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Radio Digest

EVERY WEEK **Illustrated** PROGRAMS TEN CENTS

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GOLD CUP AWARD CLOSES

ESKIMO VOICES MAY SOON BE HEARD HERE

CHICAGO STATION REACHES ETAH BY RADIOPHONE

WJAZ Prepares for Rebroadcast of Eskimo Talk, Songs from Far North

CHICAGO.—Will the voice and song of the Eskimo be relayed from the north pole back to civilization and rebroadcast to the world of listeners in?

Yes! Even before the ink on this page is dry this seeming impossibility may have been accomplished by E. F. McDonald, Jr., and Commander Donald B. MacMillan of the MacMillan Arctic expedition, now at its main base, Etah, Greenland, eleven degrees from the north pole.

Two ships are in the MacMillan party, the Bowdoin and the Peary, commanded by MacMillan and McDonald respectively. John Reinartz, of receiving circuit and short wave fame, is chief Radio operator of the expedition. The Peary carries a 1,000-watt phone transmitter, using a Zenith-Reinartz circuit, and which is transmitting back to civilization on a 40-meter wave length.

Two-Way Communication Held

Already the voice of McDonald, victrola music and songs by members of the expedition have been sent successfully from Etah to all parts of the American continent. Already successful two-way communication between the Peary and 9XN, 1,000-watt experimental 40-meter broadcaster of the Zenith Radio corporation at Arlington Heights, near Chicago, has been estab-

(Continued on page 2)

Here we have a child Radio star, a beautiful dramatic director and charming soprano. At the left is ten-year-old Rita Sherie Breen holding the ukulele she uses for her own accompaniment while singing over WGBS, WEBJ or WFBH. Iris Ruth Pavey, center, would be combining talent and beauty on the visible stage were she not engaged as director of dramatics at KOA. When Quin Ryan, WGN announcer, tells his audience that Florence Brower, right, will next sing a soprano solo, the fans are filled with joy because Florence really knows how to sing.

LAST CHANCE TO CAST VOTE IS GIVEN FANS

Field Tops Hay for 2nd

KFNF Head Gets Stupendous Support—McNamee Leads—Closes Aug. 29

The 1925 Gold Cup Award for world's greatest Radio announcer, closes at the end of this week—midnight of Saturday, August 29 to be exact—and the last ballot, the last chance to vote, appears this week in Radio Digest.

As the contest draws near to a close the standings of the contestants are becoming intensely interesting.

With one man getting nearly twice as many votes in one week as he has received during all the other weeks of the contest it looks as if the bonus votes are going to have a lot to do with the deciding of the annual Gold Cup Announcer Award.

Henry Field of KFNF, out in Shenandoah, Iowa, was the man who made the sensational gain during the past week. When the list of standings was made up for last issue, Field stood fourth on the list with but 17,309 votes to his credit, and now look at him! In one week he

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No. 22 OFFICIAL BALLOT

Announcers' Contest

RADIO DIGEST SECOND ANNUAL GOLD CUP AWARD

Gold Cup Award Editor, Radio Digest,
510 North Dearborn St., Chicago, Ill.

Please credit this ballot as one vote for:

.....of Station.....
(Announcer's name) (Call letters)

Signed.....

Address .....

City.....State.....

If you desire, tell below in five or less words what you most like about the announcer for whom you have cast this ballot:

.....

8-22-25

SHENANDOAH BEATS SHELBY AND DAYTON

SHENANDOAH, Iowa.—New York might say that we are "out in the sticks," and Chicago might call us a "hick town," but Shenandoah, in "Iowa and proud of it," through the medium of Radio Station KFNF, has put itself on the map by placing Henry Field ahead of the Chicago man and making the New York one hustle in the Gold Cup Best Announcer Award contest. This is a country town with 5,600 population and KFNF is a home-made 500-watt class A station.

GOLD CUP RACE CLOSES

(Continued from page 1)

gained 38,618 votes or just 181 less than twice the total amount he had before. Boy, when people say that corn grows six inches over night in Iowa, believe them! This gain of Henry Field shows that things do grow out on the western plains. This jump of Fields puts him in second place, a position long held by George D. Hay, the "Solemn Old Judge" of WLS.

And Mac Still Leads

Graham McNamee, of WEAF, still leads the race. He has some 30,000 votes between him and the second man, but has not won the cup as yet. Another cyclone such as blew in from Iowa this week would be nearly strong enough to displace the leader and put some one else's name on the coveted cup.

Many of the votes that placed Field so near the top were bonus votes, indicating that the Iowans believe in getting every single counter possible for their man. This also leads us to believe that we may expect a deluge of ballots after the one printed above is clipped and placed in series with the other twenty-one that are being held out in parts unknown.

It was thought for a while that part of McNamee's success could be laid to climatic conditions peculiar to summer broadcasting, his voice going out on the WEAF link and being heard at short distance in so many cities. However the fact that one station's listeners can concentrate enough votes to put their favorite up in second place, leads to the conclusion that it is possible for any announcer to win, although his listener in field be limited during summer broadcasting.

Barnett Drops from List

That certain fans are determined to see that their favorite is among the list of the fifteen also rans to receive certificates of merit in the contest is evidenced by the change at the bottom of the list—the first to be noted in some weeks. S. W. Barnett, "BWS" of WOC, who was at the bottom of the list of sixteen winners last week, has dropped down into the great open spaces below and has been replaced by John Daggett of KHJ. Thus we have a contest for both top and bottom of the leaders' list.

Besides the changes told of above there were two other shifts during the week. Lambdin Kay of the Dixie station, WSB, passed Bill Hay, formerly of KFKX. This is not an unexpected change, however, as Bill is now out of the announcing game and in business in Chicago. He is heard, however, occasionally from the local stations in clever Scotch dialect numbers. Lambdin Kay recently presided at the opening of WSB's mammoth new plant that truly enables his voice to "Cover Dixie Like the Dew."

There must be something to this thirteen superstition after all. Charles Erbstein held the thirteenth position for weeks and then instead of progressing upward therefrom he took a tumble into the next lower chair, and Jerry Sullivan, the man who taught the world a new way to pronounce ChiCAWgo, jumped up to the oft called unlucky number.

August 29 Is Dead Line

And now—bold face type, please—comes the important announcement! If you want your votes to count for your favorite, clip the last one printed here and put it in the mail with all the others so that it will reach the Digest office not later than midnight August 29. This will enable us to announce the name of the Gold Cup winner in the Radio Digest issue dated September 12.

Another little word of warning! Remember that in order to have bonus ballots count for your announcer the votes clipped from various issues must be in CONSECUTIVE order!

Here is the way they stand now:

Position	Name and Station	Votes
1.	Graham McNamee, WEAF	70,174
2.	Henry Field, KFNF	49,748
3.	George D. Hay, WLS	48,352
4.	Gene Rouse, WOAW	33,520
5.	Frank S. Lane, KFRU	19,502
6.	Hired Hand, WBAP	17,219
7.	H. W. Arlin, KDKA	13,127
8.	Leo Fitzpatrick, WDAF	9,508
9.	Lambdin Kay, WSB	6,621
10.	W. G. (Bill) Hay, KFKX	6,356
11.	Robert Emery, WEEI	6,169
12.	N. Dean Cole, WHO	5,607
13.	Jerry Sullivan, WQJ	5,604
14.	Charles Erbstein, WTAS	5,352
15.	O. E. Becker, WGR	4,555
16.	John Daggett, KHJ	4,535

How to Vote and Get Bonus

Don't miss a single ballot, for when these are turned into Radio Digest in a group of CONSECUTIVE numbers, extra bonus votes are allowed the announcer for whom you are voting.

The ballots, top of page two, numbered consecutively, will appear in each issue of the Radio Digest until the close of the contest, with the August 22 number.

Each of these ballots will count for one vote when sent in separately. You can hold these ballots until you have 4 that are consecutively numbered, and when they are sent in a bonus of 8 votes will be allowed for your favorite announcer.

For each 8 consecutively numbered ballots your candidates will receive a bonus of 20 votes. For each 12 consecutively numbered ballots, 30 votes. For each 16 consecutively numbered ballots, 40 votes. For each 20 consecutively numbered ballots, 50 votes, and for each 22 consecutively numbered ballots, 60 votes bonus will be allowed.

Send nominations or ballots to the GOLD CUP AWARD EDITOR, Radio Digest, 510 N. Dearborn St., Chicago.

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Radio Digest, Illustrated, Volume XIV, Number 7, published Chicago, Illinois, August 22, 1925. Published weekly by Radio Digest Publishing Company, 510 N. Dearborn Street, Chicago, Illinois. Subscription rates, yearly, Five Dollars; Foreign Postage One Dollar additional; single copies Ten Cents. Entered as second class matter at the post office at Chicago, Illinois, under the Act of March 3, 1879.

Looking Ahead

Over in Toronto, Canada, the Mecca of Summer Tourists from the United States, is located Station CHNC, the broadcasting plant of the Toronto Radio Research society, and next week we are going to tell you all about it in word and picture.

Although the Gold Cup Contest does not close until midnight of August 29, there will be additional standings ready for publication in the next issue. Will McNamee retain the lead after the bonus ballots begin to come in or will some dark horse come up from behind to race him to the wire in the stretch? Next week's list will give you the eleventh hour standings in the Best Announcer race.

Taking Care of a Radio Receiver is largely a matter of caring for the accessories. The sets themselves, as built by most of the reliable manufacturers today, are trouble proof in so far as the set itself is concerned. In next week's issue James E. McDonald will give the newcomer in Radio the pointers on taking care of a set that keep it working satisfactorily. The new owner of a receiver should read these simple suggestions carefully.

Professor Moreton Details the Action of a Tube as an Amplifier in his next article. Some understanding of the complex and unseen action of the electrons and the factors that govern their flow, is essential to the experimenter who is seeking better results from his home-built sets, and to the purchaser of a complete set who would set the mysterious knobs at the points for best results.

Selectivity Is tbe Principal Feature Required This Year and there are many small changes that can be made in sets, and many forms of construction that can be built into new ones, which will improve the selectivity to the elimination of powerful locals and the separation of distant stations on closely similar wave channels. John G. Ryan will begin, in the next issue, to give Digest readers the benefit of several years of experience in improving and designing sets.

LAST MINUTE DATA ON CUP NEXT WEEK

LAST MINUTE standings in the 1925 Gold Cup Award will appear in the next issue of Radio Digest, dated August 29. Although the winner will not be named until two weeks later (September 12 issue) the last preliminary standings will continue until that time. Both the August 29 and September 5 issues will contain the latest corrected standings BUT NOT the FINALS.

The FINAL STANDINGS, with the name of the 1925 winner, will appear in the SEPTEMBER 12 issue. WATCH next week's standing!

ATWATER KENT SAYS 'RADIO MOVIES NEXT'

EXPECTS AIR PICTURES BY WIRELESS IN YEAR 1935

Hoover Committee Member Predicts Ball Games Will Be Broadcast to Home in Picture

WASHINGTON, D. C.—Broadcasting of motion pictures will be the next outstanding advance in the field of Radio communication, A. Atwater Kent, of Philadelphia, a member of Secretary Hoover's committee on broadcasting, believes.

Declaring he has been intensely interested in the recent transmission of motion pictures by Radio across the city of Washington and their projection on a miniature screen, Mr. Kent said he anticipates the time when "Radio movies" will be shown as clearly and large as canned pictures now thrown on theater screens. He added:

"When it is remembered that broadcasting stations and broadcasting words and music of whole vaudeville shows and operas are achievements of the past ten years, perfection of Radio motion pictures during the next few years seems a goal likely to be attained.

Expects Radio Movies by 1935

"Recent success in Radio vision experiments indicate that by 1935, and perhaps even sooner, we can sit at home and watch the playing of a championship baseball series, projected on a Radio picture screen, besides hearing the umpire's voice and the crowd's cheers, which the sound receiving set now picks up.

"Possibilities of such apparatus are unlimited. Inauguration of the president, maneuvers of battleships, horse races and football games could be witnessed by persons all over the nation, at the time they happen, for waves carry the pictures across the continent in less than a second.

"Cost of a Radio vision machine for homes is only a matter of speculation yet, but it seems that it could be made as accessible as high-powed sound receiving sets now on the market."

ESKIMO BROADCASTS

(Continued from page 1)

lished. Newspaper men and other invited guests have witnessed the successful tests and become enthusiastic.

Now only remains to pick up the Peary, transmitting an Eskimo program from Etah, or later from even the north pole, rebroadcast it on a wave length within the range of the average broadcast receiver, and the seemingly fantastical project will have become a recognized achievement.

WJAZ, the superpower broadcasting station of the Zenith Radio corporation at Mt. Prospect, near Chicago, at the time of going to press was being tuned and adjusted for its debut on the air. WJAZ will operate on 322.4 meters, sharing time with KOA at Denver. Before this magazine is on the newsstands, the rebroadcast of the Peary by WJAZ may have been accomplished.

And American jazz band leaders will have a new style of music to add to their repertoires for the fall and winter season.

Fail to Select Winner of Westinghouse Song Contest

PITTSBURGH.—While more than 1,400 manuscripts from all parts of the country have been submitted for the patriotic song contest recently held by Westinghouse stations, it is impossibe to choose a winner, according to a recent announcement here.

The committee of judges, selected from prominent musicians and literary men, stated that none of the entries were of sufficient merit for a patriotic song, the music of which was composed by young Robert Saudek.

The contest will be opened again next fall and those who took part are asked to re-vamp their work and try again.

NEWS BRIEFS FROM THE BROADCASTERS

KIDDIES HEAR NEW VOICE; SPRAT TRIO ON WIBO

"Man in the Moon" Popular in East; "Dry Navy" Talk Over Station WJZ

There is a new voice in the air. It belongs to Mrs. Bertha W. Edmonds of the Schuster-Martin school and she sends it forth through WLW every Tuesday evening at 7 o'clock. This new voice is especially for the little ears of children but as her stories are sometimes given in dialect, it pleases the grown-up children as well as the smaller ones.

* *

The Jack Sprat concert trio—violin, cello and piano—has been added to the staff of WIBO, Chicago.

* *

Every Tuesday and Friday evening at 6:30 children all over the East tune in on WOR for the "Man in the Moon" stories. The "Man in the Moon" is a lovable character who seems to know all about the good habits as well as the bad ones of his small listeners.

* *

Lieut. Com. S. S. Yeandle, aid to Admiral Billard, chief of the U. S. Coast Guard service, recently told of the experiences of the "Dry Navy" off the coast of Jersey from Station WJZ.

* *

Organists of the feminine sex change their high heel shoes for ones with low heels when they play the Wurlitzer unit organ in the WLW studio. There are so many shoes in the rack, it looks like a sale.

* *

Maxim Eastyluck, Russian baritone, who sings over WKRC, the Kodel Radio station at Cincinnati every Tuesday night, has only been in this country three weeks and is unable to speak English, although he is taking a special course of instructions at the University of Cincinnati during the summer months.

* *

Of special interest to fathers will be a talk on boy problems which has been scheduled during the studio program to be given next Monday evening at KOA.

* *

KDKA fans will miss a familiar voice the last two weeks in August when H. W. Arlin, world's pioneer announcer of that station, will spend a two weeks' vacation at his old home in Carthage, Mo.

* *

Joseph Henry Jackson comes back to KGO with his book talks after a vacation, during which he has been sadly missed on the educational programs.

* *

Travelers returning from abroad report that in England, where American stations are heard quite consistently, the Silvertown Cord orchestra is considered one of the best American features.

* *

"Miss Very Cool" is the name given the young lady singer who has been attracting so much attention in the regular Monday night WCCO theatrical broadcast.

* *

"So happy that she could cry" was demonstrated the other night following a so-called "Old Times Hour" at WEAF. An old lady called in immediately after the concert to thank the artists for taking her back to her youth. Parodoxically, in one breath, she stated she enjoyed to the fullest extent, and in the next, said it made her unutterably sad.

* *

Passengers on the Canadian National railway train en route from Edmonton to Prince Rupert, B. C., recently danced in the observation car to music provided by the Gold Medal Radio station.

SEPTEMBER DATE FOR CONFERENCE?

Secretary of Commerce Hoover Says "Better Go Through With It"

WASHINGTON, D. C.—Unless some unforeseen contingency arises the Fourth Radio conference will be held in Washington in September or October according to a statement made by Secretary of Commerce Hoover upon his return from a vacation.

It is expected that announcement will be made shortly by the department setting the date for the conference. When told that some of the Radio officials of his department had suggested that this year's conference be postponed, Secretary Hoover said that he thought "we had better go through with it." Several of the officials had expressed an unofficial opinion that no good could be accomplished through the holding of a conference.

'FATHER SINGS NEXT' SAYS SON AT MIKE

FOR the first time in Radio history perhaps, a son introduced his father as an entertainer over the microphone, when Tom Daniel, well known oratorio concert basso, appeared at WJZ recently and was announced to the invisible audience by his son, John B. Daniel, one of WJZ's regular announcers. The elder Daniel rendered several delightful numbers. John B. has no mean singing voice himself.

ANNOUNCER MUFFS BUT FAN SAVES DAY

CHICAGO.—"The fielder catches the fly. Three outs and the Cubs lose!" thus announced Hal Totten broadcasting a recent Cub-Giants game over WMAQ. "The hell they do! He dropped it!" cried Harry Madsen, Cub fan sitting near the "mike." And the fan was right. Listeners heard the fan's statement, which went on the air, and remained to hear the Cubs make a ninth inning rally and win, after Hal had announced their defeat.

NOW KYW CUPID HITS THE 'KIDS'

CHICAGO.—Another one of the KYW boys has been married! This time Frank Haben Clark, studio director of the Hearst Square studio was the one struck by Cupid's dart, and it seems that good fortune certainly ran apace with Mr. Clark in his matrimonial aspirations in choosing and winning one of Chicago's prettiest girls. Miss Sarah Anne McCabe was the bride, and the wedding took place August 12, 1925, at St. Patrick's church here.

Everyone around KYW calls Sarah and Frank, "The Kids." Miss McCabe is the soprano soloist at St. Patrick's church, and one of Chicago's leading Radio stars, having been heard frequently from KYW and other local broadcasting stations. She also sang with Fiske O'Hara in "The Big Mogul" company, during its Chicago engagement.

Mr. Clark is well known to Radio fans because of his activity with Chicago's pioneer station.

Bowes Directs Radio Bills

NEW YORK.—To his multiple duties as managing director of the Capitol theater, Major Edward Bowes has recently added the important one of serving as liason between the Capitol theater and the Radio public. To his duties as director of the Radio programs, he brings a friendly and cultured personality with a pleasing voice.

New Stations

Many of our readers were no doubt surprised last week not to find a list of new stations. There were none to report. This week's list includes, WIBW, Logansport, Ind., 220 meters, 100 watts; WIBX, Utica, N. Y., 205.4 meters, 4 watts; WRMU, New York, N. Y., 236 meters, 100 watts; and KFWP, Brownsville, Tex., 214.2 meters, 10 watts.

WMAF, Dartmouth, Mass., owned by the Round Hills Radio Corp., is now a 1000 watt station operating on 440.9 meters.

The following commercial class A stations signed off last month: WMAV, Auburn, Ala.; KFER, Fort Dodge, Ia.; WHBX, Punxsutawney, Pa.; WDM, Washington, D. C.; WRR, Dallas, Tex.; WFBK, Hanover, N. H.; KFQR, Oklahoma, Okla.; WGBH, Fall River, Mass.; KFVJ, San Jose, Calif.; KFOC, Whittier, Calif.; KFPV, San Francisco, Calif.; WBBV, Johnstown, Pa.; WIAK, Omaha, Nebr.; WPAZ, Charleston, W. Va.; WHBS, Mechanicsburg, Ohio; WWAO, Houghton, Mich.; WIBF, Wheatland, Wis.; WCAY, Milwaukee, Wis.; KFOJ, Moberly, Mo.; WQAS, Lowell, Mass.; KFRH, Grafton, N. D.; WCAG, New Orleans, La.; WRAA, Houston, Tex.; WFBY, Fort Benjamin Harrison, Ind.; WCM Austin, Texa.; WHBO, Pawtucket, R. I.

Poland Still Awaits

WASHINGTON, D. C.—Although it has been some eight months since the Polish broadcasting law was enacted, the government has not yet granted an exclusive broadcasting concession for Poland to any firm due to the absence of suitable offers.

WHO IS 'MISS RADIO, DIANA OF THE AIR'

FEMININE HUNTER OF DX TO BE AWARDED TITLE

Radio World's Fair Offers Trip to New York for Best Log and Letter

NEW YORK.—International fame awaits America's greatest feminine Radio enthusiast.

Who is the Diana of the air—the fair huntress of elusive DX stations, who has been thrilled by the success of her experiments and who can visualize the joy of listening in to others by describing her experiences in the best letter?

Who is the pretty listener who can tell a real story of Radio's appeal, the joy it brings and the service it renders?

Recognizing that women are now taking the deepest interest in Radio, by virtue of the beautifully designed sets that now adorn their parlors and also by reason of the fine information they are receiving each day on household affairs and beauty hints, not to mention other factors to engage their attention, the Second Radio World's Fair management has announced this special contest in an effort to discover the greatest lady fan of the country, and asks the cooperation of husbands, brothers and friends to make this competition one of the most interesting in the history of Radio.

Trip to New York Prize

The winner will be the girl or woman who presents the most impressive accredited log of stations with the best description of her career as a broadcast listener. Here is a real opportunity not only to show the number of stations received, but to tell about interesting happenings in the air or features conincident to the reception.

First prize in the contest will be a silver cup and an invitation to come to New York as the guest of the Second Radio World's Fair (all expenses paid) during the week it is open, September 14 to 19, inclusive. The cup will be presented as a feature of opening night. Of course, royal entertainment will be accorded the winner in the way of theater parties and receptions.

Two other prizes will be awarded for second and third best logs and letters, also cups of handsome design, suitably inscribed.

Beauty Picture Gallery

It will increase interest in the contest if the contestants will send photographs of themselves listening in, and this gallery of pretty fans will be displayed at the Radio World's Fair, just to prove to male visitors that they will have to look to their laurels in Radio as well as in all other fields of endeavor when the fair sex makes up its mind to try a hand.

All entries in the "Radio Diana" contest should be sent to the Second Radio World's Fair headquarters, suite 1500, 1475 Broadway, New York, or Radio Digest.

No Entry Fee

The contest closes at midnight September 7. There is, of course, no entry fee or financial obligation on the part of any contestant. It is open to any girl or woman in the land. In case of a tie, duplicate awards of the prizes tied for will be made to those tieing.

Radio Digest will be glad to receive letters and logs for entry in this contest and urges its fair readers to enter. The 100 best letters received will be selected at the offices of the World's Fair and will be turned over to a group of judges especially interested who will make the final decision as to who will be named "Miss Radio."

REPEAT ORIGINAL WEAF BROADCAST

Third Birthday Party at New York Station Is of Particular Interest

NEW YORK.—WEAF, the broadcasting station of the American Telephone and Telegraph company, celebrated the beginning of its fourth year of operation on August 15. Although the initial broadcasting began on July 25, 1922, it was under the call letters WBAY, and it was not until August 16 of the same year that the familiar letters WEAF were assigned by the department of commerce.

The evening was one of particular interest, since as many of the singers and musicians who were heard on the first few weeks of the programs were invited to attend the reunion. Not only the original artists, but also practically the same program numbers were heard, as were originally sent out on the old 400-meter wave length.

WEAF has in three years grown from a group of five people to a complicated organization of eighty-five.

EXTINCT CRATER IS RECEIVING PARADISE

BUT ONCE IS ENOUGH FOR LOS ANGELES EXPLORERS

No Static or Power Line Interference in Mojave Desert Volcano Cone Site

LOS ANGELES, Calif.—The reading of a United States government report on recent experiments, conducted to determine the "live" or "dead" Radio reception qualities of different localities, and a chance meeting with V. M. Bitz, Radio expert, and Dr. A. J. Tiele, consulting geologist, gave C. W. Macfarlane of the Los Angeles Examiner the idea of leading a party far out into the purple reaches of the Mojave desert into the crater of an extinct volcano to record an unusual Radio reception test.

Hard Climb to Crater

The trip was made to the scene of a once boiling inferno about 250 miles from Los Angeles. Mr. Macfarlane's party motored to within two miles of the now placid volcano cone and after a two-mile hike over the hardened glass-sharp lava reached the foot of the volcano and started the steep ascent. The pitch of the cone was estimated to be between 35 to 37 per cent, and after what seemed hours of heavy exertion the party reached the top of the volcano and installed their receiving set.

The following paragraphs, taken from Mr. Macfarlane's report, conveys the best picture of what happened:

"About 4 o'clock we began receiving and there came to us, sitting there in the scarred pit of a dead volcano, air voices from some of the nearby large broadcasting stations and from scores of the smaller stations sprinkled throughout the North and Middle West, and finally from Westinghouse Station WBZ at Springfield, Mass., this latter station being the farthest reached.

Clarity of Reception Remarkable

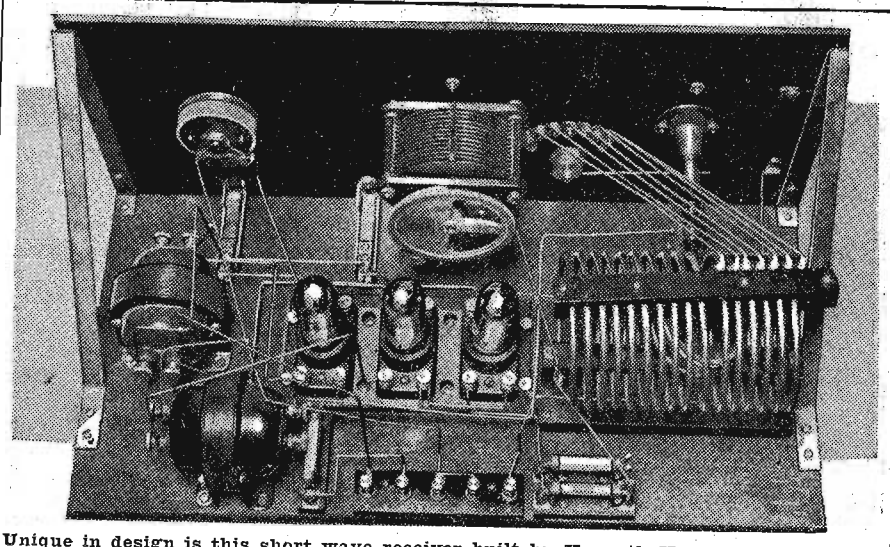
"The clarity of reception was extraordinary, stations in the Middle West and even the more distant stations being received with as much volume as those in Los Angeles. There was an absolute lack of static—and, of course, there were no power line noises. Speaker volume was attained on a loop aerial and the majority of stations could be heard nicely with the small enclosed loop.

"It was weird, it was ghostly; it represented the fulfillment of a 'distance nut's' dream; it was an experience never to be forgotten—but an easy chair is a softer seat than a lump of lava, and the mountain will have to come to Mahomet after this, distance or no distance."

Frisco Mayor to Speak at Coast Radio Show Opening

Through remote control by direct wire from the San Francisco Auditorium to the KGO studios, the opening exercises of the Pacific Coast Radio Trades second annual convention will be broadcast from KGO on Saturday, August 22, at 8:10 p. m. The speakers include Supervisor J. Emmet Hayden and the Honorable James Rolph, Jr., mayor of San Francisco, and a brilliant array of artists.

SET HEARS ASIATIC SHORT WAVES



Unique in design is this short wave receiver built by Kenneth Hewitt, known to the amateur transmitting fraternity as 2RK. Mr. Hewitt has been successful in picking up foreign code amateur stations working on waves below 100 meters. He has heard China, India, Australia and Europe. Note tuner winding of copper tubing.

Friday Sure Is Fish Day Over WEAF When Natural History Talk Is Miked

By Esmeralda De Mars

NEW YORK.—One of the most remarkable and popular series of natural history talks ever given by Radio is being broadcast from WEAF by Miss Ida M. Mellen, assistant to the director of the New York aquarium, on alternate Friday afternoons at 4:45 o'clock.

It began June 5 with a talk, "The New York Aquarium and Its Denizens." This was so greatly appreciated that a dozen more talks were arranged. The second, "Goldfishes and the Care of Fishes in Captivity," met with so many requests for repetition, that it will be given again near the end of the series.

"Fishes That Make Noises and Some That Can Live Out of Water" was equally well received. Coming subjects include fishes that bring forth their young alive, sharks and other dangerous fishes, the intelligence of fishes, the fastest fish in the sea, and others equally interesting, and will continue to December 18 or later.

After the fish series, a final talk, the fourteenth, will answer the common question on which many a wager is lost—"Is a Whale a Fish?"

These brief lectures are a liberal education of the sort that the public has been hankering after. They have been prepared with a view to the general inquiries the public constantly makes of Miss Mellen, by mail, telephone and in person, about fishes and other aquatic animals. Her natural Radio voice and perfect diction are as greatly enjoyed as the subject matter; and there is certainly no other woman in the world who is giving such a delightful and instructive series of natural history talks, and no other who is discoursing on fish.

Her future subjects include:

August 28, "Fishes That Bring Forth Their Young Alive," also, "Fishes That Build Nests and Defend Their Young;" September 11, "How Much Does a Fish Know?" also, "Gars and Mudfish;" September 25, "The Dreadful Shark;" October 9, "The Slippery Eel" (the only fish that lies in fresh water and goes down to the sea to spawn), also, "About Flounders;" October 23, "Poisonous and Dangerous Fishes," also, "Fishes of the Deep Sea;" November 6, "The Disappearing Sturgeon and Other Animals Nearly or Wholly Exterminated by Man," and, "The Sardines and Herrings, Which No Amount of Fishing Can Exterminate;" November 20, "What Do Fishes Eat? What Is the Fastest Fish in the Sea? Why Is a Fish?"; December 4, "Goldfish Talk" (repeated by request); December 18, "Is a Whale a Fish?" something also about "The Most Terrible Animal in the Seven Seas," which is one of the porpoises.

"KING OF THE IVORIES" HEARD ON WBAP BILL

First Appearance at Class B Station on Tour

FORT WORTH, Texas.—Harry Snodgrass, "King of the Ivories," and his announcer, J. M. Witten, formerly of WOS, Jefferson City, Mo., while appearing at the Majestic theater here, were the guests of the Hired Hand, popular WBAP announcer.

It was a reunion of old timers and thousands of listeners in all parts of the country were tuned to hear the familiar voices and Harry's famous interpretations of "Three o'Clock in the Morning." WBAP, the Star-Telegram station, is the first class B station to have the opportunity of entertaining and broadcasting these artists since their departure from Jefferson City on a vaudeville tour.

French Try Relay Programs

PARIS.—The well-known Paris station, PTT, is arranging for trials in relaying their programs through the local stations of Lyons-La-Dora and Toulouse PTT, which will extend its radius to the whole southeastern and southwestern France. If this is successful, it will probably be the beginning of an extensive relaying system on the lines of that in use in England.

PLAN TO EXCHANGE PROGRAM OVER SEA

BRITISH BROADCASTERS TO BUILD SPECIAL RECEIVER

Will Use 40-Kilowatt Plant to Establish Regular Transatlantic Service

LONDON.—Through the International Union of Broadcasters at Geneva, the British Broadcasting company is developing comprehensive proposals for the exchange of programs, especially with America.

The B. B. C. proposes to arrange its American exchange with all the leading American organizations, but in the first instance the arrangement will be with the Radio Corporation of America. The B. B. C. has sent the following message to America through David Sarnoff, vice-president of the R. C. A.:

"The B. B. C., as responsible for all the broadcasting in Britain and northern Ireland, welcomes the suggestion of a still more ambitious scheme for the exchange of programs between America and Britain.

"In the past years American programs relayed by us in this country, and this year British programs retransmitted in America have received warm support from listeners in both countries. Further to explore the possibility of an international exchange of programs, the B. B. C. has planned to established a central receiving station, equipped with all the latest devices for receiving the world's most powerful broadcasting stations, and, by this means, it hopes next winter to be able to retransmit to its 10,000,000 listeners, with even greater success than heretofore, Transatlantic programs.

Already Received in Maine

"The transmitting station used in the B. B. C.'s latest test was located at Chelmsford, and with a power of 10 kilowatts in the temporary antenna was received in Maine. This year the B. B. C. high power transmitter will be ready in its permanent quarters, with a power of 40 kilowattts in a much improved antenna.

"The complete technical arrangements made on both sides of the Atlantic encourage the B. B. C. definitely to allocate parts of its program time as an 'American Program Period,' and similar arrangements will be made in the states.

"Broadcasting, through the regular exchange of programs, should be the means of increasing the good feeling existing between the United States and Great Britain. In addition, a close knowledge of our respective ideals and standards in all phases of life which this affects will have far-reaching results."

Trade Commission Attorney Prepares for R. C. A. Battle

WASHINGTON.—Edward A. Smith, attorney for the Federal Trade Commission, in its case against the Radio Corporation of America and other firms in the alleged monopoly, has gone to New York to prepare for the opening of the hearings. While no date has yet been announced it is expected that the hearings will be held sometime in September.

Replying to inquiries as to the progress being made by the department of justice in connection with its investigation into the practices of the Radio Corporation of America, the attorney general recently stated, "This inquiry is still under way and there are no developments which can at this time be made public."

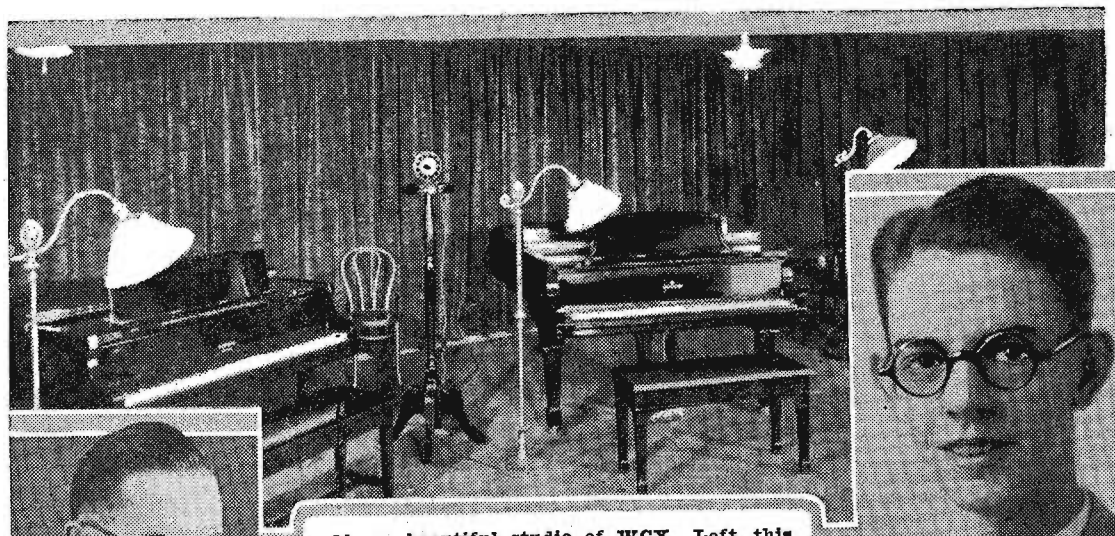
HEARING STARTS IN SEPTEMBER

WASHINGTON, D. C.—The Federal Trade commission will begin the taking of testimony in its Radio monopoly case about September 15 in New York city.

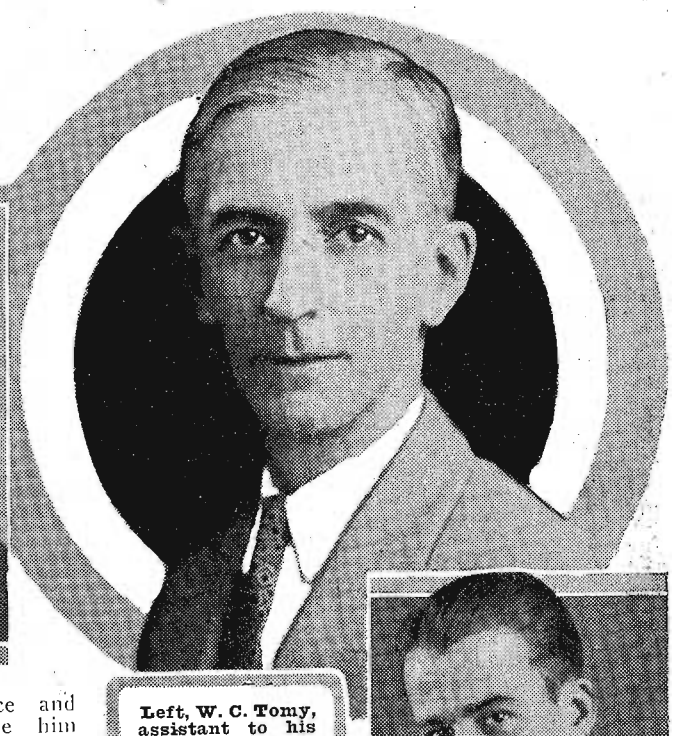
In addition to the New York hearings it is expected that testimony will be taken in Washington, Pittsburgh, and possibly several other large cities.

The "Sparks Circus" believes in Radio, through WAHG on one hand and WGY on the other. Left is A. O. Coggeshall, WGY announcer, at the microphone before one of the side shows. Right, the clowns do their tricks for the invisible audience of WAHG, rebroadcast from Grebe mobile pick-up station with call WGMU.

WCX—The Home of the "Red Apple Club"



Above, beautiful studio of WCX. Left, this gentleman is Merrill R. Mitchell, chief engineer, the man who constructed the station on the Book-Cadillac hotel in face of difficulty.



Left, W. C. Tomy, assistant to his father, C. D. Tomy, right, the WCX manager and chief announcer.

"George Lamb" is program director and songster.

Above, Thomas Ledyard, operator. Left, "Pretty Little Bernice," pianist to the Red Apple club.

"WAY up on top of the Book-Cadillac hotel." This has become one of the familiar phrases to the Radio audience since WCX, the Detroit Free Press station, moved to the thirtieth floor of Detroit's magnificent new hostelry last December.

The phrase alone has given a character to the station that it has lived up to and made known to listeners in every part of the country. Much of its following is derived from the famous Red Apple club, which is an entertainment of the lighter sort, presenting popular music and popular entertainers in a direct and personal way.

The director of the station, C. D. Tomy, was moved to the position from one with the editorial staff of the Free Press, when the paper took up broadcasting on May 4, 1922. Mr. Tomy's newspaper work had been long and varied in three of the largest cities of the country, namely Chicago, New York and finally in Detroit.

In addition to directing the activities of the Radio station, Mr. Tomy takes more than an occasional fling at the microphone. Yes, he has a big deep voice and when you see him either in person or by picture you begin to wonder where it all came from. His thickness does not warrant the character of his voice, but perhaps because of this deficiency in avoirdupois, his voice can be attributed to his length, which quite warrents the volume of his voice.

It has been to the credit of Mr. Tomy that he has developed one of Radio's attractive and much admired performers. This person is only known to the invisible audience as "Bernice." Since her last name is never mentioned over the air, why should it be mentioned here? Aside from names and the like, she is a good performer. She has earned her claim to a place among the real Radio entertainers because of her ability to play the piano. She does it often and well. You can tune her in every Tuesday night with the Red Apple club.

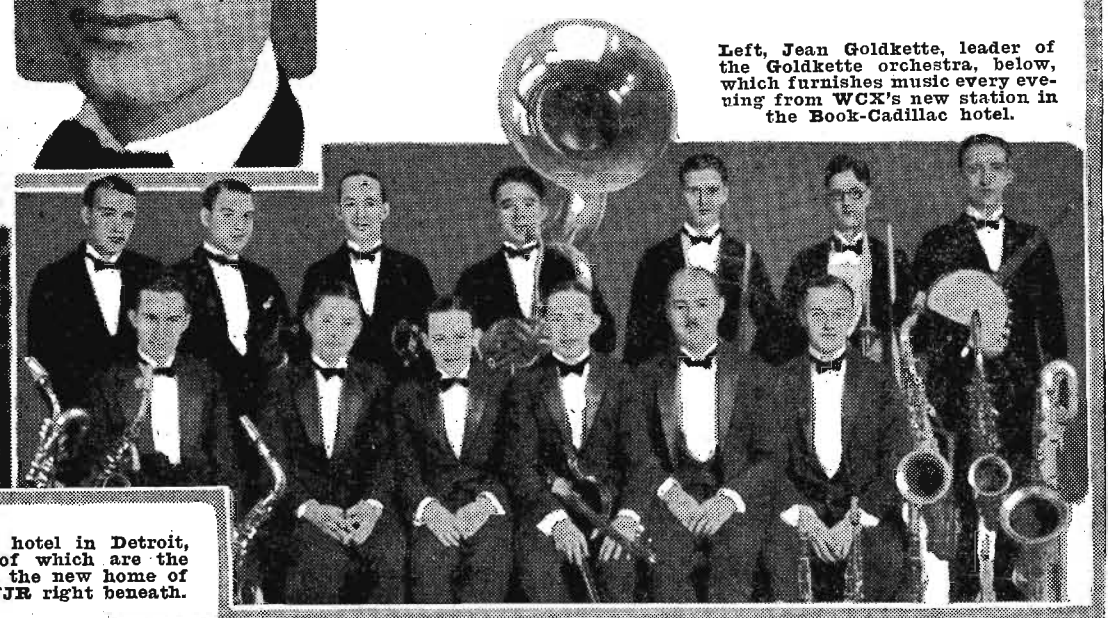
Rettig L'Amoreau, sometimes introduced to the Radio audience as "George Lamb, the Wabash songster," is program director and assistant announcer of the station. Even though he has been with the station only a few weeks, he has won a place of high regard for himself, both because of his type of announcing and his distinctive singing.

The chief engineer of the station, M. R. Mitchell, may safely be called the smallest chief engineer of any broadcasting station in the country. Inasmuch as his position does not call for great physical strength, this is not a handicap. He has done a creditable job all the way through. Especially was his work noteworthy when he overcame a number of obstacles in placing the station on top of the Book-Cadillac hotel. He was told by a number of engineers that the station could not be operated efficiently from that location, but the first night it was on the air reception reports were received from every state in the Union.

Yes, there are some other important personages connected with WCX. Thomas S. Ledyard, assistant operator, has just returned from four years as a ship's operator. And during these four years of key pounding he sailed the seven seas. There is another Tomy connected with the station. He is W. C., son of the "boss" of the station, C. D.

And now that WJR has placed a superstation at Pontiac and the Jewett broadcaster is to have studios in the Book-Cadillac, what will happen to WCX? Nothing at all, that is, WCX will continue to broadcast from the hotel over the Jewett 5,000-watt set, and thus increase its already large circle of friends.

The Book-Cadillac hotel in Detroit, away up on top of which are the WCX towers, with the new home of that station and WJR right beneath.



Left, Jean Goldkette, leader of the Goldkette orchestra, below, which furnishes music every evening from WCX's new station in the Book-Cadillac hotel.

WJR, JEWETT PLANT, OPENS IN DETROIT

FIRST HIGH-POWER RADIO TO GO ON MICHIGAN AIR

Lengthy, Well-Balanced Program Is Broadcast in Book-Cadillac Hotel Superpower Premier

DETROIT.—The new high-power broadcasting station of the Jewett Radio and Phonograph company came on the air August 15, beginning at 7 p. m., Eastern standard time, with an inaugural program of such a varied makeup that the entire Radio audience found some part of it of particular appeal to them. The program was broadcast from the main studios of the station in the Book-Cadillac hotel here on a wave length of 517 meters.

As is quite fitting in this case, the station was officially opened and dedicated to the service of the Radio audience by Edward H. Jewett, president of the Jewett Radio and Phonograph company. In his short talk to the invisible audience, he outlined the aims of the station and greeted for the first time the people his company has been serving for a number of years.

Program Noteworthy

Following Mr. Jewett, Governor Alex. J. Groesbeck of Michigan was to have been introduced to the millions in his own state, in many other states in the Union and to the Canadian audience. WJR is the first high-powered station to come into Michigan, assuming, of course, that 500 and 1,000 watt stations are no longer rated as high-power equipment.

The third speaker of the evening was J. B. Book, the eldest of the three Book brothers, geniuses behind the Book-Cadillac hotel. C. D. Tomy, representing the Detroit Free Press, which is associated with the Jewett company in the operation of the station, spoke for his concern. Although there were four speakers on this opening program, all of them realized that brevity before the microphone is a virtue. After the speeches, Jean Goldkette, musical director of the station, began a demonstration of his unusual ability at entertaining the public. The program continued until 3:00 a. m. Practically every kind of music was presented. In the array of talent which appeared before the microphone was a number of nationally-known musicians.

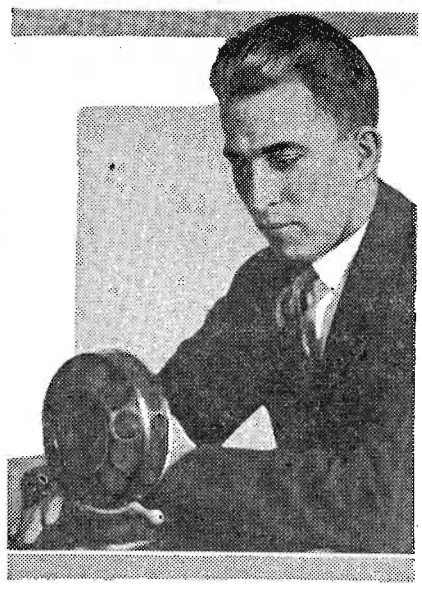
It was the aim of the program department and the musical director to have the program well balanced, containing types of music that will appeal to the varied likes of the Radio audience. The long program was not designed to simply take up time or to continue into the early morning hours with the hope of establishing distant records, but for the prime purpose of entertaining the vast Radio audience. One feature of the first hour's entertainment was the appearance of Mr. Jean Goldkette himself, as a soloist. His name has been broadcast thousands of times by two of the Detroit stations, but this was his first solo offer to the Radio audience. He is a pianist of unusual ability, having received his musical education at the Imperial Conservatory at Moscow.

