts. The two dials should be turned together, with a hand on each, so that the numbers can be kept approximately together.

With as many stations as there are now, there should be no difficulty in finding a station, but if you have difficulty at first you will find a selectivity control within the set in the front left-hand corner. This is marked "broad" and "sharp," and it may be that this control happens to be in the sharp position, which will make our preliminary tuning a little difficult. Turn this selectivity control into either of the positions identified as "broad," and rotate the dials slowly over the scale once more, keeping the dial readings approximately the same, and a station will be heard; in fact, you will probably hear several. If you are close to a number of highly powered stations you may have difficulty in separating them.

If this proves to be the case, open the link connector at the left end of the set, inside, which automatically places a small fixed condenser in series with the antenna lead. It will have the effect of shortening your antenna and increasing selectivity. Should you still have trouble, the selectivity control should be moved over toward the "sharp" position, which will probably eliminate this difficulty. It

creep in. The best operating point for this control can quickly be found.

If your antenna and lead-in combined have a length of more than one hundred feet, it will certainly be necessary to leave open the link referred to above. Probably the better antenna for use with this set would be one in which the antenna proper, and the lead-in, have a combined length of about seventy feet, which would permit operation with the selectivity control on the broad position and the link either open or closed, depending on the proximity of powerful stations.

Once you have a distant station tuned in to maximum strength and clearness it would be a good idea to try switching the tubes around in their sockets to find those which function best as amplifiers and detector. This will require slight readjustment of the sensitivity control on the front of the panel, and a combination of tube positions will be found which gives the maximum in volume and tone quality.

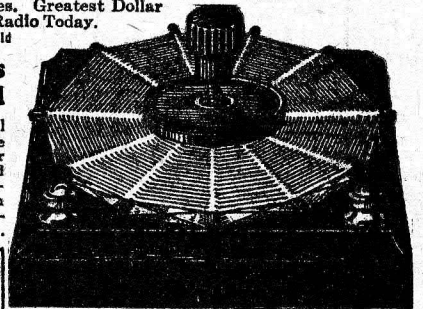
The Digest laboratory in which this receiver was tested is exceptionally close to three powerful broadcasters, and is considered a difficult location. With an antenna and lead-in of a combined length of eighty-five feet the receiver was operated with the link open and the selectivity control on the line dividing "broad" and "sharp." The tubes, which were not new, were operated on a meter reading of 5.1 volts, and the B battery showed a voltage of 87. The chart which is included with this article as figure 2 shows the points



Fred W. Stein.

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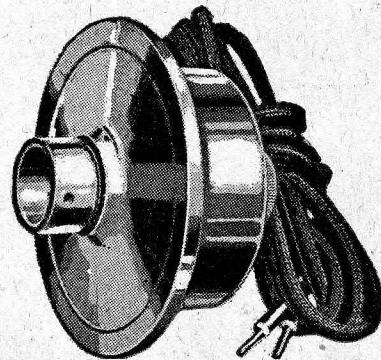
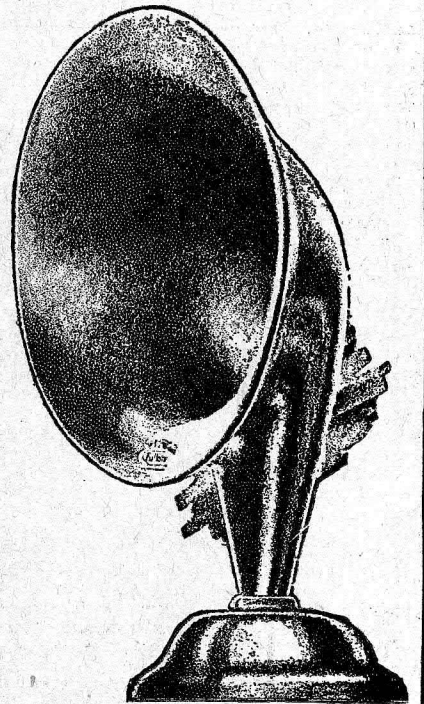
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Part IV—Adjusting and Tuning

By James McDonald

TURN rotor plates half way in on the rear trimmer condenser attached to the twin condenser at the left; then turn the rotor plates of the rear trimmer on the right twin condenser to the same position. This is the permanent setting for the rear trimmer condensers. Adjust the dials so that both read 100, with condenser plates fully in and flush with the stator plates.

In connecting the accessories to the set we will consider the receiver from the front. The first binding post (at rear left corner) is for the antenna lead-in, the next is for ground wire. The third post (first of the group of six) is to be attached to the plus terminal of a 6-volt storage battery, while the fourth is to be connected to the minus terminal of the battery. Insert the tubes in their sockets; rheostat should regulate brilliancy of all tubes, when turned, and "on-off" switch should flash tubes on and off when snapped.

Now remove all tubes and disconnect the storage battery. Connect the plus terminal of the storage battery to both the fifth and sixth binding posts; connect the negative of storage battery to the third binding post. Insert all tubes. The filaments of the tubes should not light. If any filament shows brilliancy, a wrong connection or a short circuit is indicated at some part of the B plus wire or apparatus connected to it.

