"The Electric Circuit" Explained for Beginners by Prof. D. P. Moreton; Wiring Directions for Four Filter Super-Het; Audio Frequency Amplifiers

Radio Digest

EVERY WEEK **PROGRAMS Illustrated** TEN CENTS

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Vol. XII | Copyright 1925 By Radio Digest Publishing Co. | SATURDAY, APRIL 4, 1925 | No. 13

TRAIN CONTROL BY RADIO

RADIO AID AS DEATH STALKS IN ILLINOIS

STATIONS RISE TO EMERGENCY OF CYCLONE

Broadcasters Prove Value—Raise Relief Fund, Collect Clothing and Disseminate News of Twister

CHICAGO.—When a terrific tornado swept the southern part of Illinois and Indiana, causing a gigantic loss of life and property, broadcast stations of this and other cities demonstrated their ability to help in an emergency by sending out appeals for money and clothing. Fans throughout the country responded nobly, and as a result much grief and misery was obliterated.

Thousands of dollars were contributed and many stations gave special programs for the benefit of the sufferers. Notably among these was WLS, the Sears-Roebuck station here.

When the call came through to rush doctors, nurses and volunteer workers to the scene, George Hay, the "Solemn Old

(Continued on page 2)

Claiborne Foster, beautiful star of "Applesauce," pleased Radio listeners again from WGN recently. Photo by Drake Photo Studio.

Virginia Flohri, young dramatic soprano heard often over KFI'S microphone, reflects all the beauty of southern California in her eyes and voice. Right, Laura Hope Crews, lead in "Ariadne," was interviewed recently at WGBS, New York, by Teresa Rose Nagel.

NO ENGINEER NEEDED WITH NEW SCHEME

Starts or Stops at Will

G. Y. Allen Tells of Automatic and Radio Control for Crewless Electric Trains

NEW YORK.—"Through the use of modern developments in Radio, it is entirely possible to operate electric trains from a central control office," said G. Y. Allen of the Radio department of the Westinghouse Electric and Manufacturing company in discussing the subject of "Railroad Radio" recently before the New York Railroad club.

"I do not wish to be understood as advocating the elimination of the motorman, conductor, and crew, for no mechanical device, however perfect, can take the place of human intelligence," continued Mr. Allen, "but it is interesting to note some of the possibilities of Radio control.

Operation Entirely Feasible

"It is now entirely feasible, through combination of automatic control and Radio supervisory control, to start a train without a crew from a station, run it at full speed over clear tracks, slow it down or stop it, in accordance with the signals of an automatic block signalling system, start it up again, when the signals clear, stop it at its next station stop, and open its doors," said Mr. Allen.

(Continued on page 2)

No. 2 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:

.....

4-1-25

GOLD CUP CONTEST STARTS WITH BANG

15 POPULAR ANNOUNCERS PUT IN RACE ALREADY

Who Will Get 1925 Radio Digest Trophy? Make Nominations and Save Ballots

Hardly had the last issue of Radio Digest been placed on the newsstands before the first nomination came in for the second annual Radio Digest Gold Cup Award for world's best Radio announcer for 1925. In the few days remaining before this issue was put to press fifteen popular announcers had been nominated by Radiophan admirers.

The competition for the 14-carat, solid gold cup bids to be hot this year!

If your favorite's name does not appear in the list of fifteen so far nominated, get busy and fill in the nomination blank in the lower left corner of page 14 of this issue. Then save your ballots for him. Don't miss a single ballot, for when these are turned in to Radio Digest in a group of CONSECUTIVE numbers, extra bonus votes are allowed the announcer for whom you are voting.

How Bonus Votes Are Given

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 candidate 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.

Fifteen Announcers Nominated

The fifteen announcers who have been nominated already by ardent followers are:

KDKA .....H. W. Arlin
KFKX .....Bill (W. G.) Hay
KGW .....Richard Haller
KHJ .....John Daggett
KYW .....Steve Trumbull
WBAP .....Hired Hand
WDAF .....Leo Fitzpatrick
WEAF .....Graham McNamee
WGN .....Quin A. Ryan
WGY .....Kolin Hager
WLS .....George D. Hay
WLW .....Fred Smith
WOAW .....Gene Rouse
WOC .....S. W. Barnett
WSB .....Lambdin Kay

It is interesting to note that included in the list are the winner and many strong competitors for the 1924 Gold Cup Award.

All broadcasting station announcers in the United States, Canada, Cuba, Europe, Asia, South America or elsewhere, are eligible to be nominated and voted for.

Is you beloved "voice" included in the entries? If not, be sure to send his name along. You don't know his name? Ask the GOLD CUP AWARD EDITOR. He knows and will tell you.

Several Broadcasters Listed for Standard Frequencies

NEW YORK.—Deviation of broadcasting stations WEAF, New York, WRC and WCAP, Washington, from their new wave lengths or frequencies recently assigned, have been zero, according to an announcement by the Radio section of the bureau of standards. Stations WWJ, Detroit; WSB, Atlanta; WGY, Schenectady, and WBZ, Springfield, varied one-tenth of one per cent in the past two months. They therefore constitute standard stations by which fans may calibrate their wave meters and sets.

FRED SMITH TO SEE STATIONS IN EUROPE

TO WRITE ABOUT TRIP FOR RADIO DIGEST READERS

Crosley WLW Director Will Visit Principal European Countries in Quest of Radio Information

CINCINNATI.—Fred Smith, nationally known announcer and program director for Crosley WLW station here, is going to Europe within the next few weeks to write for American newspapers and magazines on Radio conditions in England, Germany, Holland, France, Belgium, Spain, Switzerland, Italy and Russia.

He has contracted to supply an exclusive weekly news letter for Radio Digest.

Readers of Radio Digest will read Mr. Smith's articles with much interest. He will tell the history of broadcasting development in each country, what is actually being done at present and European ideals for the future.

He will compare European programs to those in America. He will answer the question, as far as Europe is concerned, "Who pays for broadcasting?"

Well Qualified as Observer

Mr. Smith is well qualified as European observer, because for eight years he traveled and studied in Spain, Belgium, France, Germany, Holland and England.

Fred Smith, besides chronicling European broadcasting, will bring back with him all the best things in Radio programs and entertainment Europe has to offer. His originality in conducting WLW has classed him as one of the foremost broadcast trail-blazers. If his past performance is indicative of his journey abroad, it may be said that European station directors will be taking pointers from him.

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Looking Ahead

WEBH, "The Voice of the Great Lakes," Chicago, is the next station to be pictured and described in the series of page feature articles devoted to various broadcasters. Learn about "Bob" Boniel and his Edgewater Beach hotel studio in the April 11 issue of Radio Digest.

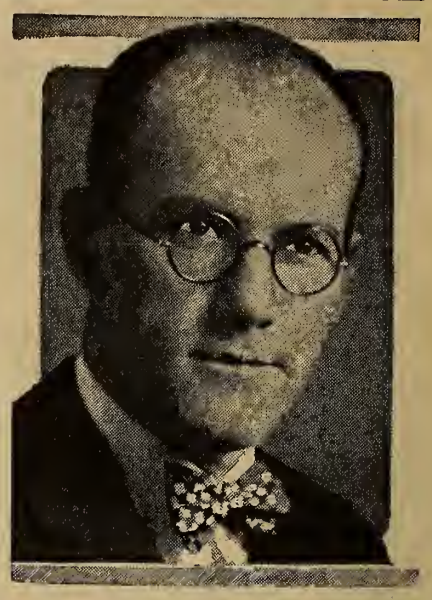
Who Is Best Announcer? Who would you have win the 1925 Radio Digest Gold Cup Award? Who shall this publication present with its second $5,000 solid gold trophy? Follow the announcers' contest weekly in Radio Digest, and save your ballots for your favorite. Help him to win.

The A. B. C. Course in Fadio Fundamentals Takes Up the Basic Principles of inductance and magnctic coupling in the next article. Thorough understanding of these underlying facts is essential to the grasping of later data on the use of inductance in Radio frequency circuits and how it influences tuning.

A New Type of Operating Articles on standard receivers will be started in next week's issue, with the Crosley Trirdyn as the first set under discussion. In addition to telling how to tune, each article will go into detail as to what occurs in the mystifying maze of wires when the dials are rotated.