Nationally-Known Artists Perform

Among the nationally-known artists to be presented during the evening were Cameron McLean, baritone; Mme. Djina Ostrowska, eminent harpiste; Miss Marguerite Schuiling, dramatic mezzo-soprano; The Detroit Operatic ensemble; Joseph Gorner, violinist; Marcus Kellerman, baritone and T. Stanley Perry, tenor. Another group of outstanding performers includes Albert Seibert, dramatic tenor; Mme. Homer DuBard, soprano; Ina M. Lockhart, contralto; The Detroit Symphony trio; Jean Goldkette's concert orchestra; The Blue Room Dance orchestra of the Book-Cadillac hotel; The Stellar male quartet, composed of Messrs. John Renton, Thomas C. Evans, Edward Galer, and George Macdonald; Miss Bernice Raeburn; Miss Charlotte Meyers; O'Brien and Bickle; John Kaaihue, Hawaiian entertainer; Will Collins; Miss Marion Partridge, pianologue, and Ivan Severstrom, piano and accordion.

With talent such as this, WJR made its debut to the Radio world. In WJR is the realization of an ideal—an ideal of Mr. E. H. Jewett, president of the Jewett Radio and Phonograph company—an ideal demanding the best broadcasting equipment that money could buy—an ideal which called upon the Radio manufacturer to direct the business of broadcasting, it being Mr. Jewett's contention that, inasmuch as the very life of the Radio manufacturer ultimately depended upon broadcasting, the Radio manufacturer should do the broadcasting.

WJR ANNOUNCER IS OLD HAND AT 'MIKE'



Corley W. Kirby, program director and assistant manager of WJR, new Jewett Phonograph and Radio superstation, is not a beginner at the microphone. Listeners will recognize his voice as one they formerly heard frequently announcing from WWJ, the Detroit News station.

Nebraska Station Reaches To Far Off Belgian Congo

LINCOLN, Nebr.—Henry Hansen of the Botua Trading company of Botua, Belgian Congo, recently made a visit to the Nebraska Buick Automoble company here to tell that KFAB, their station, was received with fair distinction on the night of March 4, 1925.

The distance from Botua to Lincoln is between 6,000 to 7,000 miles. Mr. Hansen and KFKX, but has picked up no others. He uses a homemade super-heterodyne.

KTHS SPLITS TIME; HELPS CLEAR AIR

"Voice of Oklahoma" Benefits by Sharing Hot Springs Station's Wave Length

HOT SPRINGS, Ark.—Station KTHS, the new Arlington hotel station, here, has granted a voluntary division of time with Station KFRU, Bristow, Okla., according to an official announcement by Director G. C. Arnoux, of Station KTHS.

"The division was not at the request of the department of commerce officials or other governmental agencies," Director Arnoux stated in making the announcement, "but the decision of the Arkansas station as its small bit in helping to solve the present congestion in class B wave bands."

"Station KTHS was petitioned by the 'Voice of Oklahoma' station," Arnoux said, "to allow it to share the Arkansas wave length of 374.8 meters, thus enabling it to withdraw from dividing time with San Antonio and so allow another station in that city, soon to take the air, to assume the former KFRU wave length. This would prevent a three-way split on time and thus not only benefit the stations but also the fans in general who listen to these stations." It was this benefit to the Radio fraternity in general that brought about the decision of KTHS to share its exclusive wave.

Former Bootleg Craft Is Kodel Radio Patrol Boat

CINCINNATI.—The Ohio river now has a Radio patrol boat with the launching of the 37-foot cabin cruiser, Betty Mae, owned by the Kodel Radio corporation, on which will be built a low wave transmitter for picking up and broadcasting Radio programs from towns along the Ohio and Mississippi rivers and tributaries.

The boat, originally a rum runner confiscated off the Jersey coast, was purchased by Clarence E. Ogden, president of the Kodel corporation.

John F. Church, chief engineer of WKRC, Kodel corporation station, is arranging the installation of a 20-watt transmitter for the boat.

WLW HEAD REPORTS ON ENGLISH SYSTEM

FRED SMITH FINDS BRITISH RADIO WELL EXECUTED

America's Radio Ambassador Visits 2LO and B. B. C. Executive Office —People Satisfied with Plan

Article II, by Fred Smith

LONDON.—The American who believes that broadcasting in Europe has something to do with the middle ages should spend a week in London!

The British have built up a system which is at once efficient, practical, profitable and artistic. The revenue resulting from the small tax levied upon each receiving set enables an energetic monopoly called the British Broadcasting company to produce concerts and programs of a high, professional quality, and distribute them through a network of stations to crystal set owners all over Britain.

We came up from Dover in the afternoon. The suburbs of London had a lacework of pretty, regular aerials along the roofs of the houses. That first night I listened on a crystal set to Clara Butt singing to 10,000 people in Albert hall. Since then I have listened to 2LO practically every night. Musically, the concerts are superb. The singers are frequently accompanied by the excellent station orchestra. One night I remained up to hear the famous Savoy hotel jazz band; but it was not as good as our first class American dance orchestras.

A Visit to 2LO, London

Just as soon as I got into London, I phoned Major Atkinson of the B. B. C. publicity department, since it was he who had answered my letter from America some weeks before. Thanks to the major, I was able to visit Station 2LO and go all over the building from office to office, meeting practically every one of importance on the huge staff.

I was curious to know what part the announcers played in the program. Major Atkinson told me that personal publicity for the individual members of the staff is generally restricted. Voices that talk to children and the youngsters take on the title of "Uncle." It seems that "Uncle Rex" in London holds the palm. Everybody loves him.

Many of the original announcers have become station directors in the provinces and still remain very prominent and popular. There are 562 names on the B. B. C. pay roll, so they can't all be stars! The main offices of the B. B. C. are right in the center of London—Savoy Hill—which is near Picadilly. Provincial stations, such as Manchester, have about fifteen members on the staff.

The stations do not use their call letters as we do in America. Neither is the name of the company mentioned. The announcer rarely tells you about the selection that has been played, but comes on to announce the next group of songs or instrumental numbers. Now and then, he says, "London calling." He still clings to the "Wait a moment, please." Pauses are not bad, but sometimes are a minute in length.

Types of English Stations

There are three kinds of stations outside of London: First, main stations, located at Cardiff, Aberdeen, Glasgow, Birmingham, Manchester, Bournemouth, Newcastle and Belfast. These main stations run about 85 per cent of their own programs and use 15 per cent from London by relay. Next are the relay stations at Sheffield, Plymouth, Edinburgh, Liverpool, Leeds-Bradford, Hull, Nottingham, Stoke-on-Trent, Dundee and Swansea. These latter receive practically all of their programs from London.

The third kind is altogether different. This is the high power station. Until now it has been located at Chelmsford. But, since the purpose of the high power station is to bring the concerts to crystal set owners practically anywhere on the island, Chelmsford is at a disadvantage, being right on the edge of the island.

A new location was chosen. Daventry, in the very center of England, is the suite of the new 25-kilowatt station of the B. B. C. The formal opening took place on July 27.

I was invited by the B. B. C. to be present, but my schedule led me to other lands. Also I was asked to make an English-American friendship talk from 2LO on July 4, but had to decline because that date was to find me in Berlin.

Inside Details from an Editor

England has a number of excellent Radio magagines. I looked them over on the newsstands and picked out "The Wireless Magazine" as the most attractive. Then I phoned Bernard Jones, the editor, and forthwith went over to see him—offices in the buildings known as "La Belle Sauvage," named after our own Pocahontas. I arranged with Mr. Jones to have published in his magazine a number of photos of American studios. He asked me to write an article for him on American Radio and another on Radio in Europe. You may be sure that I shall endeavor to do my best for America—and happy indeed for the opportunity.

Mr. Jones gave me a lot of information about the situation in Britain. Of course the B. B. C. has come in for a great deal of red-hot criticism—there were plenty of people who could find numbers of reasons why broadcasting should not fall into the hands of a monopoly. But the English love to criticise and at bottom the B. B. C. is a mighty popular institution.

The best thing Mr. Jones did for me, though, was to phone headquarters and arrange an interview for me with J. C. W. Reith, managing director of the B. B. C., the man upon the throne so far as British broadcasting is concerned. I want to tell you about Mr. Reith after I've seen other lands and other personalities.

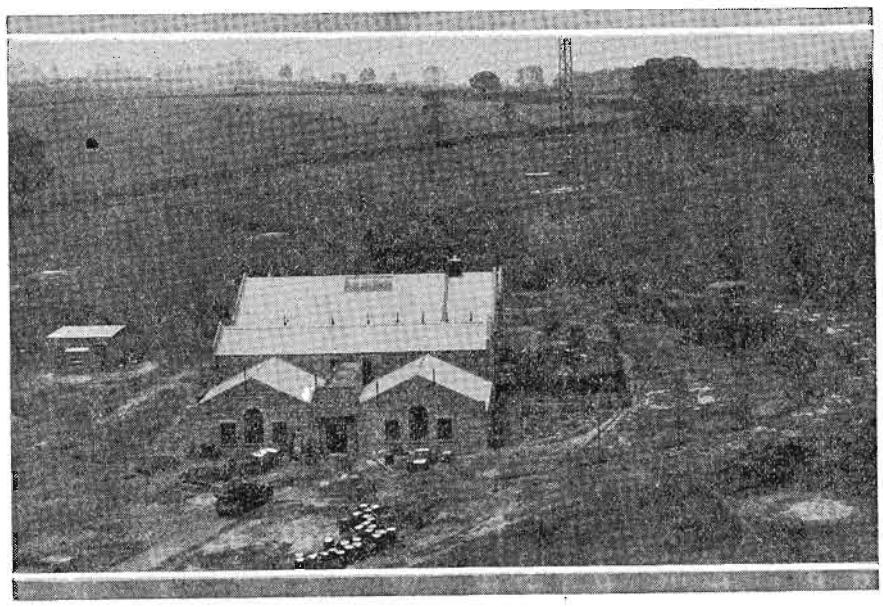
The B. B. C. has a network of telephone lines tying the twenty stations together. At five in the afternoon these lines, which are used during the day for commercial purposes, are turned over to the company. From five to seven the lines are used for conversation—business details between the various stations. At seven the programs begin.

All relayed programs go through 2LO, London. That is to say, if Birmingham has a special concert to be given to any one or all other stations, the concert goes first to London and then out over the network. Even if a station is relaying to only one other, the relay must go through London. In other words, the capital of the British empire is the capital of the British Broadcasting company.

Herein lies the great advantage for the B. B. C.: a thousand years of history has been preparing the situation. London is the commercial, political, educational and artistic capital of the country in a much more complete sense than any other metropolis with regard to its respective nation.

(TO BE CONTINUED)

NEW ENGLISH SUPERSTATION OPENS



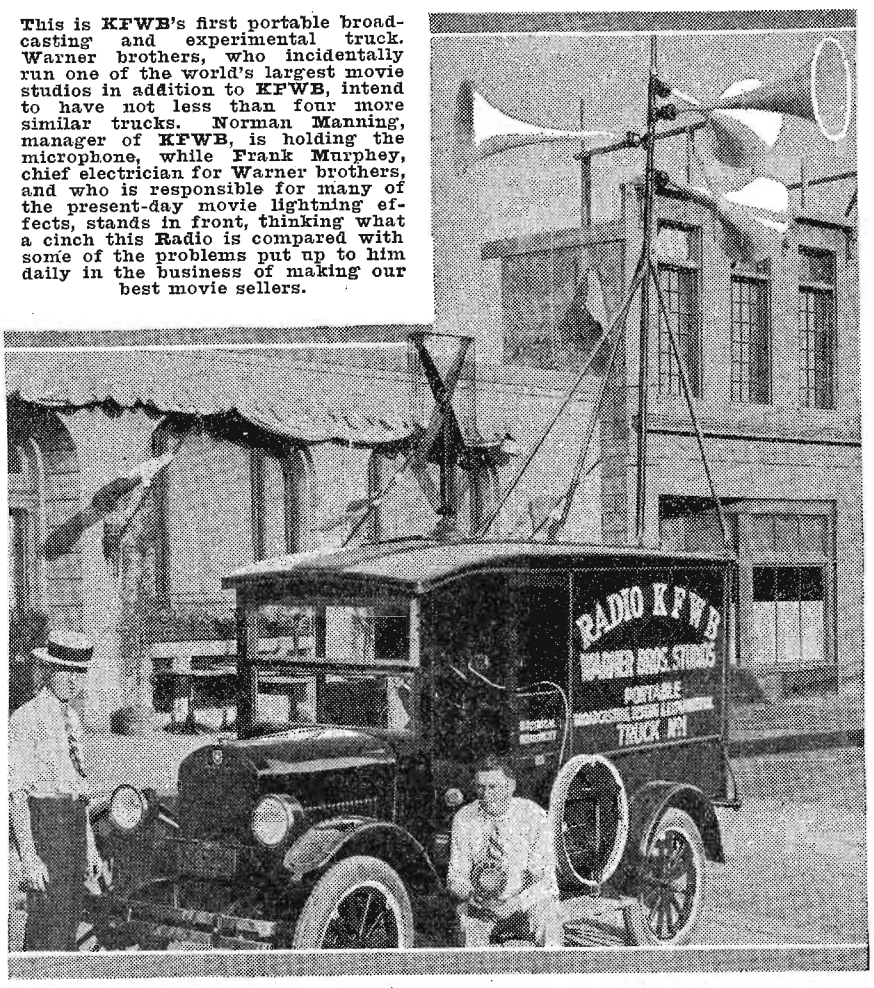
Looking down from an airplane on the power house of the new superpower station, 5XX, at Daventry, England, the gigantic proportions of the equipment can be visualized. The broadcaster recently was opened and now is an important link in the British Broadcasting company's scheme. 5XX operates with 25 kilowatts (25,000 watts) of power on a wave length of 1,600 meters. The above photo was presented to Fred Smith of WLW during his visit at Daventry.

9XH Hears from NRRL

MADISON, Wis.—Don Mix, operator of Burgess Station 9XH, here, communicated with A-3EF, Melbourne, Australia, on August 5, for about twenty minutes, with dry battery power. Communication was without trouble and he learned that the operator had that day bid good-bye to Lieut. F. A. Schnell, the A. R. R. L. experimenter now with the United States navy flagship (NRRL) in Australian waters.

KFWB TRUCKS TO BRING STARS NEAR

This is KFWB's first portable broadcasting and experimental truck. Warner brothers, who incidentally run one of the world's largest movie studios in addition to KFWB, intend to have not less than four more similar trucks. Norman Manning, manager of KFWB, is holding the microphone, while Frank Murphey, chief electrician for Warner brothers, and who is responsible for many of the present-day movie lightning effects, stands in front, thinking what a cinch this Radio is compared with some of the problems put up to him daily in the business of making our best movie sellers.



MOVIES AND RADIO ARE DRAWN CLOSER

HOLLYWOOD FILM MAKERS USE PORTABLE PLANT

Station KFWB Mounted on Trucks to Aid the Picture Folk When on Location

HOLLYWOOD, Calif.—The thrill that comes once in a lifetime may become a reality this fall and Radio fans have the privilege of hearing, direct from Hollywood, the voices of some of movieland's greatest directors as they put such stars as Monte Blue, John Barrymore, Marie Prevost, Patsy Ruth Miller, Mary Astor, Kenneth Harlan and others, through their paces. This will be broadcast direct from the firing line of motion picture sets on the lot of Warner brothers' west coast studios and will be accomplished through the use of one of the new portable broadcasting, testing and experimental trucks, the first of which was just recently put into service by KFWB.

In addition to other equipment, these trucks have a complete Western Electric public address system, with the lily-horns mounted on a steel shaft that sticks up above the car top and which is collapsible. A super-heterodyne and power amplifier is also incorporated, making it possible to switch over and receive programs from stations over long distances.

Aids on Movie Set

Recently a Radio Digest correspondent was given a demonstration of the uses to which this portable broadcaster, as it might be called, is used. The car, which had been touring the streets of Los Angeles picking up programs of various stations, was run onto a set in the studio at Warner brothers and the director, James Flood, presented with a hand microphone and told to use that in place of the time-honored megaphone. A number of scenes were taken, ranging from a ballet, which ordinarily would be difficult for one man to handle, to close-ups. In the larger scenes particularly the broadcasting of the director's voice evenly to all parts of the set showed the value of the installation. During lulls between scenes, and while lights were shifted and cameras replanted, music was brought in from a number of stations, much to the enjoyment of the waiting crowd of actors, extras, electricians and lookers-on. The only persons who did not seem to enjoy these concerts were the musicians who are hired to play music for the emotional scenes.

Plan Hollywood Broadcast

While such a use in the studios is not new, this application of it is and there is no doubt that it will be widely copied and all the larger motion picture companies make use of the portability and flexibility of the truck method of handling the public address systems. But none of the other studios have Radio stations and so it may be, if a satisfactory solution of the wave length problem can be found, that KFWB this fall will be housed on the roof of the new Warner brothers' theater at Hollywood with a new 5,000 watt transmitter with not less than four smaller stations in strategic points throughout the country to rebroadcast some of the novelties that can only be found in Hollywood. Such, briefly, are the ambitious plans of Warner brothers in the Radio broadcast field. Radio and the movies are coming closer together every day.

Dedicate Edna Field Memorial Pipe Organ

Shenandoah Station Scene of Impressive Ceremony

SHENANDOAH, Iowa.—The Edna T. Field Memorial organ at Station KFNF here, recently was formally dedicated with appropriate Radio ceremonies in the plant studio. Playing of Mrs. Field's favorite selections by several organists in turn was the principal part of the program. Relatives of Mrs. Field and entertainers on the station staff also sang many of the songs she loved so well. One song, a beautiful number, was especially written for the occasion by Miss Estella Priest of Red Oak, Iowa. Philip Field, a minister, son of Henry Field the station owner, journeyed to Shenandoah to make an address at this occasion.

The organ has a beautiful appearance and lovely tones and seems to fit in with the studio and the music of the station.

Need Expensive Sets Only

WASHINGTON, D. C.—Inductive interference caused by the many high tension power lines in Switzerland necessitates the use of receiving sets that will minimize this disturbance and consequently precludes the possibility of the sale of the cheaper make of receiving equipment.

PACIFIC COAST RADIO SHOW AT KGO

Saturday, August 22

Saturday, silent night for: CHNC, CNRT, KFAB, KFAE, KFDM, KFKX, KFMQ, KFUO, KLDS, WBAP, WBAV, WBZ, WCAU, WCTS, WCX, WEBJ, WEEI, WFI, WHAD, WHAZ, WHN, WHO, WJAR, WJY, WLIT, WNYC, WOAN, WOO, WOR, WOS, WSMB, WSUI, WTIC, WWJ.

Atlantic or Eastern Daylight Saving Time Stations

CKAC, Montreal, Can. (410), 7 p. m., health talks; 7:30, Windsor hotel dinner concert; 8:30, "Advantages of Quebec Province;" 10, Harold Leonard's Red Jackets.

CNRO, Ottawa, Can. (435), 8 p. m., Chateau Laurier concert orchestra; Horace Butler, buss; Myrlah Kendall, pianist; Horace Butler, soprano; Edythe Young, violinist; Mrs. Hugh Renwick, reader; instrumental trios; duet, Mr. and Mrs. Horace Butler; Chateau Laurier dance orchestra.

WAHG, Richmond Hill, N. Y. (315.6), 1:05-1:30 p. m., musical program; 12-2 a. m., dance music.

WBBR, New York, N. Y. (272.6), 8 p. m., Fred Ehrenberg, musical soloist; 8:10, L. Marion Brown, soprano; 8:20, Bible questions and answers, Judge Rutherford; 8:40, L. Marion Brown, soprano; 8:50, Fred Ehrenberg, musical saw soloist.

WCAE, Pittsburgh, Pa. (461.3), 6:30 p. m., dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 7:45, baseball scores; 8:30, concert.

WEAF, New York, N. Y. (491.5), 4-5 p. m., Roy Nichols' Recording orchestra; 6-7, dinner music, Waldorf-Astoria; 7-7:10, Curbstone Four male quartet; 7:10-7:20, Minnie Weil, pianist; 7:20-7:30, Alfred Nirenstein, violinist; 7:30-7:40, Curbstone Four; 7:40-7:50, Minnie Weil; 7:50-8, Alfred Nirenstein; 8-8:45, Huyler's Foremost Four; 8:45-10:15, concert, United States Army band; 10:15-10:30, Arthur Herschmann, baritone; 10:30-11, musical program; 11-12, Vincent Lopez and his Hotel Pennsylvania orchestra.

WGBS, New York, N. Y. (315.6), 2-3 p. m., Belle Harbor Serenaders; 3-4, "Timely Talks," "Terese;" Mary Miller, soprano; 6-6:30, Uncle Geebee; 6:30-7, Bob Schaefer and Fred Fisher, entertainers; 7:30-8, Michael Bataess, Russian bass; Grace Anderson, accompanist; 10:30-11:30, Meyer Davis' orchestra.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., WGR's afternoon program; 8:45-10:15, U. S. Army band, Washington, D. C., through WEAF.

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

WIP, Philadelphia, Pa. (508.2), 3 p. m., song of the surf; 3:30, Comfort's philharmonic orchestra; 6:05, Benjamin Franklin concert orchestra; 7, Uncle Wip's bedtime stories; 8, Comfort's philharmonic orchestra; 8:45, song of the surf; 8:50, Veselli's band; 10:03, California Night Hawks' dance orchestra.

WJZ, New York, N. J. (454.3), 5:05-5:30 p. m., Irish Minstrel Boys; 5:30-6, daily reports; 7-7:45, Nathan Abas' Hotel Pennsylvania dinner concert; 7:45-8, Josephine Evans, contralto; 8:10-8:25, talk, Damon Runyan; 8:25-10:30, stadium concert, 10:30-11:30, Joseph Knecht's Waldorf-Astoria orchestra.

WMCA, New York, N. Y. (340.7), 8:30-8:45 p. m., Theodore Alban, tenor; 9-10, Asbury Park dance orchestra; 11-12, Ernie Golden and his Hotel McAlpin orchestra; 12-1 a. m., Berkeley-Carteret hotel orchestra.

WOR, Newark, N. J. (405.2), 6:15-7:15 p. m., Herman Rice and his Bluehills orchestra; 7:15-7:30, "sports," Bill Wathey; 7:30-8:30, Central Park Casino orchestra, Flo Richardson and her girls.

Eastern Standard or Central Daylight Saving Time Stations

KDKA, Pittsburgh, Pa. (309.1), 8:45 p. m., Westinghouse band.

KYW, Chicago, Ill. (536), 7-7:30 p. m., dinner concert, Congress hotel; 7-8, musicale.

PWX, Havana, Cuba (400), 8:30 p. m., Cuban songs, Professor Juan Gonzalez.

WBBM, Chicago, Ill. (226), 8-2 a. m., Samovar orchestra; Nate Caldwell, Dave and Charlie, Harry Brailsford, Roy Trueger, college trio; Jerry Cromack, Jazzmania artists.

WCX, Detroit, Mich. (516.9), 2:30 p. m., band concert, Belle Isle; 6, dinner concert, Book-Cadillac hotel.

WEAR, Cleveland, Ohio (389.4), 7-8 p. m., novelty dinner concert.

WEBH, Chicago, Ill. (370.2), 7:30-8:30, Oriole orchestra; 9:30-10:30, Oriole orchestra, Indiana male quartet; 11:30-1, Oriole orchestra, Indiana male quartet, Wayne Myers; Frank Greif, tenor; Blanche and Rudie Bnie, songs.

WGN, Chicago, Ill. (370.2), 6:30-7:30 p. m., Drake concert ensemble; Blackstone string quintet; 8:30-9:30, studio program; 10:30-11:30, Drake hotel Terrace Garden program.

WGY, Schenectady, N. Y. (379.5), 7 p. m., talk, William F. Jacob; 7:25, New York Philharmonic symphony program; 9:30, dance program, Ten Eyck hotel orchestra.

WHT, Deerfield, Ill. (399.8), 7 p. m., classical program: Al Carney, organist; Grayling's string trio; 7:30, Dean Remick, pianist; Eleanor Kaplin, violinist; 8, Lottie Friedman, soprano; Jetke musical muments; 8:45, Elmer Kaiser's Melody Masters and Berensen's Riverview band; 10:30, program a la carte; Walter Ford's Checrio orchestra; 11:30, Fred Agard, tenor; Si Berg, ukulele soloist; Marie Wright, soprano; 12, R. V. Thomas, basso; Weaver and Gualano, banjo duo; 12:30 a. m., Al Carney's organ recital; request period.

WJR, Detroit and Pontiac (517), 7 p. m., Jean Goldkette's ensemble; 10, Blue Room dance orchestra.

WKRC, Cincinnati, Ohio (422.3), 10 p. m., Marion McKay's Bond Hill House orchestra; 10:30, song features, Bert Lindsay, Kern Aylward; 11, Marion McKay's Bond Hill House orchestra.

WLS, Chicago, Ill. (344.6), 7:45 p. m., lullaby time, Ford and Glenn; 8-1, national barn dance music; Rex's Cornhuskers; Ralph Emerson, organist; Tony Corcoran, Irish baritone; Chubby Parker, banjoist; Grace Wilson, contralto; Simmons and Clifford.

WLW, Cincinnati, Ohio (422.3), 7 p. m., organ recital, Johanna Grosse; 7:35, instrumental trio; cello solos, Arthur Knecht, soloist.

WMAQ, Chicago, Ill. (447.5), 3 p. m., baseball scores; 6, musical program; 6:30, Jack Chapman's orchestra; 8, Fred Daw and Russell Pratt; 8:30, photologue, "The Florida Coast," B. E. Dahlgren; 9, Chicago theater revue.

WMBB, Chicago, Ill. (250), 7-8:30 p. m., Trianon ensemble; Bernard Senescu, violinist; Desmond Sullivan, cellist; Wayne King, saxophonist; John S. Everett, barltone; Hazel O'Neil, soprano; 8:30-10:30, Trianon orchestra; Cecil and Esther Ward, guitarists; Woodlawn theater concert orchestra; Fisher and Wayne; Charles Agne, marimba soloist; Geraldine Doyle, soprano.

WMBF, Miami Beach, Fla. (384.4), 7-7:30 p. m., concert; 7:30-8, dance; 10-12, Fleetwood hotel dance orchestra.

WORD, Batavia, Ill. (275), 8-10:30 p. m., Webster hotel concert program; Parkway hotel orchestra.

WQJ, Chicago, Ill. (447.5), 7-8 p. m., dinner concert, Ralph Williams and his Rainbo Gardens orchestra; Alvina Becker, soprano; Madame Ramar, pianist; Edith Dady, whistler and mezzo-soprano; Josephine Anderson, contralto; 10-3 a. m., Ralph Williams and his Rainbo Skylarks; Sheppard Levine, tenor; Helen Reed, accompanist; Jerry Sullivan; Rose Vanderbosch, pianist and soprano; Melodians; Williamson Brothers and Joe Termini, mandolinists and guitarist; Everett George Opie, character reader; Clarence Theders, tenor; Rick, Snyder and Gardner, harmony singers; popular artists; Bob Birdson and Ben Burke.

WRC, Washington, D. C. (468.5), 6:15 p. m., Bible talk; 7, Hotel Washington orchestra; 7:30, Philharmonic concert, Lewissohn stadium; 10, announced; 10:30, Crandall's Saturday Nighters.

WREO, Lansing, Mich. (285.5), 10-12 p. m., baseball reports; special dance program, Speed-Wagon Serenaders.

Headliners of the Week

THROUGH remote control by direct wire from the San Francisco Auditorium to the KGO studios, the opening exercises of the Pacific Coast Radio Trades second annual convention will be broadcast from KGO on Saturday, August 22, at 8:10 p. m. The program includes Supervisor J. Emmet Hayden and the Honorable James Rolph, Jr., mayor of San Francisco, and a brilliant array of artists who have been broadcasting during the past year.

The I. B. S. A. choral singers will give a vesper service of hymns and sacred songs at WORD Sunday. Adelaide Jones, soprano will be the soloist. The WFAA entertainer for the evening is Jack A. Davis called the railway pianist. This versatile musician plays popular or classical selections as requested.

Of special interest to fathers will be the talk on boy problems given by Rev. David Carson Monday at KOA, Denver. His subject will be "The Best Opportunity Yet." Clyde Davis, singing violinist; Mart Grauenhorst, soulful banjoist, and Joseph G. Woods of the melting tenor voice will lure unsuspecting fans from serious subjects to KFAB this same evening.

WSAI will give a folk song program Tuesday evening. Russian, French, Italian, Spanish, Old English, Bohemian and American songs will be heard over the Radio. These songs, which originated with the people, will reach the people again by means of ether waves.

Gustavo LaZazzera, whose cello solos are always enjoyed at WBZ, Springfield, will be heard again at this station Wednesday night. Margaret E. Smith, soprano is the vocal soloist of the evening. Neither of these artists need Introductions to fans.

Zither quartets are rare and unique. For this reason the program scheduled at WEAR Thursday by the Zither quartet will attract much atttention. J. Howard Johnson, whose programs are famous along the Pacific coast, will direct Episode 2 of the history of the Pacific Electric railway at KHJ. Mary Carr Moore will give an interesting program from the opera "Narcissa" this same evening at KPO. This is an opera which is seldom heard.

Erwin F. Swindell, musical director of WOC, has long been recognized as a composer of note. Some of his more important compositions will be presented Friday night. Gania Zielinska, a coloratura soprano who is being recognized in the East, will entertain at WEAF this same evening. Her voice is unusually good for broadcasting.

WSAI, Cincinnati, Ohio (325.9), 7:45 p. m., story lady, Ethel Knapp Behrman; 8, chime concert, Robert Badgley; 8:15, Bicycle Playing card sextet; 9:15, sextet, instrumental soloist; Eugene Perrazo, pianist; 12 nidnight, popular program.

WTAS, Elgin, Ill. (302.8), 8-10:30 p. m., Purple Grackle orchestra; Herbie Mintz, Maurine Marseilles, Phil Wilcox.

WTAM, Cleveland, Ohio (389.4), 6-7 p. m., Hotel Statler concert orchestra; Maurice Spitalny, director; 8-9, dance program, Frank Wilson's Euclid Beach Park orchestra; 9-12, novelty program, Ev Jones and the Coo Coo club; Joe Ferte, tenor.

Central Standard Time Stations

KFAB, Lincoln, Nebr. (340.7), 6-7 p. m., dinner program.

KFNF, Shenandoah, Iowa (266), 7:30 p. m., Scotch trio.

KFVE, University City, Mo. (240), 6:30 p. m., amusement review, Romaine Fielding; 10, Jack, Tom Gibbs, Jimmy, Steve.

KSD, St. Louis, Mo. (545.1), 7 p. m., Grand Central theater.

KTHS, Hot Springs National Park, Ark. (374.8), 9 p. m., Ray Mullins Whittington Park orchestra.

WBAP, Fort Worth, Texas (475.9), 7:30 p. m., Interdenominational Sunday school lesson, W. F. Barnum.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 6 p. m., baseball scores; 6:15, dinner concert, George Osborn's Nicollet hotel orchestra; 8, musical program; 10, dance program, Wallie Erickson's Coliseum orchestra.

WDAF, Kansas City, Mo. (365.6), 6-7 p. m., School of the Air: piano tuning-in number on the duo-art; address; Tell-Me-a-Story lady; Plantation Players.

WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Western Electric Four; 8:30-9:30, W. W. Macbeth, harmonica expert; W. B. Chenoweth, fiddler; Cornfield Symphony orchestra; 11-12, Adolphus hotel orchestra.

WHAS, Louisville, Ky. (399.8), 7:30-9 p. m., concert, auspices Holen Ann Moritz.

WMC, Memphis, Tenn. (499.7), 8:30 p. m., Arkansas Barefoot Boys.

WOAI, San Antonio, Texas (394.5), 8:30 p. m., Menger hotel trio.

WOAW, Omaha, Nebr. (526), 6 p. m., public news period; 6, Rialto orchestra; 7, Gilbert Jaffy and his orchestra; 7:30, speakers' hour; 9, program, auspices Omaha Printing company; 11, Arthur Hays, organist.

WOC, Davenport, Iowa (484), 9-10 p. m., Acme orchestra; 11-12, LeClaire orchestra; Peter MacArthur, baritone.

WSMB, New Orleans, La. (319), 8:30-10:30 p. m., Cammo Allen and artists; concert program.

Mountain Standard Time Stations

KOA, Denver, Colo. (322.4), 8 p. m., open-air concert, Denver municipal band; Henry Sachs, director; 10, dance program, Twilight harmony orchestra.

Pacific Standard Time Stations

KFWB, Hollywood, Calif. (252), 8-9 p. m., popular song hour with Mildred Masser, female baritone; Sally Bell, Vie Beal and Frank Pierce, comedy songs; Violet Silver, violinist; 9-10, Screenland dance orchestra, Gwendolynn Rickard, blues singer; Luigi Bosselli, tenor; 10-11, Warner brothers' trolle, Charlie Wellman, director.

KGO, Oakland, Calif. (361.2), 8:10 p. m., Second Annual Pacific Radio Exposition and Convention; addresses, Hon. James Rolph, Jr., mayor of San Francisco; J. Emmett Hayden; Marshall Geiselman, organist; 10-1, Dwight Johnson's Hotel St. Francis dance orchestra.

KGW, Portland, Ore. (491.5), 6-8 p. m., dance music, Jackie Souders' orchestra; 10-12, Jackie Souders' orchestra.

KHJ, Los Angeles, Calif. (405.2), 5:30-6 p. m., Leighton's Arcade cafeteria orchestra, Jack Cronshaw, leader; 6-6:30, Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, Radio kiddies' hour with Frances Mortes, soprano, Dolly of Radioland, Piggly Wiggly girls stringed trio; Uncle John; 8-10, program, Broadway Department store, arranged by J. Howard Johnson; 10-11:30, Art Hickman's Bitmore hotel dance orchestra, Earl Burtnett, leader; 11:30-2 a. m., Lost Angeles of KHJ, Walter Biddick, Chief Harpist, Lost Angeles orchestra.

KNX, Hollywood, Calif. (336.9), 5:30-6:15 p. m., Wurlitzer pipe organ studio; 6:15, travel talk, W. F. Alder; 6:30-7, Atwater Kent Radio orchestra, Paul Finstein, leader; 7-7:30, dinner music; 7:30-8, Wurlitzer pipe organ studio; 8-9, feature program, presented by G. Allison Phelps; 10-11, Ray West's Coconut Grove dance orchestra from Ambassador hotel; 11-2 a. m., Hollywood night program.

KPO, San Francisco, Calif. (428.3), 6:35 p. m., Waldemar Lind and the States Restaurant orchestra; 8-12, Jack Coakley's Cabirians.

KTCL, Seattle, Wash. (305.9), 6:50-7:15 p. m., Hermie King and his orchestra; Palace Hip theater; 9:10-9:30, Hermie King's orchestra; 9:30-12, studio program.

Sunday, August 23

Sunday, silent night for: CHNC, CKAC, KFAB, KFAE, KFKX, KFMQ, KFOA, KSD, KYW, PWX, WAHG, WBAV, WCAE, WCAU, WCEE, WDAF, WEBJ, WFI, WGR, WHAD, WHAS, WHAZ, WIP, WJR, WJY, WHAQ, WMC, WOO, WOR, WRC, WREO, WSAI, WSMB, WTAM.

Atlantic or Eastern Daylight Saving Time Stations

CFCA, Toronto, Can. (356), 11 a. m., services, Timothy Eaton Memorial church; 7, Walmer Road Baptist church services.

WBBR, New York, N. Y. (272.6), 10 a. m., vocal quartet; L. Marion Brown, soprano; 10:20, vocal quartet; 10:30, Bible lecture, Judge Rutherford; 11, L. Marion Brown, soprano; 11:10, instrumental selections; 11:20, vocal quartet.

WCTS, Worcestor, Mass. (268), 7:20-9:15 p. m., musical program, Capitol gang, Major Bowes, director; 9:15-10:15, Goldman band concert, Edwin Franko Goldman, conductor.

WEAF, New York, N. Y. (491.5), 3-5 p. m., "Sunday Hymn Sing," Federation of Churches; 7:20-9:15, Roxy and his Gang, Capitol theater; 9:15-10:15, Goldman band concert.

WEEI, Boston, Mass. (475.9), 7:20 p. m., Major Bowes and Capitol theater gang; 9:15, Goldman band concert.

WFI, Philadelphia, Pa. (394.5), 10:15 a. m., services, Arch Street Methodist Episcopal church.

WGBS, New York, N. Y. (315.6), 3:30-4:30 p. m., Piccadilly theater program; 8-9, program, Steel Pier, Atlantic City.

WGR, Buffalo, N. Y. (319), 10:30, a. m., Central Presbyterian church service; 3-4 p. m., vesper service.

WHAR, Atlantic City, N. J. (275), 2:30 p. m., short sacred recital, Seaside hotel trio; 2:45, sermon, Rev. T. Roland Philips; 7:50, Chelsea Baptist church; 9, Seaside hotel trio; 11:15, Strand theater organ recital.

WHN, New York, N. Y. (361.2), 3-4 p. m., Queens County Christian Endeavor program; 4:30-5, Music Lovers' association; 5-5:30, Roseland dance orchestra; 5:30-6, Olcott Vail's string trio; 10:45-11:15, Janssen's Hofbrau orchestra.

WIP, Philadelphia, Pa. (508.2), 10:15 a. m., services, Holy Trinity church; 4:15, services, St. James Episcopal church, Atlantic City.

WJAR, Providence, R. I. (305.9), 7:20-9:15 p. m., Roxy and his gang; 9:15, Goldman band concert.

WJY, New York, N. Y. (405.2), 8:45-9:45 p. m., concert, "Siegfried," Josiah Zuro, director.

WJZ, New York, N. Y. (454.3), 2:30-3:30 p. m., Radio Bible class; 4-5, vesper services, St. George's church; 7-8, Nathan Abas' Hotel Pennsylvania orchestra; 10-10:30, Godfrey Ludlow, violinist.

WLIT, Philadelphia, Pa. (394.5), 8:15 p. m., Fairmont Park Symphony orchestra.

WMCA, New York, N. Y. (340.7), 11-12:15 p. m., services, Third Church of Christ; 7-7:35, Ernie Golden and his Hotel McAlpin orchestra; 9-10, Asbury Park dance orchestra.

WNYC, New York, N. Y. (526), 8:50-9 p. m., baseball results; 9-11, Brooklyn Mark Strand theater program, direction of Edward L. Hyman.

Eastern Standard or Central Daylight Saving Time Stations

KDKA, Pittsburgh, Pa. (309.1), 9:45 a. m., Point Breeze Presbyterian church; 7 p. m., Calvary Episcopal church.

KYW, Chicago, Ill. (536), 11-12:30 p. m., Second Presbyterian church; 4-5, studio concert.

WBBM, Chicago, Ill. (226), 4-6 p. m., tea dance program; 8-10, Samovar orchestra; William Molnaire; Wendell Weigert; Charlie Garland; Sunset male quartet; Henriette Greenfield; 12-2, Sunday midnight nutty club feature; Samovar orchestra; Ralph Atlass; Charlie and Dave, Nate Caldwell; Roy Trueger.

WBZ, Springfield, Mass. (333.1), 8 p. m., talk, George Leo Patterson; 8:45, Orpheus quartet; Lena B. Knox, organist.

WCX, Detroit, Mich. (516.9), 10:30 a. m., services of the Central Methodist Episcopal church; 3:30 p. m., band concert, Belle Isle; 8 p. m., The Detroit Symphony orchestra.

WEAR, Cleveland, Ohio (389.4), 3:30-5 p. m., musicale, Ivan Francisel; 7-8, Stillman theater orchestra.

WEBH, Chicago, Ill. (370.2), 7-9 p. m., artists' program.

WGN, Chicago, Ill. (370.2), 11:45 a. m., program, Chicago theater; 3 p. m., Lincoln Park band concert; 9-10, Drake concert ensemble.

WGY, Schenectady, N. Y. (379.5), 9:30 a. m., First Baptist church; 7 p. m., musical program from WJZ; 7:45, Lakewood Farm ensemble, WJZ; 9, Godfrey Ludlow, pianist.

WKRC, Cincinnati, Ohio (422.3), 10 p. m., classical program.

WLS, Chicago, Ill. (344.6), 7:30 p. m., Ralph Emerson, organist; 8-8:55, WLS Little Brown church.

WLW, Cincinnati, Ohio (422.3), 9:30 a. m., school, editorial staff of Sunday School Publications, Methodist Book concern; 11, services, Church of Covenant, Dr. Frank Stevenson; 8 p. m., H. & S. Pogue orchestra; soloist, Walton McHugh; Arthur Dondero.

WMBB, Chicago, Ill. (250), 3-5 p. m., Woodlawn theater orchestra; John S. Everett, baritone; Trianon orchestra; Fisher and Wayne; 7-8:30, Trianon ensemble; Woodlawn theater orchestra; 8:30-10:30, Trianon orchestra; Florenee Tennoy; Harold Stokes, accordionist; Clyde Hager, reader.

WMBF, Miami Beach, Fla. (384.4), 7-7:30 p. m., concert; 7:30-8, Fleetwood hotel orchestra; 10-12, Fleetwood hotel dance orchestra.

WORD, Batavia, Ill. (275), 10 a. m., hymns and sacred songs; address, Christopher Iverson; 6:45, hymns, sacred songs, I. B. S. A. choral singers; 7, Adelaide Jones, soprano; 7:30, address, D. J. Morehouse.

WQJ, Chicago, Ill. (447.5), 3-4 p. m., concert program; Bella Marta trio; Wilson school of music; Alma Wilson McMahill, dramatic soprano; Mary W. Kloester, pianist and accompanist; 8-9, Ralph Williams and his Rainbo Garden concert orchestra; Gertrude Wolf Quentin, soprano; Carl Bertschinger, concert pianist; Maude Chapton Couse, lyric soprano; 9-10, Saida A. Ballantine artists; William Bresters, tenor; Dan Vanderveld, baritone; Helen Grossenbacher, lyric soprano; Adele Schmadeke, pianist; Maurits Kesnar, violinist, Saida A. Ballentine, accompanist.

WREO, Lansing, Mich. (285.5), 10:30 a. m., services, First Presbyterian church; Rev. Guy W. Simon, pastor; Dwight Steere, organist.

WSAI, Cincinnati, Ohio (325.9), 3 p. m., sermonette, "The Guiding Eye;" 3:10, chime concert, Robert Badgley.

WTAS, Elgin, Ill. (302.8), 8-12 midnight, Purple Grackle orchestra; Herbie Mintz, Maurine Marseilles, Phil Wilcox, Evelyn Johnson, Art Stiller.

WWJ, Detroit, Mich. (352.7), 11 a. m., services, St. Paul's' Episcopal Cathedral; 6:20, Capitol theater program; 8:15, Goldman band concert.

Central Standard Time Stations

KFAB, Lincoln, Nebr. (340.7), 4-5 p. m., Rev. A. W. Lundeen.

KFDM, Beaumont, Texas (315.6), 8-9 p. m., sacred program.

KFNF, Shenandoah, Iowa (266), 10:45 a. m., First M. E. church; 2:30 p. m., Golden Rule song service; 3, program, Nebraska City S. S.; 6:30, Golden Rule circle; 8, Union church service.

KFUO, St. Louis, Mo. (545.1), 8:15 p. m., address, "The Forgiveness of Sins."

KFVE, University City, Mo. (240), 6:30, p. m., Mary Morehead, soprano; Ruth Benseinger, pianist; Rev. Dr. C. W. Davis; 10, sacred concert.

KLDS, Independence, Mo. (441), 11 a. m., Stone church services; Robert Miller, organist; sermon, Cyril E. Wight; 6:30 p. m., vesper services; KLDS ladies' quartet; sermonette, S. A. Burgess; 9:15, Robert Miller, organist; Emma Snead, violinist; George Miller, pianist; Clarence Reseh, bass; sermon, R. W. Farrell.

KTHS, Hot Springs National Park, Ark. (374.8), 9 p. m., New Arlington-Meyer Davis ensemble; 10, Ray Mullins and his Whittington Park orchestra.

WBAP, Fort Worth, Texas (475.9), 11 a. m., First Methodist church services, Rev. J. W. Bergin, pastor; 12:30 p. m., kiddies' hour, Uncle Billy reads the comics; 11-12, popular music.

WCBD, Zion, Ill. (344.6), 8 p. m., mixed quartet; celestial bell quartet; Rendall trio, flute, clarinet and piano; Erma Reynolds, soprano; Edith Carey, contralto; M. P. Barton, tenor; John Studebaker, clarinetist; Hulda Klammer, reader; Amelia Nelson, pianist.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 10:30 a. m., Plymouth Congregational church, Rev. H. P. Dewey, pastor; 4:10, p. m., House of Hope Presbyterian church, Rev. H. C. Swearingen, pastor; 7:30, services, First Baptist church, Rev. W. B. Riley, pastor; 9:15, classical concert.

WDAF, Kansas City, Mo. (365.6), 4-5 p. m., Newman, Royal and Pantages theater programs; 5-5:30, International Sunday school lesson, Dr. Walter L. Wilson; sacred hymns, quartet.

WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Radio Bible class, Dr. William M. Anderson; 8-9, Westminster Abbey Presbyterian service; 9:30-11, piano recital, Jack A. Davis, pianist.

WHAD, Milwaukee, Wis. (275), 3:15 p. m., Milwaukee Park Board band, Walter Claudet, director.

WHAS, Louisville, Ky. (399.8), 9:57 a. m., organ prelude; 10, Calvary Episcopal church.

WHO, Des Moines, Iowa (526), 11 a. m., University church service, Dr. C. S. Medbury; 7:30-8:30, Bankers' Life trio.