Final Connections

Assuming that the tubes do not light on this test, we are ready to connect all the accessories. The storage battery should be disconnected from the way in which you just had it, and the plus terminal is to be connected to the third binding post. At the same time connect the negative terminal of one of the B battery units to this binding post. The negative terminal of the storage battery is to be connected to the fourth binding post. While doing this, connect also the positive terminal of a 4½-volt C battery. The positive terminal of the B battery unit, already partially connected, is to be attached to the fifth binding post and also to the negative terminal of the second B battery unit. The positive terminal of this second B unit is then connected to the sixth binding post, which will give 90 volts difference between the third and the sixth binding post. An Eveready C battery is provided with two negative terminals, one identified by a 3 and one by a 4½ mark. The 3 (volt) terminal is connected to the seventh binding post on the set, and the 4½ (volt) terminal is connected to the eighth or last binding post.

You can now replace all tubes and turn the filament switch to the "on" position. The rheostat should be adjusted for medium brilliancy of the tubes, and then the loud speaker or phones can be plugged into the first stage jack. Place the selectivity switch, at the left end of the front panel, on the seventh point, the volume control at the center of the panel at the zero position, and then rotate the selector dials very slowly, maintaining about the same scale reading on both until a signal is tuned in. The Mikro-Mike condensers should be adjusted so that the pointers are about half way down.

Now tune in a comparatively weak signal and then reduce the brilliancy of the tubes with the rheostat (at the right end of the panel) to that point which gives best results. The volume control can be rotated to the point which gives the loudest clear signal. Then plug the loud speaker into the second stage jack, which is that in the lower right corner. The volume should be greatly increased. Adjust the selectivity switch to various points from 1 to 8, retuning slightly on each new position. The volume will be decreased on points 1 and 2, but tuning should be much sharper. The greatest volume will be found on points 7 and 8.

Sensitivity and Volume Control

This control operates throughout about one and a half turns. You will note that in the half way position between extreme adjustments this control snaps into a neutral or zero position. The knob on the volume control should be attached with the arrow pointing directly up when control is in neutral. The B-T dual control consists of two separate resistance units, one of which operates in the Counterphase balancing circuit. As the second resistance is increased, volume and sensitivity are decreased. Always adjust this control to secure clear signals. Operate tubes at lowest brilliancy consistent with satisfactory results. Increasing brilliancy only increases the volume up to a certain point, and shortens the life of the tubes.

Adjustment Method Number One

The Mikro-Mike or Counterphase condensers must each be carefully adjusted, starting with number 3, next to the detector. A long sharpened wooden rod may

be used to adjust these MMF condensers. Tune in a strong signal near 40 on the dials. Remove tubes 1 and 2. Tune signal carefully, using trimming knobs for maximum volume. Set volume control at 0 (midpoint). Rotate selector 2 (right condenser) back and forth across signal and an oscillation beat or whistle will be heard, as signal is brought in and out of tune, or oscillation may be indicated by a click. When Mikro-Mike condenser number 3 is properly adjusted, oscillation will not occur and no beat or whistle will be heard. Therefore, rotate adjustment screw of the Mikro-Mike slowly until no beat is heard when crossing signal with selector 2. Continue turning adjustment screw until beat is heard again. The proper adjustment is half way between the point where oscillation stops and point where it is again heard. Adjust Mikro-Mike to this middle position and leave permanently at this adjustment.

Replace tube number 2 and adjust Mikro-Mike condenser number 2 in same manner except that selector 1 (left condenser) is rotated across signal to detect oscillation beat or click.

The third step is to replace tube number 1 and adjust Mikro-Mike condenser number 1 in same manner as number 2.

As the point of adjustment is quite sharp on numbers 1 and 2, it will be necessary to proceed slowly, always making certain that station is tuned to maximum volume, as the Mikro-Mike adjustment will change the tuning slightly.

Method Number Two

Disconnect antenna, operate tubes at normal brilliancy, with volume control at zero or neutral. Adjust selectors at reading of about 75.

Rotate selector number 2 (right dial) in and out of resonance and a "click" will be heard as it is brought into tune, and again as it is brought out of tune. The first "click" indicates that the tubes have gone into oscillation, and the second indicates stopping of oscillation as selector is rotated out of tune.

Count divisions on dial between first click (start of oscillation) and second click (stopping of oscillation).

The Mikro-Mike is properly adjusted when the divisions of selector rotation between clicks is smallest. Therefore,

adjust each Mikro-Mike until clicks occur as closely together as possible when selector is rotated in and out of tune.

If these clicks are not heard, adjust trimmer condenser knobs until they are heard. Keep trimmer knobs closely tuned, because adjustment of Mikro-Mike condenser slightly detunes stages. Rotate Mikro-Mike screw very slowly and carefully.