Jacques Fournier's Four Filter Super has now been constructed with two different systems of audio frequency amplification, so it seems logical to next discuss a way of testing should this sharp tuning set fail to "perc" on first trial or go wrong after being in operation awhile. Mr. Fournier will, therefore, consider trouble shooting next week.

CROSLEY DIRECTOR WILL GO TO EUROPE



Fred Smith, director and announcer for Crosley, WLW, Cincinnati, will soon leave this country for a trip abroad, where he will study Radio conditions in all principal European countries. He has been engaged to write a weekly exclusive article on his findings for readers of Radio Digest.

RADIO TRAIN CONTROL

(Continued from page 1)

"The supervisor at the central office would receive complete information by Radio at all times as to the position and operation of the train; he could take personal charge of its operation at any time; and he could talk directly to the passengers to give them any desired directions."

The Radio features of this system, according to Mr. Allen, are of the "carrier current" type; namely, Radio waves which travel along the power lines of the railroad instead of spreading out through the ether as in ordinary broadcasting. By using this system, the waves can be directed to any desired point and can be utilized to operate switches and other devices, as well as to carry on conversations. This system is now being used practically by many electric power and street railway companies for controlling distant switches and for talking between any points on the system.

Radiophones for Freight Trains

"An interesting railroad application of this system," said Mr. Allen, "is its use on long freight trains. Some trains are upwards of a mile long and the ordinary methods of communication between the engineer at the head of the train and the conductor in the caboose at the rear, or the engineer of a pusher locomotive, become difficult to use. Carrier current Radio telephones can now be installed on a train which make communication between various parts of it as easy as between the offices in a building."

RAISE CYCLONE FUNDS

(Continued from page 1)

Judge," went on the air and gave such a heart-throbbing picture that even before he had finished the checks began to come it.

"WLS Unlimited" Brings in Pledges

All through the night, the "Judge" kept at the microphone, using every means possible to increase the number of checks pouring into the studio. For any person who sent in a pledge for $100, the "WLS Unlimited" left the roundhouse and traveled to the home of the donor, where one of the train crew—usually Ford or Glenn—sang a special song for their benefit.

News bulletins were broadcast through the night from Station WGN for the benefit of anxious listeners. In order to furnish this information, Quinn A. Ryan, chief announcer, and George Curran, operator, stationed themselves at amateur Station 9AAW at the home of W. E. Schweitzer. Through terrific static conditions 9AAW succeeded in getting in touch with 9BLO at Dorrisville, Ill., just on the edge of the storm-swept area. Later 9YAU, Carthage college, at Carthage, Ill., was heard from.

KYW and Others Do Bit

At the Hearst Square studio of KYW, Steve Trumbull, the "Mark Twain of Radio," sat at the microphone and informed the Radiophans about the list of dead and injured. All through the following day and night he announced the lists of casulties as soon as they arrived at the studio.

Other stations in and near Chicago contributed their share of help in the emergency. Included were WJJD, WTAS, WQJ, WBCN and WEBH.

SILVERSHEET STARS FROM MOVIE TRAIN HERALDED BY KFI STOP AT WOC

Left to right: Anna May Wong, Jack Tighe, Edna Gregory, Ruth Stonehouse, Jack Dougherty, Cullen Landis, Bryant Washburn, Kathryn McGuire and Carl Miller. The screen stars are touring the country on a train heralded in advance by KFI. This picture was made at WOC.

STATION GLEANINGS AND NEWSY BRIEFS

TELL HITHERTO UNTOLD DISCOVERIES AT KOA

Floyd Collins' Father Speaks from WLW—Bernarr MacFadden Conducting Exercises at WOR

Unpublished discoveries of prehistoric American civilization of more than 1,200 years ago will be described in a unique program April 8, from Station KOA, Denver, Colo.

* *

Station WTAS, Elgin, Ill., has a new orchestra to replace that of Fred Hamm. Husk O'Hare's famous orchestra is known to thousands.

* *

"Civilian Clothes," a comedy in three acts, will be presented by the KGO players, Oakland, Calif., April 9. It will be presented under the direction of Wilda Wilson church.

* *

Professor Joseph Blumenthal, internationally known scientific character analyst, will begin a series of talks from Station WCCO, Minneapolis, Minn.

* *

Speaking from Station WLW, Cincinnati, Ohio, the father of Floyd Collins thanked the public for their assistance during his son's imprisonment. He asked for assistance in raising a fund for the Floyd Collins memorial.

* *

Everything is rosy at Stations WJZ and WJY. Milton J. Cross, better known as announcer "AJN," has become the father of a buxom baby girl. It is known as the "first WJZ baby."

* *

The program by "Roxy and his gang" from the Capitol theater, New York City on Sunday evenings is now being broadcast simultaneously through WEAF, New York; WEEI, Boston; WJAR, Providence; WCAP, Washington; WDBH, Worcester, and WWJ, Detroit.

* *

The "Early Bird Gym Class," originated by Station WOR, Newark, N. J., is creating considerable comment among fans. It is now being conducted by Bernarr MacFadden, one of America's leading physical culture exponents.

* *

Station WGBS, New York city, is broadcasting every Tuesday at midnight for half an hour an organ recital from the Piccadilly theater, given by John Hammond.

* *

A dinner tendered to Gov. Alfred Smith of New York by the Friars club was recently broadcast by Station WHN, New York, direct from the Hotel Astor.

* *

"Ten Nights in a Bar Room," was presented recently from Station WOC, Davenport, Iowa, by the dramatic club of the Palmer School of Chiropractic.

* *

Station CNRW, Winnipeg, Can., recently celebrated its anniversary program. Thousands of telegrams and letters poured into the studio during the performance.

Shenandoah Gets New Set

WASHINGTON, D. C.—Ten 250-watt tubes are found in the immense new transmitting set recently installed aboard the Shenandoah, giant Navy air cruiser. The giant transmitter is surpassed by but few broadcasting stations and was built for the airship when plans, later vetoed, were made for it to go to the North Pole.

Oregon vs. Stanford on Air at KGW-KLX

800-Mile Debate Decision in Hands of Listeners

EUGENE, Ore.—Oregon and Stanford debating teams went on the air in the second intercollegiate Radio debate in the West on March 25. The Oregon men argued the question of the Japanese immigration law from Station KGW, Portland, and the Stanford team from Station KLX, Oakland, Calif.

The teams, although approximately 800 miles distant from each other, followed the ordinary form and convention of the usual debate.

Decision in the Oregon-Stanford debate will be by mail, the Radio listeners north of the California line sending their ballots to Station KGW and south of the boundary to Station KLX. The vote is now being tabulated.

New Seattle Radio Club

SEATTLE, Wash.—The Broadcast Listeners' club, open only to residents of the University district, a suburb of Seattle, has been organized to clear up electrical interferences and exchange Radio ideas.

FRACTION OF METER BAND FOR AMATEUR

HOOVER ASSIGNS DECIMAL WAVES FOR RESEARCH

Experimenters Get Wave Band 19/100 Meter Long—If Developed May Eliminate Interference

WASHINGTON, D. C.—Secretary Herbert Hoover has authorized transmitting amateurs to use waves less than one meter in length in addition to their previous assignment. The permission covers the channels between .7477 and .7496 of a meter; in other words, a band at about the ¾-meter wave length.

Few people realize the immense number of possible operating channels that lie in the low wave lengths. While the band now assigned to amateurs is only nineteen one-thousands of one meter in width, its extremes are separated by 1,000 kilocycles.

The secretary of commerce pointed out that if it ever became feasible to conduct broadcasting at these high frequencies, it would be possible to place within this band 100 broadcasting stations and give to each the present separation of 10 kilocycles. Mr. Hoover said further that all the stations in the world could operate in the upper half of the one meter band. The art has of course not developed to make this possible, but the amateurs now have an opportunity to see what they can do in the way of trail blazing.

Outlaw Broadcaster Closed Down by Court Proceedings

LOS ANGELES.—The activities of an outlaw broadcast station were terminated here abruptly recently in a hearing before United States Commissioner Turney, when the defendant, George W. Fellows, residing at the Fremont Arms hotel, fell in a faint at the beginning of the proceedings and had to be sent to the hospital.