(Continued on page 9)

The Skeen trio is a regular feature of WOAW, Omaha. They will be on the air Saturday night. The harp and violins blend well over the microphone.

RAILWAY PIANIST APPEARS AT WFAA

Sunday, August 23

(Continued from page 8)

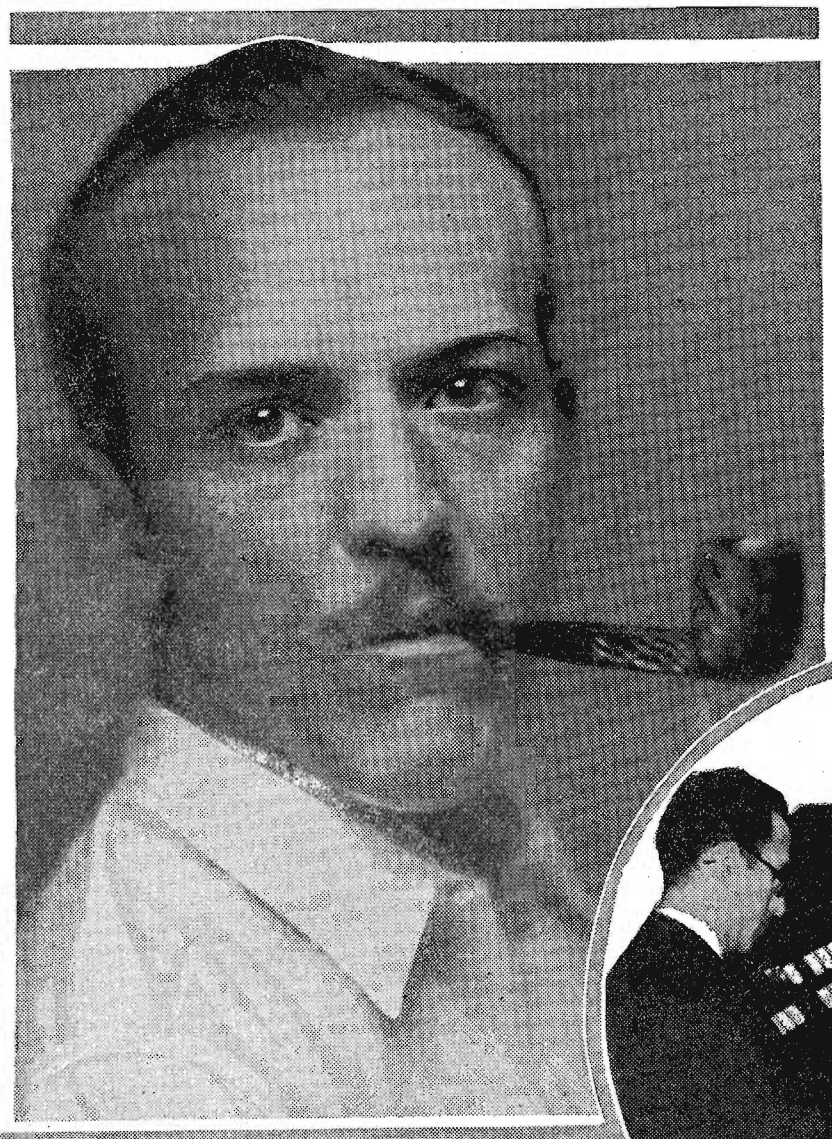
WMC, Memphis, Tenn. (499.7), 11 a. m., services, First Methodist church.
WOAI, San Antonio, Texas, (394.5), 11 a. m., First Presbyterian church; 8 p. m., Central Christian church; 9:30-10:30, musical program, Penelope Borden, director.
WOAN, Lawrenceburg, Tenn. (282.8), 9-10 p. m., Vaughan Radio orchestra, Herschel Raines, director; male quartet, saxophone quartet.
WOAW, Omaha, Nebr. (526), 9 a. m., chapel service, Rev. R. R. Brown; 9 p. m., chapel service.
WOC, Davenport, Iowa (483.6), 6:45 p. m., baseball scores; 8-8:30, services, First Methodist Episcopal church; "Moral Cowardice," Rev. George Shepherd.
WOS, Jefferson City, Mo. (440.9), 8 p. m., Union church service.

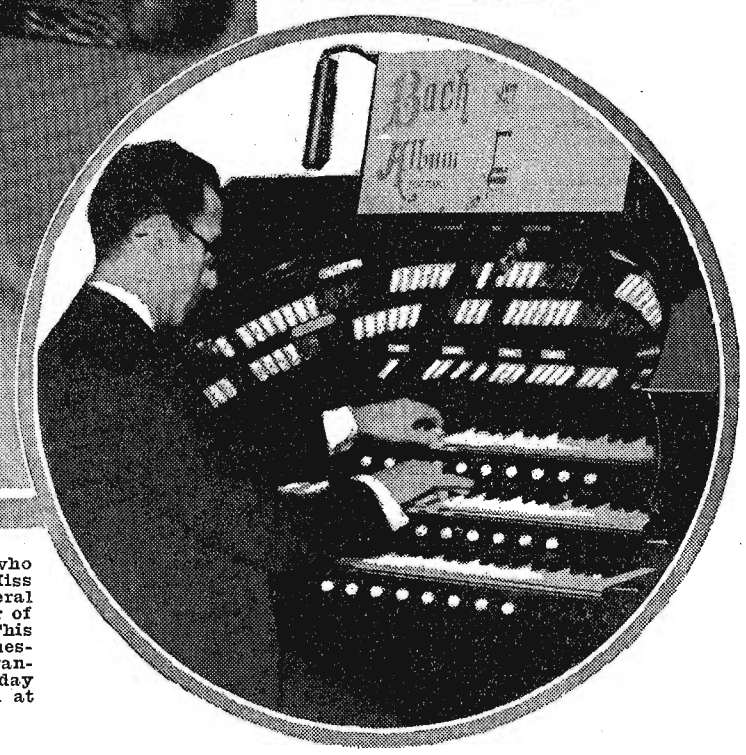
Mountain Standard Time Stations

KOA, Denver, Colo. (322.4), 11 a. m., Augustana Lutheran church, Rev. E. G. Knock, pastor; Mrs. Earl P. Martinson, organist; 4 p. m., Augustana Lutheran church; 8, Augustana Lutheran church.

Pacific Standard Time Stations

KFWB, Hollywood, Calif. (252), 9-11 p. m., late sport and world news and Warner brothers' Sunday night movie frolic.
KGO, Oakland, Calif. (361.2), 11 a. m., First Baptist church; 3:30 p. m., KGO Little Symphony; 7:30, First Baptist church.
KGW, Portland, Ore. (491.5), 10:55-12 noon, services, First Presbyterian church; 7:55-9 p. m., services, First Church of Christ, Scientist.
KHJ, Los Angeles, Calif. (405.2), 6-6:30 p. m., Leighton's Arcade cafeteria orchestra, Jack Cronshaw, leader; 6:30-7, Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 7-7:30, Arthur Blakely, organist; 8-10, program, Los Angeles Soap company, arranged by J. Howard Johnson.
KNX, Hollywood, Calif. (336.9), 7-8 p. m., First Presbyterian church of Hollywood, Rev. Stewart P. MacLennan, pastor; 8-9, Ambassador hotel concert orchestra, Josef Rosenfeld, director; 9-10:30, program, Beverly Hills Nurseries, presenting the Luboviski stringed trio in chamber music.
KPO, San Francisco, Calif. (428.3), 6:30-7:30 p. m., Palace hotel concert orchestra; 8:30-10, Rudy Selger's Fairmont hotel orchestra.
KTCL, Seattle, Wash. (305.9), 1-2 p. m., Moves cafeteria; 7:50-9:10, services, First Church of Christ, Scientist; 9:10-10:10, International Bible students' association program.





Marcella North, left, is well known to housewives who enjoy the 4:30 programs at WLIT, Philadelphia. Miss North has been the staff pianist of this station for several years. William C. Stoes is the summer studio director of WLW, but is better known to fans as an entertainer. This week he will direct the Formica concert orchestra Tuesday evening. Albert F. Brown, right, is the official organist at WJJD. His regular concerts are Monday and Friday evenings. He is shown here playing the new organ at this station.

Monday, August 24

Monday, silent night for: CKAC, CNRT, KFAE, KFDM, KFMQ, KGW, KHJ, KLDS, KYW, PWX, WBAV, WBBM, WBBR, WBCN, WCAU, WCTS, WEBH, WEBJ, WFI WGN, WGBS, WGES, WHAS, WIP, WJY, WLS, WMAQ, WMBB, WOC, WOAI, WQJ, WRC, WREO.

Atlantic or Eastern Daylight Saving Time Stations

CFCA, Toronto, Can. (356), 6:05 p. m., baseball scores; 6:30-7:30, dinner music, Hippodrome theater.
CHNC, Toronto, Canada (356.7), 10 p. m., CHNC orchestra, Charles E. Bodley, director.
WAHG, Richmond Hill, N. Y. (315.6), 7:45-8 p. m., sports talk, Thornton Fisher: 8-8:15, Viola Scherer, soprano; 8:15-8:30, Horace J. Taylor, reader: 8:30-9, Synchrophase string trio; 9-9:15, Viola Seherer, soprano; 9:30-10, Synchrophase string trio; 10-10:15, Horace J. Taylor; 10:15-10:55, Bensonians dance orchestra; 10:55-11:05, time signals and weather report; 11:05-11:30, Bensonians orchestra.
WCTS, Worcester, Mass. (268), 7:30 p. m., baseball scores; 7:45, Kelly Springfield talk.
WEAF, New York, N. Y. (491.5), 4-4:10 p. m., Victor H. Cockaday, tenor; A. McAdams, bass; 4:35-4:45, Henry Dart, pianist: 4:45-5, "Old New York," Henry Collins Brown; 6-7, dinner music, Waldorf-Astoria; 7-7:15, Bessie Booth Dodge, soprano; 7:15-8:30, program, Mark Strand theater; Joseph Plunket, director; 8:30-8:45, health talk; 8:45-9:15, musical program; 10:15-10:30, Giuseppe de Benedetto, tenor; 10:30-11:30, Hotel Bossert Marine Roof orchestra.
WFI, Philadelphia, Pa. (394.5), 1 p. m., Bellevue Stratford trio; 3, recital; Loretta Kerk, pianist; 6:45, Bellevue Stratford Roof Garden orchestra.
WGBS, New York, N. Y. (315.6), 6-6:30 p. m., children's program; 6:30-7:30, Premier club orchestra.
WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., WGR's afternoon program; 6:30-7:30, Century dance orchestra; 9-10, recital, Mrs. William H. Kadwill; 11-1 a. m., supper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gieser, director.
WHAR, Atlantic City, N. J. (275), 2 p. m., Seaside hotel trio; 7:30, lecture period; 8, Seaside hotel trio.
WHN, New York, N. Y. (361.2), 8-8:30 p. m., Roseland dance orchestra; 11-11:30, organ recital, Lexington theater; 11:30-12, Silver Slipper revue; 12-12:30 a. m., Owl entertainers.
WIP, Philadelphia, Pa. (508.2), 3:30 p. m., Comfort's Philharmonic orchestra; 6:05, Benjamin Franklin concert orchestra; 7, Uncle Wip's bedtime stories.
WJAR, Providence, R. I. (305.9), 7:45 p. m., Berry Spring dance hour.
WJZ, New York, N. Y. (454.3), 1-2 p. m., Meyer Davis' Park Lane orchestra; 4:30-5:30, Fred Hall's Royal Terrace orchestra; 6-7, U. S. Navy band from WRC; 7-8, Bernhard Levitow's Hotel Commodore dinner concert; 8-8:10, Wall Street Journal review; 8:10-8:25, Rose Reed, contralto; 10:45-11:45, Jacques Green and his Club Deauville orchestra.
WLIT, Philadelphia, Pa. (394.5), 12:02 p. m., daily almanac; Stanley theater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 4:30, Marcella North, pianist; 7:30, Dream Daddy's bedtime stories; 7:45, "Short Agro Waves," Charles P. Shoffner; 8, Fairmount Park Symphony orchestra; Richard Hageman, conductor; 9, movie review, James A. Nassau; 9:10, Stanley theater hour of music; 10:10, Arcadia cafe dance orchestra.
WMCA, New York, N. Y. (340.7), 6:30-7 p. m., Ernie Golden and his Hotel McAlpin orchestra; 7:30-8, songs, Coakley Sisters; 8-9, lecture, Third Church of Christ; 9-10, Asbury Park dance orchestra; 11-12, Berkley-Carteret dance orchestra.
WNYC, New York, N. Y. (526), 6:30-7 p. m., Original Charleston Five; 7-7:15, market high spots; 7:15-7:30, Charleston Five; 8:15-10:15, concert, Passeri's band from Central Park; 10:15-10:30, "Trend of the Times," Dr. Sydney N. Ussher.
WOO, Philadelphia, Pa. (508.2), 11 a. m., organ recital; 12:02 p. m., Golden's Crystal tea room orchestra; 4:45, organ recital; 7:30, A. Candelori's orchestra; 8, Mark Strand theater concert; 8:45, to be announced; 10:15, Giuseppe de Benedetto, tenor; 10:30, Hotel Bossert Marine Roof orchestra; 11, A. Candelori's dance orchestra.
WOR, Newark, N. J. (405.2), 6:15-7:15 p. m., Chateau Baltusrol orchestra, Wallie Osborne, director; 7:15-7:30, sports talk, Bill Wathey; 8:30-9:30, Al Reid's hour.
WRC, Washington, D. C. (468.5), 5 p. m., U. S. Navy band concert; 6:25, baseball scores.
WSAI, Cincinnati, Ohio (325.9), 10 p. m., Clarence Baiter, violinist; Clifford Cook, baritone; Alma Longland, soprano; artists.
WTAM, Cleveland, Ohio (389.4), 6-7 p. m., Golden Pheasant dance orchestra; 8-9, instrumental hour; Willard Symphony, Walter Logan, director; 9-10, studio program, selected artists; 10-11, symphony program; 11-12, dance music, Frank Wilson's Euclid Beach Park orchestra.
WWJ, Detroit, Mich. (352.7), 6 p. m., dinner concert; 7:30, Goldman band concert.

Eastern Standard or Central Daylight Saving Time Stations

KDKA, Pittsburgh, Pa. (309.1), 8:45 p. m., concert.
WBBM, Chicago, Ill. (226), 6-7 p. m., vesper hour, Charlie and Dave; Nate Caldwell; Alamo orchestra; Roy Traueger.
WBZ, Springfield, Mass. (333.1), 8 p. m., Capitol theater orchestra; Margaret Tighe, organist; 6:35, Capitol theater; 8, Aleppo Drum Corps or Shriners' band; 8:30, Henry Volk, violinist; Winfield Lapworth, baritone; 9, Mrs. Irene Simpson Rommel, pianist; 9:15, Charles Bradford Beach, baritone; A. Stanley Usher, accompanist; 9:40, book review, Bennett B. Schneider.
WCX, Detroit, Mich. (516.9), 2:30 p. m., band concert, Belle Isle; 6, dinner concert, Book-Cadillac hotel; 8, The Detroit Symphony orchestra.
WEAR, Cleveland, Ohio (389.4), 7-8 p. m., musical program, Loew's State theater.
WGY, Schenectady, N. Y. (379.5), 5:30 p. m., Hotel Ten Eyck orchestra; 6:35, Lola Gutmann, reader; Arthur Roy, pianist; Bessie Slavin, soprano; Thelma Tabor, accompanist.
WHAZ, Troy, N. Y. (379.5), 8:15 p. m., Trorado quartet.
WHT, Deerfield, Ill. (399.8), 7 p. m., classical program; Al Carney, organist; Dean Renick, pianist; 7:30, Kitchen Klenzer Klassics; John Clark, baritone; Leola Aikman, soprano; 8, Loftis' thirty minutes of melody; Pat Barnes, tenor; 9, Oscar Heather, baritone; Kay Ronayne, songs; 10, Tom Brown saxophone band; U. S. L. battery of entertainers; 11, Kapp trio; Glesle Brothers; 12, Harlend Norrill, musical saw soloist; Fred Witmer, pianist; 12:30 a. m., Al Carney's organ recital.
WJR, Detroit and Pontiac (517), 7 p. m., Jean Goldkette's ensemble; 10, Blue Room dance orchestra.
WKRC, Cincinnati, Ohio (422.3), 8 p. m., dance music, Caldwell & Taylor Original Benzol Boys; 9, program, Robert E. Bentley Post, No. 50; 12, Marion McKay's Bond Hill House orchestra.
WLW, Cincinnati, Ohio (422.3), 7 p. m., dinner concert, Hotel Gibson orchestra, Robert Visconti, director; 10, popular program, courtesy of Liggett Bros. Coal company; sparks, Liggetts Red Hot piano player; 11, the Famous Lyric male quartet.
WMBF, Miami Beach, Fla. (384.4), 7-7:30 p. m., concert; 7:30-8, Fleetwood hotel orchestra; 10-12, Fleetwood hotel dance orchestra.
WRC, Washington, D. C. (468.5), 5 p. m., U. S. Navy band concert; 6:25, baseball scores.
WSAI, Cincinnati, Ohio (325.9), 10 p. m., Clarence Baiter, violinist; Clifford Cook, baritone; Alma Longland, soprano; artists.
WTAM, Cleveland, Ohio (389.4), 6-7 p. m., Golden Pheasant dance orchestra; 8-9, instrumental hour; Willard Symphony, Walter Logan, director; 9-10, studio program, selected artists; 10-11, symphony program; 11-12, dance music, Frank Wilson's Euclid Beach Park orchestra.
WWJ, Detroit, Mich. (352.7), 6 p. m., dinner concert; 7:30, Goldman band concert.

Central Standard Time Stations

KFAB, Lincoln, Nebr. (340.7), 6-7 p. m., dinner concert; 7:30-8, Belshaw's dance orchestra; 8-9, Clyde Davis, singing violinist; Mart Grauenhorst, banjoist; Joseph G. Woods, tenor; Colonians.
KFKX, Hastings, Nebr. (288.3), 9-11 p. m., Y. W. C. A. program.
KFUO, St. Louis, Mo. (545.1), 8 p. m., "Young People's Temptations;" "The Pride of Life."
KFVE, University City, Mo. (240), 6:30 p. m., amusement review, Romaine Fielding; 10, Orchestra Romaine; Walter Dickerson.
KSD, St. Louis, Mo. (545.1), 9 p. m., Silverman's concert orchestra.
KTHS, Hot Springs National Park, Ark. (374.8), 9, p. m., New Arlington-Meyer Davis instrumental quartet.
WCBD, Zion, Ill. (344.6), 8 p. m., clarinet quartet; mixed quartet and string quartet; Mrs. McKerlie and Mrs. Reed, soprano and contralto; Mary Sweeney, soprano; L. J. Bishop, baritone; Miriam Hollingshead, flutist; Mabel Gustafson, reader; John Mehaffey, pianist.
WCCO, Minneapolis-St. Paul, Minn. (416.4), 5:30 p. m., children's hour; 6, baseball scores; 6:05, sports talk; 6:45, F. and R. family; 9, baseball scores; 9:05, "Northwest Dairy Show."
WDAF, Kansas City, Mo. (365.6), 3:30-4:30 p. m., Star's string trio; 6-7, School of the Air; reading, Cecile Burton; Tell-Me-a-Story lady; Plantation Players; 8-9, around the town.
WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Artie Collins and his Ozark Inn orchestra; 8:30-9:30, Sears-Roebuck agricultural foundation program.
WHAD, Milwaukee, Wis. (275), 4 p. m., Ethel Silver, pianist; Jessie Whitmore, contralto; hook review, Perry Olds; 6-7, organ recital, Arthur Richter; 7-7:05, baseball scores; 8-10, Marquette university studio program; Herman Lepgold, tenor.
WHO, Des Moines, Iowa (526), 7:30-9 p. m., Alex Lindblom, violinist; C. E. Lee, bass; program, Dean Holmes Cowper; 11-12, dance program.
WMC, Memphis, Tenn. (499.7), 7:30 p. m., farm talk, C. W. Watson; 8, Bennett's Moonlight syncopators.
WOAI, San Antonio, Texas (394.5), 8:30 p. m., Menger hotel trio.
WOAN, Lawrenceburg, Tenn. (282.8), 9-10 p. m., Vaughan Radio orchestra; saxophone quartet.
WOAW, Omaha, Nebr. (526), 6 p. m., Phyllis Griswold, organist; 6:30, McCrory's popular period; Lillian Madsen, director; 6:45, Ray Muzzy's Carter Lake club orchestra; 9, Skeen trio; 10, orchestra.
WOS, Jefferson City, Mo. (440.9), 8 p. m., address, George Auerswald; old time fiddling, Ola Gathright, Bill Caton.
WSMB, New Orleans, La. (319), 8:30-11 p. m., Dixola novelty orchestra; Fuzzy Wuzzy twins; Ed McCarthy and Irwin Leclere.

Mountain Standard Time Stations

KOA, Denver, Colo. (322.4), 6:30 p. m., Herbert White and his Silver State orchestra; 8, KOA orchestra; "Trail Blazers of the Rockies;" Elizabeth Jacoway Mathews, soprano; Helen Pierce Vincent, tenor; Royden S. Massey, tenor; Mrs. Royden S. Massey, accompanist; "The Best Opportunity Yet," Dr. David Carson Bayless.

Pacific Standard Time Stations

KFWB, Hollywood, Calif. (252), 6-7 p. m., children's hour, Big Brother of KFWB; 7-7:45, Radio Doings question and answer period, K. G. Ormiston, technical editor; Van Sisters trio; J. Stanley Fulbright, tenor; 8-9, program, Star Motor company dance orchestra, Vic Beal and Frank Pierce, comedy songs; 9-10, Harold's Collegians, Corrine Cleveland, blues singer; 10-11, Warner Bros. frolic, direction Charlie Wellman.
KGO, Oakland, Calif. (361.2), 6-7 p. m., dinner concert, Wiley B. Allen company; 8, "Reviving the Apparently Drowned," Hugh Barrett Dobbs; "A Look into the Beehive," Professor E. R. De Ong; "Symposium on the New Education," Williams institute; "Rome," Helene Phillips; "Chats about New Books," Joseph Henry Jackson; "From a Composer's Workshop—Voice," Arthur S. Garbett; "Inside Dope on Curing Automobile Ills," Louis P. Signer; Arion trio.
KNX, Hollywood, Calif. (336.9), 5:30-6:15 p. m., Wurlitzer pipe organ studio; 6:15, travel talk, W. F. Alder; 6:30-7, Atwater Kent Radio orchestra, Paul Finstein, leader; 7-7:30, Mutual Motors mirth program; 7:30-8, Mexicon music, Columbia Outfitting company; 8-9, program, L. W. Stockwell company; 9-10, program, Listenwalter and Gough; 10-11, Goodrich Silvertown Cord dance orchestra, Lilyan May Challenger, contralto; 11-12, Ray West's Cocoanut Grove dance orchestra.
KPO, San Fransisco, Calif. (428.3), 6:40 p. m., Waldemar Lind and the States Restaurant orchestra; 8-10, studio program; 10-11, Waldemar Lind and the States Restaurant orchestra.
KTCL, Seattle, Wash. (305.9), 9-10 p. m., National Machines Sales company studio program.

Tuesday, August 25

Tuesday, silent night for: CHNC, CNRT, KFAE, KFKX, KFUO, KOA, PWX, WAHG, WBAV, WBBR, WCBD, WCTS, WEAO, WHAD, WHAZ, WKAQ, WLIT, WOR, WOS, WSMB, WTAM.

Atlantic or Eastern Daylight Saving Time Stations

CKAC, Montreal, Can. (410), 7 p. m., "Hygiene;" 7:30, Windsor hotel dinner concert; 8:30, "Tourists' Attractions in Quebec;" C. P. O. S. S. Montcalm's orchestra; 10, dance orchestra, Windsor Hotel Cascades room.
CNRA, Moncton, Can. (313), 9 p. m., "Sweet Clover," Murray players; Imperial theater orchestra; CNRA dance orchestra.
WCAU, Philadelphia, Pa. (278), 7:30 p. m., recital arranged by N. Snellenburg and Co.; 8, concert; 10, Harry Link and his gang; 10:30, Billy Hayes and his Cathay Tea garden dance orchestra.
WEAF, New York, N. Y. (491.5), 4-4:10 p. m., Amy Hopkins Larremore, soprano; 4:10-4:20, Morris Kall, violinist; 4:20-4:30, Amy Hopkins Larremore; 4:30-5, women's program; 6-7, dinner music, Waldorf-Astoria; 7-7:10, Florence Burns, contralto; 7:10-7:30 Columbia university lecture; 7:30-8, salon concert; 8-8:10, talk, Bank of America; 8:10-8:30, salon concert; 8:30-9, Gold Dust twins; 9-10, Eveready hour; 10-11, grand opera, "La Forza del Destino." WEAF Grand Opera company; 11-12, Vincent Lopez and his orchestra.
WEBJ, New York, N. Y. (272.6), 7-7:15 p. m., Bonne's Recreation orchestra; 7:30-8, Frank Cork's Luna Park orchestra; 8-8:10, railroad talk, Dr. C. P. Segard; 8:15-8:30, Kathryn Connolly, soprano; 8:30-9, Arthur Pryor's concert band.
WFI, Philadelphia, Pa. (394.5), 1 p. m., Bellevue Stratford concert trio; 3, Caroline Hoffman, pianist; 6:45, Bellevue Stratford Roof Garden orchestra; 8:30, Gold Dust Twins; 9, Eveready hour; 10, grand opera, "La Forza del Destino;" 11, Bellevue Stratford dance orchestra.
WGBS, New York, N. Y. (315.6), 6-6:30 p. m., children's program; 6:30-7, Comus club orchestra; 7-8,

(Continued on page 10)

KOA GIVES TALK FOR FATHERS MONDAY

Tuesday, August 25

(Continued from page 9)

Meyer Davis' orchestra; 8:30-9:30, Scandinavian program; 9:30-10, Robert Murray, pianist; Irene Bennet, pianist; 10:30-11:30, Meyer Davis' orchestra.

WGR, Buffalo, N. Y., (319), 2:30-4:30 p. m., WGR's afternoon program; 6:30-7:30, Vincent Lopez Hotel Statler dance orchestra, Harold Gieser, director; 8-11, jointly with WEAF, including Gold Dust Twins, Eveready hour, and the grand opera, "La Forzaz Del Destino."

WHAR, Atlantic City, N. J. (275), 2 p. m., Seaside hotel trio; 7:30, book review, Mrs. James Lord; 8, Seaside hotel trio; 11:15, Strand theater organ recital.

WHN, New York, N. Y. (361.2), 4:30-4:45 p. m., Uncle Robert's chat to children and grown folk; 7:30-8, Will

Louis Harlow is the leader of the Aleppo Drum Corps or Shriners' band which plays every Monday evening at WBZ, Springfield. This band is internationally famous, due largely to Mr. Harlow's competent directing.

Oakland's Chateau Shanley; 8-8:30, Colonial Aces; 9:30-10, Palisades Amusement Park orchestra; 11-11:30, Silver Slipper revue.

WIP, Philadelphia, Pa. (508.2), 3:14 p. m., song of the surf; 3:30, Comfort's philharmonic orchestra; 6:05, Benjamin Franklin concert orchestra; 7, Uncle Wip's bedtime stories; 8, Comfort's philharmonic orchestra; 8:45, song of the surf; 8:50, Veselli's band; 10:03, weekly movie talk; 10:30, Traymore hotel dance orchestra; 11, California Night Hawks' dance orchestra.

WJAR, Providence, R. I. (305.9), 7:30 p. m., studio program; 8:30, Gold Dust Twins; 9, Eveready hour.

WJY, New York, N. Y. (405.2), 7:30-8:30 p. m., Hotel Ambassador ensemble, Henry Vander Zanden, director.

WJZ, New York, N. Y. (454.3), 1-2 p. m., Nathan Abas' Hotel Pennsylvania orchestra; 4:30-5:30, Bernhard Levitow's Hotel Commodore orchestra; 7-7:15, Frank Dole's dog talk; 7:15-8, Joseph Strissof's Hotel Vanderbilt orchestra; 8-8:10, Wall Street Journal review; 8:10-8:25, NYU Air college; 8:25-10:30, Stadium concert.

WLIT, Philadelphia, Pa. (394.5), 11 a. m., organ recital; 12:02 p. m., daily almanac; Stanley theater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; talk, "Old Nooks and Corners of Philadelphia," by Chauncey Shortlidge; 4:30, Marcella North, pianist.

WMCA, New York, N. Y. (340.7), 7-8 p. m., "Jack Wilbur's Personalities;" 8:30-9, Columbia Amusement Park orchestra; 9-10, Asbury Park dance orchestra; 10-11, Chiropractic hour of music; 11-12, Ernie Golden and his Hotel McAlpin orchestra.

WNYC, New York, N. Y. (526), 6:30-6:40 p. m., "Home Economics," Mrs. Louis Reed Welzmiller; 7:10-7:30, the Canadians; 7:35-7:50, news of the day; 7:50-8, the Canadians; 8:05-10:30, program, Brooklyn Safety council.

WOO, Philadelphia, Pa. (508.2), 11 a. m., organ recital; 12:02 p. m., Golden's crystal tea room orchestra; 1:45, organ recital; 7:30, A. Candelori's orchestra.

WOR, Newark, N. J. (405.2), 6:30-7 p. m., Man in Moon; 7:15-7:30, sports talk, Bill Wathey.

Eastern Standard or Central Daylight Saving Time Stations

KDKA, Pittsburgh, Pa. (309.1), 8:45 p. m., concert; 10:30, concert, Grand theater.

KYW, Chicago, Ill. (536), 7-7:30 p. m., Congress hotel; 8-8:20, Charlotte Benensohn, soprano; Christiana Nisted, violinist; 8:20-8:45, talks, American Farm Bureau federation; 8:45-9:30, music; 10-11:30, evening at home.

WBBM, Chicago, Ill. (226), 8-12, Samovar orchestra; Charlie Garland, Tiny Dave Nudelman, College trio; Alamo orchestra; Alice Higgie, saxophonist; Jerry Cromack; Harold Anderson, accordionist; Roy Traueger; Harry Brailsford, mandolinist.

WBZ, Springfield, Mass. (333.1), 6 p. m., Leo Reisman's Hotel Lenox ensemble; 8, Evelyn LaFrance Daly, violinist; Eleanor Turner LaZazzera, accompanist; 8:15, to be announced; 8:30, Harry Cummings, harmonica; 8:45, Justin Sandridge, pianist; 9, Hotel Brunswick orchestra.

WCX, Detroit, Mich. (516.9), 2:30 p. m., band concert, Belle Isle; 6, dinner concert, Book-Cadillac hotel; 8, The Detroit Symphony orchestra; 10, the Red Apple club.

WEAR, Cleveland, Ohio (389.4), 7-8 p. m., dinner concert, Hotel Cleveland orchestra; Ivan Francisel, director; 8-9, Viennese Instrumental quartet; 9-10, Melody hour; 10-11, Instrumental program.

WEBH, Chicago, Ill. (370.2), 7:30-8:30 p. m., Oriole orchestra; Dorothy Herman Blum, soprano; Frank Bordner, baritone; Loos brothers, songs; 11:30-1, Oriole orchestra; Sandy Meek, tenor; Harry Sosnik, accompanist; Jack Penewell; Banks Kennedy; Paul Small.

WGN, Chicago, Ill. (370.2), 6:30-7:30 p. m., Drake concert ensemble; Blackstone string quintet; 8:30-9:30, studio program; 10:30-11:30, Drake hotel Terrace Garden program.

WGY, Schenectady, N. Y. (375.9), 1 p. m., "Who Kissed Barbara?" WGY Matinee players; 1:30, Stephen E. Boisclair, organist; 5:30, Hotel Van Curler orchestra; 7:45, New York Philharmonic orchestra; 9:20, Joseph A. Gregar, violinist; 10, dance orchestra, WRC.

WHT, Deerfield, Ill. (399.8), 7 p. m., Grayling's string trio; Jane McConnell, contralto; 7:30, August Bredemeier, tenor; Uncle Bill's Borden birthday party; 8, Agatha Karlen, reader; Eleanor Gilmour, soprano; Jelke musicale; 8:45, (238), Elmer Kaiser's Melody Masters, Berensen's Riverview band; 10:30, (399.8), Walter Ford's Cheerio orchestra; Paul Small, tenor; 11:30, Babee & Barr; Oscar Heather, tenor; Pat Barnes; 12, Brock Sisters; Walter Duffy, tenor; 12:30, Al Carney, organist.

WJR, Detroit and Pontiac (517), 7 p. m., Jean Goldkette's ensemble.

WKRC, Cincinnati, Ohio (422.3), 10 p. m., Sam Pusatori, baritone; Sam Bova, tenor; Pete Mincowski, violinist; A. Kirschner, pianist; Maxim Eastyluck, Russian baritone; Eugene Perazzo, pianist; 10:15, safety talk, John Arnold, safety director; 11:30, Marion McKay's Bond Hill House orchestra.

WLS, Chicago, Ill. (344.6), 6:30 p. m., Ralph Emerson, organist; Martha Meier, contralto; 7:15, early concert, Rex's Cornhuskers; 7:45, lullaby time, Ford and Glenn; 8, Better Music hour: Louis Victor Saar, pianist-composer; 9, R. F. D. program; Rex's Cornhuskers; Chubby Barker; 10, Jean St. Anne, French baritone; Anne Williams, soprano; Nubs Allan, contralto; Rex's Cornhuskers' dance music; 10:30, Grace Wilson, contralto; 10:40, Ford and Glenn time; 11, dance music, Rex's Cornhuskers; 11:15, "Solemn Old Judge's" program; 12-1 a. m., midnight revue; Ralph Emerson, organist.

WLW, Cincinnati, Ohio (422.3), 4 p. m., student recital, pupils of Leo Stoffregen; 6:30, instrumental trio; 7, WLW story lady, Mrs. Bertha W. Edmonds; 8, WLW orchestra; 8:30, Jake Rutz's Pumpkin Vine orchestra, Warren Foster, WLW's phenomenal boy soprano; 9, the Formica concert orchestra, William Stoess, director, Heley Remley, soloist; Beulah Barrett, accompanist.

WMAQ, Chicago, Ill. (447.5), 6 p. m., Chicago theater organ; 6:30, Jack Chapman's orchestra; 8, Chapman's orchestra; 8:30, travel talk, Clara Laughlin; 8:50, Elizabeth Stokes, soprano; 9:30, Jack Chapman's orchestra; 9:40, "Swimming."

WMBB, Chicago, Ill. (250), 7-8:30 p. m., Trianon ensemble; John S. Everett, baritone; Bernard Senescu, violinist; Marie Caruso, soprano; 8:30-10:30, Trianon orchestra; Woodlawn theater orchestra; Florence Tenney; Charles Agne, marimba soloist.

WMBF, Miami Beach, Fla. (384.4), 7-7:30 p. m., concert; 7:30-8, Fleetwood hotel orchestra; 10-12, Fleetwood hotel dance orchestra.

WQJ, Chicago, Ill. (447.5), 7-8 p. m., dinner concert, Ralph Williams and his Rainbo Gardens orchestra; Elsie D. Hoffman, soprano; Henrietta Nolan, violinist; Blanche E. Robinson, pianist; 10-1 a. m., Ralph Williams and his Rainbo Skylarks; Adelaide Steeg, contralto; songs, Jerry Sullivan; Rose Vanderbosch, pianist and soprano; Ila Shannabrook, soprano; Mack Sisters; Frank Blasco, boy tenor; Will Rossiter; Irene Flinean, soprano; Mary Jane, popular artists; 1-2, Ginger hour, Ralph Williams, the Ginger Man, Little Skylarks.

WRC, Washington, D. C. (468.5), 6:55 p. m., "Over the Seven Seas, Hong Kong-Canton;" 7:30, Philharmonic concert, Lewissohn stadium; 9:30, announced; 10, W. Spencer Tupman's Hotel Mayflower orchestra.

WREO, Lansing, Mich. (285.5), 8:15 p. m., Reo Motor Car company band; Reo Motor Car company band glee club.

WSAI, Cincinnati, Ohio (325.9), 7:45 p. m., chime concert, Robert Badgley; 8, Eveready hour, WEAF; 9, folk songs of all nations: Russian, Maxim Kastyluck; French, Howard Fuldner; Italian, Helen Nugent; German, Herbert Shatz; Bohemian, Maxim Kastyluck; Irish, Ferd Raine; Old English, Richard Pavy; Spanish sextet; American, Helene Kessing.

WTAM, Cleveland, Ohio (389.4), 6-7 p. m., dinner music, Hotel Statler concert orchestra; Maurice Spitalny, director.

WTAS, Elgin, Ill. (302.8), 8-10:30 p. m., Purple Grackle boys; Herbie Mintz, Flo Henrie, Lillian Bernard, Tony Corcoran, Violet Eaton, Phil Wilcox, Ruth Etting, Ned Miller, Brock Sisters.

WWJ, Detroit, Mich. (352.7), 6 p. m., dinner concert; 7, WEAF concert.

Central Standard Time Stations

KFAB, Lincoln, Nebr. (340.7), 6-7 p. m., dinner program; 7:30-8:30, Schmoller & Mueller program.

KFDM, Beaumont, Texas (315.6), 8-10 p. m., musical program.

KFMQ, Fayetteville, Ark. (299.8), 9 p. m., musical program, H. E. Schultz, director.

KFVE, University City, Mo. (240), 6:30 p. m., amusement review, Romaine Fielding; 10, Ramona Park orchestra; Martha Anderson.

KLDS, Independence, Mo. (441), 8 p. m., Helen Hicks, pianist; Earl J. Cox, cornetist; baritone horn, M. N. Grinter; F. G. Lee, baritone; Mrs. Clarence Koenig, H. O. Eyssell, sopranos; E. J. Cox, contralto.

KSD, St. Louis, Mo. (545.1), 7 p. m., Arne Arneson's concert orchestra.

KTHS, Hot Springs National Park, Ark. (374.8), 9 p. m., Whittington Park orchestra.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 4:05 p. m., Readers' club, Eleanor Poehler; 6, baseball scores; 6:05, dinner concert, Biley's St. Paul hotel orchestra; 7-9, national WEAF program; Eveready hour, grand opera; 9, baseball scores.

WDAF, Kansas City, Mo. (365.6), 3:30-4:30 p. m., Star's string trio; 6-7, School of the Air; piano tuning-in number on the duo-art; address; Tell-Me-a-Story lady; Plantation Players; 11:45-1 a. m., Nighthawk frolic; Merry Old Chief, Carl Nordberg's Plantation Players; K .C. Athletic club orchestra; organ selections, Ted Meyn.

WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Frensley Moore and his Black and Gold serenaders; 8:30-9:30, monthly program, Dallas advertising league; 11-12, Aida Choral club.

WHAD, Milwaukee, Wis. (275), 6-7 p. m., organ recital, Arthur Richter; 7-7:05, baseball scores.

WHAS, Louisville, Ky. (399.8), 7:30-9 p. m., Al Wiseman's Harmonaders; three-minute thrift talk.

WHO, Des Moines, Iowa (526), 7:30-8:30 p. m., musical program.

WMC, Memphis, Tenn. (499.7), 7:30 p. m., health talk, Dr. E. E. Francis; 8:30, Malcolm Burks' orchestra; 11, organ recital, Harry O. Nichols.

WOAI, San Antonio, Texas (394.5), 8:30-9:30 p. m., musical program, Penelope Borden, director.

WOAN, Lawrenceburg, Tenn. (282.8), 9-10 p. m., Vaughan Radio orchestra, saxophone quartet, male quartet, saxophone quartet.

WOAW, Omaha, Nebr. (526), 6 p. m., dinner program; 7-10, Radio review; Neal Jones; 9, First Christian church orchestra; 10:20, Franels Potter's Banjo orchestra; 12, Rialto theater.

WOC, Davenport, Iowa (483.6), 5:45-6 p. m., chimes concert; 6, baseball scores; 6:30-7, Gold Dust Twins, WEAF; 7-8, Eveready hour, WEAF; 8-9, musical program, artists from Clinton, Iowa; Harry Yeazelle Mercer, director.

Mountain Standard Time Stations

CNRR, Regina, Can. (356), 8 p. m., Grace Newman's concert party.

KOA, Denver, Colo. (322.4), 6:30 p. m., Herbert White and his Silver State orchestra.

Pacific Standard Time Stations

KFWB, Hollywood, Calif. (252), 6-7 p. m., children's hour, Big Brother of KFWB; 8-9, continuity program, Western's superservice garage, J. K. Frank; Great Western male quartet, Violet Preston, blues singer; 9-10, program, H. L. Crockett, Hudson Six orchestra; 10-11, Warner brothers' frolic, direction Charlie Wellman.

KGO, Oakland, Calif. (361.2), 6-7 p. m., dinner concert, Wiley B. Allen company; 8, KGO studio staff, Arion trio; 9:50, Radio Breezes, K. C. B.

KGW, Portland, Ore. (491.5), 7:30-8 p. m., baseball scores; 8-9, concert, Red Star line; 9-10, General Cord orchestra; 10-11, Herman Kenin's Multnomah hotel dance orchestra.

KHJ, Los Angeles, Calif. (405.2), 5:30-6 p. m., Leighton's Arcade cafeteria orchestra, Jack Cronshaw, leader; 6-6:30, Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, weekly visit of Queen Titania and Sandman from Fairyland, Louis F. Klein, auto-harp and harmonica, Charles Leslie Hill, readings; Uncle John; 9-10, program, Young's Market company; Uncle Remus, monologues; 10-11, Art Hickman's Biltmore hotel dance orchestra, Earl Burtnett, leader.

KNX, Hollywood, Calif. (336.9), 5:30-6:15 p. m., Wurlitzer pipe organ studio; 6:15, travel talk, W. F. Aider; 6:30-7, Atwater Kent Radio orchestra, Paul Finstein, leader; 7-8, Don Clark and his La Monica ballroom orchestra; 8-10, KNX feature program, arranged by Carrie Preston Rittmeister; 10-12, movie night at the Ambassador, Ray West's Cocoanut Grove dance orchestra, with Town Crier introducing film celebrities over the microphone.

KPO, San Francisco, Calif. (428.3), 7-7:30 p. m., Rudy Seiger's Fairmont hotel orchestra; 8-9, Shrine Chanters; 9-10, Avon string quintet; 10-11, Jack Coakley's Cabirians.

KTCL, Seattle, Wash. (305.9), 7-8 p. m., Simonds Saw and Steel company program; 8-9, Northwest Products night.

Baseball Scores

TABULATED below is a time table of the stations giving baseball scores this week. Stations are divided into the different standard times in use. The hours are given in the kind of time in use at each listed station:

Atlantic or Eastern Daylight Saving Time Stations

Saturday, August 22: 4:30, WJZ; 5:30, WCTS, WJZ; 6:40, WPG; 7:15, WOR; 7:25, WNYC; 8, WJZ.

Monday, August 24: 4, WJZ; 4:30, WJZ, WCAE; 5, 5:30, 6, WJZ; 7:15, WEEI, WOR; 7:25, WNYC; 8, WJZ.

Tuesday, August 25: 4, 4:30, 5, 5:30, 6, WJZ; 6:30, WEEI; 7:15, WOR; 7:25, WNYC; 8, WJZ.

Wednesday, August 26: 4, 4:30, 5, 5:30, 6, WJZ; 7:15, WOR; 7:25, WNYC; 7:45, WEEI; 8, WJZ.

Thursday, August 27: 4, 4:30, 5, 5:30, 6, WJZ; 6:30, WEEI; 7:15, WOR; 7:25, WNYC; 8, WJZ.

Friday, August 28: 4, 4:30, 5, 5:30, 6, WJZ; 7:15, WEEI, WOR; 7:25, WNYC; 8, WJZ.

Eastern Standard or Central Daylight Saving Time Stations

Saturday, August 22: 2, WGY; 2:30, KDKA; 2:45, KDKA, WMAQ; 3, KDKA, KYW; 3:15, KDKA; 3:30, KDKA, KYW; 3:55, WWJ; 4, WMAQ, KYW; 4:15, 4:30, KYW; 4:45, 5, KDKA, KYW; 5:55, WTIC; 6, WGN, WLS; 6:50, WTIC; 7, KDKA, WTIC; 7:30, WEBH, WLW; 9:55, KDKA.

Sunday, August 23: 6:30, WBZ; 6:55, WTIC; 9:50, WBZ.

Monday, August 24: 2, WRC; 2:45, WMAQ; 3:30, KDKA, KYW, WEAR; 3:45, WEAR; 3:55, WWJ; 4, KDKA, KYW, WMAQ; 4:30, KYW; 5, KDKA; 5:30, KYW; 5:55, WTIC; 6, WGN, WLS; 6:30, WBZ; 6:50, WTIC; 7:30, WEBH, WLW; 9:50, WBZ; 9:55, KDKA.

Tuesday, August 25: 2, WRC; 2:45, WMAQ; 3, KDKA, 3:30, KDKA, KYW, WEAR; 3:45, WEAR; 3:55, WWJ; 4, KYW, WMAQ; 4:30, KYW; 5, KDKA, KYW; 6, WGN, WLS; 6:30, WBZ; 7, KDKA; 7:30, WEBH, WLW; 9:50, WBZ; 9:55, KDKA.

Wednesday, August 26: 2, WRC; 2:45, WMAQ; 3:30, KDKA, KYW, WEAR, 3:45, WEAR; 3:55, WWJ; 4, KYW; 4:30, KYW; 5, KYW; 6, WGN, WLS; 6:30, WBZ; 6:50, WTIC; 7, KDKA; 7:30, WEBH, WLW; 9:50, WBZ; 9:55, KDKA.

Thursday, August 27: 2, WRC; 2:45, WMAQ; 3, KDKA, KYW; 3:30, KDKA, KYW, WEAR; 3:45, WEAR; 3:55, WWJ; 4, KYW; 4:30, KYW; 5, KDKA, KYW; 6, WGN, WLS; 6:30, WBZ; 6:50, WTIC; 7:30, WEBH, WLW; 9:50, WBZ; 9:55, KDKA.