Starting with the neutralizing condenser nearest the detector tube (number 3), slowly turn the adjustment screw so that the indicator moves downward. If the separation of oscillation clicks on the controls becomes less, adjustment is being made in the right direction, and should be continued until the separation between clicks reaches a minimum. If it is found that when the Mikro-Mike indicator is adjusted downward the number of scale divisions between the oscillation clicks does not decrease, the indicator should be moved up until the click band narrows as previously described. This operation should be repeated on the second and third R.F. stages. If instructions

(Continued on page 30)

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"COUNTERPHASE" SET

(Continued from page 29)

have been properly followed, the best possible results will be obtained from the set.

In actual tuning, complete suppression of oscillation is brought about by adjustment of the volume control, and close adjustment of Mikro-Mike condensers is not imperative, but is desirable for maximum results. Always turn trimmer knob number 2, when adjusting Mikro-Mike number 3, and trimmer knob number 1 for Mikro-Mike numbers 1 and 2.

Use of Tuning Controls

Selectors 1 and 2 are used to tune the receiver to the same frequency as the signal to be received. For strong signals, close tuning is not necessary and it may even be desirable to rotate selector 2 slightly out of resonance to prevent overloading. However, weak signals require very close adjustment of selectors for maximum volume, and volume may be considerably increased by means of the "trimmer" knobs.

Strong local signals may often be improved by rotating selector 2 slightly out of tune to prevent overloading. Always operate at lowest volume consistent with size of room. Volume or sensitivity may be increased by rotating the dual resistance control. Increasing the sensitivity beyond a certain degree causes the circuit to go into oscillation. This is indicated by a "click," oscillation beats, whistles or distorted signals. Always reduce sensitivity below this point.

When tuning weak signals, use both hands, tuning each control and its trimmer carefully. Then adjust sensitivity control carefully for loudest clear signal.

Keeping Circuits "In Tune"

When searching for weak, distant stations, it is necessary that all tuned circuits be kept in resonance, otherwise the station may not be heard; that is, it may be passed by. To keep the circuits resonant—in other words, tuned to the same wave length when the tuning controls are rotated—is difficult unless you are systematic.

A simple rule is to follow the outside sounds or noises; there is always a certain amount of static present. If your tuning controls are kept together, these sounds can be heard as you turn the dials, although there may be no station signal. Keep your circuit resonant so that these static noises can be heard as you go up or down the scale, and you will locate the dial readings of practically all stations within range.

By recording dial readings, these stations may be located thereafter without difficulty.

The necessity for keeping tuned circuits closely in resonance is one of the reasons "single control" methods do not give satisfaction. Some stations may come in just right, but many others can only be approximated.

Shielding

When operating a receiving set very near one or more powerful stations, it is highly desirable to shield the receiver

in order to obtain maximum selectivity, because the wiring in the set, the battery leads, and the tuning apparatus pick up and deliver, directly to the detector, sufficient energy to produce an audible signal, regardless of tuning. To obtain full selectivity from a receiver it is necessary that the signal be delivered to the antenna post of the set only, so that undesired signals may be rejected by the various tuned stages.

The stray pick-up can be largely overcome, if you find it too objectionable, by lining the inside of the cabinet with aluminum, copper, brass or any metal, of about 24-gauge thickness. The parts of lining should be soldered together or have thorough connections throughout. All necessary holes should be as small as possible. A sheet of metal should be placed to cover the entire back of the panel with good connection to other lining. Holes in panel shield should be sufficiently large to prevent contact with shafts or mounting bushings of any apparatus.

Place a thin plate of insulating material between metallic apparatus and shielding plate when mounting to prevent short circuits, except where frame of apparatus is connected to same wire or lead as shield.

(CONCLUSION)

THE JEWETT RECEIVER

(Continued from page 28)

ing for this weakness by increase of the rheostat within the set. The meter can be made to show 4.8 even if the battery is low by turning the rheostat, but, as just stated, it is much better practice to charge the battery oftener and change the rheostat less.

The B batteries, if of the dry cell type, need not be changed until the meter on the panel shows that they cannot supply better than 70 volts. If your B batteries are of the storage type they should be re-

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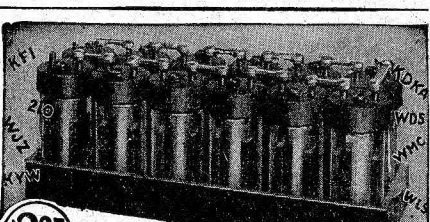
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Among other things, we tried this receiver on B battery eliminators and found that it could be used successfully with the Philco, the Balkite, the Cooper, the R.C.A. and the Freshman.

If the above suggestions as to battery care are kept in mind, and you will learn to tune carefully, you should have little trouble with this receiver; but if anything goes wrong, do not try to have it fixed by any local "expert." You will have much more satisfaction in the long run if you take this up with your dealer and, if he can make no suggestions, have him send it back to the factory for examination, and, if necessary, repair.

("Operating and Trouble Shooting" next week will be devoted to the study of another standard receiver. The Isolodyne, Dayfan, Apex Super Five, Stewart Warner and Erla sets will be among the first to appear.—Editor's Note.)

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