The case is the first of its kind to be filed in local federal court, and according to agreement entered into between attorneys will be dismissed if Fellows will dismantle his station.

Bryan Brothers, of Cleveland, Pave Way for Broadcasts of Better Music

By P. A. Price

"THE white man in the jungle, sitting in at the tribal dance of the blacks, hearing the rhythmic beat of the tomtoms and rattle of the dried gourd, feels an impulse to join the whirling, stamping crowd; to shout with them, dance with them, to throw aside the restraint and discipline of his race and revert to the status of the primitive entity within him—that entity within me, you, all humankind. Hence the appeal of jazz, pandering to the atavistic urge of the subconscious."

So said Osborne A. Bryan; student of the theory and mechanics of harmony and who, with his brother Leonard Z. Bryan, Jr., has done probably as much for the elevation of Radio musical offerings as any individual in the country.

Pave Way for Higher Ideals

The Bryan brothers live in Cleveland, Ohio, and it is from the Cleveland broadcasting stations that these two men are unostentatiously introducing to their unseen audiences the charm and beauty of music as it has developed through the countless ages of man's efforts in pursuit of harmony. Their idea is not to force themselves or their preferences upon their audience, but to make such offerings as will appeal by the sheer force of the intrinsic beauty that is within the music itself. Incidentally, the Bryan brothers were the first persons in Cleveland to dare to broadcast an entire evening program made up of nothing but classical music.

They hold to the belief that the beautiful in music, as the beautiful in art, makes for general mental betterment.

Arrange Series at WHK

The two brothers have sung and played 600 numbers before the microphone within the past year from the Cleveland stations, WHK, WJAX (now WEAR) and WTAM. These numbers have been worth-while music without exception; not necessarily heavy or intended for exclusive appreciation by trained musicians, but no jazz numbers have been included or vocal numbers of questionable nature.

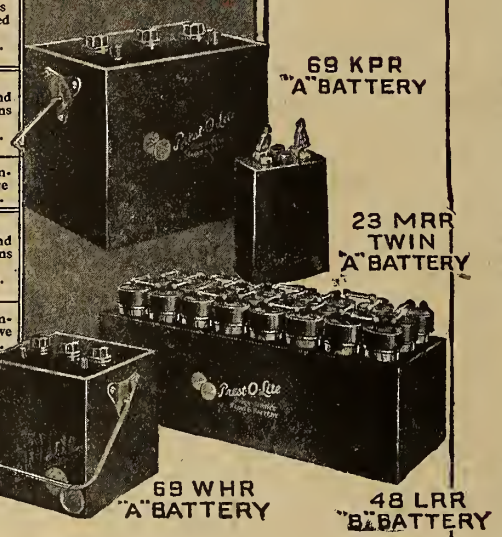
It is their intention to provide programs for WHK on the first and third Sunday of each month, similar in nature to that provided on March 29, and which was an unqualified success, if one may judge from the volume of applause received by letter and wire.

Leonard Z. (left) and Osborne A. Bryan playing a four-hand piano number from one of the Cleveland stations. The Bryan brothers place the microphone themselves.

Prest-O-Lite

RADIO CHART

Voltage of Tubes	No. of Tubes	Type of Tubes (see foot-note)	Total Rated Ampere Drain	Recommended Prest-O-Lite "A" Batteries: Order by following Types	Recommended Prest-O-Lite "A" Batteries: Days between Chargings	Recommended Prest-O-Lite "B" Batteries: Set Manufacturer's Specified Voltage	Recommended Prest-O-Lite "B" Batteries: Order by following Types
5-Volt Tubes	1	UV-200	1	69 WHR —OR— 67 WHR	22 / 16	22½-24	One 24 XRR
	2	UV-201A	½	67 WHR	33	45-48	One 48 XRR
	2	1 UV-200 1 UV-201A	1¼	611 WHR —OR— 69 WHR	22 / 17	90-96	Two 48 XRR
	3	UV-201A	¾	69 WHR —OR— 67 WHR	29 / 22	45-48	One 48 XRR
	3	1 UV-200 2 UV-201A	1½	611 RHR —OR— 69 WHR	21 / 14	67-72	One 24 XRR One 48 XRR
	4	UV-201A	1	69 WHR —OR— 67 WHR	22 / 16	90-96	Two 48 LRR
C-300 and UV-200 are interchangeable. C-301A, DV-2 and UV-201A are interchangeable	4	1 UV-200 3 UV-201A	1¾	613 RHR —OR— 611 WHR	22 / 15		
	5	UV-201A	1¼	611 WHR —OR— 69 WHR	22 / 17	45-48	One 48 LRR
	5	1 UV-200 4 UV-201A	2	613 RHR —OR— 611 WHR	19 / 13	67-72	One 24 LRR One 48 LRR
	6	UV-201A	1½	611 RHR —OR— 69 WHR	21 / 14	90-96	Two 48 LRR
	8	UV-201A	2	69 KPR —OR— 67 KPR	21 / 15		
	For sets using current at a rate higher than 2 amperes.		2¼	69 KRL —OR— 67 KPR	22 / 13	45-48 / 67-72 / 90-96	Use combinations of LRR as specified above for same voltage.
			2½	69 KRL —OR— 69 KPR	19 / 16		
3-Volt Tubes	1	UV-199 C-299 DV-1 DV-3	.06	One 43 MRR	100	22½-24	Use same XRR and LRR combinations as above for same voltage.
	2		.12		50	45-48	
	3		.18		33	45-48 / 67-72 / 90-96	
	4		.24		25		
	5		.30	Two 43 MRR in Parallel	40	45-48 / 67-72 / 90-96	Use same LRR combinations as above for same voltage.
	6		.36		33		
1.1-Volt Tubes	1	WD-11 WD-12 C-11 C-12 215A 215N	¼	One 23 MRR Twin	48	22½-24	Use same XRR and LRR combinations as above for same voltage.
	2		½		23	45-48	
	3		¾	Two 23 MRR Twins in Parallel	32	45-48 / 67-72 / 90-96	
	4		1		23		
	5		1¼	Three 23 MRR Twins in Parallel	29	45-48 / 67-72 / 90-96	Use same LRR combinations as above for same voltage.
	6		1½		23		



Write today for this free booklet

Whether you have a one-tube set or most advanced multi-tube outfit, you'll find a fund of interesting information in our booklet, "How to fit a storage battery to your set—and how to charge it."

This booklet gives you the complete Prest-O-Lite Radio Chart—technically accurate recommendations covering both "A" and "B" storage batteries for every type of set.

In addition, there is much vitally important data on battery care and upkeep—information that any radio fan will find of real value in keeping his set at its maximum efficiency. Write us at Indianapolis, Ind., for your copy right now.

How to fit storage batteries to your set

IT PAYS to buy wisely—to select batteries that bring out the best in your set and are of the right capacity to give fine reception at recharging intervals best suited to your convenience.

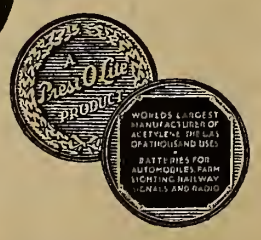
The new Prest-O-Lite Radio Chart shown here tells you how to select such batteries. Use either of the two sizes of "A" Batteries recommended for your set, depending on the days of service you wish between chargings (based on the average use of your set of three hours a day). You will find the larger capacity battery more desirable unless facilities are provided for frequent and easy recharging. Use the "B" Battery combinations that give the plate voltage recommended by the manufacturer of your set. Prest-O-Lite "B" Batteries serve from two to four months without recharging.

Special structure plates, high porosity separators and scientific internal construction make Prest-O-Lite Batteries dependable sources of the even, unvarying current absolutely necessary for volume, clarity and distance.

Prest-O-Lite Batteries are made to give long, faithful service. They're easy to recharge—and offer you truly remarkable savings. Though standard in every respect, they are priced as low as $4.75 and up. See them at your dealer's—or write for "How to fit a storage battery to your set—and how to charge it."