Friday, August 28: 2:30, KDKA; 2:45, WMAQ; 3, KDKA, KYW; 3:30, KDKA, KYW, WEAR; 3:45, WEAR; 3:55, WWJ; 4, KYW, WMAQ; 4:30, KYW; 5, KDKA, KYW; 6, WGN, WLS; 6:30, WBZ; 6:50, WTIC; 7:30, WEBH, WLW; 9:50, WBZ; 9:55, KDKA.

Central Standard Time Stations

Saturday, August 22: 3:30, WDAF, WHAS; 4:30, WDAF, WFAA; 5, WDAF; 6, WCCO, WDAF, WOC; 6:20, WOAW; 6:30, WSMB; 9, WCCO; 9:15, KTHS.

Sunday, August 23: 3:30, 4, WDAF; 4:30, WFAA; 5, WDAF; 5:05, WOS; 6:45, WOC; 9, WCCO; 9:15, KTHS.

Monday, August 24: 3:30, WDAF, WHAS; 4, WCCO, WDAF; 4:30, WFAA; 5, WDAF; 5:05, WOS; 6, WCCO, WDAF, WOC; 6:30, WOAW, WSMB; 7, WHAD, WOAI; 9, WCCO.

Tuesday, August 25: 3, WOAI; 3:30, WDAF, WHAS; 4, WCCO, WDAF; 4:30, WFAA; 5, WDAF; 6, WCCO, WOC; 6:20, WOAW; 6:30, WSMB; 7, WHAD, WOAI; 8:45, WHAS; 9, KTHS, WCCO.

Wednesday, August 26: 3, WOAI; 3:30, WDAF, WHAS; 4, WCCO; 4:30, WDAF, WFAA; 5, WDAF; 5:05, WOS; 6, WCCO, WDAF, WOC; 6:30, WSMB; 7, WHAD, WOAI; 9:15, KTHS; 9, WCCO.

Thursday, August 27: 3, WDAF, WOAI; 3:30, WHAS; 4, WCCO, WDAF; 4:30, WFAA; 5, WDAF; 6, WCCO, WDAF, WOC; 6:20, WOAW; 6:30, WSMB; 7, WOAI; 9, WCCO; 9:15, KTHS.

Friday, August 28: 3, WDAF, WOAI; 3:30, WHAS; 4, WCCO, WDAF; 4:30, WFAA; 6, WCCO, WDAF, WOC; 6:20, WOAW; 6:30, WSMB; 8:45, WHAS; 9, WCCO; 9:15, KTHS.

Mountain Standard Time Stations

Monday, August 24: 6, KOA.
Tuesday, August 25: 6:30, KOA.
Wednesday, August 26: 6, KOA.
Thursday, August 27: 6:30, KOA.
Friday, August 28: 6, KOA.

Pacific Standard Time Stations

Saturday, August 22: 2:30-5, KNX; 6, KFOA; 6:15, KPO; 8, KFWB, KHJ.

Sunday, August 23: 6:30, KPO; 8, KHJ; 9, KFWB.

Monday, August 24: 6, KFOA; 6:15, KPO, 6:45, KGO; 7:30, KGW; 8, KFWB, KHJ.

Tuesday, August 25: 6, KFOA; 6:15, KPO; 6:45, KGO; 7:30, KGW; 8, KFWB, KHJ.

Wednesday, August 26: 2:30-5, KNX, 6, KFOA; 6:15, KPO; 6:45, KGO; 7:30, KGW; 8, KFWB, KHJ.

Thursday, August 27: 6:30, KFOA; 6:15, KPO; 6:45, KGO; 7:30, KGW; 8, KFWB, KHJ.

Friday, August 28: 2, 3, 4, KNX; 6, KFOA, KPO; 6:45, KGO; 7:30, KGW; 8, KFWB, KHJ.

Wednesday, August 26

Wednesday, silent night for: CHNC, CKAC, CNRT, KFDM, KFKX, KLDS, WBAV, WBBR, WCBD, WCTS, WFAA, WFI, WGBS, WGY, WHAR, WHAZ, WIP, WJY, WMC, WOAW, WORD, WPG, WRC, WREO, WTIC.

Atlantic or Eastern Daylight Saving Time Stations

CFCA, Toronto, Can. (356), 6:05 p. m., baseball scores; 10:45, Gilbert Watson and his orchestra.

CNRO, Ottawa, Can. (435), 8 p. m., Chateau Laurier concert orchestra; Fred Dunning, tenor; Norman McKeever, violinist; Gladys Seeley Browne, soprano; H. Winges, reader; Center theater concert orchestra; Alfred Edgecombe, pianist; Jack Fallen, violinist duet, flute, cello, Alfred Williams, Charles H. Mathe; Chateau Laurier dance orchestra.

WAHG, Richmond Hill, N. Y. (315.6), 7:30-7:45 p. m., Joe Zimmerman, pianist; 7:45-8, sports talk, Thornton Fisher; 8-8:15, Denton Vastow, tenor; 8:15-8:30, dulcimer and piano, Green and Perry; 8:30-8:45, Lafayette male quartet; 8:45-9, Joe Zimmerman; 9-9:15, Denton Vastow; 9:15-9:30, Green and Perry; 9:30-10, Lafayette male quartet; 10-10:15, Herman E. Fisher, reader; 10:15-10:55, Sunrise Trail orchestra; 11:05-11:30, Sunrise Trail orchestra.

WCAU, Philadelphia, Pa. (278), 6:30 p. m., Billy Hayes and his Cathay Tea Garden dance orchestra; 8, concert; 10:30, Jack Myers' Musical Architects.

WEAF, New York, N. Y. (491.5), 4-4:15 p. m., Leslie McLeod, tenor; 4:15-4:30, "The Next Step," Carrie Chapman Catt; 4:30-4:45, Winifred Bauer, pianist; 4:45-5, "Glimpses of Life," Eleanor Brown; 5-7, dinner music, Waldorf-Astoria; 7-7:30, services, United Synagogue of America; 7:30-9, concert, United States Army band; 9-10, "Old Timers Hour"; 10-11, Ipana Troubadours; 11-12, Hotel Bossert Marine Roof orchestra.

WEBJ, New York, N. Y. (272.6), 8-8:30 p. m., Lane trio; 8:45-9, Eddie Burke, Irish piper; 9-9:30, Isabel Henderson, soprano; 9:30-9:45, Eddie Burke; 9:45-10, Doris Sheldon, contralto.

WFI, Philadelphia, Pa. (394.5), 1 p. m., Bellevue Stratford concert trio; 3, Loretta Kerk, pianist; 8:45, Bellevue Stratford Roof Garden orchestra.

WGBS, New York, N. Y. (315.6), 6-6:30 p. m., children's program; 6:30-7:30, the Palisadians.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., WGR's afternoon program; 6:30-7:30, two piano recital; the Gospel Melodists; 9-9:30, John Dodsworth, reader; 9:30-10, Edween Short, heading a popular instrumental quartet; 11-1 a. m., supper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gieser, director.

WHN, New York, N. Y. (361.2), 10-10:30 p. m., Roseland dance orchestra; 10:30-11, Palisades Amusement Park orchestra; 11:30-12, Silver Slipper revue.

WIP, Philadelphia, Pa. (508.2), 3 p. m., song of the surf; 3:30, Comfort's Philharmonic orchestra; 6:05, Benjamin Franklin concert orchestra; 7, Uncle Wip's bedtime stories.

WJAR, Providence, R. I. (305.9), 7:30 p. m., program, WJZ.

WJZ, New York, N. Y. (454.3), 1:15-2 p. m., luncheon music; 4:30-5:30, Hotel Belmont tea music; 5:30-6, daily reports; 7-8, Cafe Boulevard orchestra; 8-8:10, Wall Street Journal review; 8:10-8:30, N. Y. U. Air college; 8:30-9:30, Edison hour; 9:30-9:45, "Bugs" Baer; 9:45-10:30, Wurlitzer musicale.

WLIT, Philadelphia, Pa. (394.5), 12:02 p. m., daily almanac; Stanley theater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 4:30, talk, auspices Philadelphia Home and School league; 7:30, Dream Daddy's bedtime stories; 8, Fairmount Park Symphony orchestra; 10, Arcadia cafe dance orchestra; 10:30, Chas. Frey's dance orchestra; 11, organ recital, Karl Bonawitz.

WMCA, New York, N. Y. (340.7), 6:30-7:30 p. m., Ernie Golden and his Hotel McAlpin orchestra; 8:30-8:45, Leo Woods entertainers; 8:45-9, "Lord Allinbroke and Rawstice," Jack Smiles; 9-10, Asbury Park dance orchestra; 11-12, Berkley-Carteret hotel dance orchestra.

WNYC, New York, N. Y. (526), 6-6:30 p. m., elementary lessons in Spanish, V. Harrison Berlitz; 6:30-7, advanced lessons in Spanish; 7:10-7:30, Larkin club orchestra; 7:30-7:35, police alarms; 7:35-8, Larkin orchestra; 8-8:05, baseball results; 8:15-10:15, concert, Shannon's band from Central Park; 10:15-10:30, songs, Kenneth Casey and Lou Altern.

WOO, Philadelphia, Pa. (508.2), 11 a. m., organ recital; 12:02 p. m., Golden's Crystal tea room orchestra; 4:45, organ recital; 7:30, United States Army band; 9, "Old Timers' Hour"; 10, Ipana Troubadours; 11, Hotel Adolphia Roof Garden orchestra.

WOR, Newark, N. J. (405.2), 6:15-7 p. m., Ben Goldfarb and his Bluebird orchestra; 7-7:15, sports talk, Bill Wathey; 8-8:10, "Topics of the Day," Spencer Armstrong; 9:15-9:30, talk, Dr. Vizetelly; 11-12, Central Park Casino orchestra, Flo Richardson and girls.

Eastern Standard or Central Daylight Saving Time Stations

KDKA, Pittsburgh, Pa. (309.1), 8:45 p. m., Dry Blitz hour of music.

KYW, Chicago, Ill. (536), 7-7:30 p. m., Congress hotel; 7:33-7:43, entertaining plans, Vivotte Groman; 8-9, Sapphire ladies' quartet; 10-12:30 a. m., midnight revue.

PWX, Havana, Cuba (400), 8:30 p. m., General staff band, Cuban army.

WBBM, Chicago, Ill. (226), 8-10 p. m., Samovar orchestra; Nate Caldwell; Maurice Silverman; Dave and Charlie; Harold Anderson, accordionist; Alamo orchestra; Sunset male quartet; 12-2, Samovar orchestra; Nate Caldwell, Roy Traueger, Wendell Weigert; Charlie and Dave; William Molnaire; Sunset male quartet.

George Ryall, violinist of the Meyer Davis orchestra, which is heard several times a week at KTHS, Hot Springs National Park, is a southern artist. His violin solos are apt to show a Dixie leaning.

WBZ, Springfield, Mass. (333.1), 6 p. m., Hotel Kimball trio; 8, Gustavo LaZazzera, cellist; 8:15, Margaret E. Smith, soprano; 8:30, Pauline Norrie, xylophonist; Ethel Parker Norris; 9, Lyman Stanley, pianist.

(Continued on page 11)

OPERA "NARCISSA" THURSDAY AT KPO

Wednesday, August 26

(Continued from page 10)

WCX, Detroit, Mich. (516.9). 2:30 p. m., band concert, Belle Isle; 6, dinner concert, Book-Cadillac hotel; 8, the Detroit Symphony orchestra.

WEAR, Cleveland, Ohio (389.4), 7-8 p. m., studio dinner concert.

WEBH, Chicago, Ill. (370.2), 7:30-8:30 p. m., Oriole orchestra; Florence Behrend, soprano; Howard Neumiller, pianist; 9:30-10:30, Oriole orchestra; Correll & Gosden; Robert York; 11:30-1 a. m., Oriole orchestra; Correll & Gosden; Robert York, tenor, Oriole orchestra.

WGN, Chicago, Ill. (370.2), 6:30-7:30 p. m., Drake ensemble; Blackstone string quintet; 8:30-9:30, studio program; 10:30-11:30, Drake hotel Terrace Garden program.

WHT, Deerfield, Ill. (399.8), 7 p. m., classical program, Al Carney, organist; Pauline Sachs, soprano; 7:30, Oscar Heather, tenor; Dean Remick, pianist; 8, Kitchen Klenzer Klassics: Jolke musical moments; 8:45, (238), Elmer Kaiser's Melody Masters: Berensen's Riverview band; 10:30, (399.8), Walter Ford's Cheerio orchestra; 11:30, Leota Lands, soprano; Carl Strodel, baritone; Wilkens and Martens; 12, Hickey and Johnson; Manfred Gottelf, pianist; 12:30 a. m., Al Carney, organist.

WIR, Detroit and Pontiac (517), 7 p. m., Jean Goldkette's ensemble; 10, Blue Room dance orchestra.

WKRC, Cincinnati, Ohio (422.3), 8 p. m. weekly book review, Alice B. Coy; 8:20, Marion McKay's Bond Hill House orchestra; 9, popular song features, Abe Farb, Merrell Schwartz, B. Aylward; 9:30, Marion McKay's orchestra.

WLS, Chicago, Ill. (344.6), 6:30 p. m., Ralph Emerson, organist; Martha Meler, contralto; 7:15, Rex's Cornhuskers' concert; 7:45, lullaby time, Ford and Glenn; 8, Perry Lee Huffaker, tenor; 8:13, lone scout program; 8:45, dance music, Rox's Cornhuskers; 9, farm program; Ford and Glenn; Cornhuskers brass quartet; 10, Eugene Schweizer, tenor; Suzanne France Schweizer, soprano; 10:40, Ford and Glenn time; 11-11:30, dance music, Rex's Cornhuskers.

WLW, Cincinnati, Ohio (422.3), 4 p. m., "Shut In" program; 7, dinner concert, Hotel Gibson orchestra, Robert Visconti, director; 7:20, talk; 10, Cino male quartet; soloist, Margaret Niesel; 11, varied organ selections, Johanna Grosse.

WMAQ, Chicago, Ill. (447.5), 6 p. m., Chicago theater organ recital; 6:30, Georgene Faulkner, the story lady; 8, Jack Chapman's orchestra; 8:30, announced; 9, musical program, Madolene Whitehead Sheffelman; 9:30, Chapman's orchestra.

WMBB, Chicago, Ill. (250), 7-8:30 p. m., operatic semi-classical program, Trianon ensemble; Lindsay McPhail, pianist; Bernard Senescu, violinist; Desmond Sullivan, cellist; Rebecca Agulnick, pianist; Phyllis Harries, soprano; Charles Agne, trumpet soloist; 8:30-10:30, Trianon orchestra; Woodlawn theater orchestra; Fisher and Wayne; Florence Tenney; Harold Stokes, accordionist; Lindsay McPhail, pianist; Geraldine Doyle, soprano.

WMBF, Miami Beach, Fla. (384.4), 7-7:30 p. m., concert; 7:30-8, Fleetwood hotel orchestra; 10-12, Fleetwood hotel dance orchestra.

WQJ, Chicago, Ill. (447.5), 7-8 p. m., dinner concert, Ralph Williams and his Rainbo Gardens orchestra; Otto A. Moore, baritone; LaVerne Hanson, accompanist; Izora Reynolds, musical reader; Helen Holman, soprano; 10-1 a. m., Ralph Williams and his Rainbo Skylarks; Jerry Sullivan; Rose Vanderbosch, pianist; Melodians; Esther Trostrud, mezzo-soprano; Alice Hessner, pianist; Anita Chellis, contralto; Fontella trio; Rick, Snyder and Gardner, harmony singers; Williamson Brothers and Joe Termini, mandollnists and guitarist; Fred A. Jacobsen, monologist; Paul Small, tenor; Gail Bandell, contralto; Clarence Theders, tenor; Kenneth Sterling, tenor, 1-2, Ginger hour.

WRC, Washington, D. C. (468.5), 5 p. m., U. S. Marine band concert.

WSAI, Cincinnati, Ohio (325.9), 10 p. m., golf talk; 10:10, Richard Gray, baritone; Robert Badgley, violinist; Ann Cockburn, pianist; 11, string quartet, playing Romanti period music.

WTAM, Cleveland, Ohio (389.4), 6-7 p. m., selected entertainers; 8-10, organ recital, artists; 10-11, Hollenden hour; 11-12, dance music, Frank Wilson's Euclid Beach Park orchestra.

WTAS, Elgin, Ill. (302.8), 8-10:30 p. m., Purple Grackle boys; Herbie Mintz, Evelyn Johnson, Art Stiller, Herbert Schroeder.

WWJ, Detroit, Mich. (352.7), 6 p. m., dinner concert.

Central Standard Time Stations

KFAB, Lincoln, Nebr. (340.7), 6-7 p. m., dinner program; 7:30-8, Roy P. Knotts and his Blue Moon orchestra.

KFMQ, Fayetteville, Ark. (299.8), 7:30 p. m., "Farm Filosofy," Cy Adams; "Community Fairs," Connie Bonslagel; "The College of Agriculture," Dean Dan T. Gray; "Picking and Packing Apples," E. A. Hodson.

KFUO, St. Louis, Mo. (545.1), 9:15 p. m., address, "Christianity vs. Materialism."

KFVE, University City, Mo. (240), 10 p. m., Orchestra Romaine; Leona Bloomer; Mrs. Elsa Herzog, accompanist.

KSD, St. Louis, Mo. (545.1), 7 p. m., Silverman's jazz band.

KHJ, Los Angeles, Calif. (405.2), 5:30-6 p. m., Leighton's Arcade cafeteria orchestra, Jack Cronshaw, leader; 6-6:30, Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, Dick Winslow, juvenile reporter, Baby Muriel MacCormac, Mickey McBan, screen starlets, Olga Mitana and Rose Rondzik, violin duets, Uncle John; 8, Dr. Mars Bumgardt, scientific lecturer; 8:30-9:30, program, Alva Radio company; 9:30-10, Piggly Wiggly girls stringed trio; 10-11, Art Hickman's Biltmore hotel dance orchestra, Earl Burtnett, leader.

KNX, Hollywood, Calif. (336.9), 5:30-6 p. m., Wurlitzer pipe organ studio; 6, talk on insect life, Harry W. McSpadden; 6:15, travel talk, W. F. Alder; 6:30-7, Atwater Kent Radio orchestra, Paul Finstein, leader; 7-8, Ambassador hotel concert orchestra, Josef Rosenfeld, director; 8-10, feature program, a presentation by G. Allison Phelps; 10-11, program, Hercules Gasoline company, program with a kick.

KPO, San Francisco, Calif. (428.3), 6:40 p. m., Waldemar Lind and the States Restaurant orchestra; 7-7:30, Rudy Seiger's Fairmont hotel orchestra; 8-9, program, Atwater Kent company; 9-10, Silvertown Cord orchestra; 10-11, Waldemar Lind and the States Restaurant orchestra.

KTCL, Seattle, Wash. (305.9), 7-8 p. m., Transportation club program; 8:15, friendly advisor, George Crandall; 10-11, Alaska weekly, studio program.

Frederick G. Rodgers, left, has a bass voice much appreciated at KDKA, Pittsburgh. Rose Brown, above, is the leading lady of the KGO players. She will appear Thursday night in "Sun-Up." Neita Osborne Rickarts, contralto, is one of the reasons WTAM, Cleveland, is popular. She will entertain during the dinner hour Monday.

KTHS, Hot Springs National Park, Ark. (374.8), 9 p. m., New Arlington hotel orchestra.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 6 p. m., baseball scores; 7, midweek church service, Wesley Methodist church, Rev. W. E. Clark, pastor; 8, musical program; 9, baseball scores; 10, Wallie Erickson's Coliseum dance orchestra; 11:30, organ recital, Eddie Dunstedter.

WDAF, Kansas City, Mo. (365.5), 6-7 p. m., School of the Air: piano tuning-in number of the duo-art; address; Tell-Me-a-Story lady; 8-9:15, classical music; Star's orchestra, vocal and instrumental soloists.

WHAD, Milwaukee, Wis. (275), 6-7 p. m., organ recital, Arthur Richter; 7-7:05, baseball scores; 8, open air concert, Milwaukee Park board band; Walter Claudet, director; 11:30-12:30 a. m., request organ recital, Saxe's Wisconsin theater, Edmund Fitch.

WHAS, Louisville, Ky. (399.8), 7:30-9 p. m., orchestra concert, Howard Koch, director.

WHO, Des Moines, Iowa (526), 6:30-7:30 p. m., Bankers' Life trio; 7:30-9, Williamson Brothers; Thyra Smith Mack, soprano; Mildred Carson, violinist; Grace Ullman, accompanist; Radio Ray Noble, baritone; 10:30-12, Corn Sugar dance orchestra.

WOAI, San Antonio, Texas (394.5), 8:30-9:30 p. m., Army night.

WOAN, Lawrenceburg, Tenn. (282.8), 9-10 p. m., Vaughan Radio orchestra; saxophone quartet; male quartet; saxophone quartet.

WOAW, Omaha, Nebr. (526), 6 p. m., popular program; 6:25, to be announced; 6:45, Randall's Royal Fontenelle orchestra; 9, Sunshine program.

WOC, Davenport, Iowa (483.6), 6 p. m., baseball scores; 9-10, Erwin Swindell, organist; Grace Huber-Lohnmiller, soprano.

WOS, Jefferson City, Mo. (440.9), 8 p. m., address, Enoch Underwood; musical program, Mrs. W. W. Bratton.

WSMB, New Orleans, La. (319), 8:30-10:30 p. m., Jacque DeMolay Commandery No. 2 Knight Templars band, Professor Cupero, conductor.

Mountain Standard Time Stations

KOA, Denver, Colo. (322.4), 6:30 p. m., Herbert White and his Silver State orchestra; 8, program, Ida McKinley Tent No. 3, Daughters of Veterans; Mary Frances Biedler, Graee A. Blair; M. C. Scotty; Cora Yegge; Maud Cole; Letta Brown; Holly Southworth, Irene Hubbell Morris, Dora H. Seidler; Leota Rader; 10, dance program.

Pacific Standard Time Stations

KFWB, Hollywood, Calif. (252), 6-7 p. m., children's hour, Big Brother of KFWB; 7-7:30, Mutual Motors half hour of mirth; 7:30-8, program, Bezerlyridge company; 8-9, Warner Bros. syncopators; Don McNamee and Geo. Green, accordion, banjo and piano duets; Frank Stever, baritone; Kathryn Martin, soprano; 9-10, program, Independent Furniture Manufacturing company; Darktown dance orchestra; 10-11, Warner Bros. frolic, direction Charlie Wellman.

KGO, Oakland, Calif. (361.2), 6-7 p. m., dinner concert, Baldwin Piano company; 8, program, Second Annual Pacific Radio Exposition and Convention; Marshall Geiselman, organist.

KGW, Portland, Ore. (491.5), 6-7 p. m., dance music, Jackie Souder's orchestra; 7:30-8, baseball scores; 8-10, concert, Western Auto Supply company; 10-11, concert, Sherman, Clay and company studio.

Thursday, August 27

Thursday, silent night for: CNRT, KFAB, KFAE, KFDM, KFKX, KFMQ, KFOA, KFUO, KFVE, KOA, KSD, KTCL, PWX, WAHG, WBAV, WBBR, WCEE, WEBJ, WHAD, WHAZ, WJJD, WKRC, WLIT, WOR, WOS, WRBC, WTAM.

Atlantic or Eastern Daylight Saving Time Stations

CHNC, Toronto, Canada (356.7), 9 p. m., Charles E. Bodley and his dance orchestra; Elsie Addison, contralto; Elsie White, soprano.

CKAC, Montreal, Can. (410), 7 p. m., health talks; 7:30, Windsor hotel dinner concert; 8:30, tourists' talk.

WAHG, Richmond Hill, N. Y. (315.6), 12:30-12:55 p. m., Joe Zimmerman, pianist; 12:55-1:05, time signals and weather report; 1:05-1:30, Joe Zimmerman.

WCAU, Philadelphia, Pa. (278), 6:30 p. m., Billy Hayes and his Cathay Tea Garden dance orchestra; 7:30, N. Snellenburg and company symphony orchestra; 8, recital; 10:30, Jack Meyers' Musical Architects' dance orchestra.

WCTS, Worcester, Mass. (268), 5:30 p. m., baseball scores; 10-11, Silvertown Cord orchestra from WEAF.

WEAF, New York, N. Y. (491.5), 4-4:10 p. m., Ruth M. Donaldson, soprano; 4:10-4:35, Metropolitan instrumental trio; 4:35-4:45, Ruth M. Donaldson; 4:45-5, talk, Cameron Rogers; 6-7, dinner music, Waldorf-Astoria; 7-7:30, services, Greater New York Federation of Churches; 7:30-8, Cushman's serenaders; 8-9, "Pop" concert; 9-10, Atwater Kent Radio artists; 10-11, Silvertown Cord orchestra; 11-12, Vincent Lopez and his Hotel Pennsylvania orchestra.

WFI, Philadelphia, Pa. (394.5), 1 p. m., Bellevue Stratford concert trio; 6:45, Bellevue Stratford Roof Garden orchestra; 8, "Pop" concert; 9, Atwater Kent Radio artists; 10, Silvertown Cord orchestra; 11, Bellevue Stratford Roof Garden dance orchestra.

WGBS, New York, N. Y. (315.6), 6-6:30 p. m., children's program; 6:30-7:30, Starlight Ramblers; 9:30-10:30, Piccadilly program.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., WGR's afternoon program; 6:30-7:30, Vincent Lopez Hotel Statler dance orchestra, Harold Gieser, director; 8-11, jointly with WEAF, including Atwater Kent artists and the Goodrich Silvertown Cord orchestra.

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

WHN, New York, N. Y. (361.2), 2:15-3:15 p. m., musical program; 8-8:30, Will Oakland's Chateau Shanley; 9-9:30, Jimmy Clark's entertainers; 9:30-10, Pallsades Amusement Park orchestra; 10:15-10:30, Loew's vaudeville headliners.

WIP, Philadelphia, Pa. (508.2), 3 p. m., Comfort's philharmonic orchestra; 6:05, Benjamin Franklin concert orchestra; 6:30, "Intimate Talks on Current Sports of the Day," Billy Roeap; 7, Uncle Wip's bedtime stories; 8, Comfort's Philharmonic orchestra; 8:45, song of the surf; 8:50, Veselli's band; 10, Gaylord and Young dance orchestra; 11, California Night Hawks' dance orchestra.

WJAR, Providence, R. I. (305.9), 8 p. m., studio program; 9, Atwater Kent Radio artists; 10, Goodrich Silvertown Cord orchestra.

WJY, New York, N. Y. (405.2), 7:30-8:30 p. m., Freddie Rich and his Hotel Astor orchestra.

WJZ, New York, N. Y. (454.3), 1-2 p. m., Nathan Abas' Hotel Pennsylvania orchestra, 4:30-5:30, Bernhard Levitow's orchestra; 8-8:10, Wall Street Journal review; 8:10-8:30, NYU Air college; 8:30-9:30, U. S. Marine band from WRC; 10-11, the Romanys' Royal hour of music.

WLIT, Philadelphia, Pa. (394.5), 12:02 p. m., daily almanac; Stanley theater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 4:30, talk, Dr. Harris Gruman.

WMCA, New York, N. Y. (340.7), 9-10 p. m., Asbury Park dance orchestra; 10-10:30, Snedden Weir, baritone; 11-12, Ernie Golden's hotel McAlpin orchestra.

WNYC, New York, N. Y. (526), 6:30-6:40 p. m., "Home Economics," Mrs. Louis Reed Welzmiller; 7:10-7:30, Arcady orchestra; 7:35-8, news of the day; 8:15-10:15, concert, Police band, Prospect Park; 10:15-10:30, songs.

WOO, Philadelphia, Pa. (508.2), 11 a. m., organ recital; 12:02 p. m., Golden's crystal tea room orchestra; 4:45, organ recital; 7:30, Hotel Adelphia Roof Garden orchestra, A. Candelori, director.

WOR, Newark, N. J. (405.2), 6:15-7:15 p. m., Tom Cooper's Country club orchestra; 7:15-7:30, sports talk, Bill Wathey.

Eastern Standard or Central Daylight Saving Time Stations

KDKA, Pittsburgh, Pa. (309.1), 8:45 p. m., concert; 10:15, concert, Willows.

KYW, Chicago, Ill. (536), 7-7:30 p. m., Congress hotel; 7:35-7:53, talks, American Farm Bureau federation; 8-8:20, twenty minutes of good reading, Rev. C. J. Jernin; 8:20-9:15, Katherine Johnson, soprano; Sallie Menkes, pianist; 9:15, talk, John C. Cutting; 10-11:30, evening at home.

WBBM, Chicago, Ill. (226), 8-12 midnight, Samovar orchestra; College trio; Harold Anderson, Charlie and Dave; Maurice Silverman; Roy Traueger; Ray Hibbeler.

WBZ, Springfield, Mass. (333.1), 6 p. m., Leo Reisman's Hotel Lenox ensemble; 7:30, concert, U. S. Marine band.

WCX, Detroit, Mich. (516.9), 2:30 p. m., band concert, Belle Isle; 6, dinner concert, Book-Cadillac hotel; 8, the Detroit Symphony orchestra.

WEAR, Cleveland, Ohio (389.4), 7-8 p. m., dinner concert, Hotel Cleveland orchestra; Ivan Francisci, director; 8-9, studio program, Freshman Masterpieco artists; 9-10, Chauncey Lee and his orchestra; 10-11, studio program, zither quartet.

WEBH, Chicago, Ill. (370.2), 7:30-8:30, p. m., Oriole orchestra; Riviera theater; 9:30-10:30, Oriole orchestra; Katherine Forbes, soprano; Beulah Ladon, violinist; 11:30-1, Oriole orchestra; Wayne Myers; Paul Small; Loos Brothers.

WGN, Chicago, Ill. (370.2), 6:30-7:30 p. m., Drake concert ensemble; Blackstone string quintet; 8:30-9:30, studio program; 10:30-11:30, Drake Hotel Terrace Garden program.

WGY, Schenectady, N. Y. (379.5), 5:30 p. m., dinner program; Ten Eyck hotel; 6:35, book chat, L. L. Hopkins; 6:40, Joseph Kopezynski, baritone; Francis Victor Broady, violinist; 7:30, Marine band, WRC; 9, Royal hour, WJZ; 10, Ivan Strough, violinist; Clara Haber, contralto; 10:30, Stephen E. Boisclair, organist.

WHT, Deerfield, Ill. (399.8), 7 p. m., Grayling's string trio; Bryce Talbot, baritone; 7:30, Ruth Lyon, soprano; 8, Good Luck Girl; 8:45, (238), Elmer Kaiser's Melody Masters; Berensen's Riverview band; 10:30, (399.8), Walter Ford's Cheerio orchestra; U. S. L. Battery of Entertainers; 11:30, Hill, Hirsh & Gorney; 12, Agatha Karlen, reader; Harry Sosnick, pianist; 12:30, Al Carney, organist.

WJR, Detroit and Pontiac (517), 7 p. m., Jean Goldkette's ensemble; 10, Blue Room dance orchestra.

WLS, Chicago, Ill. (344.6), 6:30 p. m., Ralph Emerson, organist; Gladys Weyforth, contralto; 7:15, Rex's Cornhuskers' concert; 7:45, lullaby time, Ford and Glenn; 8-8:55, Better Music hour: Jean St. Anne, French baritone; William Hayden, tenor.

(Continued on page 12)

WEAR PRESENTS ZITHER QUARTET; (

Index to Popular Concerts

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

Popular

Atlantic or Eastern Daylight Saving Time Stations

Saturday, August 22: 6:30, WGBS; 8:15, WEAF; 8:45, WIP; 10, WCAU; 10:15, WNYC.

Sunday, August 23: 7:20, WEAF, WJAR; 7:30, WEEI; 9, WNYC; 10, WNYC.

Monday, August 24: 7:30, WAHG, WHN, WMCA; 8:30, WAHG, WOR; 8:45, WAHG; 9, WHAR, WOR; 9:30, WMCA; 10, WAHG; 10:30, WMCA; 12, WHN.

Tuesday, August 25: 7, WMCA; 7:15, WEBJ; 8, WHAR, WHN; 8:15, WEAF, WEEI, WFI; 8:30, WEEI, WFI; 8:30, WEEI, WFI, WHN, WJAR; 8:45, WIP; 9:45, WCAU, WMCA.

Wednesday, August 26: 7:30, WAHG; 8:15, WAHG; 8:30, WEEI, WMCA; 9, WMCA; 10, WAHG; 10:15, WNYC; 11, WCAE; 12, WMCA. 12, WMCA.

Thursday, August 27: 7:30, WEAF; 8, WHN; 8:45, WIP; 9, WHN; 10:15, WHN.

Friday, August 28: 7, WEBJ; 7:30, WAHG; 8, WEAF, WHN; 8:15, WAHG; 8:45, WLIT; 9, WAHG, WEEI; 10, WLIT; 10:15, WNYC; 10:45, WEAF; 11, WMC; 11:30, WLIT.

Eastern Standard or Central Daylight Saving Time Stations

Saturday, August 22: 6:20, WWJ; 8, WBBM, WHT, WLS, WMAQ, WTAS; 8:30, WMBB; 9, WBBM, WLS, WTAM; 9:30, WMBB, WTAS; 10, WBBM, WKRC, WLS, WQJ; 10:30, WCEE, WGES, WHT, WJJD, WTAM; 11, WBBM, WGES, WLS, WQJ; 11:30, WCEE, WJJD; 12, WBBM, WHT, WLS, WQJ, WSAI; 1, WBBM, WQJ, WTAM; 2, WTAM.

Sunday, August 23: 6:20, WWJ; 8, WBBM, WTAS; 8:30, WBZ, WMBB; 9, WBBM, WTAS; 9:15, WHT; 9:30, WMBB; 10, WTAS; 10:30, WGES; 11, WGES, WTAS; 12, WBBM, WJJD; 1, WBBM, WJJD.

Monday, August 24: 6, WBBM; 8, WLW, WTAS; 9, WTAS; 9:30, WHAZ; 10, WLW; 10:15, WHT; 10:30, WCEE, WJJD; 11, WHT; 11:30, WCEE, WHT, WJJD; 12, WHT, WJJD.

Tuesday, August 25: 8, WBBM, WTAS; 8:30, WMBB; 9, WBBM, WHT, WTAS; 9:15, WREO; 9:30, WEBH, WMBB; 10, WBBM, WLS, WQJ, WTAS; 10:30, WCEE, WEBH, WGES, WGN, WHT, WJJD, WLS, WQJ; 11, WBBM, WHT, WLS; 11:30, WCEE, WEBH, WGES, WHT, WJJD, WQJ; 12, WIBO, WLS; 12,30, WEBH, WJJD; 1, WBBM, WIBO, WQJ; 2, WIBO.

Wednesday, August 26: 8, WEAO, WLS, WTAS; 8:30, WBBM, WMBB; 9, WBBM, WKRC, WTAS; 9:30, WEBH, WMBB; 10, KYW, WHT, WIBO, WQJ, WSAI; 10:30, WCEE, WEBH, WGN, WHT, WJJD; 11, KYW, WGES, WHT, WIBO, WLS, WQJ, WSAI; 11:30, WCEE, WEBH, WJJD; 12. WGES, WQJ; 12:30, WEBH, WJJD; 1, WQJ.

Thursday, August 27: 8, WBBM, WTAS; 8:15, WREO; 8:30, WMBB; 9, WBBM, WTAS; 9:30, WEBH, WMBB; 10, WBBM, WQJ, WTAS; 10:03, WLW; 10:30, KYW, WEBH, WGN, WHT; 11, WHT, WQJ, WTAS; 11:15, WLW; 11:30, WEBH; 12, WBBM, WIBO, WQJ; 12:30, WEBH; 1, WIBO, WQJ; 2, WIBO.

Friday, August 28: 8, WBBM, WTAS; 8:30, WBZ, WEBH, WMBB; 9, WBBM, WTAS; 9:30, WMBB; 10, KYW, WEBH, WIBO, WLS, WMBB, WTAS; 10:15, WHT; 10:30, WCEE, WGN, WJJD, WQJ; 11, KYW, WEBH, WHT, WIBO, WLS; 11:30, WCEE, WJJD, WQJ; 12, WEBH, WIBO, WQJ; 12:30, WJJD; 1, WQJ.

Central Standard Time Stations

Saturday, August 22: 6:30, WFAA; 7, KSD; 8:30, WOAI, WSMB; 9, KFRU; 9:25, KTHS; 9:30, WSMB; 10, KFRU, KFVE; 10:45, WSB; 11, WBAP, KFRU, KFVE, WOAW.

Sunday, August 23: 9:30, WFAA, WOAI; 11, WBAP.

Monday, August 24: 6:30, WFAA, WOAW; 6:45, WCCO; 7:30, KFAB; 8, KFAB, KFRU; 8:30, KFAB, WMC, WOAI, WSMB; 9, KFRU; 9:30, WSMB; 10, KFVE, WOAW; 10:45, WSB.

Tuesday, August 25: 6:30, WOC; 8, WCCO, WSB; 8:30, WOAI; 10, KFVE; 10:30, KFRU, WOAW; 10:45, WSB; 11:30, KFRU; 11:45, WDAF; 12, WOAW.

Wednesday, August 26: 7:30, KFAB, 8, KFRU; 8:30, KFAB, WSMB; 9, KFRU; 9:30, WSMB; 10, KFRU, KFVE; 10:45, WSB.

Thursday, August 27: 6, WOAW; 8, WCCO; 8:30, WOAI, WSMB; 9, WOAW; 9:30, WSMB; 11:45, WDAF.

Friday, August 28: 8, KFAB, WDAF; 8:30, KFAB, WOAI; 9, WHAD; 10, KFVE; 10:45, WSB; 11, KFRU, WMC; 12, KFRU.

Mountain Standard Time Stations

Sunday, August 23: 8-11, KFWA.

Wednesday, August 26: 11, KFWA. KFWA.

Friday, August 28: 9-11, KFWA.

Pacific Standard Time Stations

Saturday, August 22: 8, KFWB, KNX; 9:30, KTCL; 10, KFI, KFWB; 11, KNX; 11:30, KHJ, KTCL; 12, KNX; 12:30, KHJ; 1, KNX.

Sunday, August 23: 8, KHJ; 9, KFWB; 10, KFWB.

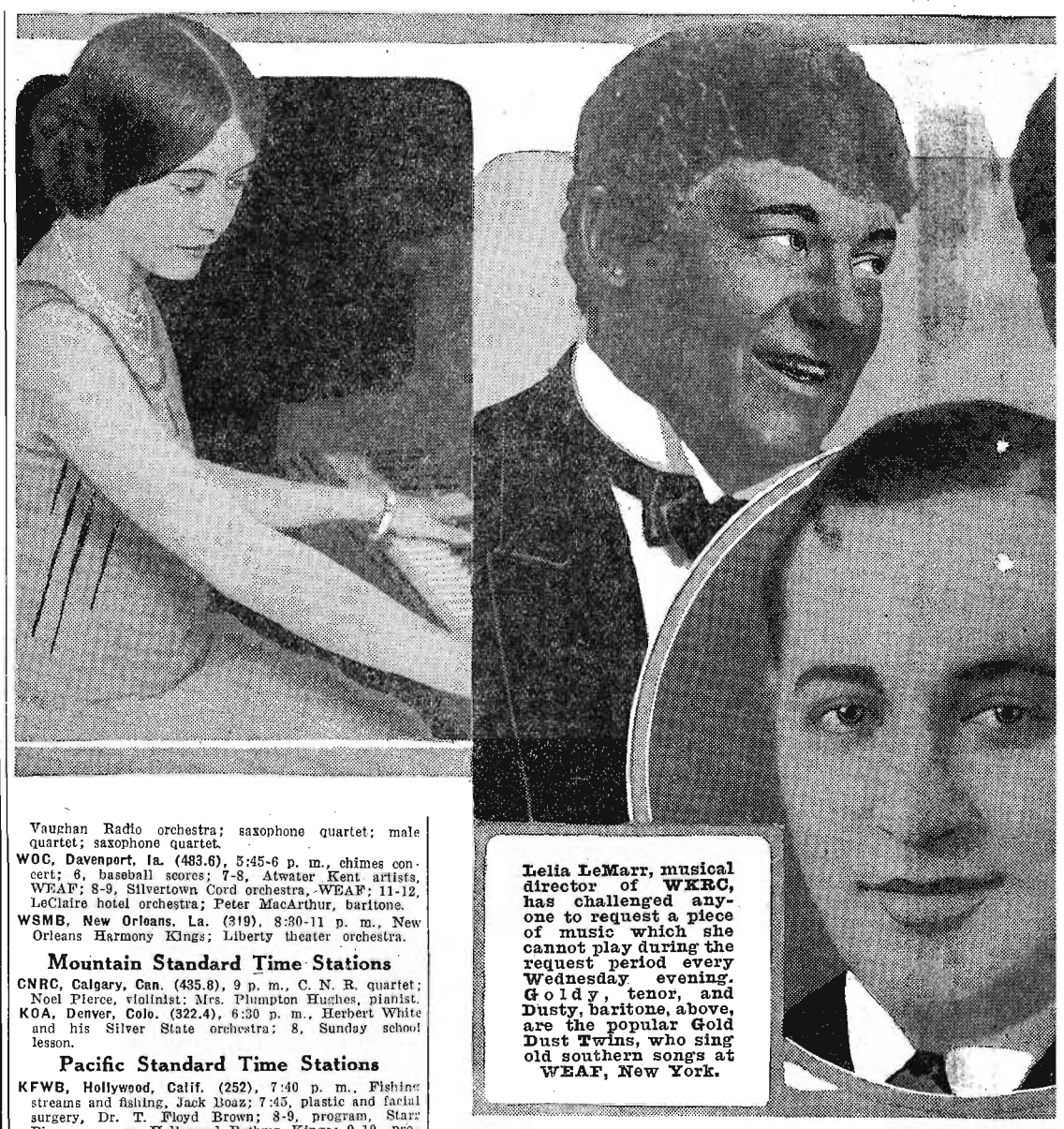
Monday, August 24: 9, KNX; 10, KFWB; 11, KFWB; 12, KFWB.

Tuesday, August 25: 8, KFWB, KNX; 9, KFWB, KNX, KPO; 10, KFWB, KNX; 11, KFWB.

Wednesday, August 26: 8, KGW, KPO; 9, KFWB, KNX; 10, KNX; 11, KFWA, KFWB; 11, KNX.

Thursday, August 27: 8, KHJ; 9, KHJ; 10, KFWB, KHJ; 11, KNX.

Friday, August 28: 8, KFWB; 9, KFWB, KHJ, KNX; 10, KFWA, KFWB, KNX; 10:30, KGW; 11, KFWB; 11:30, KGW; 12, KFWB, KNX; 1, KNX.



Lelia LeMarr, musical director of WKRC, has challenged anyone to request a piece of music which she cannot play during the request period every Wednesday evening. Goldy, tenor, and Dusty, baritone, above, are the popular Gold Dust Twins, who sing old southern songs at WEAF, New York.

Thursday, August 27

(Continued from page 11)

WLW, Cincinnati, Ohio. (422.3), 4 p. m., piano recital, Adelaide Apfel; 7, dinner concert, Hotel Gibson orchestra, Robert Visconti, director; 7:50, Seckatary Hawkins; 10, three minute message, Civil Service Department of U. S. Government; 10:03, entertainment and dance program, Doherty Melody boys; feature player-role artists Irene Downing and Marjorie Hebestreit organ and piano; WLW orchestra.

WMAQ, Chicago, Ill. (447.5), 6 p. m., Chicago theater organ recital; 6:30, Jack Chapman's orchestra; 8, Chapman's orchestra; 8:45, musical program; 9:30, Chapman's orchestra.

WMBB, Chicago, Ill. (250), 7-8:30 p. m., English music, John S. Everett, baritone; Trianon ensemble; Bernard M. Senescu, violinist; Wayne King, saxophonist; Marie Caruso, soprano; 8:30-10:30, Woodlawn theater orchestra; Trianon orchestra; Florence Tenney: Lindsay McPhail, pianist; "The Street Faker," Clyde Hager.

WMBF, Miami Beach, Fla. (384.4), 7-7:30 p. m., concert; 7:30-8, Fleetwood hotel orchestra; 10-12, Fleetwood hotel dance orchestra.

WQJ, Chicago, Ill. (447.5), 7-8 p. m., dinner concert, Ralph Williams and his Rainbo Gardens orchestra; program, Hinshaw Conservatory of Music; 10-1 a. m., Ralph Williams and his Rainbo Skylarks; Tula Miller, Margaret Walbank, soprano and contralto, duetists; songs, Willie Horwitz, Jerry Sullivan; Rose Vanderbosch, pianist and soprano; Bob Birdson and Ben Burke; pianologue, Ralph Keim; Anne Keim, mezzo-soprano; Marie Wright, soprano; Mary Jane, prima donna; Lew Butler and artists; 1-2, Ginger hour.

WRC, Washington, D. C. (468.5), 6:55 p. m., baseball scores; 7, Shoreham hotel orchestra; 7:30, U. S. Marine band concert; 9, Romany orchestra; 10, Meyer Davis' LeParadis roof band.

WREO, Lansing, Mich. (285.5), 8:15-9:45, p. m., Reo Broadcasting orchestra; Reo male quartet; Rajoan trio.

WSAI, Cincinnati, O. (325.9), 7 p. m., "Pop" concert; 8, Atwater Kent artists; 9, Silvertown Cord orchestra, Joseph Knecht, director.

WTAM, Cleveland, Ohio (389.4), 6-7 p. m., dinner music, Hotel Statler concert orchestra; Maurice Spitalny, director.

WTAS, Elgin, Ill. (302.8), 8-12 midnight, Purple Grackle boys; Herbie Mintz, Violet Eaton, Roland Hinckle, Flo Henrie, Lillian Bernard, Phil Wilcox, Brock sisters.