THE PREST-O-LITE CO., INC., INDIANAPOLIS, IND.
New York San Francisco
In Canada: Prest-O-Lite Company of Canada, Ltd., Toronto, Ont.

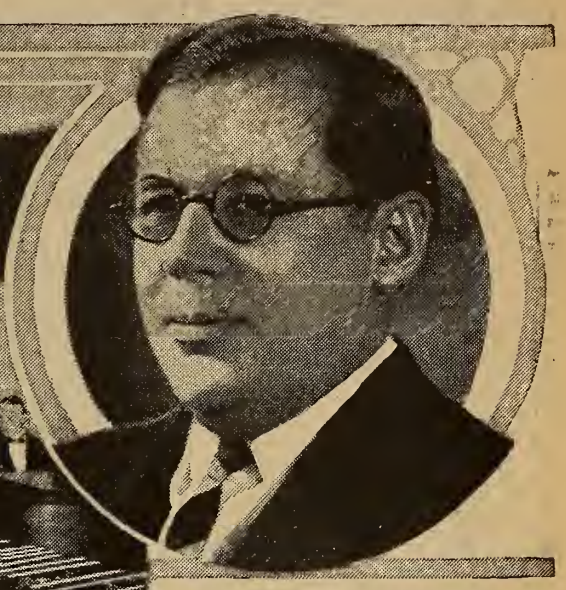
Prest-O-Lite



WHB—"The Heart of America"

E. J. Sweeney, owner and founder of Station WHB. Below, Morrell Moore, organist of the Linwood theater, who broadcasts regularly.

View showing the Sweeney Radio orchestra and interior of studio from which they broadcast their selections.



George H. Stone, program manager and sponsor of many of the station's features. Below, John P. Schilling, chief engineer and announcer.

A. A. Murray is assistant operator and announcer. He was also a Navy Radio operator before being employed by Sweeney. He assists Schilling in announcing programs.

A recent addition to the Radio department is Mr. Earl Nesbit. His official title is development manager. He was formerly in the theater business, and is therefore a very competent critic. His reviews of the current motion picture showings are eagerly awaited by the women who tune in on the ladies' hour program to learn the coming events. *(Continued on page 7)*

WHB, the broadcasting station of the Sweeney Automotive and Electrical school at Kansas City, has attracted a large share of the attention of the Radiophans throughout the United States and the surrounding territory, for the scream of its siren before each schedule attracts more attention than a fire engine speeding down a city thoroughfare. Listeners know that this siren is a signal that some real entertainment is in store for them.

All of the credit for the success of WHB goes to Emory J. Sweeney, head of the Sweeney school, which is one of the largest auto schools in the world. There is no station owner in the country who is a more ardent Radiophan than Mr. Sweeney, the founder of WHB. He was one of the first business men in the United States to realize the possibilities of Radio broadcasting.

Mr. Sweeney's first investment was a 250-watt composite transmitter, assembled by his engineers and installed on the top floor of the ten-story Sweeney building. This was in May, 1922, when there were only a small fraction of the number of broadcasting stations which there are in existence today.

Of course, the popularity of WHB demanded a larger transmitting set, and so a 500-watt transmitter was installed in August, 1922. In order to insure having high class entertainment at all times an orchestra was hired to do nothing but play for the WHB audience.

The man responsible for the most of these novelties and features is George Hamilton Stone, general manager of the Sweeney school, and program manager of WHB.

John T. Schilling, chief engineer and announcer of WHB has been with the station since it first opened. He understands Radio perfectly, having been connected with it since 1916. For quite a while Schilling was a wireless operator in service with the United States navy. He is a first class commercial operator as well as announcer. His voice, which has often been called the "golden voice of WHB," is easily recognized for its clearness and distinctness.

Earle S. Nesbitt, development manager and theatrical critic.

Reception room at Station WHB, where visitors are entertained and performers await their turn at the microphone.

WGN SOLVES EQUITY CHARGE FOR SHOWS

FAIR STORE PAYS FEE FOR "SHOW-OFF" BROADCAST

Quin A. Ryan Hits on Plan to Make Direct from Theater Pickups Possible

CHICAGO.—In putting the popular comedy, "The Show-Off," on the air, Station WGN chalked up another huge theatrical success, following the station's record-breaking applause for broadcasting "The Mikado" and "H. M. S. Pinafore." WGN is the only Chicago station that has broadcast a theatrical performance direct from the stage since the Actors' Equity decreed that the actors be paid for an entire extra performance.

Last Friday evening WGN broadcast "The Show-Off" from Cohan's Grand theater, the comedy that has run over a year in New York. Quin A. Ryan, chief announcer at WGN, has hit upon a plan to cover the Equity charge—by letting an outside advertiser give a "Radio theater party" for its customers the country over. "The Show-Off" constituted a Radio theater party given by the Radio department of the Fair store in Chicago.

Mr. Ryan arranged with Miss Rosalie Stewart, producer of the comedy, to have the actors focus their spoken lines on the center of the stage that evening, where the main microphone was located in the footlights. "The Show-Off" was selected by WGN because of its fitness for broadcasting. It is a screamingly funny comedy of American middle-class home life, chosen because of the universal appeal of its humor, its entertainment for the ear alone and its independence of tricky stage "business." A play with a vast amount of laughs from the theater audience provides the necessary psychological background for a theatrical broadcast.

WSB TO GET NEW HIGH POWER SET

Latest Type 2,500-Watt Western Electric Transmitter to Add to "Voice of South"

ATLANTA.—Earliest possible instaliation of an entirely new type of Western Electric broadcasting station was announced by The Atlanta Journal, operators of Station WSB, on the recent occasion of the third birthday of "The Voice of the South."

Atlanta will have the first one of the transmitters of its kind on the air. The power ranges from a minimum of 1,000 watts to a peak of 2,500 watts. WSB's new equipment is expected to be placed in operation before midsummer.

The Journal station is the oldest newspaper station in the South and one of the first in America.

Foreign Notes

Jerusalem is to have a broadcasting station. It will be on the air every night beginning June 1.

* *

The Garlands hotel in London, Eng., is the first hotel in Europe to be equipped with Radio in every room. The fact that this hotel is over 100 years old further increases the interest.

* *

Broadcasting will probably begin in Japan early in April. It was originally planned to begin March 1, but the opening had to be postponed.

* *

LOW, operated by Sanchez y Cia, Buenos Aires, Argentina, is broadcasting a complete daily program on 325 meters with 500 watts power. Plans have been made to increase the power to 10,000 watts soon.

* *

Three Cornishmen are making ready to leave Plymouth, England, on a voyage 'round the world in a life boat. They intend to prove conclusively the value of Radio in the event of a boat being cast adrift at sea.

* *

LOY, Sociedad Radio Nacional, located at Buenos Aires, Argentina, broadcasts regularly on 325 meters. A power of 1,000 watts is used.

* *

Although Radio has not proved of much assistance to the police of Breslau, Germany, it was enough to help stop a crime wave. One band of thieves heard a police description of themselves broadcast, and stopped their operation.

* *

Work has started on the new Radio station located atop Mount Saleve, overlooking Geneva, Switzerland. When completed—in about four years—it will be one of the show places of Europe. The League of Nations will broadcast there.

* *

Radio-Belgique, located in Belgium, is now broadcasting in both Belgian and Flemish. The latter is for the benefit of fans in Holland.

* *

All fire and police stations in Austria are being equipped with sending and receiving apparatus. They will work on short waves to intercept criminals throughout the country.

* *

London's new broadcast station, which is to take the place of the present 2LO transmitter at Marconi house, will shortly be brought into use. It will be one of the finest stations in the world.

Station Changes

Beginning April 4, Station WAHG will broadcast every day from 11:55 to 12:05 p. m. the Arlington time signals and weather reports.

* *

Jacksonville, Fla., is to have a 500-watt broadcasting station in the near future. The city fathers have pledged to place $10,000 in the next budget to complete payment for the station.

* *

Completion of a direct wire link between Station WBZ, Springfield, Mass., and the studios of WJZ-WJY, New York, have been announced. The WJY-WJZ-WGY-WRC-WBZ system now covers the whole eastern half of the continent.

* *

The following new licenses have been issued: WHBM, Chicago, Ill.; WHBN, St. Petersburg, Fla.; WHBO, Pawtucket, R. I., and WHBP, Johnstown, Pa.

WHB AT KANSAS CITY

(Continued from page 6)

This ladies' program is exceedingly popular with the women, whose only chance to listen on the Radio comes in the afternoon. The schedule is from 2 to 3 o'clock each afternoon, except Saturday and Sunday. Women find rest and relaxation from housework when they are tuned in to the entertaining and instructive features of this program.

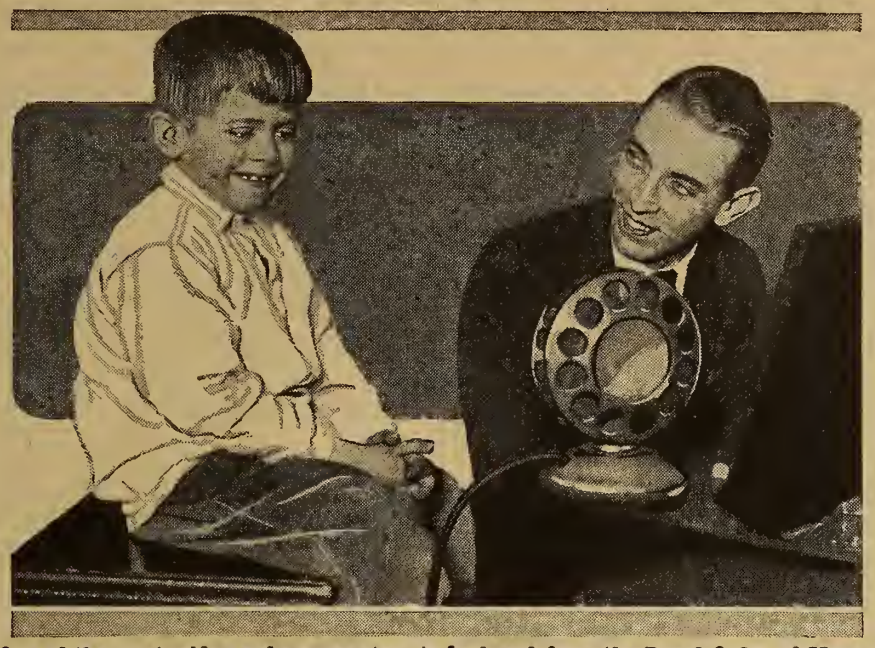
Music for these afternoon programs, as well as for other evening programs, is furnished by Gilbert Jaffey's Music Masters, also known as the Sweeney Radio orchestra. Gilbert Jaffey, violinist and director, and Jess Sutton, pianist, have won especial favor among the fans.

A WHB feature which has attracted nationwide attention is the Sunday morning religious service which is broadcast from the Linwood Boulevard Christian church.

Organ music by Morrell Moore at the Linwood theater in Kansas City is broadcast each Sunday night at 11:30 o'clock, as well as Wednesday afternoon. Special equipment has been installed in the theater so that the full quality of the music may be enjoyed by the listener.

The station has also experimented to quite an extent in rebroadcasting and has had remarkable results. One of the reports from Apia, Samoa, states that this station's rebroadcasting was received with more volume than the original signals were received.

WHERE 1,200 KIDDIES BROADCAST



One of the most wide-awake youngsters to be heard from the Loyal Order of Moose, Station WJJD, at Mooseheart, Ill., is 7-year-old Elmer Pell. He is shown above with Jack Nelson, the director of WJJD, who says he never knows what Elmer is going to do or say next, although he never fails in his performance in front of the microphone. Elmer is just one of the 1,200 boys and girls who broadcast at Mooseheart, the City of Childhood, maintained by the 600,000 members of the order to care for the dependent children of their deceased brothers.

VICTOR ENDS SERIES TO STUDY EFFECTS

IF RESULTS JUSTIFY, PROGRAMS MAY CONTINUE

Seventh Recital Closes Season—Many Artists Leave for Foreign and Concert Tours

NEW YORK.—The series of cooperative experiments between the Victor Talking Machine company and the American Telephone and Telegraph company in bringing world-famous artists of the former before the microphone was terminated with the presentation on Thursday evening, March 26. The final concert, bringing the present series to a close, made the total number of recitals seven.

The public response to these programs has been most enthusiastic. The Victor company now wishes to study the results of the experiment, which at first was carried on through a chain of eight broadcasting stations linked to WEAF, New York. The chain later grew to fourteen stations, located as far west as Davenport, Iowa.

Coupled with the desire to study the effects of the broadcasts is the fact that the concert and opera season is rapidly drawing to a close and the majority of the artists in this field are either leaving for foreign shores or embarking on concert tours.

Experiments are now being carried out in England which may eventually lead to clocks becoming self-adjusting. The idea is to fit the clock with gear which will pick up Radio signals from an observatory and thus set the hands at predetermined intervals.

AN EVENING AT HOME WITH THE LISTENER IN
IN CENTRAL TIME
(SEE INSTRUCTIONS FOR USE BELOW)