WWJ, Detroit, Mich. (352.7), 6 p. m., dinner concert; 7, WEAF concert.

Central Standard Time Stations

CNRW, Winnipeg, Can. (384.4), 9 p. m., Fort Garry hotel trio; Frank Redlich, cellist; Aimee Ould, reader; Richardson Irwin, tenor; Emile Mignacca, violinist.

KLDS, Independence, Mo. (441), 8 p. m., Blanche Trainor, pianist; Wilmont Palmer, cornetist; Otis Swart, violinist; Bernice Griffith, soprano; Aileen Pemberton, mezzo-soprano; Emily Foley, contralto.

KTHS, Hot Springs National Park, Ark. (374.8), 9 p. m., Lawson Reid, organist.

WCBD, Zion, Ill. (344.6), 8 p. m., mixed quartet, saxophone quintet, celestial bells; Misses Sweeney and Naffziger, Mrs. Crowe, vocal trio; Mrs. Ralph Steel, soprano; John McElroy, saxophonist; Esther Crary, reader; Alexander DePew, flutist; Beulah Myhre, pianist.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 5:30 p. m., children's hour, Eleanor Poehler; 6, baseball scores; 7-9, WEAF program; Atwater Kent artists; Silvertown Cord orchestra; 9, baseball scores.

WDAF, Kansas City, Mo. (365.5), 6-7 p. m., School of the Air; piano tuning-in number on the duo-art; book talk, Louis Mecker; Tell-Me-a-Story lady; Plantation Players; 11:45-1, Nighthawk frolic, Merry Old Chief, Plantation Players; Ted Meyn, organist.

WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Lone Star Five's seven-piece orchestra; 8:30-9:30, Farmers' Friendly hour melodie club, Maurince Mitchell, director; 11-12, Western Electric Four.

WHAD, Milwaukee, Wis. (275), 6-7 p. m., organ recital, Saxe's Wisconsin theater, Arthur Richter; 7-7:05, baseball scores; 8-10, popular dance hits, Wisconsin Roof Garden orchestra.

WHAS, Louisville, Ky. (399.8), 7:30-9 p. m., Fine Arts trio; String Division K. & I. terminal railroad orchestra.

WHO, Des Moines, Iowa (526), 7:30-9 p. m., musical program; 11-12, dance program.

WMC, Memphis, Tenn. (499.7), 8:30, p. m., musical program.

WOAI, San Antonio, Tex. (394.5), 8:30-9:30 p. m., Menger hotel trio; 9:30-10:30, Jimmy's Joys.

WOAN, Lawrenceburg, Tenn. (282.8), 9-10 p. m., Vaughan Radio orchestra; saxophone quartet; male quartet; saxophone quartet.

WOC, Davenport, Ia. (483.6), 5:45-6 p. m., chimes concert; 6, baseball scores; 7-8, Atwater Kent artists, WEAF; 8-9, Silvertown Cord orchestra, WEAF; 11-12, LeClaire hotel orchestra; Peter MacArthur, baritone.

WSMB, New Orleans, La. (319), 8:30-11 p. m., New Orleans Harmony Kings; Liberty theater orchestra.

Mountain Standard Time Stations

CNRC, Calgary, Can. (435.8), 9 p. m., C. N. R. quartet; Noel Pierce, violinist; Mrs. Plumpton Hughes, pianist.

KOA, Denver, Colo. (322.4), 6:30 p. m., Herbert White and his Silver State orchestra; 8, Sunday school lesson.

Pacific Standard Time Stations

KFWB, Hollywood, Calif. (252), 7:40 p. m., Fishing streams and fishing, Jack Boaz; 7:45, plastic and facial surgery, Dr. T. Floyd Brown; 8-9, program, Starr Piano eompany, Hollywood Rythmn Kings; 9-10, program, Don P. Smith, Inc., Diana-Moon dance orchestra, Roger's Hawaiian trio; 10-11, Warner Bros. frolic, direction Charlie Wellman.

KGO, Oakland, Calif. (361.2), 8 p. m., "Sun-Up," KGO players; Arion trio; 10-1, Ben Black's orchestra.

KGW, Portland, Ore. (491.5), 7:30-8 p. m., baseball scores; 10-12, dance music, Herman Kenin's Multnomah hotel orchestra.

KHJ, Los Angeles, Calif. (405.2), 5:30-6 p. m., Leighton's Arcade cafeteria orchestra, Jack Cronshaw, leader; 6-6:30, Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, Radio kiddies hour with Dickie Brandon and "Sunny" Jane Hughes of movie fame, Uncle John; 8-10, History of the Pacific Electric Railway with musical settings (Episode 2) arranged by J. Howard Johnson; 10-11, Art Hickman's Biltmore hotel dance orchestra, Earl Burtnett, leader.

KNX, Hollywood, Calif. (336.9), 5:30-6:15 p. m., Wurlitzer pipe organ studio; 6:15, travel talk, W. F. Alder; 6:30-7, Atwater Kent Radio orchestra, Paul Finstein, leader; 7-8, program, John A. Evans corporation; 8-9, KNX feature program; 9-10, program, May company department store; 10-11, Ray West's Cocoanut Grove dance orchestra from Ambassador hotel.

KPO, San Francisco, Calif. (428.3), 6:40 p. m., Waldemar Lind and the States Restaurant orchestra; 7-7:30, Rudy Seiger's Fairmont hotel orchestra; 8-9, program, Caswell Coffee company; 9-10, Opera Narcissa, Mary Carr Moore; 10-11, Jack Coakley's Cabirians.

Friday, August 28

Friday, silent night for: CHNC, CKAC, KFAE, KFUO, KFMQ, KGO, KLDS, PWX, WBBR, WCBD, WCTS, WFI, WGBS, WHAZ, WIP, WJY, WKRC, WLW, WOR, WRC, WREO, WSAI, WSMB, WTAM.

Atlantic or Eastern Daylight Saving Time Stations

CNRA, Moncton, Can. (313), 9 p. m., Mrs. Irvine Malcolm, pianist; Vera Sharpe, pianist; Mrs. J. Clyde Stevens, soprano; J. G. Davis, tenor; Anna Malenfant, contralto; J. Gibson Davis, violinist; Cecil Blanchard Selfridge, baritone; A. J. Mason, tenor; Cecil Blanchard Selfridge, baritone; CNRA dance orchestra.

CNRT, Toronto, Can. (357), 6:30 p. m., Luigi Romanelli and his King Edward hotel concert orchestra; 9:30, CNRT instrumental trio; Ina Lockhart, contralto, 11:30, Luigi Romanelli and his King Edward hotel dance orchestra.

WAHG, Richmond Hill, N. Y. (315.6), 7:45-8 p. m., sports talk, Thornton Fisher; 8-8:15, songs, Arthur A. Feldman; 8:15-8:30, "Everyday Speech," Professor Richard E. Mayne; 8:45-9, Margaret Tallman, pianist; 9:15-9:30, monologues, Arthur A. Feldman; 9:30-9:45, uke and songs, Armand De Cesare; 9:45-10, Margaret Tallman; 10-10:15, Radio question box; 10:15-10:55, dance orchestra; 10:55-11:05, time signals and weather report; 11:05-11:30, dance music.

WCAU, Philadelphia, Pa. (278), 6:30 p. m., Billy Hayes and his Cathay Ten Garden dance orchestra; 10:30, Jack Meyers' and his Musical Architects dance orchestra.

WEAF, New York, N. Y. (419.5), 4-4:15 p. m., musical program; 4:15-4:30, James A. N. Caruso, violinist; 4:30-4:45, Ralph E. Palmer, tenor; 4:45-5, "Fishes and Their Young," Ida M. Mellen; 6-7, dinner music, Waldorf-Astoria; 7-7:15, Gania Zielinska, soprano; 7:15-7:30, Iris Torn, pianist; 7:30-7:45, Sir Hobgoblin's Fairy orchestra; 7:45-8, Gania Zielinska; 8-8:10, Iris Torn; 8:10-8:30, "Acres of Diamonds," Roy C. Scafe; 8:30-9, Eagle Neutrodyne trio; 9-9:15, Edgar M. Gruen, baritone; 9:15-11, musical program; 11-12, Hotel Bossert Marine Roof orchestra.

WEBJ, New York, N. Y. (272.6), 7-7:30 p. m., Hotsy-Totsy Boys; 7:30-8, Czecho-Slovakian band; 8-8:15, Beatrice MacCue, contralto; 8:30-9, Arthur Pryor's band.

WFI, Philadelphia, Pa. (394.5), 1 p. m., Bellevue Stratford concert trio; 3, Caroline Hoffman, pianist; 6:45, Bellevue Stratford Roof Garden orchestra.

WGBS, New York, N. Y. (315.6), 6-6:30 p. m., children's program; 6:30-7:30, Win Unger's orchestra.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., WGR's afternoon program; 7-7:30, Winger's Crescent Park Entertainers, "The Village Blacksmith Shop;" 9-9:20, piano, Juanita Ansteth; 9:20-9:35, Robert Clemenceau Boinet, baritone, of Norristown, Pa.; 11-1 a. m., supper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gieser, director.

WHAR, Atlantic City, N. J. (275), 2 p. m., Seaside hotel trio; 7:30, fashion review, Gladys Stoudte; 8, Seaside hotel trio; 11:15, Strand theater organ recital.

WHN, New York, N. Y. (361.2), 8-8:30 p. m., Colonial Aces; 10:30-11, Roseland dance orchestra; 11:30-12, club Alabam orchestra.

WIP, Philadelphia, Pa. (508.2), 3 p. m., Song of the Surf; 3:30, Comfort's philharmonic orchestra; 6:05, Benjamin Franklin concert orchestra; 7, Uncle Wip's bedtime stories.

WJAR, Providence, R. I. (305.9), 8 p. m., musical program; 9, Maine Creamer hour; 11, Providenee Biltmore dance orchestra.

WJZ, New York, N. Y. (454.3), 1-2 p. m., Henry Vander Zanden's Hotel Ambassador trio; 5-5:20, Fred DeLima, tenor; 7-8, Savarin ensemble; 8-8:10, Wall Street Journal review; 8:10-8:30, NYU Air college; 8:25-10:30, Stadium concert.

WLIT, Philadelphia, Pa. (394.5), 12:02 p. m, daily almanac; Stanley theeater organ recital; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; playlet, students National School of Oratory and Elocution; 7:30, Dream Daddy's bedtime stories; 8, Chas. Frey's dance orchestra; 8:45, Welch's Minstrels; 10, Morning Glory Club concert; Arcadia cafe dance orchestra; Chas. Frey's dance orchestra, songs by Rufus and Rastus; Carl Zoehrns, songs.

WMCA, New York, N. Y. (340.7), 6:30-7:30 p. m., Ernie Golden and his Hotel McAlpin orchestra; 8-8:10, "Helps for Better Reception," Hudson E. Burr; 8:30-9, Columbia Park orchestra; 9-10, Hardman hour of music; 10-11, Asbury Park dance orchestra; 12-1 a. m., Berkley-Carteret hotel dance orchestra.

WNYC, New York, N. Y. (526), 6-7 p. m., lessons in French, V. Harrison Bertlitz; 8-8:15, baseball results; 8:15-10:15, concert, Max Jacobs orchestra from Central Park.

WOO, Philadelphia, Pa. (508.2), 11 a. m., organ recital; 12:02 p. m., Golden's crystal tea room orchestra; 4:45, organ recital; 7:30, A. Candelori's orchestra; 8:30, recital; 9, WOO orchestra; 10, organ recital, Newell Robinson; 10:30, Hotel Adelphia Roof Garden dance orchestra.

WOR, Newark, N. J. (405.2), 6:15-6:30 p. m., sports talk, Bill Wathey; 6:30-7, Man in Moon; 7-7:30, Howard Oliver and his Log Cabin orchestra.

Eastern Standard or Central Daylight Saving Time Stations

KDKA, Pittsburgh, Pa. (309.1), 8:45 p. m., concert.

KYW, Chicago, Ill. (536), 7-7:30 p. m., Congress hotel; 7:30-8:30, home lover's hour; 10-12:30, midnight revue.

WBBM, Chicago, Ill. (226), 8-10 p. m., Samovar orchestra; William Molnaire; Jerry Cromack; Sunset male quartet; Al Furry; Charlie and Dave.

WBZ, Springfield, Mass. (331.1), 6 p. m., Hotel Kimball trio; 8, Charlotte de Volt, violinist; Artiss de Volt, harpist; 8:30, Bill Boyle's entertainers; 9, John W. Skinner, humorist; 9:15, old heart songs, Alden Thomas, baritone.

DANCING

Central Standard Time

Saturday, August 22

8, Kgw, Wgy, Wmbb, Wpg, Wtas; 8:05, Wip; 8:30, Webh, Wgy, Wjz, Wsmb; 9, Weaf, Wmbf, Wmca, Wqj, Wrc, Wreo, Wtas; 9:30, Wcee, Wges, Wgn, Wjjd, Wrc; 10, Kpo, Kths, Wcco, Wkrc, Wmbf, Wreo, Wpg, 10:30, Webh, Wges; 11, Kfwb, Koa, Wcee, Wfaa, Wjjd, Wkrc, Woc; 11:15, Wdaf; 11:30, Wges, 11:45, Wdaf; 12, Kgo, Kgw, Khj, Knx.

Monday, August 24: 8

Wkrc, Wmbb, Wtas; 8:30, Weaf, Wsmb; 8:45, Wjz, Wor; 9, Wcae, Wgr, Wmbf, Wtas; 9:05, Wahg; 9:25, Kths; 9:30, Wcee, Wjjd; 10, Kpo, Wgr, Whn, Wmbf, Woaw, Wtam; 10:30, Wees, Wjjd; 11, Who, Wkrc, 11:30, Wjjd; 11:45, Wdaf

Tuesday, August 25: 8

Wmbb, Wtas; 8:30, Wcau, Webh, Wip; 8, Wcx, Weaf, Wip, Wmaq, Wmbf, Wmca, Wqj, Wtas; 9:30, Wcee, Wges, Wgn, Wjjd, Woc; 10, Whar, Wmbf; 10:30, Wcee, Webh, Wges, Wjjd, Wkrc, Woaw; 11, Kfwb, 11:30, Wjjd; 12, Kgo.

Wednesday, August 26

8, Kgw, Whad, Whn, Wkrc, Wmbb, Wtas; 8:30, Kyw, Wcau, Webh, Wjz, Wkrc, Wmaq, Woo, 9, Kfwb, Kyw, Weaf, Wgr, Whad, Wmbf, Wnc, Wqj; 9:05, Wahg; 9:15, Wahg; 9:30, Kfi, Wcee, Webh, Wges, Wgn, Wjjd, Wtas; 10, Kfve, Kfwb, Kgw, Kyw, Wcco, Whc, Wmbf, Wtam; 10:30, Wcee, Wges, Wsmb; 11, Wjjd; 11:30, Wges, 11:45, Wdaf; 12, Khj, Kpo, Wqj.

Thursday, August 27

8, Wfi, Wip, Wjar, Wmbb, Wrc, Wtas; 8:30, Wcau, Webh, Wmaq, Wsmb; 9, Weaf, Wii, Wmbf, Wmca, Wqj, Wrc, Wtas; 9:25, Kths; 9:30, Wgn, Woal, Wsmb; 10, Wmbf; 10:30, Webh; 11, Kfwb, Wfaa, Wkrc, Woc; 12, Kgo, Kgw, Khj, Knx, Kpo, Wqj.

Friday, August 28: 8

Kyw, Wcae, Weaf, Wee, Wmbb, Wtas; 8:30, Kyw, Wcau, Webh, Wmn, Wjz, Wmaq, Woo; 9, Kyw, Wcae, Wex, Weaf, Wgr, Wmbf, Woaw, Wqj; 9:15, Wahg; 9:30, Wcee, Wgr, Wjjd, Wtas; 10, Kfve, Whar, Wmbf; 10:30, Wcee, Webh, Wjjd; 11, Kfwb; 11:45, Wdaf, 12, Khj, Wqj.

T; GANIA ZIELINSKA SINGS AT WEAF

Al Handler, left, is the leader of the orchestra which will be heard regularly from the Stewart-Warner studio of WBBM. Charles G. Seelbach, upper right corner, is the director and violinist of the Century orchestra, which will play during the dinner hour Monday at WGR.

DANCING

tral Standard Time

turday, August 22:
Kgw, Wgy, Wmbb, , Wtas; 8:05, Wip; Webh, Wgy, Wjz, b; 9, Weaf, Wmbf, a, Wqj, Wre, Wreo, ; 9:30, Wcee, Wges, , Wjjd, Wre; 10, Kths, Wcco, Wkrc, f, Wreo, Wpg;), Webh, Wges; 11,), Koa, Wcee, Wfaa, , Wkrc, Woc; 11:15, ; 11:30, Wges,), Wdaf; 12, Kgo, , Khj, Knx.

nday, August 24: 8, , Wmbb, Wtas; 8:30, , Wsmb; 8:45, Wjz, ; 9, Wcae, Wgr, f, Wtas; 9:05, g; 9:25, Kths; 9:30, , Wjjd; 10, Kpo, , Whn, Wmbf, Woaw, n; 10:30, Wcee, ; 11, Who, Wkrc; , Wjjd; 11:45, Wdaf.

esday, August 25: 8, b, Wtas; 8:30, , Webh, Wip; 9, Weaf, Wip, Wmaq, f, Wmca, Wqj, ; 9:30, Wcee, Wges, , Wjjd, Woc; 10, r, Wmbf; 10:30, , Webh, Wges, Wjjd, , Woaw; 11, Kfwb;), Wjjd; 12, Kgo.

dnesday, August 26:
Kgw, Whad, Whn, , Wmbb, Wats; Kyw, Weau, Webh, Wkrc, Wmaq, Woo; Kfwb, Kyw, Weaf, Whad, Wmbf, Who, ; 9:05, Wahg; 9:15, g; 9:30, Kfi, Wcee, , Wges, Wgn, Wjjd, ; 10, Kfre, Kfwh, Kyw, Wcco, Who, f, Wtam; 10:30, , Wges, Wsmb; 11, ; 11:30, Wges; , Wdaf; 12, Khj, Wqj.

ursday, August 27:
Wfi, Wip, Wjar, b, Wrc, Wtas; 8:30, , Webh, Wmaq, b; 9, Weaf, Wip, f, Wmca, Wqj, Wrc, ; 9:25, Kths; 9:30, , Woai, Wsmb; 10, f; 10:30, Webh; 11,), Wfaa, Who, k, Woc; 12, Kgo, , Khj, Knx, Kpo.

iday, August 28: 8, , Wcae, Wear, Weel, b, Wtas; 8:30, Kyw, t, Webh, Whn, Wjz, q, Woo; 9, Kyw, , Wcx, Weaf, Wgr, f, Woaw, Wqj; 9:15, g; 9:30, Wcee, Wgn, , Wtas; 10, Kfve, , Wmbf; 10:30, , Webh, Wjjd; 11, , Who; 11:45, Wdaf; hj, Wqj.

WCX, Detroit, Mich. (516.9), 6 p. m., dinner concert, Book-Cadillac hotel; 8, the Detroit Symphony orchestra.

WEAR, Cleveland, Ohio (389.4), 7-8 children's hour; 8-8:30, talks, prominent Clevelanders; 8:30-11, Ed Day and his Bedford Glens dance orchestra.

WEBH, Chicago, Ill. (370.2), 7:30-8:30 p. m., Oriole orchestra; Riviera theater; Howard Neumiller, pianist; 9:30-10:30, Oriole orchestra; WEBH Light Opera company; 11:30-1, Oriole orchestra; Three Musketeers; Fowler & Tamara's South American Troubadours; Correll & Gosden; Rita McFawn, soprano.

WGN, Chicago, Ill. (370.2), 6:30-7:30 p. m., Drake concert ensemble; Blackstone string quintet; 8:30-9:30, studio program; 10:30-11:30, Drake hotel Terrace Garden program.

WGY, Schenectady, N. Y. (379.5), 6 p. m., Albany Strand theater orchestra; Floyd H. Walters, organist; 6:40, Ethel Osterhout, pianist; M. F. Westover, 7:25, New York Philharmonic orchestra; 9:30, E. Ellas Brady, pianist; 10, "The Bracelet," WGY players.

WHT, Deerfield, Ill. (399.8), 7 p. m., Dean Remick, pianist; Bob York, tenor; 7:30, Al Carney, organist; Genevieve Barry Burnham, soprano; 8, Kitchen Klenser Klassics; Good Luck Girl; 8:45, Elmer Kaiser's Melody Masters; Riverview band; 10:30, program a la carte, Loftis Thirty Minutes of Melody; 11, Herman Sinaeko, violinist; Giesie Brothers; 11:30, Fred Whitmer, pianist; Kay Ronayne, songs; 12:30, Al Carney, organist.

WJR, Detroit and Pontiac (517). 7 p. m., Jean Goldkette's ensemble; 10, Blue Room dance orchestra.

WLS, Chicago, Ill. (344.6), 6:30 p. m., Ralph Emerson, organist; 7:15, Rex's Cornhuskers; 7:45, lullaby time, Ford and Glenn; 8, negro spirituals, Rousseau concert four; 8:30, Rex's Cornhuskers; 8:45, Anne Williams, mezzo-soprano; 9, farm program; Brooks Colby, violinist; 10, Jaros instrumental trio; 10:30, Rex's Cornhuskers; 10:40, Ford and Glenn time; 11-11:30, Rex's Cornhuskers.

WMAQ, Chicago, Ill. (447.5), 6 p. m., organ recital, Chicago theater; 6:30, Jack Chapman's orchestra; 8, Chapman's orchestra; 8:30, announced; 9:30, Chapman's orchestra.

WMBB, Chicago, Ill. (250), 7-8:30 p. m., Trianon ensemble; Hazel O'Neil, soprano; Lindsay McPhail, pianist; 8:30-10:30, Trianon orchestra; Fisher and Wayne; Woodlawn theater orchestra; Morey Alswang, banjoist; Florence Tenney; Jock Murnane, baritone; Clyde Hager.

WMBF, Miami Beach, Fla. (384.4), 7-7:30 p. m., concert; 7:30-8, Fleetwood hotel orchestra; 10-12, Fleetwood hotel dance orchestra.

WQJ, Chicago, Ill. (447.5), 7-8 p. m., dinner concert, Ralph Williams and his Rainbo Garden orchestra; Kane McDuffee, whistler; Frederick Mueller, German teonr; Catherine Diepenbrock, pianist; Elsie Orr, soprano; "Weekly Road Review," S. A. Larson; 10-1 a. m., Ralph Williams and his Rainbo Skylarks; C. B. Roe, baritone; R. N. Price, tenor; Blanche and Rudy Baie, pianist and songs; Paul Small, tenor; Irene Finucan, soprano; Anita Chellis, contralto; William Richardson, baritone; Rose Quin, contralto; Fontella trio; Jack Lavin, tenor; Eleanor Terry and Marie Pollette; West Brothers, Hawaiian guitarists; 1-2, Ginger hour, Little Skylarks.

WRC, Washington, D. C. (468.5), 1 p. m., New Willard hotel orchestra; 6:25, baseball scores.

WTAM, Cleveland, Ohio (389.4), 6-7 p. m., dinner dance music, Golden Pheasant orchestra.

WTAS, Elgin, Ill. (302.8), 8-10:30 p. m., Purple Grackle orchestra; Herbie Mintz, Marie Wright, Tommy Dunlap, Brock sisters, Art Stiller.

WWJ, Detroit, Mich. (352.7), 6 p. m., dinner concert; 8, Goldman band concert.

Central Standard Time Stations

KFAB, Lincoln, Nebr. (340.7), 6-7 p. m., dinner program; 7:30-8:30, Mary & Jean Field, pianists; Beth Field, violinist; Sue Field, flutist; 8:30-9:30, Elizabeth Bonnell Davis, soprano; Colonians dance orchestra.

KFDM, Beaumount, Tex. (315.6), 8-10 p. m., Magnolia Petroleum company's refinery band.

KFKX, Hastings, Nebr. (288.3), 9-11 p. m., musical program, Hotel Clarke studio.

KFVE, University City, Mo. (240), 10 p. m., Van Horn Farm orchestra.

KSD, St. Louis, Mo. (545.1), 7 p. m., Arne Arneson's concert orchestra.

KTHS, Hot Springs National Park, Ark. (374.8), 9 p. m., Ray Mullins' Como hotel roof garden orchestra.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 4:05 p. m., Readers' club, Mrs. W. Stevens; 6, baseball scores; 6:15, dinner concert, George Osborn's Nicollet hotel orchestra; 8, Gordon Cooke ensemble; 9; baseball scores.

WDAF, Kansas City, Mo. (365.5), 6-7 p. m., School of the Air; piano tuning-in number on the duo-art; address; Tell-Me-a-Story lady; Plantation Players; 8-9:30, popular musical program.

WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Tom D. Collins and his Glen Haven String orchestra; 8:30-9:30, Dr. James Wood, tenor.

WHAD, Milwaukee, Wis. (275), 6-7 p. m., organ recital, Arthur Richter; 7-7:05, baseball scores; 8:30-10, Wisconsin theater review; best talent, 35-piece concert orchestra; Dexter's Wisconsin roof dance orchestra.

WHAS, Louisville, Ky. (399.8), 7:30-9 p. m., Jake Seligman and his Kentucky Night Owls.

WHO, Des Moines, Iowa (526), 7:30-9 p. m., Stewart Watson, baritone; Lily Jacobs, harpist; artists, Dean Raymond N. Carr; 11-12, Kirkwood hotel orchestra.

WMC, Memphis, Tenn. (499.7), 8:30 p. m., Britling's Cafeteria novelty orchestra; 11, midnight frolic.

WOAN, Lawrenceburg, Tenn. (282.8), 9-10 p. m., Vaughan Radio orchestra; saxophone quartet.

WOAW, Omaha, Nebr. (526), 6 p. m., music review, Hester Bronson Copper; 6:20, baseball scores; 6:40, Gilbert Jaffy and his orchestra; 7:10, weekly sports talk, Ivan L. Gaddis; 9, program, Union Pacific Railroad company.

WOC, Davenport, Ia. (483.6), 5:45-6 p. m., chimes concert; 6, baseball scores; 8-9, musical program; Erwin F. Swindell's own compositions; organ numbers, Howard Snyder.

WOS, Jefferson City, Mo. (440.9), 8 p. m., address, George A. Pickens, music.

Mountain Standard Time Stations

CNRE, Edmonton, Can. (516.9), 8:30 p. m., Edmonton Riverview dancing pavilion, Graydon Tipp and his orchestra.

KOA, Denver, Colo. (322.4), 6:30 p. m., Herbert White and his Silver State orchestra; 8, open-air concert, Denver Municipal band.

Pacific Standard Time Stations

KFWB, Hollywood, Calif. (252), 8-9 p. m., program, Monte Mar Vista Subdividers, Monte Mar Vista orchestra, Violet Preston, blues singer; 9-10, Warner Bros. Syncopators; Dorothy Dodd, soprano; Ina Mitchell Butler, soprano; 10-11, Warner Bros. frolic, direction Charlie Wellman.

KGO, Oakland, Calif. (361.2), 6-7 p. m., dinner concert, Baldwin Piano company.

KGW, Portland, Ore. (491.5), 6-8 p. m., Jackie Souder's dance orchestra; 10-12, dance music, Jackie Souder's orchestra.

KHJ, Los Angeles, Calif. (405.2), 5:30-6 p. m., Leighton's Arcade cafeteria orchestra, Jack Cronshaw, leader; 6-6:30, Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, Adventures of the Browns (4th episode), pupils of Edyth McGrath, bedtime story, Uncle John; 8-10, program, Western Auto Supply company, arranged by J. Howard Johnson; 10-11, Art Hickman's Biltmore hotel dance orchestra, Earl Burtnett, leader.

KNX, Hollywood, Calif. (336.9), 5:30-6:15 p. m., Wurlitzer pipe organ studio; 6:15, travel talk, W. F. Alder; 6:30-7, Atwater Kent Radio orchestra, Paul Finstein, leador; 7-7:30, program, Beverlyridge company; 7:30-8, musical gems programs, Eastern Outfitting company; 8-9, West Coast Theaters by remote control; 9-10, Order of the Optomistic Donut, Davis Perfection Bread company; 10-11, popular song hour; 11-12, Ray West's Cocoanut Grove dance orchestra from Ambassador hotel; 12-2 a. m., Wurlitzer Night Hawks, Len Nash and his Country Boys, Lilyan May Challenger, contralto and others.

KPO, San Francisco, Calif. (428.3), 6:15 p. m., Loew's Warfield theater; 7-7:30, Palace hotel concert orchestra; 8-11, Palace hotel dance and concert orchestra.

KTCL, Seattle, Wash. (305.9), 7-8 p. m., Simonds Saw and Steel company program; 9-10, Western Auto Supply company program; 10:15-12, Earl Gray's Butler hotel orchestra.

Index to Classical Concerts

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

Classical

Atlantic or Eastern Daylight Saving Time Stations

Saturday, August 22: 6, WEAF; 6:05, WIP; 6:30, WCAE; 6:45, WPG; 7, WEAF, WJZ; 7:30, CKAC, WEAF, WGBS; 7:45, WEAF, WGR; 8, WBBR, WEAF, WHAR, WIP, WMCA, WNYC; 8:05, WPG; 8:15, WNYC; 8:25, WJZ; 8:30, WCAE, WMCA; 8:40, WBBR; 8:45, WEAF, WGR; 8:50, WIP; 9, WPG; 10:15, WEAF; 10:30, WEAF.

Sunday, August 23: 6, WOO; 6:30, WCAE; 7, WJZ; 7:20, WCAE, WCTS, WEAF, WEEI; 8, WGBS; 8:15, WLIT; 8:45, WJY; 9, WBBR, WHAR, WJZ; 9:15, WCAE, WCTS, WEAF, WEEI, WJAR; 10, WBBR; 11, WHAR.

Monday, August 24: 6, WEAF, WGR; 6:05, WIP; 6:30, WCAE; 7, WJZ; 7:15, WEAF; 7:30, WAHG, WEEI; 8, WAHG, WEEI, WGR, WHAR, WLIT, WOO; 8:05, WNYC; 8:15, WNYC; 8:30, CHNC, WCAE, WMAK, WOO; 8:45, WEAF, WOO; 9:10, WLIT; 9:15, WAHG, WMCA; 10, CHNC, WGR, WJZ; 10:15, WEAF, WOO; 11, WHN.

Tuesday, August 25: 6, WGR; 6:05, WIP; 6:30, WCAE; 7, WEAF, WGR; 7:10, WNYC; 7:15, WJZ; 7:30, CKAC, WCAU, WEAF, WJY; 8, WCAE, WCAU, WEAF, WEEI, WGR, WNYC, WIP, WJY, WJZ; 8:15, WEBJ, WNYC; 8:25, WJZ; 8:30, WCAU, WEBJ, WGBS; 8:50, WIP; 9, WCAE, WEAF, WEEI, WFI, WGBS, WGR, WJAR; 9:30, WGBS, WGR; 10, WCAE, WEAF, WEEI, WFI, WMCA; 11, WHAR.

Wednesday, August 26: 6, WEAF, WGR; 6:05, WIP; 6:30, WCAE; 7:30, WEAF, WEEI, WOO; 8, WAHG, WCAE, WCAU, WEAF, WEBJ, WEEI, WGR, WLIT; 8:15, WAHG, WNYC; 8:30, WCAE, WEEI, WGR, WJZ; 8:45, WAHG, WEBJ; 9, CNRO, WEAF, WEBJ, WEEI, WOO; 9:30, WEBJ; 9:45, WJZ, 10, WEAF, WOO, WOR; 11, WLIT.

Thursday, August 27: 6, WEAF, WGR; 6:05, WIP; 6:30, WCAE, WDWF; 7, WGR; 7:10, WNYC; 7:30, WCAU, WGBS, WDWF, WEEI, WHAR; 8, WCAE, WCAU, WEAF, WEBJ, WEEI, WFI, WGR, WIP, WJAR; 8:10, WJZ; 8:15, WNYC; 8:30, WHAR, WJZ; 8:50, WIP; 9, WCAE, WEAF, WEEI, WFI, WGR; 9:30, WGBS, WMCA; 10, WCAE, WCTS, WEBJ, WEEI, WJZ.

Friday, August 28: 6, WEAF, WGR; 6:05, WIP; 6:30, WCAE; 7, WEAF, WJZ; 7:30, CKAC, WEBJ, WEEI; 7:45, WEAF; 8, WEBJ, WEEI, WGR, WHAR, WJAR; 8:15, WNYC; 8:25, WJZ; 8:30, WCAE, WEBJ, WEAF, WOO; 9, WCAU, WEAF, WJAR, WMCA, WOO; 9:15, WEAF; 10, WEAF, WOO; 10:45, WHAR; 11, WHAR.

Eastern Standard or Central Daylight Saving Time Stations

Saturday, August 22: 6, KYW, WCX, WIBO, WGES, WMAQ, WTAM; 6:30, WGN; 6:45, WJJD; 7, KYW, WEAR, WHT, WIBO, WJR, WLW, WMBB, WQJ; 7:15, WJJD; 7:25, WGY; 7:30, WRC; 7:35, KYW, WLW; 7:45, WLS; 8, WORD, WSAI, WTAM; 8:15, WSAI; 8:30, KYW, PWX, WGN; 8:45, KDKA; 9, WMAQ; 9:15, WSAI.

Sunday, August 23: 6, WCX, WGES; 6:30, WHT; 6:45, WORD; 7, WEAR, WEBH, WGY, WMBB; 7:45, WGY; 8, WBZ, WCX, WLS, WLW, WQJ; 8:15, WREO, WWJ; 8:30, WEBH; 8:45, WBZ; 9, WGN, WGY, WQJ; 10, WKRC.

Monday, August 24: 6, WBZ, WCX, WGES, WMAQ, WTAM, WWJ; 6:30, WGN; 6:55, WTIC; 7, WEAR, WHT, WJR, WLW; 7:15, WJJD; 7:20, WWJ; 7:30, WCX, WHT; 7:40, WGY; 8, WBZ, WCX, WTAM; 8:15, WHAZ; 8:30, WBZ, WCX, WHAZ; 8:45, KDKA; 9, WBZ, WKRC, WORD, WTAM; 9:15, WBZ, WHAZ; 10, WSAI, WTAM; 11, WLW; 12:30, WHT.

Tuesday, August 25: 6, WBZ, WCX, WGES, WIBO, WMAQ, WTAM, WWJ; 6:30, WGN, WLW; 6:45, WGY, WJJD; 7, KYW, WEAR, WHT, WIBO, WJR, WMBB, WQJ, WWJ; 7:10, WTIC; 7:15, WJJD; 7:25, WGY; 7:30, WBZ, WCX, WEBH, WRC, WTIC; 7:45, WSAI; 8, KYW, WBZ, WCX, WEAR, WSAI; 8:10, WTIC, WREO; 8:30, WBZ, WCX, WGN, WMAQ; 8:45, KDKA, KYW; 9, WEAR, WORD, WSAI; 10, KYW, WEAR, WKRC; 10:30, KDKA; 12:30, WHT.

Wednesday, August 26: 6, WBZ, WCX, WGES, WIBO, WMAQ, WTAM, WWJ; 6:30, WGN, WLW; 6:45, WJJD; 7, KYW, WEAR, WHT, WIBO, WJR, WLW, WMBB, WQJ; 7:15, WJJD; 7:25, WGY; 7:30, WBZ, WCX, WEBH, WRC, WTIC; 7:45, WEAF; 8, WEBJ, WEEI, WGR, WHAR, WJAR; 8:15, WNYC; 8:25, WJZ; 8:30, WCAE, WEBJ, WEAF, WOO; 9, WCAU, WEAF, WJAR, WMCA, WOO; 9:15, WEAF; 10, WEAF, WOO; 10:45, WHAR; 11, WHAR.

Thursday, August 27: 6, WBZ, WCX, WGES, WIBO, WMAQ, WTAM, WWJ; 6:30, WGN; 6:45, WGY; 7, KYW, WEAR, WHT, WIBO, WJR, WLW, WMBB, WQJ; 7:15, WJJD; 7:30, WCX, WEBH, WHT; 8, KYW, WBZ, WCX, WTAM; 8:15, WBZ; 8:30, PWX, WBZ, WCX, WGN, WORD; 8:45, KDKA; 8:50, WBZ; 8:55, WMAQ; 10, WLW, WTAM; 11, WLW.

Friday, August 28: 6, WBZ, WCX, WGES, WIBO, WMAQ, WTAM, WWJ; 6:30, WGN; 6:45, WJJD; 7, KYW, WHT, WIBO, WJR, WMBB, WQJ, 7:10, WTIC; 7:15, WJJD; 7:20, WGY; 7:30, WCX, WEBH; 7:55, WTIC; 8, KYW, WBAV, WBZ, WCX, WWJ; 8:15, WBZ; 8:30, WBZ, WCX, WGN, WMAQ; 8:45, KDKA, WBZ; 10:30, WHT.

Central Standard Time Stations

Saturday, August 22: 6, KFAB, WOAW; 6:15, WCCO; 6:30, WFAA, WSMB; 7:30, KFNF, WHAS; 8, WCCO, WSB; 8:30, WFAA, WHAS, WMC; 8:35, KYW; 9, WOAW, WOC.

Sunday, August 23: 6:30, KLDS; 7:30, WHO; 8, KFDM, WCBD, WOS; 9, WOAN; 9:15, KLDS, WCCO; 9:25, KTHS; 9:30, WOC; 10, KFVE; 10:30, WOC.

Monday, August 24: 6, KFAB, WOAW; 6:30, WFAA, WSMB; 6:45, WOAW; 7:30, KFNF, WHO; 8, WCBD, WHAD, WHO, WOS, WSB; 8:30, WFAA; 9, KFKX, KSD, WHAD, WOAN, WOAW; 9:25, KTHS.

Tuesday, August 25: 6, KFAB, WHAD, WOAW; 6:05, WCCO; 6:25, WOAW; 6:30, WFAA, WSMB; 7, KSD, WCCO, WOC; 7:30, KFAB, KFNF, WHAS, WHO; 8, KLDS, WCBD, WOC; 8:30, WFAA, WHAS, WMC; 9, WOAN; 9:25, KTHS; 10:30, KFRU; 10:45, WSB; 11, WFAA.

Friday, August 28: 6, KFAB, WHAD; 6:15, WCCO; 6:30, WFAA, WOAW, WSMB; 7, KSD; 7:30, KFAB, KFNF, WHAS, WHO; 8, KFDM, WCCO, WOS, WSB; 8:30, WFAA, WHAS, WHO, WMC; 9, KFDM, KFKX, WOAN, WOAW, WOC.

Mountain Standard Time Stations

Saturday, August 22: 8, KOA.
Monday, August 24: 6:30, KOA; 8, KOA; 9-11, KFWA.

Tuesday, August 25: 6:30, KOA; 7:30, KOA.

Wednesday, August 26: 6:30, KOA; 8, KOA; 9-11, KFWA.
Thursday, August 27: 6:30, KOA.
Friday, August 28: 6:30, KOA; 8, KOA.

Pacific Standard Time Stations

Saturday, August 22: 6, KFOA, KHJ; 6:30, KNX; 6:45, KFOA; 7, KNX; 7:30, KNX; 8:10, KGO; 8:15, KHJ.

Sunday, August 23: 6:30, KHJ; 6:35, KPO; 7, KHJ, KNX; 8, KNX, KPO; 9, KNX; 10, KNX.

Monday, August 24: 6, KFOA, KGO; 6:30, KNX; 6:45, KFOA, 7, KPO; 7:30, KNX; 9, KTCL.

Tuesday, August 25: 6, KFOA, KGO; KHJ; 6:30, KNX; 6:45, KFOA; 7, KNX, KTCL; 8, KGO, KGW, KHJ, KPO, KTCL; 8:30, KFOA; 9, KGW, KPO.

Wednesday, August 26: 6, KFOA, KGO, KHJ; 6:45, KFOA; 7, KNX, KTCL; 7:30, KFAE; 8, KGO, KNX; 8:30, KFAE, KFOA, KPO; 9:30, KHJ; 10, KGW, KTCL.

Thursday, August 27: 6, KFOA, KHJ; 6:30, KNX, KTCL; 7, KNX; 8, KGO, KGW, KPO; 9, KGW, KPO.

Friday, August 28: 6, KFOA, KGO, KHJ, KTCL; 6:15, KPO; 6:45, KFOA; 7:30, KFAE, KNX; 8, KHJ, KNX, KPO; 8:30, KFAE; 9, KGW, KPO, KTCL.

CHISHOLM SECRECY SCHEME SAID BEST

GREAT BRITAIN INTERESTS SELF IN VARIOUS PLANS

Secret Broadcast System Would Permit Selling Programs, News and Other Services to Fans

By A. C. Blackall

LONDON.—The most serious drawback to the use of Radiophony for commercial purposes—lack of secrecy—has not only been overcome by J. D. Chisholm's epoch-making discovery recently described in Radio Digest, but has since been solved in many other ways.

Apart from the advantages of cutting out unauthorized listeners from a private conversation, secret transmission will open up the way of the creation of a limited or "narrowcast" service of special financial and other news—or entertainment—to a select circle of subscribers.

A new system of disguising ordinary speech so that it is unintelligible to an unauthorized listener consists in abstracting, by means of suitable filtering circuits fitted to the transmitter, certain of the frequency components or "side bands" that go to form a speech-modulated carrier wave. The abstracted portions are subsequently restored at the receiving end by means of a local tube oscillator, which must be set at a given frequency or cycle of frequencies. So treated, the incoming message is restored to its original form. By ordinary receivers the signals are heard as an unintelligible jumble of sounds.

Second Secrecy Device

A further refinement to this type of secret transmission is deliberate inversion or distortion systematically, of speech frequencies by a process of overmodulation, and the provision of tube demodulation at the receiving station so set as to reverse the deliberate distortion, and thus restore the original speech form. Telephonic messages radiated in this manner would be absolutely unintelligible to the ordinary crystal or tube receiver.

The recently developed system of beam transmission also affords a considerable degree of secrecy—perhaps selectivity is a better term—by confining or localizing the signal energy within a comparatively narrow zone of space, outside of which no reception is possible under any circumstances. The Radio beam presents, in fact, an approximation to the conditions of ordinary line telephony, and to this extent protects the message from the casual listener.

Chisholm Method Simplest

The simplest method of baffling unauthorized eavesdropping, however, is to utilize Chisholm's principle of introducing at the transmitting and a deliberate and irregular variation in the emitted wave length. An ordinary listener, unequipped with special means for keeping the tuning of the aerial circuit in constant step with the imposed perturbations, would find it impossible to pick up more than a fragment of the transmitted speech.

The objection to systems using this principle lies in the practical difficulty of providing a simple yet efficient mechanism for maintaining the receiving circuit in synchrony with the superposed "wobble." One inventor, at least, has suggested the use of clock-work driven cams of irregular outline to control the setting of the transmitting circuits, a similar equipment being added to each receiver.

Chisholm, however, is the only person who has yet perfected a system on this principle.

PROVE RADIO IS NOT CONCERT DETRIMENT

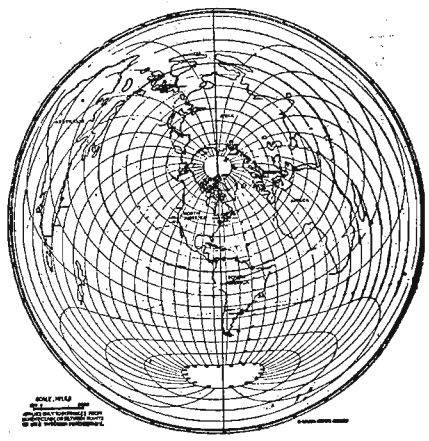
Broadcasting Helps Rather Than Hinders in New York

NEW YORK.—There seems to be the feeling among certain ones in the theatrical and sporting world that broadcasting an event will adversely affect the patronage received. As yet there appears to be no definite proof for this belief and the recent opening of the Philharmonic concerts at the Lewisohn stadium indicate that such belief is entirely erronous.

The Philharmonic society has been broadcast for several years. Therefore it is not a novelty. Furthermore, Station WJZ broadcast the opening concert and definitely announced that they would broadcast at least three of these stadium concerts each week for the rest of the summer. Also in a performance of this nature, little is to be seen; practically all is to be heard. Radio gives all there is to get.

But at the opening stadium concert more persons attended than ever before in history. The stadium was sold out.

THIS 'MAP OF MAPS' TELLS LOTS AT WGY



IF YOU have ever tried to figure the distance between any point in North America and a city in Asia, or South Africa, making due allowance for the curvature of the earth, you will appreciate this distorted map which was drawn for the convenience of Radio engineers of the General Electric company in interpreting transmission tests.

It is known as an "equidistant zenithal projection," which means that you don't have to resort to spherical trigonometry or a slide rule to get either direction or distance between two points on the face of the earth, one point of which is the center of the map.

Map Has Three Uses

This map is drawn with Schenectady as a center and all measurements to be accurate must be from or to Schenectady. An entirely different distortion would be produced if the map were drawn with London or Melbourne as a center.

The projection has three main uses. First, it gives the straight line distance between Schenectady and any other point on the earth's surface. This is obtained by measuring the distance from Schenectady to the point in question and converting this measurement in inches into miles by means of the scale at the bottom of the map.

The map is valuable in the second place because it shows the nature of the intervening territory between Schenectady and any other point. This is highly important for the Radio engineer for, as is well known, the distance over which Radio signals can be transmitted depends, among other things, on the nature of intervening territory, that is, whether it is land or water. Distance transmission over territory three-fourths of which is water and one-fourth land is not so difficult as transmission over the same distance three-fourths land and one-fourth water.