Station and City	Met.	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
AT9, Fort Bragg, N. C....	435	7:00- 8:55	7:00- 8:00	Silent	7:00- 8:55	Silent	7:00- 8:55	Silent
CFCA, Toronto, Ont.....	356.9	Silent	6:00- 7:00	Silent	7:15- 8:15	7:15- 8:15	7:15- 8:15	Silent
CFCN, Calgary, Alta.....	434.5	11:00- 1:00	Silent	Silent	12:30- 1:30	Silent	Silent	Silent
CHNC, Toronto, Can.....	356.9	Silent	Silent	7:30- 8:30	Silent	Silent	Silent	Silent
CKAC, Montreal, Que.....	410.7	6:30- 9:30	3:30- 4:30	Silent	6:30- 9:30	Silent	6:30- 9:30	Silent
CKY, Winnipeg, Man.....	384.4	Silent	7:00- 8:00	Silent	7:30- 9:15	Silent	7:30- 9:15	7:30- 9:15
CNRO, Ottawa, Ont.....	434.5	6:30-11:30	Silent	Silent	Silent	6:30-11:30	Silent	Silent
CYB, Mexico City, Mex...	370	8:30- 9:00	Silent	Silent	8:30- 9:00	Silent	9:00-11:00	Silent
CYL, Mexico City, Mex.....	480	Silent	Silent	Silent	10:00-11:30	Silent	Silent	10:00-11:30
CYX, Mexico City, Mex....	330	Silent	Silent	9:00-12:00	Silent	Silent	Silent	8:00-10:00
KOKA, Pittsburgh, Pa.....	309.1	6:00- 8:55	5:30- 7:45	6:15- 8:55	6:30-11:00	6:30- 8:55	6:30-11:00	6:30- 8:55
KFAB, Lincoln, Nebr.....	240	Silent	4:00- 5:00	7:30- 9:30	Silent	7:30- 9:30	Silent	7:30- 8:30
KFAE, Pullman, Wash.....	348.6	Silent	Silent	9:30-10:30	Silent	9:30-10:30	Silent	9:30-10:30
KFAU, Boise, Idaho.....	275	Silent	Silent	9:00-10:00	Silent	Silent	Silent	9:00-10:00
KFDM, Beaumont, Texas.	315.6	Silent	9:00-10:00	Silent	7:00-10:30	Silent	Silent	7:00-10:30
KFI, Los Angeles, Calif...	468.5	8:45- 1:00	6:00- 1:00	8:45- 1:00	8:45- 1:00	8:45- 2:00	8:45- 1:00	8:45- 2:00
KFKB, Milford, Kan.....	273	6:00-11:00	8:00-10:00	6:00-11:00	6:00-11:00	6:00-11:00	6:00-11:00	6:00-11:00
KFKU, Lawrence, Kan.....	275	Silent	Silent	6:50- 9:45	Silent	Silent	6:50- 8:45	Silent
KFKX, Hastings, Nebr.....	288.3	Silent	Silent	9:30-11:00	Silent	Silent	9:30-11:00	Silent
KFMQ, Fayetteville, Ark ..	299.8	Silent	Silent	Silent	9:00-10:00	Silent	7:30- 8:30	Silent
KFMX, Northfield, Minn.	336.9	Silent	7:00- 8.00	Silent	Silent	9:00-10:00	Silent	Silent
KFNF, Shenandoah, Ia....	266	6:30- 9:00	6:30- 8:00	6:30- 9:00	Silent	6:30- 9:00	6:30- 9:00	6:30- 9:00
KFOA, Seattle, Wash.....	454.3	8:45- 1:00	Silent	8:45-12:00	8:45- 1:00	8:45-12:00	Silent	8:45- 1:00
KFRU, Bristow, Okla.....	394.5	7:30-12:00	Silent	7:00-10:30	10:30-12:00	8:00-10:30	10:30-11:30	11:00- 1:00
KFUO, St. Louis, Mo.....	545.1	Silent	9:15-10:15	Silent	Silent	9:15-10:15	Silent	Silent
KGO, Oakland, Calif	361.2	10:00- 3:00	9:30-11:00	10:00- 3:00	10:00- 3:00	Silent	10:00- 3:00	Silent
KGW, Portland, Ore.....	491.5	12:00- 2:00	8:00-10:00	Silent	10:00- 2:00	10:00- 2:00	10:00- 2:00	10:00- 2:30
KHJ, Los Angeles, Calif...	405.2	10:00- 2:00	10:00-12:00	Silent	10:00- 1:00	10:00-12:00	10:00- 1:00	9:45- 1:00
KIAF, Shitipok, Minn.....	421	Silent	4:00- 5:00	9:00-10:00	Silent	9:00-10:00	Silent	9:00-10:00
KJR, Seattle, Wash.....	384.4	Silent	2:30- 4:00	6:00- 9:00	6:00- 9:00	6:00- 9:00	6:00- 9:00	6:00- 9:00
KJS, Los Angeles, Calif...	293.9	Silent	9:15-11:30	Silent	10:00-11:00	Silent	10:00-11:00	Silent
KLX, Oakland, Calif.....	508.2	Silent	Silent	8:00- 1:00	Silent	8:00- 1:30	Silent	8:00-12:30
KNX, Hollywood, Calif.....	336.9	9:15- 3:00	9:00- 1:00	9:00- 2:00	8:30- 2:00	8:15- 2:00	8:30- 1:00	8:30- 2:00
KOA, Denver, Colo.....	322.4	10:00- 1:00	5:00-10:45	9:00-10:00	Silent	9:00- 1:00	Silent	9:00-10:00
KOB, State College, N. M..	348.6	Silent	Silent	8:30- 9:30	Silent	8:30- 9:30	Silent	8:30- 9:30
KPO, San Francisco, Calif.	429.5	10:00- 2:00	10:30-12:00	9:00-12:00	8:30-12:00	9:00- 1:00	9:00- 1:00	10:00-12:00
KQV, Pittsburgh, Pa.....	275.2	Silent	Silent	7:00- 9:00	Silent	7:00- 9:00	Silent	7:00- 9:00
KSAC, Manhattan, Kan.....	340.7	Silent	Silent	7:20- 8:00	7:20- 8:00	7:20- 8:00	7:20- 8:00	7:20- 8:00
KSO, St. Louis, Mo.....	545.1	7:00-10:00	Silent	7:00-10:00	6:00-11:00	Silent	8:00-11:00	Silent
KSL, Salt Lake City, Utah.	261	9:00-11:00	10:00-11:00	9:00-10:00	10:00-11:00	9:00-10:00	9:00-10:00	10:00-11:00
KTHS, Hot Springs, Ark.	374.8	8:30-11:00	8:30-11:30	8:30- 1:15	8:30-10:00	8:30-11:00	8:30- 1:15	8:30-10:00
KTW, Seattle, Wash.....	455	Silent	9:00-11:30	Silent	Silent	Silent	Silent	Silent
KYW, Chicago, Ill.....	535.4	7:00- 2:00	7:00- 9:00	Silent	7:00- 2:30	7:00- 2:30	7:00- 2:30	7:00- 2:30
NAA, Radio, Va.....	434.5	Silent	Silent	6:45- 7:00	6:45- 7:00	6:25- 7:40	6:45- 7:00	6:45- 7:00
PWX, Havana, Cuba.....	400	7:30-10:00	Silent	Silent	Silent	7:30-10:00	Silent	Silent
WABL, Storrs, Conn.....	275	Silent	Silent	6:00- 8:00	Silent	6:00- 8:00	Silent	6:00- 8:00
WABN, La Crosse, Wis....	244	Silent	Silent	9:00-12:00	Silent	Silent	9:00-12:00	Silent
WAHG, Richmond, N. Y...	315.6	11:00-12:00	Silent	6:30- 1:00	Silent	7:00-10:30	Silent	6:30-10:15
WBAP, Fort Worth, Tex.	475.9	7:00- 8:00	11:00-12:00	7:30- 1:00	7:30-10:45	7:30-10:45	7:30-10:45	7:30-10:45
WBAR, Sisiht, Wis.....	406	Silent	10:00-11:00	9:00-10:00	Silent	8:00- 9:00	7:30- 8:30	Silent
WBAV, Columbus, O.....	293.9	Silent	Silent	7:00- 9:00	Silent	Silent	Silent	7:00- 8:00
WBBG, Mattapoisett, Mass.	248	Silent	Silent	7:00- 9:00	Silent	7:00- 8:00	Silent	6:00- 1:00
WBBM, Chicago, Ill.....	226	Silent	8:00- 9:00	Silent	8:00- 9:00	Silent	8:00- 9:00	Silent
WBBR, Staten Island, N. Y.	272.6	7:00- 8:45	8:10- 9:20	7:00- 7:50	Silent	Silent	7:00- 7:50	Silent
WBCN, Chicago, Ill.....	266	6:00- 1:00	4:00-10:00	6:00- 7:00	6:00- 1:00	6:00- 1:00	6:00- 1:00	6:00- 1:00
WBZ, Springfield, Mass...	333.3	5:00-10:00	6:00-10:00	5:00-10:00	5:00- 8:55	5:00-10:00	5:00-11:45	6:05- 7:05
WCAE, Pittsburgh, Pa....	461.3	6:30- 8:30	5:30- 9:15	8:30-11:00	6:30-10:00	6:30- 8:30	6:30- 9:00	6:30- 9:30
WCAL, Northfield, Minn...	336.9	12:00- 1:00	8:30-10:00	11:00-12:00	Silent	Silent	9:00-10:00	8:30- 9:00
WCAP, Washington, D. C...	468.5	Silent	6:20- 9:00	6:30- 9:00	Silent	6:45- 9:00	Silent	6:30-11:00
WCAU, Philadelphia, Pa...	278	Silent	4:30- 8:30	Silent	6:30- 8:30	7:00-10:10	6:30-10:00	7:00-10:10
WCBD, Zion, Ill.....	344.6	Silent	2:30- 9:00	8:00-10:30	Silent	Silent	8:00-10:30	Silent
WCCO, Minn.-St. P., Minn.	416.4	8:00-11:00	4:10-10:15	6:15-11:30	6:30-10:00	6:00-11:00	7:00-10:00	6:00-11:00
WCX, Detroit, Mich.....	516.9	Silent	Silent	5:00- 8:30	5:00-10:00	5:00- 8:30	Silent	5:00-10:00
WOAF, Kansas City, Mo.	365.6	6:00- 1:00	4:00- 5:30	6:00- 1:00	6:00- 1:00	6:00- 9:15	6:00- 1:00	6:00- 1:00
WDWF, Providence, R. I....	440.9	Silent	4:00- 5:45	Silent	7:00- 8:30	Silent	Silent	7:00- 8:00
WEAF, New York, N. Y..	491.5	5:00-11:30	6:20- 9:15	5:00-10:00	5:00- 9:00	5:00-11:00	5:00-11:00	5:00-11:00
WEAO, Columbus, Ohio...	293.9	Silent	Silent	Silent	Silent	7:00- 8:00	6:00- 8:00	Silent
WEAR, Cleveland, O.....	389.4	Silent	2:30- 4:00	6:00- 7:00	6:30- 9:00	6:00- 7:00	6:00- 9:00	6:00- 9:00
WEBH, Chicago, Ill.....	370.2	7:00-12:00	7:00- 9:00	Silent	7:00-12:00	7:00-12:00	7:00-12:00	7:00-12:00
WEBJ, New York, N. Y....	233	Silent	Silent	Silent	6:00- 8:00	6:00- 8:00	Silent	6:15- 8:30
WEBW, Beloit, Wis.....	268	Silent	4:30- 5:30	Silent	8:00- 9:00	Silent	7:30- 8:30	Silent
WEEI, Boston, Mass.....	475.9	Silent	6:20-9:15	6:15- 9:00	6:15-10:00	6:15-11:00	6:15-10:00	6:15- 9:00
WEMC, Berrien Spgs., Mch.	285.5	Silent	8:15- 9:15	8:15- 9:15	Silent	8:15- 9:15	Silent	9:00-10:00
WFAA, Dallas, Tex.....	475.9	8:30-12:00	6:00-11:00	6:30- 9:30	6:30-12:00	Silent	6:30-12:00	6:30- 9:30
WFBH, New York, N. Y....	272.6	6:00-11:30	6:30-12:30	10:30-12:15	10:30-12:30	6:30-12:30	6:00-12:15	6:30-12:15
WFI, Philadelphia, Pa....	394.5	5:30- 8:00	3:30- 4:30	5:30- 7:00	5:30-10:00	5:30- 7:00	5:30- 9:00	5:30- 7:00
WGBS, New York, N. Y....	315.6	6:30-11:00	Silent	5:30- 6:30	5:30-11:00	6:10- 8:30	7:00-12:00	5:30- 6:30
WGN, Chicago, Ill.....	370.2	6:00-11:00	2:30-10:00	Silent	6:00-11:00	6:00-11:00	6:00-11:00	6:00-11:00
WGR, Buffalo, N. Y.....	319	5:00- 6:30	3:00- 7:30	5:30-11:00	5:00-10:30	5:30- 9:15	5:00-10:00	5:30-10:00
WGST, Atlanta, Ga.....	270	Silent	Silent	9:00-10:00	Silent	Silent	7:00- 8:00	Silent
WGY, Schenectady, N. Y.	379.5	8:30-11:00	2:35-10:00	6:30- 8:00	6:30-11:30	6:00- 7:00	6:30-11:30	6:30-10:30
WHA, Madison, Wis.....	535.4	Silent	Silent	7:45- 8:45	8:00- 9:00	7:45- 8:45	8:00- 9:00	7:45- 8:45
WHAO, Milwaukee, Wis...	275	Silent	Silent	7:30- 8:30	Silent	8:00- 9:00	Silent	8:00- 9:00
WHAS, Louisville, Ky.....	399.8	7:30- 9:00	4:00- 5:00	Silent	7:30- 9:00	7:30- 9:00	7:30- 9:00	7:30- 9:00
WHAZ, Troy, N. Y.....	379.5	Silent	Silent	8:00-10:00	Silent	Silent	Silent	Silent
WHB, Kansas City, Mo...	365.6	Silent	8:00- 1:00	7:00- 8:00	8:00- 9:00	7:00- 8:00	8:00- 9:00	7:00- 8:00
WHK, Cleveland, Ohio.....	273	5:00-12:30	6:30-10:00	5:00- 6:30	5:30- 6:30	5:00- 6:30	5:00-10:30	5:00- 9:00
WHN, New York, N. Y....	361.2	6:30-11:30	8:30-11:45	6:30-11:00	8:30-11:00	6:30-11:30	8:30-11:30	8:30-11:00
WHO, Des Moines, Ia.....	526	Silent	4:00- 8:30	7:30-12:00	Silent	6:30-11:00	11:00-12:00	7:30- 9:00
WIP, Philadelphia, Pa....	508.2	6:00-11:05	2:15- 8:30	5:05- 6:30	5:00-11:00	5:05- 6:05	5:05-11:00	5:05- 6:30
WJAR, Providence, R. I..	305.9	6:10- 7:10	6:20- 9:15	7:00- 8:00	7:00- 8:00	7:00-12:00	Silent	6:30-10:00
WJAS, Pittsburgh, Pa.....	275.3	Silent	Silent	7:30-10:00	7:30-10:00	7:30-10:00	6:30- 9:00	6:30- 9:00
WJJO, Mooseheart, Ill.....	302.8	7:15-12:00	Silent	7:15- 8:15	7:15- 8:15	7:15- 8:15	Silent	7:15- 8:15
WJY, New York, N. Y....	405.2	Silent	Silent	Silent	7:15-10:00	Silent	6:30- 9:00	7:30- 8:30
WJZ, New York, N. Y.....	454.3	6:00-10:30	3:00- 7:30	6:00- 9:00	6:00- 9:20	6:00- 9:30	6:00-11:00	6:00-10:30
WKAQ, San Juan, P. R..	340.7	Silent	Silent	Silent	7:00- 8:30	6:00- 8:00	6:30- 8:00	Silent
WKAR, Lansing, Mich.....	285.5	11:30- 1:00	Silent	6:60-7 :00	Silent	7:00- 8:15	Silent	6:00- 7:00
WLBL, Stevens Point, Wis.	278	11:59-12:59	Silent	Silent	8:00- 9:00	Silent	Silent	Silent
WLIT, Philadelphia, Pa...	394.5	6:30- 7:30	1:00- 2:00	6:30-10:02	6:30- 7:50	6:30-10:03	6:30- 7:30	6:30-10:03
WLS, Chicago, Ill.....	344.6	8:00-12:00	6:30- 8:00	Silent	6:30- 1:00	6:30-12:00	6:30- 8:00	6:30-11:00
WLW, Cincinnati, O.....	422.3	8:00-10:00	7:30-10:00	8:00-10:00	8:00-10:00	10:00-12:00	11:00- 1:00	Silent
WMAK, Lockport, N. Y....	265.5	Silent	Silent	7:00- 8:00	Silent	Silent	11:00-12:00	Silent
WMAQ, Chicago, Ill.....	447.5	6:00-10:00	Silent	Silent	6:00-10:00	6:00-10:00	6:00-10:00	6:00-10:00
WMBF, Miami Beach, Fla.	384.4	7:00- 2:00	7:00- 2:00	7:00- 2:00	7:00- 2:00	7:00- 2:00	7:00- 2:00	7:00- 2:00
WMC, Memphis, Tenn.....	499.7	8:30- 9:30	Silent	8:30- 9:30	8:30-12:00	Silent	8:30- 9:30	8:30-12:00
WMH, Cincinnati, O.....	422.3	10:00-12:00	6:00- 7:30	8:00-10:00	Silent	8:00-10:00	8:00-10:00	Silent
WNAC, Boston, Mass.....	280.2	9:00-10:00	7:30- 9:30	6:00-10:00	8:00-10:00	6:00-10:00	8:00-10:00	6:00-10:00
WNYC, New York, N. Y...	526	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
WOAI, San Antonio, Texas.	394.5	Silent	7:30-10:30	Silent	8:30-10:30	Silent	9:30-10:30	Silent
WOAW, Omaha, Neb.....	526	6:00-12:15	6:00-10:00	6:00-11:00	6:00-11:00	Silent	6:00-11:00	6:00-11:00
WOAX, Trenton, N. J.....	240	Silent	Silent	Silent	8:15-10:00	Silent	Silent	8:00-10:00
WOC, Davenport, Ia.....	483.6	6:30-12:00	8:00-11:30	Silent	6:30- 9:00	6:30-10:00	6:00-11:00	6:30- 9:00
WOI, Ames, Ia.....	270	Silent	Silent	10:00- 1:00	Silent	Silent	8:15- 9:15	Silent
WOO, Philadelphia, Pa.....	508.2	Silent	5:05- 7:30	6:30-10:00	Silent	6:30-10:00	Silent	6:30-10:00
WOR, Newark, N. J.....	405.2	5:15- 6:30	Silent	5:15-10:00	5:30- 5:45	5:15- 8:45	5:15- 6:15	5:15- 6:15
WORO, Batavia, Ill.....	275	Silent	7:00- 8:00	7:00- 9:00	8:00- 9:00	Silent	7:00- 9:15	8:00- 9:30
WOS, Jefferson City, Mo....	440.9	Silent	7:30- 8:30	8:00-10:00	Silent	8:00-10:00	Silent	8:00-10:00
WPG, Atlantic City, N. J....	299.8	8:00-11:00	2:15-10:00	Silent	6:00-11:00	Silent	7:15-11:00	7:00-10:00
WQJ, Chicago, Ill.....	447.5	7:00- 3:00	8:00-10:00	Silent	7:00- 2:00	7:00- 2:00	7:00- 2:00	7:00- 2:00
WRBC, Valparaiso, Ind.....	278	Silent	7:30- 8:30	7:30- 8:30	Silent	Silent	Silent	Silent
WRC, Washington, D. C...	468.5	5:45-11:15	Silent	Silent	5:45-11:00	Silent	5:45-10:30	Silent
WREO, Lansing, Mich.....	285.5	Silent	6:00- 7:00	Silent	7:15- 8:45	Silent	7:15- 8:45	Silent
WRW, Tarrytown, N. Y....	273	8:00-10:30	7:00-10:30	8:00-10:30	8:00-10:30	8:00-10:30	8:00-10:30	8:00-10:30
WSAC, Clemson Coll., S. C	336.9	Silent	Silent	Silent	Silent	7:00- 8:00	Silent	Silent
WSAI, Cincinnati, O.....	325.9	8:00- 1:30	3:00- 4:00	10:00-12:00	7:00-10:00	10:00-12:00	7:00- 9:00	Silent
WSB, Atlanta, Ga.....	428.3	8:00-12:00	7:30- 9:15	8:00-12:00	8:00-12:00	10:45-12:00	8:00-12:00	8:00-12:00
WSUI, Iowa City, Ia.....	483.6	7:30- 9:00	Silent	Silent	8:00- 9:00	9:00- 9:30	Silent	Silent
WTAM, Cleveland, O.....	389.4	5:00-11:00	Silent	5:00-11:00	5:00- 6:00	5:00-12:00	5:00- 6:00	5:00- 6:00
WTAS, Elgin, Ill.....	302.8	6:00-12:30	6:00-12:30	6:00-12:30	6:00-12:30	6:00-12:30	6:00- 1:30	6:00-12:30
WTAY, Oak Park, Ill.....	250	6:15-10:00	Silent	Silent	6:15- 7:30	6:30- 1:00	6:15- 7:30	6:30- 8:00
WTIC, Hartford, Conn.....	348.6	Silent	Silent	Silent	7:00- 8:00	7:00-10:00	Silent	7:00- 8:00
WWJ, Detroit, Mich.....	352.7	7:30- 8:30	6:20- 9:00	5:00- 8:30	5:00- 8:30	5:00-10:00	5:00-11:30	5:00- 8:30