Shows Surprising Wave Paths

In the third place the map gives the exact bearing or direction from Schenectady to any other point on the earth's surface. This bearing is obtained by extending a straight line through Schenectady and the point in question to the scale on the periphery of the map which reads directly in degrees. It would not be supposed, for example, that Radio signals from Schenectady would travel within a few degrees of the North Pole to reach Manila, Philippine Islands. The average person would not expect Radio waves, traveling in a straight line—the shortest distance to Calcutta, to take a north-easterly route. But they do!

Need License to Listen in If You Live Up in Canada

WASHINGTON.—Every owner of a Radio receiving set in Canada must obtain a government license and pay a fee of $1.00 annually, according to reports received here by the department of commerce. These licenses are obtainable at the post offices and through many Radio dealers. There are, however, say the reports, no restrictions that have a tendency to limit the advance of Radio in Canada.

Radio has not become popular in many of the rural districts of Canada, especially in the province of Quebec, due largely to the fact that most of the farmers in the province are French Canadians, and do not understand English, and only a very few stations broadcast in French.

Mooseheart Dedicates New Organ By Radio Concert

MOOSEHEART, Ill.—The new organ which has been in the process of construction four months in the Roosevelt Memorial auditorium here, was dedicated recently with a concert by the popular Radio organist, Mr. Albert F. Brown. This dedication concert was broadcast by the Loyal Order of Moose Station WJJD.

Although no definite schedule has been arranged for the broadcasting of this new organ, it will undoubtedly be used in conjunction with the Catholic services and the Protestant services which are broadcast every Sunday morning by WJJD.

STATIONS IN ORDER OF WAVE LENGTHS USED

Meters	Call	Meters	Call	Meters	Call	Meters	Call	Meters	Call	Meters	Call
217.3	WOK	275.3	WJAS	313	CNRA	361.2	WHN	405.2	WOR	468.5	WCAP
226	WBBM	278	KOIL	315.6	KFDM	365.6	WDAF	406	WBAR	468.5	WRC
226	WIBO	278	WCAU	315.6	WAHG	365.6	WHB	410.7	CKAC	475.9	WBAP
240	KFVE	278	WLBL	315.6	WGBS	370	CYB	416.4	WCCO	475.9	WEEI
243.8	WAMD	278	WRBC	319	WG	370.2	WEBH	421	KIAF	475.9	WFAA
250	WGES	280.2	WNAC	319	WSMB	370.2	WGN	422.3	WLW	480	CYL
250	WMBB	282.8	WOAN	322.4	KOA	374.8	KTHS	428.3	WSB	483.6	WOC
252	KFWB	285.5	WKAR	325.9	WSAI	379.5	WGY	428.3	KPO	483.6	WSUI
252	WGCP	285.5	WREO	326	WKRC	379.5	WHAZ	434.5	CNRO	491.5	KGW
261	KFWA	293.9	KJS	330	CYX	384.4	CKY	434.5	NAA	491.5	WEAF
265.5	WMAK	293.9	WBAV	333.1	WBZ	**384.4**	**KJR**	435	AT9	499.7	WMC
266	KFNF	293.9	WEAO	336.9	KNX	384.4	WMBF	434.5	CFCN	508.2	KLX
266	WBCN	296.9	KPRC	340.7	KFAB	389.4	WEAR	440.9	KLDS	508.2	WIP
268	WCTS	299.8	KFMQ	340.7	WKAQ	389.4	WTAM	440.9	WDWF	508.2	WOO
272.6	WBBR	**299.8**	**KSL**	340.7	WMCA	394.5	WFI	440.9	WOS	516.9	CJCA
272.6	WEBJ	299.8	WPG	344.6	WCBD	394.5	WLIT	447.5	WMAQ	516.9	WCX
272.6	WFBH	302.8	WJJD	344.6	WLS	394.5	WOAI	447.5	WQJ	516.9	WJR
273	WRW	302.8	WTAS	348.6	KFAE	399.8	WHAS	454.3	KFOA	526	WHO
275	KFAU	**305.9**	**KTCL**	348.6	WTIC	399.8	WHT	454.3	WJZ	526	WNYC
275	WCAC	305.9	WJAR	352.7	WWJ	400	PWX	455	KTW	526	WOAW
275	WHAD	309.1	KDKA	356.9	CFCA	405.2	KHJ	**461.3**	**WCAE**	535.4	KYW
275	WHAR			356.9	CHNC	405.2	WJY	467	KFI	545.1	KFUO
275	WORD			361.2	KGO					545.1	KSD

INSTRUCTIONS FOR USE OF TABLES

THE "Evening at Home with the Listener In" table is not difficult to understand and use. It is this fact that makes it so popular with the readers of Radio Digest. It is presented in three different standard times; Eastern, Central and Pacific. Two of these are presented each week. Listeners using one of the three kinds of time named, should utilize the table printed in that time and so designated by its headline.

For listeners whose standard of time is not shown here, the following instructions should be remembered:

Listeners using **Mountain time:** Use table for Pacific time but add one hour to every figure given. Can also use Central time table by subtracting one hour from every figure given.

Listeners using **Eastern daylight saving,** or **Atlantic time:** Use Eastern time table by adding one hour to every figure given.

Listeners using **Central daylight saving time:** Use Eastern time table. No changes are necessary.

The periods given in the "Evening at Home" tables are only representative of each station's evening sign-on and sign-off hours, and on Sunday, the late afternoon sign-on and sign-off. If a station has an intermittent rather than continuous program, the table cannot show this.

Above is given a list of all stations in the "Evening at Home" tables, arranged in order of the wave lengths used (or supposed to be used) by the stations. This arrangement provides a handy index for the other tables.

The "Evening at Home" tables are **corrected every week.** The number of changes often run as high as thirty per cent of the whole. Keep the "Evening at Home" tables **from the current issue** at the side of your receiver.

The Reader's View

Later Symphonies and Operas

Would you, through the columns of your Radio Digest, suggest that symphony orchestras and operas play occasionally, beginning at 10:15 local standard time? Our friends all are connected with the theater and it makes it discouraging to miss Marine band concerts, symphony orchestras, operas, etc.

This is just a suggestion, and with your cooperation might let us enjoy more good programs.—Jack Drew.

Suggestion to Announcers

There are a few good announcers, and a great many not so good, for identification of the various broadcasting stations. The name of the station should follow the call letters, at regular intervals. Many of the letters sound alike, for instance, WEAF, New York City, and WDAF, Kansas City, Mo.

Announcers should use their voices correctly and announce the name of the station, instead of giving the pedigree of some foreign "gink," which is just as welcome to the Radio fan, as a monkey in Tennessee.—C. B., Ithaca, N. Y.

Congestion and Selective Sets

Yesterday I filled out one of your "Consensus of Opinion" slips and mailed it in with a remark that in my opinion most of the fuss and feathers about this congestion was due to inexcusably broad tuning receivers. After writing the note I thought more and more about it and finally determined to express myself more fully on the matter, for it is one about which I have done considerable thinking for months.

In the first place, it seems to me that very few people have any real conception of what a really selective set is. Anything coupled inductively to the antenna is selective to them; yet any Radio engineer knows that even a non-regenerative single-circuit set can be made fully as selective as the average Neutrodyne or other tuned radio frequency set if the proper precautions are taken. I used to think a set was selective if at fifty miles a class A station could be kept within one one-hundredth of a semicircle. Many people today think that a neutrodyne of the usual type or a super-heterodyne are about the last word in selectivity. Place most of these sets within a half mile of WEAF, WGY, KDKA, or the Philadelphia stations and they spread over two or three degrees (usually that is; occasionally one finds an exception, but I am dealing with the average neutrodyne operating on 100 feet of antenna or a super-heterodyne on a loop). Most people say "Well, did you ever see a set cut out stations that were less than half a mile away?"

I have not only that, I built one. There was nothing startling about it. I even used cylindrical coils wound on a bakelite tube—a construction that I can give no excuse for except that it was six months ago, before low-loss equipment had become as prominent as it is now, for cylindrical coils invite enterference, being regular miniature loops, and the dielectric upon which they were wound invited losses which made tuning even broader. Yet merely by having a filter-like circuit using two tuned circuits, and loose antenna coupling, I discovered selectivity which cut out WEAF half a mile away and brought in WOC eight meters away without any background of interference. The set used a stage of tuned radio frequency which provided the two tuned circuits (antenna and detector-grid) as well as regeneration to increase selecivity and make up for the inevitable losses caused by the obsolescent coils; and by really loose coupling to the antenna which was but 25 feet long (I have yet to be convinced that more length improves matters). I achieved an inherent—no, not really inherent, say an acquired—selectivity which was O.K. Had I used up-to-date toroidal low-loss coils I could have moved within two blocks of the station.

So my advice is to learn what real selectivity is. Not merely selectivity at fifteen miles, or five miles, or one mile, from the station, but within several blocks of it. Then these yowlers about congestion will find it doesn't exist nearly so much as they thought, although of course it is perfectly true that no one can deny that there is an inexcusable amount of congestion even for such really selective sets.

There are one or two matters of some importance which I have never read discussed in Radio articles. I refer to critical tuning controls and selectivity. Many a time I have seen a set which promised to be very selective. On moderate DX, if verniers were not used and the operator's hands were on the tuning dials while the set was oscillating, the squeal would rise and fall with the heart-beats of the operator. Yet at short range the selectivity was gone. A set like that is of little use.

The opposite is found in sets of the tuned radio frequency type which are built on low-loss principles; there each dial of itself is not particularly selective or critical, but when the three are adjusted to an easily found resonance, the selectivity is high, provided, of course, that it is not nullified by an obsolete type of neutroformer and other broad-tuning elements. Hence I would recommend those who wish to improve their selectivity to try using two non-critical low-loss tuned circuits and a short aerial.—S.W., Princeton, N. J.

Programs Fresh and Peppy Because Studio Is Cool

MINNEAPOLIS.—The cool air of WAMD here, washed by pure artesian well water, makes this studio one of the most pleasant for summer broadcasting. Artists at this station do not mop their brows nor fan themselves. Perhaps this is the reason their programs sound fresh and peppy even in the warmest weather.

An Evening at Home with the Listener In

(FOR EASTERN TIME Or Cities Using Central Daylight Saving Time) (Tabular form and listings copyrighted. Reproduction is forbidden.) (FOR PACIFIC TIME)

Call	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Call	Location	Met.	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Call
AT9	Silent	6:00- 7:00	Silent	Silent	Silent	8:00- 9:55	Silent	AT9	Fort Bragg, N. C.	435	Silent	3:00- 4:00	Silent	Silent	Silent	5:00- 7:55	Silent	AT9
CFCA	Silent	7:00- 8:00	Silent	8:15- 9:15	8:15- 9:15	8:15- 9:15	Silent	CFCA	Toronto, Ont.	356.9	Silent	4:00- 5:00	Silent	5:15- 6:15	5:15- 6:15	5:15- 6:15	Silent	CFCA
CFCN	12:00- 2:00	Silent	Silent	Silent	Silent	10:00-11:00	Silent	CFCN	Calgary, Alta.	434.5	9:00-11:00	Silent	Silent	Silent	Silent	7:00- 8:00	Silent	CFCN
CHNC	Silent	Silent	7:30- 8:30	Silent	Silent	Silent	Silent	CHNC	Toronto, Ont.	356.9	Silent	Silent	4:30- 5:30	Silent	Silent	Silent	Silent	CHCN
CJCA	11:00- 1:00	9:30-10:30	9:30-11:30	9:30-10:00	8:00-10:00	11:00- 1:00	10:00- 1:00	CJCA	Edmonton, Can.	516.9	8:00-10:00	6:30- 7:30	6:30- 8:30	6:30- 7:00	5:00- 7:00	8:00-10:00	7:00-11:00	CJCA
CKAC	6:30-10:00	Silent	Silent	6:30-10:00	Silent	6:30-10:00	Silent	CKAC	Montreal, Que.	410.7	3:30- 7:00	Silent	Silent	3:30- 7:00	Silent	3:00- 7:00	Silent	CKAC
CKY	7:30- 9:15	8:00-10:45	Silent	9:30-11:45	Silent	9:00-10:00	9:30-10:45	CKY	Winnipeg, Man.	384.4	4:30- 6:15	5:00- 7:45	Silent	6:30- 8:45	Silent	6:00- 7:00	6:30- 7:45	CKY
CNRA	Silent	Silent	Silent	7:30- 8:30	Silent	Silent	7:30- 8:30	CNRA	Moncton, Can.	313	Silent	Silent	Silent	4:30- 5:30	Silent	Silent	4:30- 5:30	CNRA
CNRO	7:30-12:30	Silent	Silent	Silent	7:30-12:30	Silent	Silent	CNRO	Ottawa, Ont.	434.5	4:30- 9:30	Silent	Silent	Silent	4:30- 9:30	Silent	Silent	CNRO
CYB	11:30-12:45	Silent	Silent	10:15-11:15	Silent	Silent	Silent	CYB	Mexico City, Mex.	370	8:15- 9:45	Silent	Silent	7:15- 8:15	Silent	Silent	Silent	CYB
CYL	Silent	9:00-10:30	Silent	9:00-10:30	Silent	Silent	9:00-10:30	CYL	Mexico City, Mex.	480	Silent	6:00- 7:30	Silent	6:00- 7:30	Silent	Silent	6:00- 7:30	CYL
CYX	Silent	Silent	10:15-11:30	Silent	Silent	Silent	10:15-11:45	CYX	Mexico City, Mex.	330	Silent	Silent	7:15- 8:30	Silent	Silent	Silent	7:15- 8:45	CYX
KDKA	8:45- 9:55	7:00- 8:00	8:45- 9:55	8:45- 9:30	8:45- 9:55	8:00-11:30	8:45- 9:55	KDKA	Pittsburgh, Pa.	309.1	5:45- 6:55	4:00- 5:00	5:45- 6:55	5:45- 8:30	5:45- 6:55	5:00- 8:30	5:45- 6:55	KDKA
KFAB	7:00- 8:00	5:00- 6:00	7:00-10:30	7:00- 9:30	7:00-10:30	Silent	7:00-10:30	KFAB	Lincoln, Nebr.	340.7	4:00- 5:00	2:00- 3:00	4:00- 7:30	4:00- 6:30	4:00- 7:30	Silent	4:00- 7:30	KFAB
KFAE	Silent	Silent	Silent	Silent	10:30-12:00	Silent	Silent	KFAE	Pullman, Wash.	348.6	Silent	Silent	Silent	Silent	7:30- 9:00	Silent	Silent	KFAE
KFAU	Silent	Silent	10:00-12:00	Silent	Silent	Silent	10:00-12:00	KFAU	Boise, Idaho	275	Silent	Silent	7:00- 9:00	Silent	Silent	Silent	7:00- 9:00	KFAU
KFDM	Silent	9:00-10:00	Silent	9:00-11:30	Silent	Silent	9:00-11:30	KFDM	Beaumont, Texas	315.6	Silent	6:00- 7:00	Silent	6:00- 8:30	Silent	Silent	6:00- 8:30	KFDM
KFI	9:45- 3:00	7:00- 2:00	9:45- 2:00	9:45- 2:00	9:45- 2:00	9:45- 2:00	9:45- 2:00	KFI	Los Angeles, Calif.	467	6:45-12:00	4:00-11:00	6:45-11:00	6:45-11:00	6:45-11:00	6:45-11:00	6:45-11:00	KFI
KFMQ	Silent	Silent	Silent	10:00-11:00	8:30- 9:30	Silent	Silent	KFMQ	Fayetteville, Ark.	299.8	Silent	Silent	Silent	7:00- 8:00	5:30- 6:30	Silent	Silent	KFMQ
KFNF	8:30-10:30	7:30-10:15	8:30-10:30	8:30-10:30	8:30-10:30	8:30-10:30	8:30-10:30	KFNF	Shenandoah, Ia.	266	5:30- 7:30	4:30- 7:15	5:30- 7:30	5:30- 7:30	5:30- 7:30	5:30- 7:30	5:30- 7:30	KFNF
KFOA	9:00- 2:30	Silent	9:00- 1:00	9:00- 2:00	9:00- 1:00	Silent	9:00- 2:30	KFOA	Seattle, Wash.	454.3	6:00-11:30	Silent	6:00-10:00	6:00-11:00	6:00-10:00	Silent	6:00-11:30	KFOA
KFUO	Silent	9:15-10:15	9:00-10:00	Silent	10:15-11:15	Silent	Silent	KFUO	St. Louis, Mo.	545.1	Silent	6:15- 7:15	6:00- 7:00	Silent	7:15- 8:15	Silent	Silent	KFUO
KFVE	11:00- 1:00	Silent	11:00- 1:00	11:00- 1:00	11:00- 1:00	Silent	11:00- 1:00	KFVE	University City, Mo.	240	8:00-10:00	Silent	8:00-10:00	8:00-10:00	8:00-10:00	Silent	8:00-10:00	KFVE
KFWA	Silent	Silent	11:00- 1:00	Silent	11:00- 1:00	Silent	11:00- 1:00	KFWA	Ogden, Utah	261	Silent	Silent	8:00-10:00	Silent	8:00-10:00	Silent	8:00-10:00	KFWA
KFWB	10:00- 2:00	12:00- 2:00	9:30- 2:00	10:45- 2:00	10:00- 2:00	10:00- 2:00	10:00- 2:00	KFWB	Hollywood, Calif.	252	7:00-11:00	9:00-11:00	6:30-11:00	7:45-11:00	7:00-11:00	7:00-11:00	7:00-11:00	KFWB
KGO	11:00- 4:00	6:30-12:00	11:00- 1:00	11:00- 1:00	11:00- 1:00	11:00- 4:00	Silent	KGO	Oakland, Calif.	361.2	8:00- 1:00	3:30- 9:00	8:00-10:00	8:00-10:00	8:00-10:00	8:00- 1:00	Silent	KGO
KGW	9:00- 3:00	10:45-12:00	9:00-10:00	12:00- 2:00	9:00- 2:00	11:00- 3:00	9:00- 1:30	KGW	Portland, Ore.	491.5	6:00-12:00	7:45- 9:00	6:00- 7:00	8:00-12:00	6:00-11:00	8:00-12:00	6:00-10:30	KGW
KHJ	8:30- 2:00	9:00- 2:00	10:00- 4:30	8:30- 2:00	8:30- 2:00	8:30- 2:00	8:30- 2:00	KHJ	Los Angeles, Calif.	405.2	5:30-11:00	6:00-11:00	7:00- 1:30	5:30-11:00	5:30-11:00	5:30-11:00	5:30-11:00	KHJ
KIAF	Silent	3:00- 4:00	8:00- 9:00	Silent	8:00- 9:00	Silent	8:00- 9:00	KIAF	Sihtipok, Minn.	421	Silent	2:00- 3:00	7:00- 8:00	Silent	7:00- 8:00	Silent	7:00- 8:00	KIAF
KJR	Silent	10:00-11:00	10:00- 2:00	Silent	10:00- 1:00	11:30- 2:00	11:30- 2:00	KJR	Seattle, Wash.	384.4	Silent	7:00- 8:00	7:00-11:00	Silent	7:00-10:00	8:30-12:00	8:30-11:00	KJR
KJS	Silent	10:15-12:30	Silent	11:00-12:00	Silent	11:00-12:00	Silent	KJS	Los Angeles, Calif.	293.9	Silent	7:15- 9:30	Silent	8:00- 9:00	Silent	8:00- 9:00	Silent	KJS
KLDS	Silent	7:30-11:00	Silent	9:00-10:00	Silent	9:00-10:00	Silent	KLDS	Independence, Mo.	440.9	Silent	4:30- 8:00	Silent	6:00- 7:00	Silent	6:00- 7:00	Silent	KLDS
KLX	Silent	Silent	9:00- 2:00	Silent	9:00- 2:30	Silent	9:00- 1:30	KLX	Oakland, Calif.	508.2	Silent	Silent	6:00-11:00	Silent	6:00-11:30	Silent	6:00-10:30	KLX
KNX	11:00- 5:00	8:00- 2:00	9:30- 3:00	9:30- 3:00	10:00- 1:00	9:30- 3:00	9:30- 3:00	KNX	Hollywood, Calif.	336.9	8:00- 2:00	5:00-11:00	6:30-12:00	6:30-12:00	7:00-10:00	6:30-12:00	6:30-12:00	KNX
KOA	10:00- 1:00	6:00-11:00	8:30-11:00	9:30-10:30	8:30- 1:00	8:30- 9:30	8:30-11:00	KOA	Denver, Colo.	322.4	7:00-10:00	3:00- 8:00	5:30- 8:00	6:30- 7:30	5:30-10:00	5:30- 6:30	5:30- 8:00	KOA
KOIL	8:30- 1:00	8:30-10:00	8:30- 1:00	8:30- 1:00	8:30- 1:00	8:30- 1:00	8:30- 1:00	KOIL	Council Bluffs, Ia.	278	5:30-11:00	5:30- 7:00	5:30-11:00	5:30-11:00	5:30-11:00	5:30-11:00	5:30-11:00	KOIL
KPO	9:35- 3:00	9:30- 1:00	9:30- 2:00	9:30- 2:00	9:30- 2:00	9:30- 2:00	10:00- 2:00	KPO	San Francisco, Calif.	428.3	6:35-12:00	6:30-10:00	6:30-11:00	6:30-11:00	6:30-11:00	6:30-11:00	7:00-11:00	KPO
KPRC	8:30-11:00	9:00-10:00	8:30-11:00	8:30-11:00	8:30-11:00	8:30-11 00	Silent	KPRC	Houston, Texas	296.9	5:30- 8:00	6:00- 7:00	5:30- 8:00	5:30- 8:00	5:30- 8:00	5:30- 8:00	Silent	KPRC
KSD	8:00- 9:00	Silent	10:00-11:00	8:00- 9:00	8:00- 9:00	Silent	8:00- 9:00	KSD	St. Louis, Mo.	545.1	5:00- 6:00	Silent	7:00- 8:00	5:00 6:00	5:00- 6:00	Silent	5:00- 6:00	KSD
KSL	10:00- 1:00	11:00- 1:00	10:00- 1:00	11:00- 1:00	10:00- 1:00	10:00- 1:00	11:00- 1:00	KSL	Salt Lake City, Utah	299.8	7:00-10:00	8:00-10:00	7:00-10:00	8:00-10:00	7:00-10:00	7:00-10:00	8:00-10:00	KSL
KTCL	9:50- 3:00	10:50- 1:10	10:00-12:00	10:00- 2:00	10:00- 2:00	Silent	10:00- 3:00	KTCL	Seattle, Wash.	305.9	6:50-12:00	7:50-10:10	7:00- 9:00	7:00-11:00	7:00-11:00	Silent	7:00-12:00	KTCL
KTHS	10:00-12:00	10:00-12:00	10:00-12:00	10:00-12:00	10:00-12:00	10:00-12:00	10:00-12:00	KTHS	Hot Springs, Ark.	374.8	7:25- 8:25	7:25- 8:00	7:25- 8:25	7:25- 8:25	7:25- 8:25	7:25- 8:25	7:25- 8:25	KTHS
KTW	9:30-10:30	Silent	Silent	9:30-10:30	Silent	9:30-10:30	Silent	KTW	Seattle, Wash.	455	Silent	7:00- 9:30	Silent	Silent	Silent	Silent	Silent	KTW
KYW	7:00- 1:30	4:00- 8:00	Silent	7:00- 11:30	7:00- 1:30	7:00- 11:30	7:00- 1:30	KYW	Chicago, Ill.	535.4	4:00-10:30	1:00- 2:00	Silent	4:00- 8:30	4:00-10:30	4:00- 8:30	4:00-10:30	KYW
NAA	Silent	Silent	7:45- 8:00	7:45- 8:00	7:25- 8:40	7:45- 8:00	7:45- 8:00	NAA	Radio, Va.	434.5	Silent	Silent	4:45- 5:00	4:45- 5:00	4:25- 5:40	4:45- 5:00	4:45- 5:00	NAA
PWX	8:30-11:00	Silent	Silent	Silent	8:30-11:00	Silent	Silent	PWX	Havana, Cuba	400	5:30- 8:00	Silent	Silent	Silent	5:30- 8:00	Silent	Silent	PWX
WAHG	12:00- 2:00	Silent	7:00- 1:00	Silent	6:30-11:00	Silent	7:00-10:30	WAHG	Richmond, N. Y.	315.6	9:00-11:00	Silent	4:00-10:00	Silent	3:30- 8:00	Silent	4:00- 7:30	WAHG
WAMD	11:00-12:00	8:00-11:00	Silent	11:00-12:00	11:00-12:30	11:00-12:30	11:00-12:00	WAMD	Minneapolis, Minn.	243.8	8:00- 9:00	12:00- 8:00	Silent	8:00- 9:00	8:00- 9:30	8:00- 9:30	8:00- 9:00	WAMD
WBAP	8:00- 9:00	12:00- 1:00	8:30- 2:00	8:30-11:45	8:30-11:45	8:30-11:45	8:30-11:45	WBAP	Fort Worth, Tex.	475.9	5:00- 6:00	9:00-10:00	5:30-10:00	5:30- 8:45	5:30- 8:45	5:30- 8:45	5:30- 8:45	WBAP
WBAR	Silent	11:00-12:00	10:00-11:00	Silent	9:00-10:00	8:30- 9:30	Silent	WBAR	Sisiht, Wis.	406	Silent	8:00- 9:00	7:00- 8:00	Silent	6:00- 7:00	5:30- 6:30	Silent	WBAR
WBAV	Silent	Silent	8:00-10:00	Silent	Silent	Silent	8:00- 9:00	WBAV	Columbus, O.	293.9	Silent	Silent	5:00- 7:00	Silent	Silent	Silent	5:00- 6:00	WBAV
WBBM	8:00-12:00	4:00- 2:00	Silent	8:00-12:00	8:00-10:00	8:00-12:00	8:00-10:00	WBBM	Chicago, Ill.	226	5:00- 9:00	1:00-11:00	Silent	5:00- 9:00	5:00- 7:00	5:00- 9:00	5:00- 7:00	WBBM
WBBR	7:00- 8:00	8:00- 9:30	Silent	Silent	Silent	Silent	Silent	WBBR	Staten Island, N. Y.	272.6	4:00- 5:00	4:00- 5:30	Silent	Silent	Silent	Silent	Silent	WBBR
WBCN	9:00- 1:00	5:00-12:00	Silent	9:00- 1:00	8:00-12:00	9:00- 2:00	9:00- 1:00	WBCN	Chicago, Ill.	266	6:00-10:00	2:00- 9:00	Silent	6:00-10:00	5:00- 9:00	6:00-11:00	6:00-10:00	WBCN
WBZ	Silent	7:00- 9:45	6:00- 9:55	6:00- 9:55	6:00- 9:55	6:00- 9:55	6:00- 9:55	WBZ	Springfield, Mass.	333.1	Silent	4:00- 6:45	3:00- 6:55	3:00- 6:55	3:00- 6:55	3:00- 6:55	3:00- 6:55	WBZ
WCAC	Silent	Silent	7:00- 9:00	Silent	7:00- 9:00	Silent	7:00- 9:00	WCAC	Plainfield, Conn.	275	Silent	Silent	4:00- 6:00	Silent	4:00- 6:00	Silent	4:00- 6:00	WCAC
WCAE	7:30- 8:30	5:30- 6:30	7:30-11:00	7:00-10:00	7:30-11:00	7:00-10:00	7:00-10:00	WCAE	Pittsburgh, Pa.	461.3	4:30- 5:30	2:30- 3:30	4:30- 8:00	4:00- 7:00	4:30- 8:00	4:00- 7:00	4:00- 7:00	WCAE
WCAP	Silent	4:00- 9:15	7:00-10:30	Silent	7:00-10:30	Silent	7:00-10:00	WCAP	Washington, D. C.	468.5	Silent	1:00- 6:15	4:00- 7:30	Silent	4:00- 7:30	Silent	4:00- 7:00	WCAP
WCAU	Silent	Silent	Silent	5:30-10:30	5:30-10:30	5:30-10:30	5:30-10:30	WCAU	Philadelphia, Pa.	278	Silent	Silent	Silent	2:30- 7:30	2:30- 7:30	2:30- 7:30	2:30- 7:30	WCAU
WCBD	Silent	2:30-10:00	8:00- 10:30	Silent	Silent	8:00-10:30	Silent	WCBD	Zion, Ill.	344.6	Silent	6:00- 7:00	5:00- 7:30	Silent	Silent	5:00- 7:30	Silent	WCBD
WCCO	7:05-12:00	5:20-11:15	7:00-12:00	7:00-10:00	7:00- 1:30	7:00-11:00	7:00-12:00	WCCO	Minn.-St. P., Minn.	416.4	4:05- 9:00	3:20- 8:15	4:00- 9:00	4:00- 7:00	4:00-10:30	4:00- 8:00	4:00-11:00	WCCO
WCTS	Silent	6:20-10:15	Silent	Silent	Silent	9:00-10:00	Silent	WCTS	Worcester, Mass.	268	Silent	3:20- 7:15	Silent	Silent	Silent	6:00- 7:00	Silent	WCTS
WCX	6:00- 7:00	3:30- 9:00	6:00- 9:00	6:00-11:00	6:00- 9:00	6:00- 9:30	6:00- 9:00	WCX	Detroit, Mich.	516.9	3:00- 4:00	12:30- 6:00	3:00- 6:00	3:00- 8:00	3:00- 6:00	3:00- 6:30	3:00- 6:00	WCX
WDAF	7:00- 8:00	5:00- 6:30	7:00- 2:00	7:00- 8:00	7:00- 2:00	7:00- 8:00	7:00- 2:00	WDAF	Kansas City, Mo.	365.6	4:00- 5:00	2:00- 3:30	4:00-11:00	4:00- 5:00	4:00-11:00	4:00- 5:00	4:00-11:00	WDAF
WDWF	Silent	Silent	Silent	7:30- 8:30	Silent	Silent	Silent	WDWF	Providence, R. I.	440.9	Silent	Silent	Silent	4:30- 5:30	Silent	Silent	Silent	WDWF
WEAF	5:00-11:00	6:20- 9:15	5:00-10:30	5:00-11:00	5:00-11:00	5:00-11:00	5:00-11:00	WEAF	New York, N. Y.	491.5	2:00- 8:00	3:20- 6:15	2:00- 7:30	2:00- 8:00	2:00- 8:00	2:00- 8:00	2:00- 8:00	WEAF
WEAO	Silent	Silent	Silent	Silent	8:00- 9:00	8:00- 9:00	Silent	WEAO	Columbus, Ohio	293.9	Silent	Silent	Silent	Silent	5:00- 6:00	5:00- 6:00	Silent	WEAO
WEAR	7:00- 8:00	2:30- 7:00	7:00- 8:00	7:00-10:00	7:00- 8:00	7:00-11:00	7:00-11:00	WEAR	Cleveland, Ohio	389.4	4:00- 5:00	11:30- 4:00	4:00- 5:00	4:00- 7:00	4:00- 5:00	4:00- 8:00	4:00- 8:00	WEAR
WEBH	7:30-12:30	7:00- 9:00	Silent	7:30-12:30	7:30-12:30	7:30-12:30	7:30-12:30	WEBH	Chicago, Ill.	370.2	4:30- 9:30	4:00- 6:00	Silent	4:30- 9:30	4:30- 9:30	4:30- 9:30	4:30- 9:30	WEBH
WEBJ	Silent	Silent	Silent	7:00- 8:00	6:00- 8:00	Silent	7:00- 8:00	WEBJ	New York, N. Y.	272.6	Silent	Silent	Silent	4:00- 5:00	3:00- 5:00	Silent	4:00- 5:00	WEBJ
WEEI	Silent	6:20- 9:20	7:30-10:00	6:30-10:00	7:00- 9:00	7:00-10:00	7:30-10:00	WEEI	Boston, Mass.	475.9	Silent	3:20- 6:20	4:30- 7:00	3:30- 7:00	4:00- 7:00	4:00- 7:00	4:00- 7:00	WEEI
WFAA	9:30- 1:00	7:30-12:00	7:30-10:30	7:30- 1:00	Silent	7:30- 1:00	7:30-10:30	WFAA	Dallas, Tex.	475.9	6:30-10:00	4:30- 9:00	4:30- 7:30	4:30-10:00	Silent	4:30-10:00	4:30- 7:30	WFAA
WFBH	10:30- 1:00	4:00- 7:00	10:30- 1:00	10:30- 1:00	10:30- 1:00	10:30- 1:00	10:30- 1:00	WFBH	New York, N. Y.	272.6	7:30-10:00	1:00- 4:00	7:30-10:00	7:30-10:00	7:30-10:00	7:30-10:00	7:30-10:00	WFBH
WFI	Silent	6:30- 9:15	Silent	7:00- 9:00	Silent	7:00-10:00	Silent	WFI	Philadelphia, Pa.	394.5	Silent	3:30- 6:15	Silent	4:00- 6:00	Silent	4:00- 7:00	Silent	WFI
WGBS	5:00-11:00	2:30- 9:30	Silent	5:00-11:00	Silent	5:00-12:00	Silent	WGBS	New York, N. Y.	252	2:00- 8:00	5:30- 6:30	Silent	2:00- 8:00	Silent	2:00- 9:00	Silent	WGBS
WGCP	Silent	6:30-11:00	6:30-11:00	Silent	6:30-11:00	Silent	6:30-11:00	WGCP	New York, N. Y.	315.6	Silent	3:30- 8:00	3:30- 8:00	Silent	3:30- 8:00	Silent	3:30- 8:00	WGCP
WGES	10:30- 2:00	10:30- 2:00	Silent	10:30- 2:00	10:30- 2:00	10:30- 2:00	10:30- 2:00	WGES	Oak Park, Ill.	250	7:30-11:00	7:30-11:00	Silent	7:30-11:00	7:30-11:00	7:30-11:00	7:30-11:00	WGES
WGN	6:30-11:30	2:30-10:00	Silent	6:30-11:30	6:30-11:30	6:30-11:30	6:30-11:30	WGN	Chicago, Ill.	370.2	3:30- 8:30	6:00- 7:00	Silent	3:30- 8:30	3:30- 8:30	3:30- 8:30	3:30- 8:30	WGN
WGR	7:45- 9:15	2:00- 3:00	7:00-12:00	7:00-10:00	7:00-12:00	7:00-10:00	6:00-12:00	WGR	Buffalo, N. Y.	319	4:45- 6:15	11:00-12:00	4:00- 9:00	4:00- 7:00	4:00- 9:00	4:00- 7:00	3:00- 9:00	WGR
WGY	9:00-12:00	6:30-11:00	6:30- 8:30	7:10-11:00	Silent	6:45-11:30	7:15-10:30	WGY	Schenectady, N. Y.	379.5	6:00- 9:00	3:30- 8:00	3:30- 5:30	4:10- 8:00	Silent	3:45- 8:30	4:15- 7:30	WGY
WHAD	7:00- 8:00	4:15- 5:15	7:00-11:00	7:00- 8:00	7:00- 1:30	7:00-11:00	7:00-10:30	WHAD	Milwaukee, Wis.	275	4:00- 5:00	1:15- 2:15	4:00- 8:00	4:00- 5:00	4:00-10:30	4:00- 8:00	4:00- 6:30	WHAD
WHAR	6:30- 9:30	8:00-11:00	6:30- 8:00	6:30-12:00	Silent	6:30- 9:30	6:30-12:00	WHAR	Atlantic City, N. J.	275	3:30- 6:30	5:00- 8:00	3:30- 5:00	3:30- 9:00	Silent	3:30- 6:30	3:30- 9:00	WHAR
WHAS	8:30-10:00	5:00- 6:00	Silent	8:30-10:30	8:30-10:00	8:30-10:00	8:30-10:00	WHAS	Louisville, Ky.	399.8	5:30- 7:00	2:00- 3:00	Silent	5:30- 7:30	5:30- 7:00	5:30- 7:00	5:30- 7:00	WHAS
WHAZ	Silent	Silent	8:15-10:15	Silent	Silent	Silent	Silent	WHAZ	Troy, N. Y.	379.5	Silent	Silent	5:15- 7:15	Silent	Silent	Silent	Silent	WHAZ
WHB	Silent	9:00- 2:00	8:00- 9:00	Silent	8:00- 9:00	9:00-11:30	8:00- 9:00	WHB	Kansas City, Mo.	365.6	Silent	6:00-11:00	5:00- 6:00	Silent	5:00- 6:00	6:00- 8:30	5:00- 6:00	WHB
WHN	6:30- 9:00	6:30-11:00	6:30-11:00	6:30-11:00	6:30-10:00	6:30-11:00	6:30-11:00	WHN	New York, N. Y.	361.2	3:30- 6:00	3:30- 8:00	3:30- 8:00	3:30- 8:00	3:30- 7:00	3:30- 8:00	3:30- 8:00	WHN
WHO	Silent	8:30- 9:30	8:30- 1:00	8:30- 9:30	7:30- 1:00	8:30- 1:00	8:30- 1:00	WHO	Des Moines, Ia.	526	Silent	5:30- 6:30	5:30-10:00	5:30- 6:30	4:30-10:00	5:30-10:00	5:30-10:00	WHO
WHT	7:00- 1:00	12:00-10:30	7:00- 1:00	7:00- 1:00	7:00- 1:00	7:00- 1:00	7:00- 1:00	WHT	Deerfield, Ill.	399.8	4:00-10:00	9:00- 7:30	4:00-10:00	4:00-10:00	4:00-10:00	4:00-10:00	4:00-10:00	WHT
WIBO	6:00- 8:00	6:00-12:00	Silent	6:00- 3:00	6:00- 3:00	6:00- 3:00	6:00- 2:00	WIBO	Chicago, Ill.	226	3:00- 5:00	3:00- 9:00	Silent	3:00-12:00	3:00- 9:00	3:00-12:00	3:00-11:00	WIBO
WIP	7:00-11:05	Silent	Silent	7:00-12:00	Silent	7:00-12:00	Silent	WIP	Philadelphia, Pa.	508.2	4:00- 8:05	Silent	Silent	4:00- 9:00	Silent	4:30- 9:00	Silent	WIP
WJAR	Silent	6:20- 9:15	6:45- 7:45	6:30- 9:00	6:30- 7:30	7:00-10:00	7:00-11:00	WJAR	Providence, R. I.	305.9	Silent	3:20- 6:15	3:45- 4:45	3:30- 6:00	3:30- 4:30	4:00- 7:00	4:00- 8:00	WJAR
WJAS	6:00-11:00	Silent	6:00-11:00	6:00-11:00	6:00-11:00	6:00-11:00	6:00-11:00	WJAS	Pittsburgh, Pa.	275.3	3:00- 8:00	Silent	3:00- 8:00	3:00- 8:00	3:00- 8:00	3:00- 8:00	3:00- 8:00	WJAS
WJJD	6:45- 1:00	8:45-10:00	6:45- 1:00	6:45- 1:00	6:45- 1:00	Silent	6:45- 1:00	WJJD	Mooseheart, Ill.	302.8	3:45-10:00	5:45- 7:00	3:45-10:00	3:45-10:00	3:45- 7:00	Silent	3:30- 7:00	WJJD
WJR	7:00-11:00	Silent	7:00-11:00	7:00- 8:00	7:00-11:00	7:00-11:00	7:00-11:00	WJR	Detroit, Mich.	517	4:00- 8:00	Silent	4:00- 8:00	4:00- 5:00	4:00- 8:00	4:00- 8:00	4:00- 8:00	WJR
WJY	Sitent	7:15- 8:15	Silent	7:30-10:15	Silent	7:30- 9:00	7:45- 8:45	WJY	New York, N. Y.	405.2	Silent	4:15- 5:15	Silent	4:30- 7:15	Silent	4:30- 6:00	4:45- 5:45	WJY
WJZ	6:00-10:30	7:00-10:00	7:15- 8:15	7:10-10:30	8:30-10:30	7:30-10:00	7:15- 9:45	WJZ	New York, N. Y.	454.3	3:00- 7:30	4:00- 7:00	4:15- 5:15	4:10- 7:30	5:30- 7:30	4:30- 7:30	4:15- 6:45	WJZ
WKAQ	Silent	7:00- 9:00	Silent	Silent	7:00- 9:00	Silent	Silent	WKAQ	San Juan, P. R.	340.7	Silent	4:00- 6:00	Silent	Silent	4:00- 6:00	Silent	Silent	WKAQ
WKAR	12:30- 2:00	Silent	7:00- 8:00	Silent	8:00- 9:15	Silent	7:00- 8:00	WKAR	Lansing, Mich.	285.5	9:30-11:00	Silent	Silent	Silent	5:00- 6:15	Silent	Silent	WKAR
WKRC	10:00-12:00	10:00-11:00	8:00-12:00	10:00-12:30	8:00-10:30	Silent	Silent	WKRC	Cincinnati, O.	326	7:00- 9:00	7:00- 8:00	5:00- 9:00	7:00- 9:30	5:00- 7:30	Silent	Silent	WKRC
WLBL	Silent	Silent	Silent	9:00-10:00	Silent	9:00-10:00	Silent	WLBL	Stevens Point, Wis.	278	Silent	Silent	Silent	6:00- 7:00	Silent	6:00- 7:00	Silent	WLBL
WLIT	Silent	Silent	6:30-10:00	Silent	6:30-10:00	Silent	6:30-10:00	WLIT	Philadelphia, Pa.	394.5	Silent	Silent	3:30- 7:00	Silent	3:30- 7:00	Silent	3:30- 7:00	WLIT
WLS	7:45- 1:00	7:30- 8:55	Silent	7:00- 1:00	7:00-11:30	7:00- 8:55	7:00-11:30	WLS	Chicago, Ill.	344.6	4:45-10:00	4:30- 5:55	Silent	4:00-10:00	4:00- 8:30	4:00- 5:55	4:00- 8:30	WLS
WLW	6:00- 8:00	6:30- 8:30	8:15-10:30	7:00-10:00	7:00-11:00	7:00-12:15	Silent	WLW	Harrison, O.	422.3	3:00- 5:00	3:30- 5:30	6:00- 7:30	4:00- 7:00	4:00- 8:00	4:00- 9:15	Silent	WLW
WMAK	Silent	Silent	8:30-10:15	Silent	Silent	11:00-12:00	Silent	WMAK	Lockport, N. Y.	265.5	Silent	Silent	5:30- 7:15	Silent	Silent	8:00- 9:00	Silent	WMAK
WMAQ	8:00-10:00	Silent	Silent	8:00-10:15	8:00- 9:45	8:00-10:15	8:00-10:15	WMAQ	Chicago, Ill.	447.5	5:00- 7:00	Silent	Silent	5:00- 7:15	5:00- 6:45	5:00- 7:15	5:00- 7:15	WMAQ
WMBB	7:00-10:30	7:00-10:30	Silent	7:00-10:30	7:00-10:30	7:00-10:30	7:00-10:30	WMBB	Chicago, Ill.	250	4:00- 7:30	4:00- 7:30	Silent	4:00- 7:30	4:00- 7:30	4:00- 7:30	4:00- 7:30	WMBB
WMBF	6:30-12:00	6:30-12:00	6:30-12:00	6:30-12:00	6:30-12:00	6:30-12:00	6:30-12:00	WMBF	Miami Beach, Fla.	384.4	3:30- 9:00	3:30- 9:00	3:30- 9:00	3:30- 9:00	3:30- 9:00	3:30- 9:00	3:30- 9:00	WMBF
WMC	8:30-10:30	Silent	8:30-10:30	8:30- 1:00	Silent	8:30-10:30	8:30- 1:00	WMC	Memphis, Tenn.	499.7	5:30- 7:30	Silent	5:30- 7:30	5:30-10:00	Silent	5:30- 7:30	5:30-10:00	WMC
WMCA	5:30-11:00	6:00- 6:30	5:30-11:00	5:30-11:00	5:30-11:00	5:30-11:00	5:30-11:00	WMCA	New York, N. Y.	340.7	2:30- 8:00	3:00- 3:30	2:30- 8:00	2:30- 8:00	2:30- 8:00	2:30- 8:00	2:30- 8:00	WMCA
WNAC	7:00- 9:00	2:00- 8:30	7:00- 9:00	7:00- 9:00	7:00- 9:00	7:00- 9:00	7:00- 9:00	WNAC	Boston, Mass.	280.2	4:00- 6:00	11:00- 5:30	4:00- 6:00	4:00- 6:00	4:00- 6:00	4:00- 6:00	4:00- 6:00	WNAC
WNYC	5:30- 9:20	8:00-10:00	6:00- 9:20	6:20- 9:20	6:30- 9:30	6:20- 8:30	6:30- 9:20	WNYC	New York, N. Y.	526	2:30- 6:20	5:00- 7:00	3:00- 7:00	3:20- 6:20	3:30- 6:30	Silent	3:30- 6:20	WNYC
WOAI	9:30-10:30	9:00-11:30	9:30-10:30	9:30-11:30	9:30-10:30	10:30-11:30	Silent	WOAI	San Antonio, Texas	394.5	6:30- 7:30	6:00- 8:30	6:30- 7:30	6:30- 8:30	6:30- 7:30	7:30- 8:30	Silent	WOAI
WOAN	Silent	10:00-11:00	10:00-11:00	10:00-11:00	10:00-11:00	10:00-11:00	10:00-11:00	WOAN	Lawrenceburg, Tenn.	282.6	Silent	7:00- 8:00	7:00- 8:00	7:00- 8:00	7:00- 8:00	7:00- 8:00	7:00- 8:00	WOAN
WOAW	7:00- 1:00	10:00-11:00	7:00-12:00	7:00- 2:00	Silent	7:00-11:00	7:00-11:00	WOAW	Omaha, Nebr.	526	4:00-10:00	7:00- 8:00	4:00- 9:00	4:00-11:00	Silent	4:00- 8:00	4:00- 8:00	WOAW
WOC	10:00- 1:00	9:00-12:30	Silent	7:30-10:00	10:00-11:00	8:00- 1:00	9:00-10:00	WOC	Davenport, Ia.	483.6	7:00-10:00	6:00- 9:30	Silent	4:30- 7:00	7:00- 8:00	5:00-10:00	6:00- 7:00	WOC
WOK	10:00- 1:00	7:00- 1:00	7:00- 1:00	10:00- 1:00	10:00- 1:00	10:00- 1:00	10:00- 1:00	WOK	Homewood, Ill.	217.3	7:00-10:00	4:00-10:00	4:00-10:00	7:00-10:00	7:00-10:00	7:00-10:00	7:00-10:00	WOK
WOO	Silent	6:30- 7:30	6:30-11:00	6:30- 7:30	6:30-11:00	6:30- 7:30	6:30-10:30	WOO	Philadelphia, Pa.	508.2	Silent	3:30- 4:30	3:30- 8:00	3:30- 4:30	3:30- 8:00	3:30- 4:30	3:30- 7:30	WOO
WOR	5:15- 9:00	Silent	5:15- 9:00	5:15- 6:30	5:15- 9:00	5:15- 6:30	5:15- 6:30	WOR	Newark, N. J.	405.2	2:15- 8:00	Silent	2:15- 8:00	2:15- 3:30	2:15- 8:00	2:15- 3:30	2:15- 3:30	WOR
WORD	8:30-10:30	6:45- 8:00	8:30- 9:45	8:30-10:00	8:30-10:00	8:30-10:00	8:30-10:30	WORD	Batavia, Ill.	275	5:30- 7:30	3:45- 5:00	5:30- 6:45	5:30- 7:00	5:30- 7:00	5:30- 7:00	5:30- 7:30	WORD
WOS	Silent	9:00-10:00	9:00-11:00	Silent	9:00-11:00	Silent	9:00-11:00	WOS	Jefferson, City, Mo.	440.9	Silent	6:00- 7:00	6:00- 8:00	Silent	6:00- 8.00	Silent	6:00- 8:00	WOS
WPG	6:00-11:00	2:15-10:00	6:00-10:30	7:00-10:00	Silent	6:00-11:15	6:00-10:00	WPG	Atlantic City, N. J.	299.8	3:00- 8:00	5:00- 7:00	3:00- 7:30	4:00- 7:00	Silent	3:00- 8:15	3:00- 7:00	WPG
WQJ	7:00- 3:00	7:00-10:00	Silent	7:00- 2:00	7:00- 2:00	7:00- 2:00	7:00- 2:00	WQJ	Chicago, Ill.	447.5	4:00-12:00	4:00- 7:00	Silent	4:00-11:00	4:00-11:00	4:00-11:00	4:00-11:00	WQJ
WRBC	Silent	8:30- 9:30	8:30- 9:30	Silent	Silent	Silent	Silent	WRBC	Valparaiso, Ind.	278	Silent	5:30- 6:30	5:30- 6:30	Silent	Silent	Silent	Silent	WRBC
WRC	7:00-11:30	Silent	Silent	7:00-12:00	Silent	7:00-11:00	Silent	WRC	Washington, D. C.	468.5	4:00- 8:30	Silent	Silent	4:00- 9:00	Silent	4:00- 8:00	Silent	WRC
WREO	10:00-12:00	Silent	Silent	8:15- 9:45	Silent	8:15- 9:45	Silent	WREO	Lansing, Mich.	285.5	7:00- 9:00	Silent	Silent	5:15- 6:45	Silent	5:15- 6:45	Silent	WREO
WRW	9:00-11:30	8:00-11:30	9:00-11:30	9:00-11:30	9:00-11:30	9:00-11:30	9:00-11:30	WRW	Tarrytown, N. Y.	273	6:00- 8:30	5:00- 8:30	6:00- 8:30	6:00- 8:30	6:00- 8:30	6:00- 8:30	6:00- 8:30	WRW
WSAI	8:00- 1:30	3:00- 4:00	10:00-12:00	7:45-10:00	10:00-12:00	7:00-10:00	Silent	WSAI	Mason, O.	325.9	5:00-10:30	Silent	7:00- 9:00	4:45- 7:00	7:00- 9:00	4:00- 7:00	Silent	WSAI
WSB	9:00- 1:00	8:30-10:15	9:00- 1:00	9:00- 1:00	11:45- 1:00	9:00- 1:00	9:00- 1:00	WSB	Atlanta, Ga.	428.3	6:00-10:00	5:30- 7:15	6:00-10:00	6:00-10:00	8:45-10:00	6:00-10:00	6:00-10:00	WSB
WSMB	9:30-11:30	Silent	9:30-12:30	Silent	9:30-11:30	9:30-12:00	Silent	WSMB	New Orleans, La.	319	6:30- 8:30	Silent	6:30- 9:30	Silent	6:30- 8:30	6:30- 9:00	Silent	WSMB
WSUI	Silent	8:00-11:00	8:30-10:00	Silent	Silent	Silent	Silent	WSUI	Iowa City, Ia.	483.6	Silent	7:00- 8:00	5:30- 7:00	Silent	Silent	Silent	Silent	WSUI
WTAM	6:00-12:00	Silent	6:00-12:00	6:00- 7:00	6:00- 1:00	6:00- 7:00	6:00- 7:00	WTAM	Cleveland, O.	389.4	3:00- 9:00	Silent	3:00- 9:00	Silent	3:00-10:00	Silent	Silent	WTAM
WTAS	8:00-10:30	8:00-12:00	8:00-10:30	8:00-10:30	8:00-10:30	8:00-12:00	8:00-10:30	WTAS	Elgin, Ill.	302.8	5:00- 7:30	5:00- 9:00	5:00- 7:30	5:00- 7:30	5:00- 7:30	5:00-10:00	5:00- 7:30	WTAS
WTIC	Silent	Silent	5:55- 7:00	5:55- 8:45	Silent	5:55- 7:00	6:00- 8:30	WTIC	Hartford, Conn.	348.6	Silent	Silent	2:55- 4:00	2:55- 5:45	Silent	2:55- 3:00	3:00- 5:30	WTIC
WWJ	Silent	6:20-10:00	6:00- 9:00	6:00- 9:00	6:00-11:00	6:00-12:30	6:00-10:00	WWJ	Detroit, Mich.	352.7	Silent	3:20- 7:00	3:00- 6:00	3:00- 6:00	3:00- 8:00	3:00- 9:30	3:00- 7:00	WWJ

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Good and Bad Transmission

ROBERT L. KERR of London, Ontario, Canada, writes a letter voting his confidence in the crusading ability of Radio Digest and asking that this publication step out and comment upon the good and bad operation of class B stations. Microphone clicks, poor modulation, inexcusable fading and other evils traceable to poor operation or technical arrangement would so be criticised.

Our correspondent has the germ of a splendid idea. Its only weakness is to find a means of execution. Perhaps our readers will help by reporting now and then what they consider excellent technical operation of equipment and flagrant cases of mismanagement on the part of the station engineers. Thus the entire continent could be covered practically.

Good operators would be complimented. Misfunctioning operators would be constructively criticised. Better broadcasting would result. Perhaps less congestion would exist, as a result of stations slipping off of or overmodulating their wave bands.

Mr. Kerr's letter follows:

"Going back over my files of Radio Digest, I note the absence of a column devoted to either commendation or criticism of operation by the technical staffs of broadcasting stations. Programs as to their make-up, telegram reading, station events and artists' abilities are commented upon weekly; still nothing is written as to the good or bad operation of stations' transmitters and those responsible for same.

"Quite a number of class B stations I tune in regularly, have operating staffs that should be commended, and others should be criticised for the manner in which they handle the station equipment. Many a good program is 'bent' by the indiscriminate handling of microphone plugs and switches. Thuds, clicks, hisses and bangs come over the ether. Then, to top off the performance, comes a noise like a ton of coal being dropped into a cellar when the microphone is moved from one location to another.

"Alack! This is not enough. When a microphone exchange of controls is made, the difference in modulation is often so bad that the voice or instruments seem as far away as China.

"This lack of synchronization seems to point to—well, one wonders if the operating staff ever tests out its equipment? Many an evening's entertainment, otherwise faultless, is ruined by the inattention of the station engineer to such little details.

"Knowing that Radio Digest is fearless in attitude to transgressions or trangressors, will you pay attention to the foregoing as it applies to the many class B stations, giving credit where it is due, and laying on the stick where it belongs?"

We will, Mr. Kerr, for the good of Radio. All we ask now is that our readers help us to make such a weekly column possible.

Banish Song Over-Plugging

"REPRESENTATIVES of song publishers are hereby notified that the practice of repeating the same numbers evening after evening or of using the same number more than once on one program, must be **discontinued** immediately. Indiscriminate 'plugging' will not be countenanced at this station."

The foregoing announcement was recently posted on the bulletin board of a metropolitan station and almost immediately they began to receive letters complimenting them on the betterment of their evening popular programs although the public was not aware of the announcement.

The Radio audience demands certain amount of popular music and many stations depend upon the music publishers to furnish artists to put this sort of entertainment on the air. Unless the program directors of stations so doing put their feet down and demand variety, such as the station which posted the above bulletin has done, they will find that their former listeners will be elsewhere on the dials.

Some stations go so far as to prohibit the same number being used on consecutive evenings even if it is once rendered as a vocal selection and the next night as an instrumental number. Stations following this policy very seldom receive criticism containing the "same old stuff" phrase.

RADIO INDI-GEST

This Week's Poem-try

It seems customary to have
A bit of poetry in each column
Hence we are trying to make this
Look like verse.
If we were like the announcer
Who is leading our worst tin cup award
We would ask you readers to
Kick in some verse
But we are not like him.

Freddy the Viking, our own wandering correspondent, has recently returned from Florida with glowing accounts of mosquitoes, alligators, swamps and cows. He reports that static has been cut to a minimum in that state as most of the aerials are naturally under water in the summer time. Freddy will next venture into the wilds of Wisconsin to hunt for the Third Trombone Player, whose "Milwaukee Daily Beverage" has been suppressed.

Bad Luck for the Monkey

First Organ Grinder: "Nobody gives no more."
Second Organ Grinder: "Damma da Radio."—Life.

Not long ago the boys at WBBM read one of Delmer Buglass' revlews from this column over the air and the next morning they forwarded one million votes for Delmer as the world's worst announcer. However, these votes will not be placed to his credit until they are properly scrutinized. We fear he may have voted too many times for himself. Some people have such a hard time distinguishing between notoriety and popularity.

The Radio Announcer

(Extract from editorial by that name in N. Y. World.)

"They should employ the technique of train announcers: a clear, distinct tone of voice and an impersonal manner."

It seems that some comment is necessary here, but after having heard a train announcer call a train for what we thought was St. Paul and, after having boarded such train and finding ourself on the way to Buffalo, all we can say is "piffle."

Sum Tecknickle Stuff

Realizing that Radio terms are rather difficult for the layman to understand, Indi-Gest has made arrangements with an unknown tecknickle expert to furnish our readers with a list of definitions of common Radio terms. The first list follows:

AERIAL. Maiden name of Aunt Enna. A mess of wires strung over roof tops for gutter repair men to trip over, cuss and tear down. Also used by tenants in apartment buildings for clothes lines. Always too short or too long.

AMPLIFIER. An instrument used to increase the volume of static disturbances in summer.

CONDENSER. An essential part of a receiver used as the basis for jokes about milk, sent to us in every mail.

DETECTOR. The part of the set that is alleged to cause trouble on nights when friends are invited to hear DX on a crystal.

ELECTRON. Smaller than a chigger but with thousands of times more kick.

ETHER. The stuff the signals come through and the basis of "real beer."

(More next week—maybe.)

Bedtime Stories Up-to-Date

"Tell me a fairy story," pleaded little Patricia, when told that it was time to go to bed.

"Wait a moment, dearie," answered mother. "Your father has just finished trying to listen to New Zealand on his new six tube set. He'll tell you a good one."

LONDON BOBBY.

Indi's Own Q. and A. Department

Q.—Why do heterodynes cause crystalization in non-radiating tuned reflex antennas?

A.—We will bite! How?

Q.—Is it true that the announcer at BVD is a close guy?

A.—Just in the summer time.

Q.—I just adore the tenor who sang from PDQ Christmas eve. What is the color of his eye?

A.—Her name is Mike.

Q.—How can I learn how to be a Radio announcer?

A.—The courses in the Podunk Correspondence School of Applied Brick Laying are very beneficial for those desiring to become poultry raisers.

Q.—What is the wave length of Station XYZ?

A.—Her right name is Mabel and she has a permanent wave.

Q.—Why?

A.—Because.

Another Crowded Wave Band

Dear Indi: I see where Chicago fans are kicking because they have trouble tuning through the sixteen stations in and around that city. They have no kick at all! Last week my aerial got shorted on the sixteen party line telephone that crosses my farm and I got three grocery orders, a divorce suit, a marriage proposal, news of twins, and the latest bootleggers' quotations along with the World Crier, a bed time story and a Radio drama.

RURALINE.

Just Like Henry's Votes

"A stalk of corn fourteen feet ten inches high was grown in a field near Shenandoah, Iowa." **(News item.)**

We bet that it was grown from one of Henry Field's seeds assisted by Radio wave fertilization from Henry's own station, KFNF.

A new trade nickname for portable Radio sets is "Mary's lamb," because wherever John or Mary go the Radio is sure to go too.

News Review of the Week

Condensed

BY DIELECTRIC

The announcer in the studio of KYW, Chicago, seemed to be having a humorous time the other evening at the expense of one he called "Shorty." While the weather was not excessively hot the program was particularly suited to a broiling night; nothing that was said or done demanded much brain work on the part of listeners in. This sort of program is a pleasant diversion from classical concerts, theses on political economy, etc., and a little more fun would do us all good.

Those Pasadena Warblers. At the time they were scheduled to come on the air at Station WEAF, New York, my set was pleading for a respite, but fortunately that came after they finished a delightful musical concert. "Heaven," a negro spiritual, sounded peaceful as these four singers rendered it, following a delirious jazz period. Then the soprano and contralto sang a selection of Saint-Saens in a manner wholly enjoyable with voices blending harmoniously.

When you desire dinner hour of music try WTAM, Cleveland. It will not prove disappointing unless your taste is exceptional. One result of listening to this station at such a time may be the consumption of less food, for it is difficult to listen to the players and pay attention to commonplace edibles. Perhaps the music may aid you in reducing. Billy Jones, one of the Happiness Boys, declared that the way to reduce, or put on weight, is "not to eat fast" in one instance and "not to eat—fast" in the other.

Certain hours in every evening's broadcast are dedicated to tire, candy, battery, tooth paste or other necessities of life at those stations where each minute on the air means several dollars exchanging hands. WMCA, New York, recently reserved sixty minutes of their allotted time on the ether to a chiropractic entertainment. That is not to say that during said time listeners stepped up to their loud speakers and received spinal adjustments. On the contrary! One spinal column "creeped" that evening.

It may not be fair to presume that all dancers are confined in the state of Georgia, but all dancers in that southern state hearing WSB, Atlanta, were certainly on their feet the other evening during the broadcasting of terpsichorean melodies. Those players were capable of arousing ardor in the pedal extremities of gouty individuals. Even the announcer did the Charlestown as he introduced the various numbers to his audience.

Lest some of you lovers of classical music overlook the opportunity to tune in on programs presented by one of the best orchestras in the country, let me remind you that Station WCX, Detroit, presents the Detroit symphony orchestra for your enjoyment. Look up the schedule arranged for your convenience in another section of Radio Digest and note the date of the next concert. It will repay the slight effort involved.

Superpower stations are coming into the Radio limelight with the approach of winter. They may, or may not, meet with universal approval from listeners. There remains somewhat to determine the usefulness of this new type of broadcaster and your comments will help. Referring to those three tests made recently by WGY using superpower it is interesting to observe that fading persisted even with so much power, while at the same time the quality of transmitted sound apparently suffered not at all.

Regenerative Fixed Crystal Two Tube Reflex

Sharpens Tuning and Eliminates Adjustable Detector

By Carl R. Dean

THE writer has been using a two tube reflex for some months with results that were, at first, highly satisfactory. Loud speaker operation was had from scores of stations and head phone reception could be accomplished consistently on stations more than half way across the continent. Then the broadcast situation changed, with scores of new stations on the air and as many as fifteen on a wave channel, and our set no longer was such a perfect source of enjoyment. The selectivity was insufficient and it was impossible to bring in certain distant stations with sufficient volume to hear them enjoyably through the faint undercurrent from nearby powerful transmission on closely similar wave lengths.

Regeneration Helps

Various schemes were tried to improve this condition such as tube detector, loose coupling and longer aerials, but none seemed very effective, and each brought in some new problem while it eliminated one of the old ones. Having seen the statement made by several writers in Radio Digest that the introduction of regeneration, under control, would sharpen the tuning by lowering the effective resistance, regeneration was added and proved most efficient. After a little practice in tuning, until one learns the relationship between the tickler dial and the wave length dials at all wave lengths, the set rarely spills over and will cause little, if any, interference.

The use of a crystal in an ordinary single tube reflex set is usually annoying. When using an adjustable crystal, fooling around with the catwhisker becomes tiresome. In the case of a fixed crystal, the trouble is to find a detector adjusted to comply with the design of the circuit and the apparatus used. The adjustment of the crystal partly controls the degree of radio frequency amplification because of its partial control over the regeneration. In this set, regeneration is controlled by a tickler coil, and a fixed crystal detector is used.

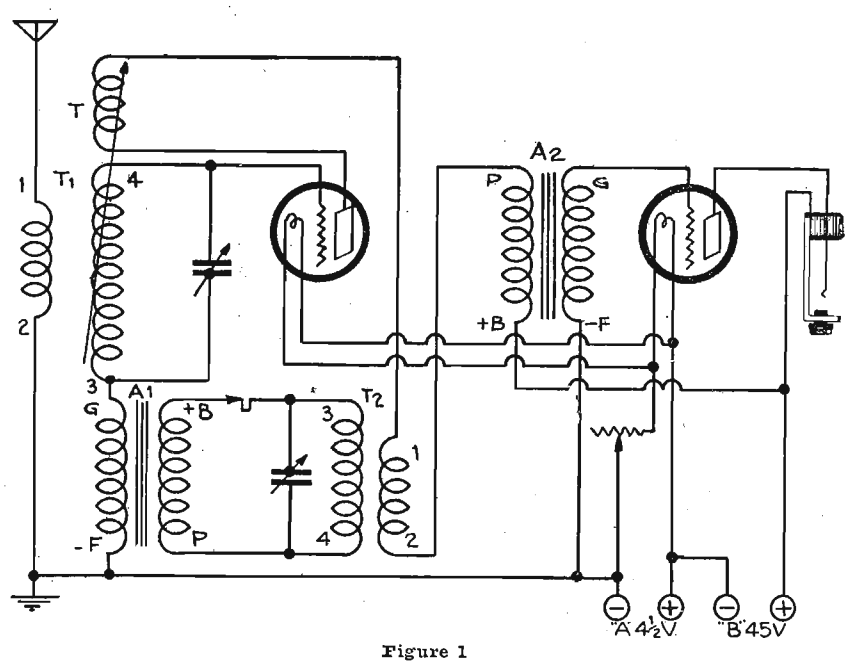


Figure 1

The results of any set depend to a great extent on the quality of the parts used. The most important unit in this set is the crystal and only a good reliable detector should be installed. The complete list of apparatus required is shown elsewhere in this article. As built by the writer, the accessories needed are two 199 or 299 tubes, 67 volts of B battery, 31½ volt No. 6 size dry cells, phone plug, phones and speaker.

Coil Construction

The coils of the radio frequency transformers are all wound in the same direction. T_1 is wound on one of the tube forms, and the secondary S between points 3 and 4 consists of 50 turns of No. 26 ssc. wire. A piece of insulating paper or Empire cloth is placed over this winding and the primary, points 1 to 2, is wound directly over this and in the same direction. It consists of 12 turns. One of the primary ends is marked 1, the other 2; the end of the secondary nearest the primary is marked 3 and the remaining secondary lead is marked 4. T_2 is wound in the same way as T_1, with the secondary having 50 turns, but for T_2 the primary should have 32 turns. The terminals should be marked in the same manner as were those of T_1.

Coil T which controls regeneration is wound in the same direction as the other coils with the same size of wire and should contain 25 turns wound on a form 1½ inches in diameter and three-fourths of an inch wide. This coil is to be secured to a shaft and mounted inside the transformer T_1 near the number 3 terminal of the secondary. The mounting and bringing out of leads are the same as is done on an ordinary variocoupler rotor. This coil is to be rotated by means of a dial.

Mounting and Assembly

The two radio frequency transformers should be mounted at right angles to each other, as should the audio frequency transformers. A good looking job can be made by using bus bar but there might be a possible gain in stability if the cabling suggestions in one of the recent articles by Milo Gurney are followed. Make the detector leads as short as possible. The stator plates of condensers should be connected to high potential ends and the rotor plates to the coil ends of low potential. This is clearly shown in the diagram. The 5 or 6 to 1 audio transformer is that identified by A_1 while the 2 or 3½ to 1 is that labelled A_2.

When the set has been assembled and wired, the rheostat should be adjusted until the filaments burn at the proper brilliancy (determined by voltmeter or the eye), and should not require retouching unless the A battery is permitted to get very depleted. Then slowly rotate both condensers at the same time, keeping them at about the same setting. If a station is heard, leave C_2 at about the setting of C_1 and clear up the signals with C_1 and T. The quality and volume of the programs are controlled by the tickler coil and remember, too much regeneration will spoil the quality.

If no programs are heard at first, the tickler leads should be reversed, or the leads to the crystal detector, or both. In any case, try reversing the detector connections. It will be found that the opera-

(Continued on page 20)

A. B. C. Course in Radio Fundamentals

Chapter XXII—The Electron Tube as a Detector

By David Penn Moreton

THE fact that the plate-current grid-voltage static characteristic of the three electrode vacuum tube is not a straight line is taken advantage of in using the three electrode vacuum tube as a detector in Radio work. The form of this curve was discussed in the previous chapter and you doubtless remember that it was not a straight line, especially at its upper and lower ends.

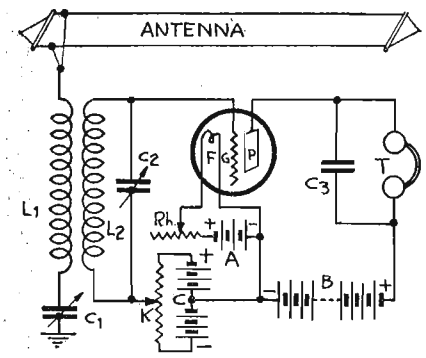


Figure 93

Let us consider the action of a three-electrode vacuum tube connected in a Radio receiving set as shown in figure 93. The filament F of the tube is heated by current from the battery A. The plate circuit is composed of the telephone receivers T and the battery B, which produces a difference of potential between the plate and filament of the tube, and, as a result, maintains a current in the plate circuit. The grid of the tube G is connected to the filament through the inductance L_2 and a battery C and potentiometer K. By means of the potentiometer, it is possible to adjust the potential of the grid G to such a value E_g that, under static conditions which prevail when no oscillations are being received from the aerial circuit, the operating point of the tube is some point P_1 or P_2 at either bend of the static characteristic curve as shown in figure 94.

Let us assume that conditions are such, under static conditions, that the plate potential E_p and the grid potential E_g result in a steady current I_p in the plate circuit, and the tube will be operated at the point P_1 on the curve, which is on the lower bend. Now, if an oscillation is received by the antenna, there will be an oscillation current set up in the circuit L_2 C_2 and there will be an alternating potential produced between the terminals of the condenser C_2. An inspection of the circuit shown in figure 93 discloses the fact that the alternating potential between the terminals of the condenser C_2 is impressed between the grid G and filament F of the tube. As a result, there will be produced at every cycle approximately an equal increase and decrease in the steady potential of the grid E_g by an amount plus e and minus e. Changes in the grid potential are shown in figure 94, and it is seen that the variations in the plate current I_p resulting from the changes in the grid potential are unequal

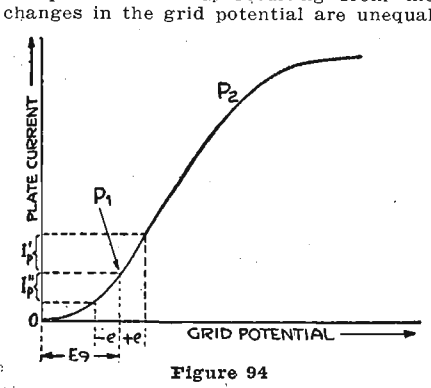


Figure 94

due to the curvature of the characteristic curve of the tube. In other words equal variations in the grid potential above and below a definite value produce unequal variations in the plate current, which results in the tube having a rectification action.

Plotting Against Time

Perhaps a better way of showing the rectification action of the tube is to plot the variation in grid potential and plate current with respect to time. The variation in grid potential, with respect to time, due to the incoming oscillations is shown in figure 95A. The normal steady value of the grid potential is represented by E_g. The variations in plate current I_p due to the variations in grid potential shown in figure 95A, are shown in figure 95B. The curve shown in figure 95B is not symmetrical with respect to the normal plate current I_p which exists in the plate circuit when the grid voltage has a steady value I_g, due to the fact that an increase in grid potential of plus e produces a greater increase in I_p than a decrease in grid potential of minus e produces a decrease in I_p. The variations in plate current shown in figure 95B will produce resulting deflections of the telephone receiver diaphragm which may be represented by a curve such as the one shown in figure 95C. The small condenser C_3 connected in shunt with the telephone receivers, as shown in figure 93, improves the operation of the telephones by allowing the high frequency currents to pass through the condenser.

The big advantage of the three electrode vacuum tube as a detector is due to the fact that the oscillating electrical potential is not acting upon the telephone receivers direct, but upon the grid of the tube and its effect upon the plate circuit is therefore multiplied by the amplification factor k of the tube. In other words, the signals are not only detected, but they are amplified at the same time, which results in the vacuum tube being the most sensitive detector.

The tube can be worked at some point P_2 on its static characteristitc curve, as shown in figure 93. Under these conditions the incoming oscillations produce approximately equal increases and decreases of the grid potential above and below its steady value, but the plate current I_p does not increase nearly so much as it decreases for a given change in grid potential. The plate current curve shown in figure 95B would be turned upside down, but the effect on the motion of the diaphragm of the telephone receiver would

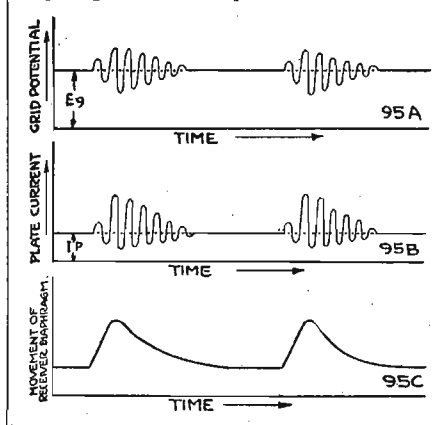


Figure 95

be practically the same. When the tube is operated at the lower bend, the steady plate current I_p in the plate circuit, where no oscillations are being received, is smaller than it is when the tube is being operated at the upper bend and as a result there is not nearly such a large drain or demand on the battery B connected in the plate circuit.

It is obvious that the tube would not function as detector if it is worked on the straight part of the curve, as equal increases and decreases in the grid potential will produce equal increases and decreases in the value of the plate current above and below the normal value I_p.

The Grid Condenser

Another method of using the three electrode vacuum tube as a detector which operates on a somewhat different principle is shown in figure 96. The connections of the tube are the same as shown in figure 93, except there is no battery connected in the grid circuit and there is a condenser C_4 connected in series with the grid. When the tube is connected in this manner there is no current in the grid circuit, as the grid is insulated from the filament by the condenser C_4. When there are no oscillations being received, there is a steady plate current I_p produced by the plate battery B. The potential of the grid will be zero, assuming the tube is a hard one or free from all gas. Now when the antenna picks up the oscillations, there will be an oscillation current set up in the circuit L_2 C_2 and, as a result, there will be an alternately positive and negative potential appear at the terminals of the condenser C_2.

This potential at the terminals of the condenser C_2 alternately charges the grid positively and negatively through the condenser C_4. During the half of the cycle where the grid is positive, it attracts some of the electrons present in the tube. During the half of the cycle where the grid is negative, it does not loose these electrons and a negative charge builds up on the grid at every cycle, the cumulative effect of which is to produce a decrease in plate current during the entire wave train. After each incoming damped oscillation has been completed, it is necessary to restore the grid to its original condition by moving the negative charge which it accumulated during the time the wave train lasted. In the case of soft tubes, or those containing considerable gas, this negative charge automatically leaks off of the grid

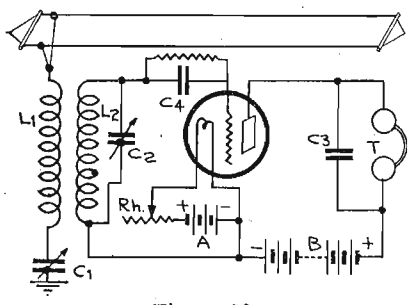


Figure 96

through the gas of the tube. In the case of the hard tube, it is necessary to shunt the condenser C_4 with a high resistance in order to provide a leakage path through which the negative charge on the grid may escape. This resistance is called a grid leak and usually ranges in resistance from one to five megohms. In some cases the grid resistance is fixed in value and in other cases it may be varied in value.

The operation of the tube using a grid condenser and grid leak is shown in figures 97A, 97B, 97C and 97D. Figure 97A shows the variation in the potential between the terminals of the condenser C_2 in figure 96. As a result of these oscillations in potential being impressed on the grid, the potential of the grid becomes negative and at the end of the wave train there is a negative charge on the grid, or its potential is negative. A small interval of time, see figure 97B, is required for this charge to leak off either through the gas of the tube, or through the path provided by the grid leak, and eventually the potential of the grid is zero before the reception of the next wave train starts. While the potential of the grid is negative, the plate current will be less than it is when the potential of the grid is zero. The variation in plate current is shown in figure 97C. The variation in plate current, of course, produces

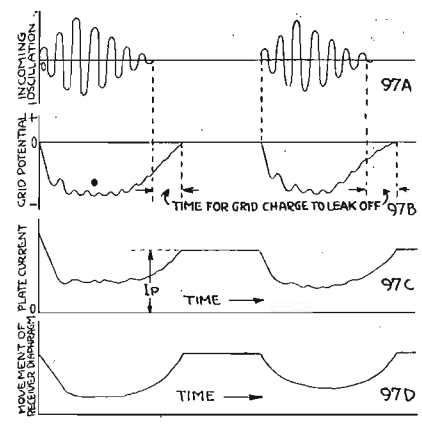


Figure 97

a motion of the diaphragm of the receiver which may be represented by a curve such as the one shown in figure 97D.

When the tube is used with a grid condenser and grid leak, it is not necessary to operate it at a particular point on its characteristic curve as was the case when the connections are made as shown in figure 93. In fact, the operation of the tube as a detector when using a grid condenser and grid leak is best when the operating point is at the center of the straight part of the curve, or where the curve has the greatest slope. The reason for this is as follows: An incoming oscillation will result in the accumulation

(Continued on page 20)

Single Dial Automatic Regeneration Control

Beginner Can Operate without Creating Interference

By P. E. Edelman

THE secret of clear reception in a set employing intentional feedback is regeneration control. Many sets built by home constructors, and quite a few manufactured varieties, have manipulation controls which do not permit smooth operation. Worst of these are the types which "blurp" into whistles or audio howls. Regeneration under control, however, offers well known possibilities.

In figure 1 is shown a simple circuit

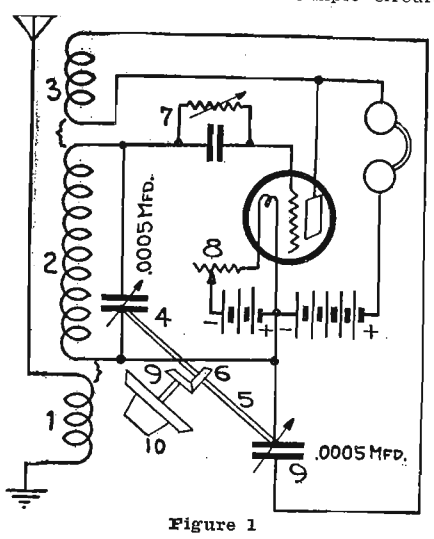


Figure 1

in which automatic control of regeneration is obtained by mechanically connecting two condensers. This circuit operates on the following principles.

Given an input coil 2 coupled to coil 1 and tuned by condenser 4, a feedback coil 3 may be coupled to the other end of coil 2. Coil 1 may have ten turns of No. 22 dcc. wire on a tube 2¾ inches in diameter. Coil 2 may have 60 turns of No. 22 dcc. wire on the same tube started ½ inch away from coil 1. Coil 3 may comprise ten turns of No. 22 dcc. wire on another tube or at the end of the same tube as coil 2. The leads of coil 3 must be in direction for aiding coil 2, and can be reversed if necessary to secure regeneration.

Condenser 9 is connected to condenser 4 and both condensers may be controlled by one dial 10 via gears 9 and 6 operating common shaft 5. Both condensers will increase and decrease together.

Factors in Regeneration

The more turns on coil 3 the less capacity required by condenser 9. The more turns on coil 3, the further out must this coil be turned or have its coupling loosened from coil 2. To get fairly close coupling of coil 3 to coil 2 fewer turns must be used. For a fixed value of coil turns and coupling, there will be a fixed value of condenser 9 which will afford regeneration in this circuit for most of the range of setting of condenser 4. But if left fixed, condenser 9 will not afford regeneration over the full range of setting of condenser 4. One could either change the coupling of coil 3 or the value of condenser 9 to get regeneration smoothly over the full range of condenser 4.

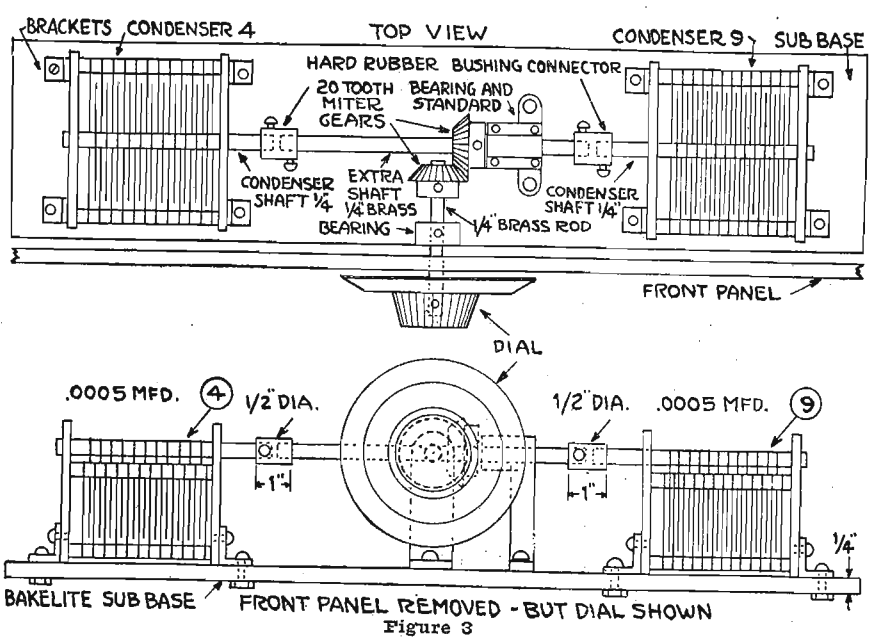


Figure 3

Supposing a fixed setting for 400 meters. Then if condenser 4 is turned back to tune for say 250 meters, there may be an audio howl, as the coupling of coil 3 to coil 2 is now too much for the new setting of condenser 3. But by reducing condenser 9 in value, this is corrected. Or again, if a fixed setting were made for 250 meters, then on turning up condenser 4 to 400 meters, there would not be enough coupling for efficient regeneration at 400 meters. This also could be corrected by turning up condenser 9, or by bringing coil 3 closer to coil 2, or turned more in alignment for maximum coupling thereto. That is what the usual regenerative set manipulation does, but many operators spill through squeals and whistles in making changes.

Why not make the regeneration control automatic? Yes, why not? Figure 1 shows how this can be done by practically any home assembler. This type of feedback is selected as the audio currents do not need to pass through coil 3, whereas the Radio current can pass this coil via condenser 9, even when the phones are in use as shown.

Figure 1 thus gives Radio feedback with minimum audio feedback, hence quiet operation without howls. To get settings, the two condensers can be tuned on any program for best adjustment, then the mechanical connector can be tightened. Or, if a fixed coupling of the two condensers is used, coil 3 can be put into a fixed coupling relation to coil 2 once for all.

In practice this works out well. There is no apparent reason why manufactured sets should not be sold with connecting adjustments which will be at all times smooth and free from whistles. In figure 2 is shown how the coupling of the coil 3 can be varied automatically and correctly by means of a cam attached to the tuning condenser shaft. In this case a fixed condenser 7 is used, with a value of .001 mfd. The connection is arranged so that the coupling increases as the tuning condenser is turned up to higher value.

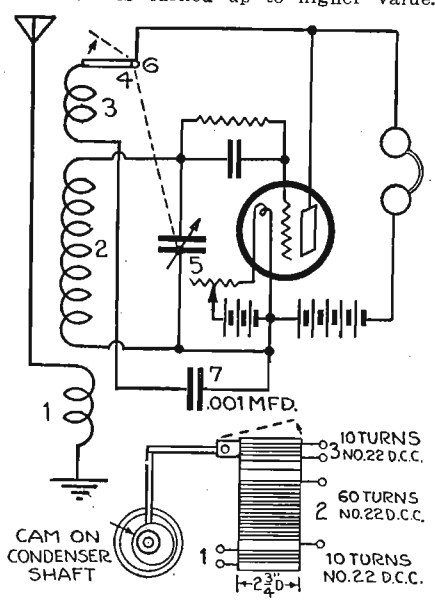


Figure 2

The cam permits correct approximation for smooth regeneration at all settings.

Rheostat and Grid Leak

Referring back to figure 1, two other factors are important for smooth operation. With most detector tubes, the rheostat 8 should be turned down for best results or brought up below the critical

(Continued on page 20)

SINGLE DIAL CONTROL

(Continued from page 19)

hissing point heard in the phones. For other factors fixed, it is possible to bring the circuit in and out of sensitive operation by manipulation of the rheostat. Then the grid leak 7 requires consideration. Usually an adjustable grid leak will be varied until best results are obtained. This is a sensitive part of the circuit and is best adjusted with a long insulated handle. If, on close coupling of coil 3 to coil 2, there results an intermittent "plop-plop-plop" sound, the grid leak can be reduced in value until the pitch increases to the point where it finaly becomes inaudible. This may be too low a resistance for most sensitive operation and in such case shows that the coupling of coil 3 to coil 2 is too close.

With these factors understood, smooth control of regeneration is easily obtained. A circuit such as shown by figure 1 or figure 2 can be made and turned over to any beginner for smooth clear results, free from the annoying "blurps" and swishing sounds obtained from old style panel controls.

If coil 3 is connected wrong, the feedback will oppose and not aid the current in coil 2. This is easily remedied by reversing the leads of coil 3. As between the use of a larger number of turns on coil 3 and a fewer number of turns more closely coupled to coil 2, smoother operation may result from the fewer turns on the tickler. With a large number of turns, the condition of a plate variometer is approximated so that coil 3 must have almost no inductive coupling to coil 2 in such case, else there will be strong whistles. Audio feedback currents can be obtained but usually blur the result due to difficulties in phasing correctly.

Tuned Plate Hook-ups

Similar arguments and circumstances apply to regenerative radio frequency amplification. With a coil 3 of larger number of turns not inductively coupled to coil 2 but operating on plate variometer principle, even a fixed coil such as the primary of a Radio transformer will give resonance feedback through the tube's plate to grid capacity, for certain ranges of radio frequencies. Provided that the resistance of the coil 3 used as such a Radio transformer primary, is not too high, a condenser 9 can be arranged per figure 1 to tune fixed Radio transformers to marked amplification advantage, without complicating controls.

Figures 3, 4, and 5 show examples of mechanical connectors for simultaneously operating the different tuning elements. Standard Boston gear parts and bearings can be used to advantage and if one has not the necessary mechanical facilities, the aid of any small machine shop can be sought.

It is when such mechanical devices are added to tuned Radio stage circuits that most practical and satisfactory results may be obtalned, as the operation is thereby greatly simplified. Five tube sets using such mechanical aids with single dial control and all tuning elements simultaneously operated at maximum adjustments have been constructed by the writer.

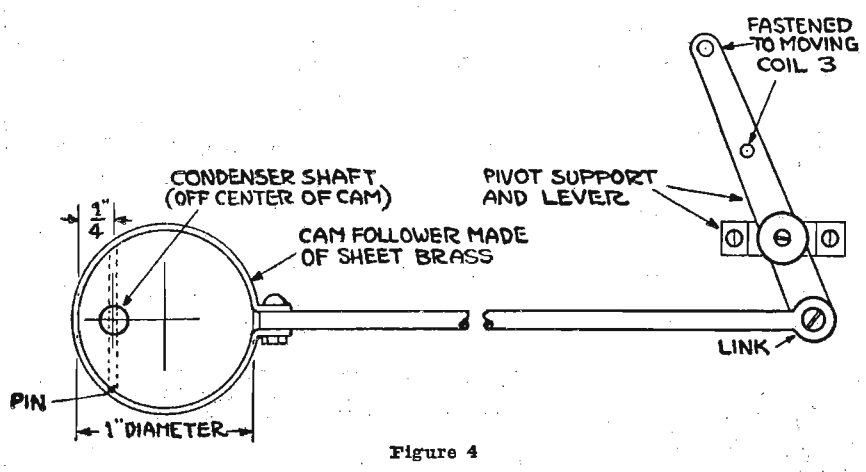


Figure 4

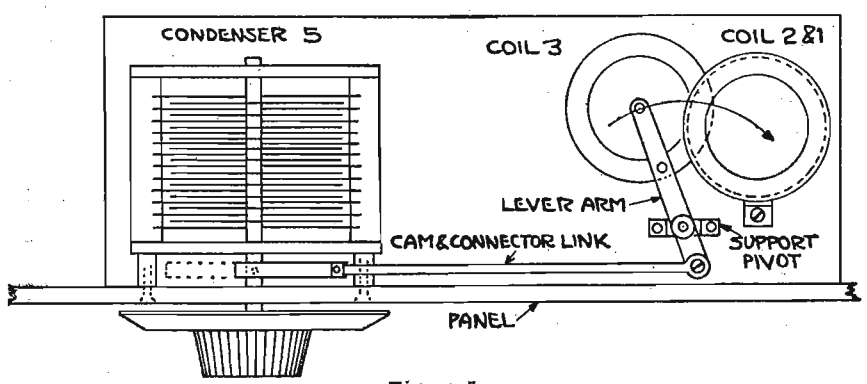


Figure 5

A. B. C. RADIO COURSE

(Continued from page 18)

of a negative charge on the grid and the potential of the grid decreases in value. Referring to figure 93, it is seen that a given decrease in grid potential will produce the greatest change in plate current at the point where the slope of the plate-current grid-potential curve is a maxi-ium.

In the above discussion of the vacuum as a detector no account was taken effect of resistance, inductance and y in the plate circuit. These ele- have a great importance in the n of the tube and may be made ce a pronounced amplification of als under proper conditions. This amplification is not a property itself, but a function of the ich the tube is connected. receiving circuit must con- his function of the tube However, in order to oud speaker volume, e operated as an for this purpose f Radio in Pro- Editor's Note)

REFLEX

that of ceiv- h

would be to mount the first radio frequency transformer horizontally near the left end of the panel behind the first variable condenser which will put the tickler at the center of the panel and the shaft may be made long enough to protrude through the panel. The second variable condenser would then be mounted at the right end of the panel with the second radio frequency transformer behind it. This will leave space to the right and left of the tickler shaft close to the panel for the tube sockets. The rheostat can be below and between the center and left hand dials while the output jack can be between the center and right hand dials and slightly below them.

If there is insufficient selectivity for your location, the coupling between primary and secondary on the first radio frequency transformer can be loosened by removing the 12-turn primary and winding it on a separate short piece of tubing which can be placed against the end of the secondary or moved a fraction of an inch away. However, this should not be carried too far as there will be loss of volume.

A director of the Western Electric company, who has just concluded an investigation into the possibilities of Radio in Kenya and Uganda, advocates the erection of a broadcasting station at Nairobi, with a daylight range of 400 miles, serving the whole of East Africa.

The formation of a new string orchestra at 2LO enables the London station to present an adequate performance of musical literature previously relegated to background.

Dalet Compensated Tuned R.F. Step

Can Put Amplification in Front of Super-Het

Although few of the super-heterodyne receivers described by the Radio publications show a stage of radio frequency amplification ahead of the first detector, there are a number of us who feel this is a great help which raises the strength of faint signals well above the threshold value necessary to actuate the detector. I built the "Simplest Super" that you ran last winter in Radio Digest and later added the regeneration which Mr. Ryan suggested for the first detector.

Then we saw where some of the manufacturers of kits had circuits containing a stage of tuned radio frequency ahead of the actual set and frequently reflexed it. We tried several types of tuned radio frequency with varying success and finally came across the Dalet method of compensating the capacity within the tube. This worked so well that I am sending you the details of this addition to our super as several of your readers may like to try it. The constructional details are given on the drawings and you will see at once this is easy to construct.—Frank Lott, Chicago, Ill.

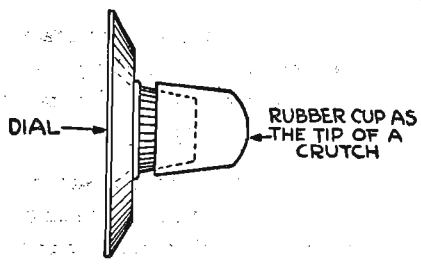
WORKSHOP KINKS EARN A DOLLAR—

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

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

Rubber Tip Stops Body Capacity

Having trouble with body capacity I overcame the difficulty entirely by placing a rubber tip, made for the end of a crutch, over the knob of the dial and

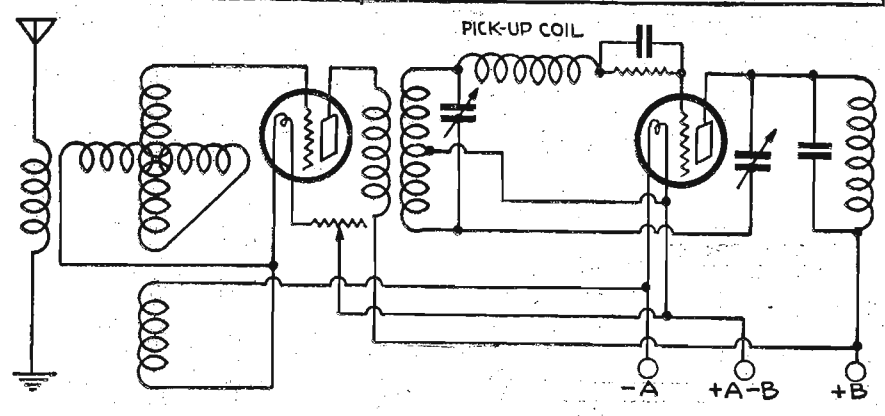


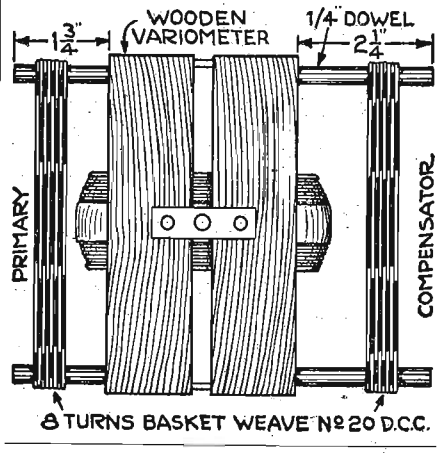
turning the dial with that. Rubber tips may be obtained to fit most any size knob, and may be easily removed if desired when not in use.—Charles Ackerman, Philadelphia, Pa.

Save the Nuts!

When throwing away dry cells that have become exhausted it is a thrifty plan to first unscrew the small thumb nuts and save them for some future use. They may come in handy if the top nut of a binding post on the set becomes lost.

DALET STAGE ON 'SIMPLEST SUPER'





Success Insured with Steady Full Current

When the faint signal of a distant station is received, rectified and amplified by a three-element tube, it is done in conjunction with a steady stream of outside electrical energy supplied to the filament and plate of the tube. If this energy is weak in amperage and voltage, no matter how good the receiver, or how many steps of amplification are used, reception will not be up to standard.

Many broadcast listeners have had the common experience of encountering exceptional results the day when fresh batteries were installed. The chances are they will credit this to the kind of circuit used, type of aerial, etc., but the all important role which fully charged batteries play in the logging of distant stations and in obtaining volume and clear tone is often overlooked. In many instances it is taken for granted that batteries are as efficient up to the point of exhaustion as when first put to use.

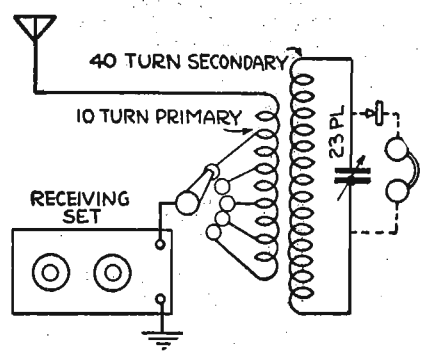
In the operation of a tube, of the type commonly used, two currents are employed. One lights the filament, the other impresses a high voltage on the plate. These tubes are generally known as three-element tubes, because besides the filament and plate they have still another element, the grid.

To understand why an even and constant flow of electrical energy is required to enable the tube to function properly, it is necessary to understand how a tube works. The passing of a current of proper value through the filament causes the element to emit a stream of electrons or tiny particles. If, in turn, a heavy positive voltage is applied to the plate, the electrons emitted by the filament will be induced to travel to the plate, and a plate current is said to be thus established.

Any factors that will increase the flow of electrons will increase the plate current, and, conversely, any factors which will decrease the flow of electrons will decrease the plate current. Any minute variation in the flow of electrons will cause like variations in the plate current. This is what makes reception possible. But any other factors which will actuate this current other than those which produce proper vibrations will cause distortion and unpleasant interruptions. This, for instance, will take place if a steady and even flow of current is not supplied both to the filament and plate.

Wave Trap Gives Selectivity

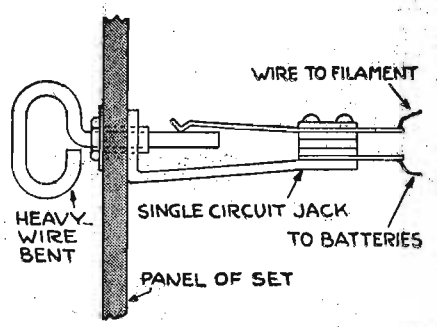
With my two tube regenerative set located about three miles from Station WOAW, I can silence them by using a wave trap and bring in stations up to within 50 meters before they again leak through.



I connected a crystal and phones to the wave trap as shown by the dotted lines and find that by tuning WOAW out of the tube set (and into the wave trap) I can hear them very plainly through the wave trap, and can also tune in DX stations on the other set just the same as before.—C. L. Beardsley, Omaha, Nebr.

Lock Switch for Battery

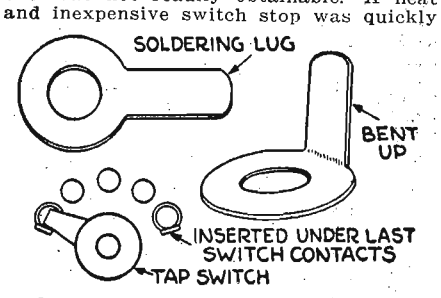
Having immediate needs of an A battery switch and not being able to get it at a store without some delay, I made use of the following: One single circuit jack, one 2" piece of heavy copper wire to fit mouth of jack.



I drilled the hole near the phone jack and fitted in this new jack, then bent the wire to a shape like a key, having soldered on the wires as shown in the diagram. I plugged in the copper "plug" which makes a good lock switch, and also reminds me to shut the current off when through using set.—John Gung, Victoria, B. C., Canada.

Emergency Switch Stop

In the home workshop while experimenting a switch stop was needed but one was not readily obtainable. A neat and inexpensive switch stop was quickly



made by taking a soldering lug of the type shown in figure and bending it as pictured. It was then inserted under the last switch point.—Claud Hart, Chariton, Ia.

Questions and Answers

Tuned R.F. Bridge Hook-Ups

Q.—I have been following Mr. Gurney's articles on advancements in tuned radio frequency and have noticed no signs of a ground connection in his articles or illustrations. Would you please inform me as to where this connection should be placed if used. Also about the balancing condensers; can they be a Chelten midget of .000045 mfd. or a Rathbun .00002 mfd. or a Bremer-Tully .00004 mfd. or a Hammerlund .000032 mfd.

A.—The circuits shown in the first five articles of Mr. Gurney's series are all more or less theoretical, to explain a principle or method and are therefore without ground connection. Mr. Gurney also shows a tuned output on many of these circuits which will not be the case in actual practice. He is giving our readers all of the information which his promises to various engineers will permit and must leave some of the details to the ingenuity of the individual reader. We wish to advise that, in our opinion, none of the condensers mentioned would be suitable for compensation in these hook-ups except the .00002 mfd. unit, as they are too large even though only between .000032 and .000045 mfd. There are no condensers to Mr. Gurney's knowledge exactly suited to the purpose which was why he gave constructional suggestions.

Battery Eliminators

(14001) WSW, Claremont, Calif.

Would like to get in touch with someone that can furnish practical battery eliminator for my set, to go in cabinet, for both A and B batteries. Also more satisfactory booster than I now use. I am using coil in record album connected to outside aerial and ground and it makes wonderful difference in distance and power. Would like to see an article on preventing heterodyning between station and second harmonics on super-het; also have trouble with the second harmonics from other stations coming in right on other station's wave lengths. Have no trouble separating stations, were it not for the second harmonics. Hope you can help me out.

A.—We wish to advise that as far as the B battery power is concerned you will find the Balkite unit perfectly satisfactory for anything up to 10 tubes. So far however there has been no successful device for the elimination of the storage battery to light the tube filaments. At such time as the data is available for the construction of an A or B eliminator or both, we will be glad to publish this information.

On Basket Weave Coils

(14005), WAL, Detroit, Michigan.

I would like to make a Harkness two tube reflex set with crystal detector and wish to use air core basket weave coils as described in Radio Digest by Mr. Fournier some months ago. My variable condensers are .00025 capacity and I want to know how many turns for primary and secondary with the same diameter coils Mr. Fournier described. This set is to be used where there are no facilities for charging storage battery. Will it work with UV-199 tubes?

A.—We are not sending the data requested for the following reasons. In the first place the success of the Harkness set depends on the incorporating of parts which contain some losses and will stabilize the circuit sufficiently to keep regeneration under control. The use of basket weave coils would reduce the losses and sharpen the tuning but you would lose the stability and the set would howl. ·re would also be much more interac- between coils which would make le. As to the second point, we do believe in the use of dry cell tubes even of the 199 class in reflex receivers since there invariably is an overcrowding of the tubes. As to the third point, Mr. Fournier has not done any experimental work with .00025 condensers and therefore this data is not available. The coils are somewhat large even when used with .0005 capacities and the interaction between coils is very great. Coils for use with these smaller condensers would have to be about 4½ inches long which makes them impractical.

Edison Battery Solution

(14135) EL, Milwaukee, Wis.

Q.—I am a constant reader of the Radio Digest and in the issue of June 27, there is a very interesting article by D. P. Moreton on the Edison storage battery. In the article it says the solution of the battery is caustic soda. What proportions of caustic potash and water are used in making the solution?

A.—We wish to advise that 3 lbs. of potassium hydroxide are to be dissolved in from 5½ to 6 pints of distilled water and you will have the correct mixture. Potassium hydroxide for this use comes in powdered form in sealed cans from Edison B battery parts jobbers. The water should be pure, the potassium hydroxide should be put in slowly and the mixing done in a large earthenware crock or enamelled ware. These last two precautions are necessary since there is a terrific heat developed during the operation.

Eliminating Body Capacity

(14015) FWC, Watertown, N. Y.

I have been troubled greatly with my Radio set. As I put on the phones, move my head or even touch the rubber part of the phone caps, it detunes the set completely. I added a stage of audio frequency, as per the hook-up on the other side, but to no avail. I am using C-12 tubes and a Premier Hedgehog 10-1 audio transformer. There is no distortion whatsoever but the only trouble is, as I have stated, the least move I make it detunes the set completely. I cannot let anyone else listen since as soon as I take off the phones the set detunes. I wish you could aid me in some way to overcome this, as it is very aggravating, especially when tuning in DX.

A.—We have your letter relative to trouble with body capacity when tuning. If you will take the variable condenser out of the ground lead and put it in the antenna lead, it still will serve to tune the antenna circuit but the filament circuit of your set will be at ground potential and there should be no body capacity. We would also suggest that you connect a fixed condenser of .002 capacity across the primary of your audio frequency transformer so that the radio frequency component of the energy in your plate circuit can pass through this fixed condenser and not have to battle with the high impedance of the transformer primary. These two points should in no way decrease the sensitivity of your outfit and we know the first will eliminate the body capacity.

Increasing Neutrodyne Volume

(14104) JP, Manchester, Okla.

I have a five-tube Hazeltine neutrodyne receiver which I built myself and it works the best of any I have heard but I would like to know if there is any way I could add three or four more tubes. This is a storage battery set using 301A tubes. It is made of all standard parts.

A.—We wish to advise that there is no way you can add any more tubes to a five-tube neutrodyne receiver. If you do not get sufficient volume and you think that the tone might be improved you could put on four stages of resistance coupled amplification instead of two stages which use transformer coupling. There can be no distortion in resistance coupling and you will be able to increase the volume to a higher point without causing feedback that will result in oscillation.

Dry Cell Amperage

(14064) CJB, Savannah, Ga.

What amperage should a fresh dry cell show, and at what amperage should it be discarded? I have been using Eveready dry cells, but I noticed in the last two sets I have purchased they only show 15 to 17 amperes with a 1½ volt.

A.—Wish to advise that it has been the writer's experience that a number 6 dry cell should show 30 amperes on test when new. However, the Eveready Radio Cell, No. 7111, is a high resistance unit and will show but 17 to 22 amperes on test. This is on open circuit with the ammeter connected across the two terminals and no apparatus in series. It is much better to run your tube on a voltage basis with the voltmeter connected directly across the socket terminals in the set. The rheostat is turned up until the operation is satisfactory and the voltage across the terminals on the socket noted. If you are using WD-11 tubes this will be about 1.1 volts and the dry cells should be discarded when it is impossible to bring the voltage up to that voltage even with the rheostat clear out. If you are using 199 tubes it will be found that the best operating point is about three volts and the dry cells should be discarded when this voltage cannot be reached. It used to be the general practice to run tubes against amperage but the R. C. A. advises that it is better practice to run them against voltage.

Tuned R.F. Inductances

(14147) HLW, Syracuse, N. Y.

Q.—A friend of mine made a set for me after the Harkness Counterflex and used two 17 plate condensers supposed to be .00025 mfd. Coils were wound for this capacity but upon trying same we found they did not balance. I wrote the manufacturers regarding their capacity and found they were .00038 mfd. Would like to find out how many turns of No. 24 wire to use for coils to cover from 200 to 550 meters. My limit now is 263 to 492 meters.

A.—It will only be necessary for you to tune your receiver to station WEAF, disconnect the secondary of one of your transformers from the grid, wind on about six turns, and then retune the condenser connected across the increased winding. You will now find that WEAF comes in a little farther down on the dial and, if it comes in at about 88 to 90 you should be able to tune in stations up to 536 meters around 98 or 99 on your dial. If six turns are not sufficient add more two at a time, until WEAF comes in at about the numbers mentioned. When you have determined the correct number on the one coil, you can then add the same number to your other coils. If your variable condensers are really .00038 mfd. your range should certainly be a lot greater than 263 to 492. With a maximum limit of 492 the minimum should be around 200 meters.

Short Wave Super-Het Reception

(14161) ABP, Texas City, Texas.

Q.—What can I do to the Fournier Four Filter Super to enable it to receive wave lengths as low as 50 meters without impairing its reception of the higher wave lengths.

A.—To fix your four filter super so that you can receive down to 50 meters it will be necessary for you to have another oscillator coupler and oscillator condenser, and possibly a separate tube so arranged that you can switch it in when you desire to receive these shorter wave lengths. A much smaller antenna coupler and secondary tuning condenser will be necessary for use on an outside aerial. The two variable condensers should preferably be .000125 mfd. as made by several manufacturers and coils will vary in the number of turns for the different ranges between 4 and 20.

Carborundum Crystals Poor

(14074), JM, St. James, Mo.

I am enclosing a diagram of a crystal receiver, the crystal being carborundum, which does not work well. Please publish a hook-up using a battery with it. What should be the range of a set like this?

A.—We wish to advise that we do not have hook-ups for the use of carborundum crystals since this type of detector is the most inefficient of the many possible and its use was discontinued by the Radio field some years ago. Why not use one of the more popular crystals such as galena or silicon or some of the synthetic crystals manufactured by various concerns? We can assure you that no hook-up using this crystal will give anything like the range or volume possible from any of the other two crystals mentioned.

No DX on Two Tubes and Loop

(14149) JWM, Macon, Mo.

Q.—I want to build a two tube receiver that will bring in DX with enough volume to be easily heard with head sets. I want also to use a loop instead of an outside aerial. My idea is to use the variable condenser across the loop then one tube followed by a variocoupler, then the second tube as a detector.

A.—We wish to advise that what you want is practically an impossibility when you expect to get DX with two tubes on a loop aerial. You could put two tubes on an outside aerial and practically cover the country with headphones, but we do not see how you are going to do it with a loop. A single stage of radio frequency on a loop aerial is not enough to produce satisfactory results.

Radiophone Broadcasting Stations

Corrected Every Week—Part V

Alabama:
Auburn, WAPI
Birmingham, WBRC
Mobile, WEBM

Arizona:
Phoenix, KFAD, KFCB
Tucson, KFDH

Arkansas:
Arkadelphia, KFWD
Bentonville, KFVX
Camden, KFVC
Conway, KFKQ
Fayetteville, KFMQ
Hot Springs Nat'l Park, KTHS

California:
Avalon, KFWO
Bakersfield, KDZB
Berkeley, KRE
Burlingame, KFQH
Chico, KFWH
Eureka, KFVU
Fresno, KMJ
Hollywood, KFQZ, KFVF, KFWB, KNX
Holy City, KFQU
Long Beach, KFON
Los Angeles, KFI, KFPG, KFPR, KFSG, KHJ, KJS
Oakland, KFUS, KFWM, KGO, KLS, KLX, KZM
Pasadena, KPPC
Sacramento, KFVK
San Diego, KFBC, KFVW
San Francisco, KFRC, KFVZ, KGTT, KJBS, KPO, KUO
San Jose, KQW
San Leandro, KFUU
San Pedro, KFVD
Santa Ana, KFAW
Santa Barbara, KFHJ
Santa Rosa, KFNV
South San Francisco, KFWI
Stanford Univ., KFGH
Stockton, KJQ, KWG
Taft, KFQC

Colorado:
Boulder, KFAJ
Colorado Springs, KFUM
Denver, KFAF, KFEL
KFUP, KFVR, KLZ, KOA
Greeley, KFKA
Gunnison, KFHA

Connecticut:
Hartford, WTIC
New Haven, WDRC
Mansfield, WCAC

Delaware:
Wilmington, WHAV

District of Columbia:
Washington, WCAP, WDM, WRC, WRHF

Florida:
Fulford By-the-Sea, WGBU
Miami, WQAM
Miami Beach, WMBF
St. Petersburg, WHBN, WIBC WJBB, WSAG
Tampa, WDAE
Winter Park, WDBO

Georgia:
Atlanta, WDBE, WGST, WSB
Columbus, WHBV
Macon, WMAZ
Savannah, WEBZ

Idaho:
Boise, KFAU, KFDD
Kellogg, KFEY
Moscow, KFAN

Illinois:
Batavia, WORD
Broadlands, WSRF
Cambridge, WTAP
Carthage, WCAZ, WTAD
Chicago, KYW, WAAF, WBBM, WBCN, WDBY, WEBH, WENR, WFKB, WGN, WHBM, WIBJ, WIBL, WIBM, WIBO, WJAZ, WKBG, WLS, WLTS, WMAQ, WMBB, WQJ, WSBC
Decatur, WBAO
Deerfield, WHT
Elgin, WCEE, WTAS
Evanston, WEHS
Farina, WIBQ
Galesburg, WFBZ, WRAM
Harrisburg, WEBQ
Homewood, WOK
Joliet, WIBD, WIBL, WJBA, WJBI

Illinois (Continued)
Lake Forest, WABA
La Salle, WJBC
Monmouth, WBBU
Mooseheart, WJJD
Oak Park, WGES
Plainfield, WWAE
Rockford, KFLV
Rock Island, WHBF
Spring Valley, WGBW
Streator, WTAX
Tuscola, WDZ
Urbana, WRM
Zion, WCBD

Indiana:
Anderson, WEBD, WHBU
Culver, WHBH
Evansville, WGBF
Ft. Wayne, WHBJ, WOWO
Greencastle, WLAX
Greentown, WJAK
Indianapolis, WFBM
Laporte, WRAF
Logansport, WHBL, WIBW
South Bend, WGAZ
Seymour, WFBE
Valparaiso, WRBC
West Lafayette, WBAA

Iowa:
Ames, WOI
Anita, KFLZ
Boone, KFGQ
Burlington, WJAS
Cedar Falls, KFJX
Cedar Rapids, KFLP, WJAM, WKAA
Council Bluffs, KOIL
Davenport, WOC
Des Moines, WHO
Fort Dodge, KFJY
Iowa City, KFQP, WSUI
Lamoni, KFFV
Le Mars, KFCY
Marshalltown, KFJB
Marengo, KFOL
Oskaloosa, KFHL
Shenandoah, KFNF
Sioux City, KFMR, WEAU

Kansas:
Independenec, KFVG
Junction City, KFJC
Lawrence, KFKU
Manhattan, KFVH, KSAC, WTG
Wichita, KFOT, WEAH

Kentucky:
Louisville, WHAS, WLAP
Mayfield, WCBG

Louisiana:
Alexandria, KFFV
Baton Rouge, KFGC
New Orleans, WAAB, WAAC, WABZ, WBBS, WCBE, WOWL, WSMB, WWL
Shreveport, KFDX, KWKH

Maine:
Bangor, WABI
Ellsworth, WHBK
Orono, WGBX
Portland, WCSH

Maryland:
Baltimore, WCAO, WCBM, WFBR, WGBA
Takoma Park, WBES

Massachusetts:
Boston, WDBR, WEEI, WNAB, WNAC, WTAT
Bridgewater, WFBN
Fall River, WSAR, WTAB
Mattapoisett, WBBG
New Bedford, WIBH
South Dartmouth, WMAF
Springfield, WBZ
Taunton, WAIT
Webster, WKBE
Worcester, WCTS, WCUW

Michigan:
Bay City, WSKC
Berrien Springs, WEMC
Dearborn, WWJ
Detroit, KOP, WCX, WGHP, WJR, WWJ
East Lansing, WKAR
Escanaba, WRAK
Flint, WFDF, WTHS
Grand Rapids, WBDC, WEBK
Houghton, KFMW
Lansing, WREO
Mt. Clemens, WABX
Owosso, WSMH
Petoskey, WBBP
Port Huron, WAFD

Minnesota:
Breckenridge, KFUJ
Collegeville, WFBJ
Minneapolis, KFDZ, WAMD, WCCO, WHDI, WLB
Northfield, KFMX, WCAL, WHAT
St. Cloud, WFAM
St. Paul, AVT, KFOY
Sibtipok, KIAF
Virginia, KFUZ
Welcome, KFVN

Mississippi:
Coldwater, WREC
Hattiesburg, WDBT
Meridian, WIBP
Oxford, WCBH

Missouri:
Butler, WNAR
Cape Giradeau, KFVS
Carterville, KFPW
Independence, KLDS
Jefferson City, WOS
Kansas City, KWKC, WDAF, WHB, WOQ
Kirksville, KFKZ
Moberly, KFFP
Springfield, KFUY
St. Louis, KFQA, KFUO, KFWF, KSD, WEW, WIL, WMAY, WSBF
University City, KFVE

Montana:
Butte, KFUY
Havre, KFBB
Helena, KFCC, KFSY
Missoula, KUOM

Nebraska:
Belden, KFQY
David City, KFOR
Harrington, KFRZ
Hastings, KFKX
Lincoln, KFAB, WFAV
Norfolk, WJAG
Oak, KFEQ
Omaha, KFOX, KOCH, WAAW, WOAW
University Place, WCAJ

New Hampshire:
Chesham, WSAU
Laconia, WKAV

New Jersey:
Atlantic City, WHAR, WPG
Camden, WABU, WFBI
Elizabeth, WIBS
Gloucester City, WRAX
Lambertville, WTAZ
Newark, WAAM, WNJ, WOR
New Brunswick, WEBA
North Plainfield, WEAM
Paterson, WODA
Salem, WDBQ
Trenton, WOAX

New Mexico:
Albuquerque, KFLR, KFVY
State College, KFRY, KOB

New York:
Buffalo, WEBR, WGR
Canton, WCAD
Cazenovia, WMAC
Flushing, WIBI
Freeport, WGBB
Ithaca, WEAI
Jamestown, WOCL
Kingston, WDBZ
Lockport, WMAK
New York, WBBR, WDBX, WEAF, WEBJ, WEBL, WFBH, WGBS, WGCP, WHAP, WHN, WIBT, WJY, WJZ, WMCA, WNYC, WQAO, WRMU, WRNY, WSDA
Richmond Hill, WAHG, WBOQ, WGMU
Rochester, WABO, WHAM, WHEC
Schenectady, WGY
Syracuse, WFBL
Tarrytown, WRW
Tonodi, WONK
Troy, WHAZ
Utica, WIBX

North Carolina:
Asheville, WABC
Charlotte, WBT
Fort Bragg, AT9
Raleigh, WFBQ

North Dakota:
Devils Lake, KDLR
Fargo, WDAY, WPAK
Grand Forks, KFJM, KFBL

Ohio:
Akron, WADC
Bellefontaine, WHBD
Canton, AQ6, WHBC
Cambridge, WEBE
Cincinnati, WAAD, WHAG, WHBR, WKRC, WSAI
Cleveland, KDPM, WDBK, WEAR, WEBR, WHK, WTAM
Columbus, WBAV, WCAH, WEAO, WMAN
Dayton, AW5, WDBS, WEBT WSMK
Elyria, WGBL
Granville, WJD
Hamilton, WRK, WSRO
Harrison, WLW
Lima, WOAC
Mason, WSAI
Newark, WBBA
New Lebanon, WGBY
Pomeroy, WSAZ
Springfield, WCSO
Toledo, WABR, WIBK, WTAL
Wooster, WABW
Yellow Springs, WRAV

Oklahoma:
Bristow, KFRU
Chickasha, KFGD
Fort Sill, KFRM
Norman, WNAD
Oklahoma City, KFJF, WKY
Tulsa, WLAL

Oregon:
Astoria, KFJI
Corvallis, KFDJ
Hood River, KQP
Portland, KFEC, KFIF, KFJR, KGW

Pennsylvania:
Allentown, WCBA, WSAN
Altoona, WFBG
Arnold, WCBU
Butler, WBR
Elkins Park, WIBG
Grove City, WSAJ
Harrisburg, WABB, WBAK, WHBG
Haverford, WABQ
Johnstown, WGBK, WHBP, WTAC
Lancaster, WDBC, WGAL
Oil City, WHBA
Parkersburg, WQAA
Philadelphia, WABY, WCAU, WFBD, WFI, WHBW, WIAD, WIP, WLIT, WNAT, WOO, WWAD
Pittsburgh, KDKA, KQV, WCAE, WJAS
Reading, WRAW
Scranton, WGBI, WGBK, WQAN
State College, WPSC
Wilkes-Barre, WBAX, WBRE

Rhode Island:
Cranston, WKAP
East Providence, WKAD
Providence, WCBR, WEAN, WGBM, WJAR, WDWF

South Carolina:
Charleston, WBBY
Clemson College, WSAC
Greenville, WGBT

South Dakota:
Brookings, KFDY
Rapid City, WCAT
Vermillion, WEAJ
Yankton, WNAX

Tennessee:
Chattanooga, WDOD
Knoxville, WFBC
Lawrenceburg, WOAN
Memphis, WGBC, WMC, WHBQ
Nashville, WCBQ

Texas:
Amarillo, WDAG, WQAC
Beaumont, KFDM
Beeville, KFRB
Brownsville, KFWP, KWWG
College Station, WTAW
Dallas, WFAA
Denison, KFQT
Dublin, KFPL
El Paso, WDAH

Texas (Continued)
Fort Worth, KFJZ, KFQB, WBAP
Galveston, KFLX, KFUL
Greenville, KFPM
Houston, KFVI, KPRC, WEAY, WSAY
Orange, KFGX
San Antonio, WCAR, WOAI
San Benito, KFLU
Waco, WJAD

Utah:
Ogden, KFUR, KFWA
Salt Lake City, KDYL, KFOO, KFUT, KSL

Vermont:
Burlington, WCAX
Springfield, WQAE

Virginia:
Norfolk, WBBW, WTAR
Radio, NAA
Richmond, WBBL
Roanoke, WDBJ
Thrifton, WGBG

Washington:
Everett, KFBL
Lacey, KGY
North Bend, KFQW
Olympia, KFRW
Pullman, KFAE, KFRX
Seattle, KFOA, KHQ, KJR, KTCL, KTW
Spokane, KFIO, KFPY
Tacoma, KFBG, KGB, KMO
Vancouver, KFVL
Walla Walla, KFCF
Yakima, KFIQ

West Virginia:
Martinsburg, WIBE
Weirton, WIBR

Wisconsin:
Ashland, WJBD
Beloit, WEBW
Fond du Lac, KFIZ
La Crosse, WABN
Madison, WHA, WIBA
Marshfield, WGBR
Menomonie, WGBQ
Milwaukee, WHAD, WSOE
Osseo, WTAQ
Poynette, WIBU
Sisiht, WBAR
Stevens Point, WHBB, WLBL
Superior, WEBC
West de Pere, WHBY
Wheatland, WIBF

Alaska:
Juneau, KFIU

Hawaii:
Honolulu, KGU

Philippine Islands:
Manila, KZKZ, KZRQ

Porto Rico:
San Juan, WKAQ

Argentina:
Buenos Aires, B1, LOR, LOV, LOW, LOX, LOY, TCR

Australia:
Adelaide, 5CL
Melbourne, 3AR
Perth, 6WF
Sydney, 2BL, 2FC

Austria:
Vienna, Radio Wien
Graz, Relay

Belgium:
Brussels, 8RB
Haeren, BAV

Brazil:
Bahia, Sociedade do Bahia
Belle Horizantes, Nat'l Telg. Service
Rio de Janeiro, SPE
Sociedade de Rio de Janeiro
Sao Paulo, Radio Bondeirantes

Canada:
Calgary, CFAC, CFCN, CFHC, CHBC, CHCM, CKCX, CKLC, CNRC
Edmonton, CFCK, CJCA, CNRE
Hamilton, CFCU, CHCS, CKOC
Iroquois Falls, CFCH
Kingston, CFRC
London, CJGC
Moncton, CNRA
Montreal, CFCF, CHYC, CJCL, CKAC, CNRM
New Westminster, CFXC
Ottawa, CHXC, CKCO, CNRO
Regina, CKCK, CNRR
Saskatoon, CFQC, CHUC, CNRS
Thorold, CFKC
Toronto, CFCA, CHIC, CHNC, CKNC, CNRT
Vancouver, CFYC, CKCD, CKFC, CNRV
Victoria, CFCT
Winnipeg, CKY, CNRW

Cuba:
Camaguey, 6YR, 7AZ, 7BY, 7CX, 7DW, 7SR
Santa Clara, 6BY, 6DW, 6EV, 6GR, 6GT, 6HS, 6JQ
Colon, 5EV
Havana, PWX, Q2LC, IAZ, 2AB, 2BB, 2BY, 2CG, 2CX, 2EP, 2HP, 2JL, 2JP, 2LR, 2MG, 2MK, 20K, 2QL, 2PK, 2RK, 2RM, 2RY, 2SZ, 2TW, 2UF, 2VW, 2XX
Mantanzas, 5AZ, 5BY
Santiago, 8AZ, 8BY, 8FU, 8IR, 8JQ
Tuinucu, 6KW, 6KJ

France:
Lyons, YN, Radio-Lyon
Paris, FPTT, Le. Petit Parisien

Germany:
Berlin, Vox Haus, Telefunken Co.
Breslau, Schlesische, Rundfunk
Cassel, Sudwestdeutscher Rundfunk.
Dresden, Mitteldeutsche Rundfunk.
Frankfort-on-Main, Sudwestdeutsche Rundfunkfienst
Hamburg, Norag.
Konigsberg, Ostmarken Rundfunk
Leipzig, Mitteldeutsche Rundfunk
Munich, Deutsche Stunde
Munster Station
Nuremberg, relayed from Munich
Stuttgart, Station

Great Britain:
Aberdeen, 2BD
Belfast, 2BE
Birmingham, 5IT
Bournemouth, 6BM
Bradford, 2LS
Cardiff, 5WA
Dundee, 2DE
Edinburgh, 2EH
Glasgow, 5SC
Hull, 6KH
Leeds, 2LS
London, 2LO
Manchester, 2ZY
Newcastle, 5NO
Nottingham, 5NG
Plymouth, 5PY
Sheffield, 6FL
Stoke-on-Trent, 6ST

Mexico:
Chihuahua, CZF
Mazatlan, CYR
Mexico City, CYA, CYB, CYG, CYH, CYL, CYX, CYZ, CZA, CZE, XDA
Monterey, CYS
Oaxaca, CYF

STATION SCHEDULES

(Continued from last week)

Cuba

PWX, Havana, Cuba. 400 meters. 500 watts. Cuban Telephone Co. International Tel. & Teleg. Corp. Wed, Sat, 8:30-11 pm, music. Eastern.

Q2LC, Havana, Cuba. 250 meters. 50 watts. Luis Casas.

IAZ, Havana, Cuba. 275 meters. 5 watts. Antonio Sarasola.

2AB, Havana, Cuba. 235 meters. 10 watts. Alberto S. Bustamante.

2BB, Havana, Cuba. 255 meters. 15 watts. Bernardo Barrie.

2BY, Havana, Cuba. 315 meters. 100 watts. Electrical Equipment Co. of Cuba. Mon, Thurs, 7:00-8:00 pm. Eastern.

2CG, Havanna, Cuba. 350 meters. 15 watts. Humberto Giquel.

2CX, Havana, Cuba. 320 meters. 10 watts. F. W. Borton.

2EP, Havana, Cuba. 355 meters. 400 watts. El Pais.

2HP, Havana, Cuba. 295 meters. 100 watts. Credito y Construcciones Co.

2JL, Havana, Cuba. 275 meters. 5 watts. Jose Leiro.

2JP, Havana, Cuba. 270 meters. 20 watts. Julio Power.

2LR, Havana, Cuba. 220 meters. 50 watts. Jose Lara.

2MG, Havana, Cuba. 280 meters. 20 watts. Manuel Y. Guillermo Salas Music Store. Announcer, Roger Morales. Daily, 3-4 pm, music. One day each week, 8-11 pm. Eastern.

2MK, Havana, Cuba. 85 meters. 20 watts. R. V. Waters.

20K, Havana, Cuba. 360 meters. 100 watts. Mario Garcia Velez.

20L, Havana, Cuba. 300 meters. 100 watts. Columbus Cycle Radio Co.

2PK, Havana, Cuba. 195 meters. 10 watts. George A. Lindenux.

2RK, Havana, Cuba. 310 meters. 100 watts. Raoul Karman. Casa De La Porte.

2RM, Havana, Cuba. 210 meters. 10 watts. Rogelio Morales.

2RY, Havana, Cuba. 170 meters. 5 watts. Salvador de la Torre.

2SZ, Havana, Cuba. 180 meters. 10 watts. Homero Sanchez.

2TW, Havana, Cuba. 230 meters. 20 watts. Roberto E. Ramirez.

2UF, Havana, Cuba. 265 meters. 10 watts. Roberto E. Ramirez.

2XX, Havana, Cuba. 150 meters. 5 watts. Antonio A. Ginard.

5AZ, Mantanzas, Cuba. 200 meters. 50 watts. Ernesto V. Figueroa.

5BY, Mantanzas, Cuba. 190 meters. 10 watts. Leon Gonzalez Velez.

5EV, Colon, Cuba. 360 meters. 10 watts. Leopoldo V. Figueroa. Sun, 9-11 pm. Eastern.

6BY, Santa Clara, Cuba. 260 meters. 200 watts. Jose Ganduxe.

6DW, Santa Clara, Cuba. 225 meters. 10 watts. Eduardo Terry.

6EV, Santa Clara, Cuba. 250 meters. 100 watts. Maria Josefa Alvares. Daily, 10:30 pm.

6GR, Santa Clara, Cuba. 250 meters. 10 watts. Luis del Castillo.

6GT, Santa Clara, Cuba. 190 meters. 5 watts. Juan Pablo Itos.

6HS, Santa Clara, Cuba. 200 meters. 10 watts. Santiago Ventura.

6JK, Tuinucu, Cuba. 275 meters. 100 watts. Frank H. Jones.

6JQ, Santa Clara, Cuba. 250 meters. 10 watts. Eligio Cobelo Ramirez.

6KW, Tuinucu, Cuba. 332 meters. 100 watts. Frank H. Jones. Slogan, "If You Hear the Koo of the Cuckoo You Are in Tune With Tuinucu." Mon, Fri, Sat, Sun, 12 mid. Sun, 9 p. m. Eastern.

6YR, Camaguey, Cuba. 200 meters. 20 watts. Diego Iborra.

7AZ, Camaguey, Cuba. 225 meters. 10 watts. Pedro Nogueras.

7BY, Camaguey, Cuba. 235 meters. 20 watts. Eduardo V. Figueroa.

7CX, Camaguey, Cuba. 85 meters. 10 watts. Leonard B. Fox.

7DW, Camaguey, Cuba. 90 meters. 10 watts. M. L. Quintana.

7SR, Camaguey, Cuba. 350 meters. 500 watts. Salvador C. Rionda. Slogan, "Cuba, the Land of Sunshine, Sugar and Tobacco." Mon, Tues, Thurs, 8:30 pm. Eastern.

8AZ, Santiago, Cuba. 240 meters. 20 watts. Alfredo Brooks.

8BY, Santiago, Cuba. 250 meters. 100 watts. Alberto Ravelo.

8FU, Santiago, Cuba. 225 meters. 15 watts. Andres Vinent.

8IR, Santiago, Cuba. 190 meters. 20 watts. Ceferino Ramos.

8JQ, Santiago, Cuba. 130 meters. 20 watts. Jose Fernandez Horedia.

France

FPTT, Paris, France. 458 meters. 500 watts. Superior School P. T. T. Announcer, M. Chanton.

YN, Lyons-la-Doua, France. 340 meters. French Government.

Lyons, Radio-Lyon, 280 meters. 600 watts.
Paris, France, Le Petit Parisien. 345 meters. 500 watts.

Germany

Berlin, Germany. 505 meters. 1,500 watts. Vox Haus.

Berlin, Germany, 290 meters. 100 watts. Telefunken Co.

Breslau, Germany. 418 meters. 1,500 watts. Schlesische Rundfunk, A. G.

Cassel, Germany. 288 meters. 1,500 watts. Sudwestdeutscher Rundfunk. A. G.

Dresden, Germany. 280 meters. 1,500 watts. Mitteldeutsche Rundfunk. A. G. (Mirag).

Frankfort-on-Main, Germany. 470 meters. 1,500 watts. Sudwestdeutsche Rundfunkienst.

Hamburg, Germany, 395 meters. 500 watts. Nordischer Rundfunk, A. G. Anneuncer, Hans Bodenstedt.

Konigsberg, Germany. 463 meters. 1,000 watts. Ostmarken Rundfunk, A. G.

Loipzig, Germany. 454 meters. 1,000 watts. Mitteldeutsche Rundfunk, A. G. (Mirag).

Munich, Germany. 485 meters. 1,000 watts. Deutsche Stunde in Bayern.

Munster, Germany. 410 meters. 2,500 watts.

Nuremberg, Germany. 340 meters. Relayed from Munich.

Stuttgart, Germany. 443 meters. 1,[illegible] watts.

Great Britain

2BD, Aberdeen, Scot. 495 meters. 1,500 watts. British Broadcasting Co. Announcer, H. M. Fitch.

2BE, Belfast, Ireland. 439 meters. British Broadcasting Co., Ltd. Announcer, W. T. Guthrie and Commander H. A. Pelham.

2DE, Dundee, Scot. 331 meters. British Broadcasting Co.

2EH, Edinburgh, Scot. 326 meters. British Broadcasting Co.

2LO, London, Eng. 365 meters. 3,000 watts. British Broadcasting Co.

2LS, Leeds, Bradford, Eng. 346-310 meters. British Broadcasting Co., Ltd.

2ZY, Manchester, Eng. 375 meters. British Broadcasting Co.

5IT, Birmingham, Eng. 479 meters. British Broadcasting Co.

5NG, Nottingham, Eng. 326 meters. British Broadcasting Co.

5NO, Newcastle, England. 403 meters. British Broadcasting Co.

5PY, Plymouth, Eng. 337 meters. 200 [illegible] Broadcasting Co., Ltd. Announcer

5SC, Glasgow, Scot. 420 meters. British Broadcasting Co.

5WA, Cardiff, Wales. 351 meters. British Broadcasting Co.

6BM, Bournemouth, Eng. 386 meters. British Broadcasting Co.

6FL, Sheffield, Eng. 302 meters. British Broadcasti Co.

6KH, Hull, Eng. (335 meters. British Broa Co., Ltd.

6LV, Liverpool, Eng. 315 meters. British Broa ing Co.

6ST, Stoke-on-Trent, Eng. 306 meters. British Br casting Co.

Mexico

CYA, Mexico City, Mex. 185 meters. [illegible] Avanzado.

CYB, Mexico City, Mex. 380 meter Buen, Tono. Tues, Sat, 7:30-9 pr concert. Mexican.

CYF, Oaxaca, Oax., Mex. 260 "The Voice from South of M pm. Sun, 8:30-10 pm. Me

CYG, Mexico City, Mex. Secre

CYH, Mexico City, Mex. 325 Life. Slogan, "Los Proveedo Viste Bien." Announcer, Jorge 8:30-10 pm. Mountain.

CYL, Mexico City, Mex. 480 me Casa del Radio. Announcer, Geo "The Land of Eternal Summer. pm, weather, financial reports, 9:30 pm. Sun, 8-9:30 pm. Concl

CYR, Mazatlan, Sin., Mex. Rossi

CYS, Monterey, Mexico. 310 meter & Cia. Slogan, "The Industrial can Republic." Daily ex Sun, 10 pm. Fri, 8:15-9:30. Sun, 9

CYX, Mexico City, Mex. 333 me celsior & Cia. Parker. dez Dominguez. Sl 8-9:30 p. m.

CYZ, Mexico C Mexicana de

CZA

"as Good as Zenith"

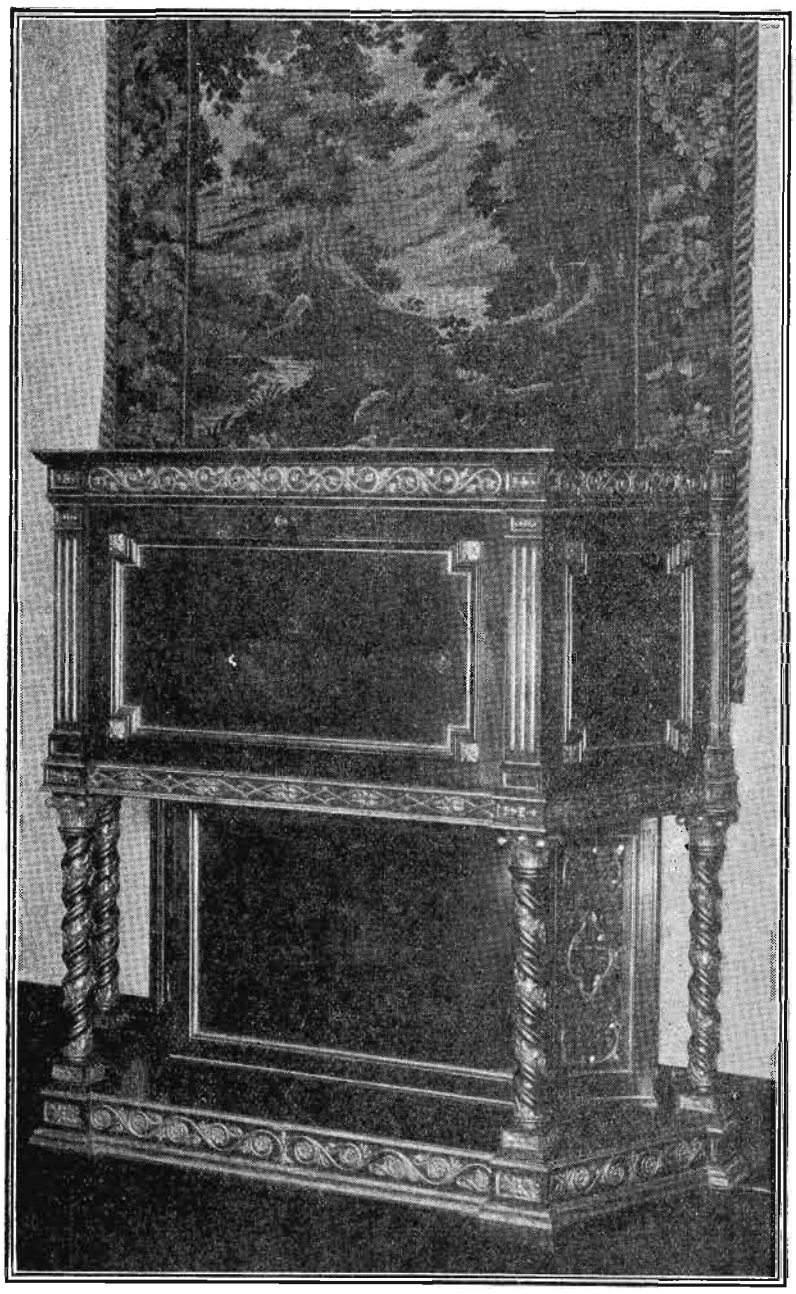
"I WANT a radio set which will give me the same true quality of tone—the same selectivity—the same volume without distortion—the same long distance range as *Zenith.*" That is the expressed desire of thousands and thousands of radio enthusiasts.

The reason for their ambition is simply this: Zenith radio sets are never offered to the public until all laboratory experiments have been carried to a satisfactory conclusion—*until in side-by-side tests with other radio sets Zenith supremacy has been completely demonstrated.*

Zenith radio sets will never be produced on a quantity basis at the sacrifice of quality.

But—which is better: to be distinguished merely for volume of production—*or to be distinguished for a degree of excellence so high that it sets the standard throughout the industry?* Ask your nearest Zenith dealer for a demonstration.

ZENITH RADIO CORPORATION
Straus Building, Chicago



Super-Zeniths are priced at from $240 to $2,000. Each instrument is sold under a quality guarantee. Above is shown the De Luxe Italian model.

Again Commander Donald B. MacMillan has chosen Zenith exclusively for his expedition to the Arctic. When human lives may depend upon the reliability of radio performance, only one reason can explain his choice: Zenith is believed to be the best obtainable at any price.

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Costs More—but Does More!