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

Dearing Brothers in Dual Broadcast Act

One Directs WMC, Other WOCL; Both Do Their Bit

MEMPHIS.—Enter the Radio brothers, Jerry Dearing, director of WMC, Memphis, and Dick Dearing, operator, builder and general supervisor at WOCL, Jamestown, N. Y. Jerry is the older and Dick the younger of the pair.

Radio plays some wierd tricks on families. Back in the home town of the brothers, Dick is the Radio expert. While Jerry was in the army and before, Dick was tinkering with Radio.

Jerry became a newspaper reporter; Dick a licensed operator, experimenter and designer. Jerry drifted to Memphis and when "The Solemn Old Judge" went to WLS, Chicago, he took a whirl at announcing. Dick stayed home, experimented, tested and finally built the station at Jamestown.

KFOA Has Song Contest

SEATTLE, Wash.—The Seattle Times, in cooperation with KFOA, has announced a song writers' contest to run until June 1, which has as its object the uplift of popular music. Haroid Weeks of the Brunswick shop here is sponsor of the competition.

WJAM, Cedar Rapids, Iowa, when operating as a 20-watt station, was heard distinctly in Surrey, England.

PANETTI BROTHERS ENTERTAIN AT WBZ

Saturday, April 4

Eastern Time Stations

The following schedules of programs are given in Eastern time. To change to Central time, subtract one hour; Mountain time, subtract two hours; Pacific time, subtract three hours.

Saturday, silent night for: CFAC, CFCA, CHNC, CHIC, KFAB, KFAE, KFDM, KFKU, KFKX, KFMQ, KFUO, KOB, WBAP, WBAV, WCAU, WCBD, WDWF, WEAO, WEAR, WEBJ, WEBW, WEEI, WGST, WHAZ, WHO, WJY, WKAQ, WMAK, WOAI, WOI, WOO, WORD, WSAC, WSUI, WWJ.

CHNC, Toronto, Can. (356.9), 8:30 p. m., CHNC trio, Frank Blachford, violinist; Leo Smith, cellist; Harvey Robb, pianist; Aeolian male quartet, J. R. Sherrit, 1st tenor; Lawrence Defoe, 2nd tenor; Charles Shearer, baritone; A. VanderVoort, bass; special song cycle, Jhalem River; Hazel VanderVoort, soprano.

KDKA, Pittsburgh, Pa. (309.1), 6 p. m., Westinghouse band; 8, Pittsburgh Sun Radio Sphinx club; 8:15, "America's Glory Land," Dr. C. A. Payne; 8:30, Westinghouse band; Woodlawn glee club, Mrs. Isaac James.

WAHG, Richmond Hill, N. Y. (315.6), 12-2 a. m., special program, Glen C. Smith's Paramount orchestra.

WBBR, New York, N. Y. (272.6), 8 p. m., Malcolm Carment, clarinetist; 8:10, Carl Park, violinist; 8:15, Bible questions and answers; 8:40, Carl Park, violinist; 8:50, Malcolm Carment, clarinetist.

WBZ, Springfield, Mass. (333.3), 6 p. m., Leo Reisman Hotel Lenox ensemble; 7:05, bedtime story for the kiddies; 7:15, sketches, U. S. Naval history, E. S. R. Brandt; 7:30, Hotel Kimball trio; 8, "Happy Hawkins" dance orchestra; 8:30, Radio checker game, A. McCullough; 8:45, music; 9, William L. Spittal, tenor; Dorothy Birchard Mulroney, pianist; 9:30, Panetti Brothers; 9:45, William L. Spittal, tenor; Dorothy B. Mulroney, pianist; 10:05, Hotel Brunswick orchestra.

WCAE, Pittsburgh, Pa. (461.3), 6:30 p. m., dinner concert, William Penn hotel; 8, Current Motor topics; 8:30, concert, Freedom, Pa.

WCX, Detroit, Mich. (516.9), 4:15 p. m., musical program; 6, dinner concert, Book-Cadillac hotel.

WEAF, New York, N. Y. (491.5), 6 p. m., Hotel Waldorf-Astoria; 7, William Hyatt, tenor; 7:10, Maria Leverone, Benedict Fitzgerald, pianists; 7:30, "Trips and Adventures," Fred J. Turner; 7:50, William Hyatt, tenor; 8:05, Sybil Sanderson Fagen, whistler; 8:15, Huyler's Foremost four; 8:45, Sybil S. Fagen, whistler; 9, Waldorf-Astoria concert orchestra; 9:45, Caterina Gobbi, dramatic soprano; 10, Pallavicini Sisters trio; 10:15, Caterina Gobbi, soprano; 10:30, Robert Yap Hawaiian ensemble; 11-12, Vincent Lopez and his orchestra.

WFI, Philadelphia, Pa. (394.5), 6 p. m., Rey Elrae dance orchestra; 0:30, Meyer Davis Bellevue Stratford concert orchestra; 7, bedtime stories; 8, Cantata, "Stabat Mater."

WGBS, New York, N. Y. (315.6), 6-6:30 p. m., Uncle Geebee; 6:30-7:30, Cameo Collegians; 7:30-8:30, Armand Vecsey's orchestra; 8:30-8:45, Bob Emerick, pianist; 8:45-9:30, Bayonne Military band, New Jersey; 9:30-9:40, "Inside Movie Chats," Sam Comly; 9:45-10, Philipino sextet; 10-10:15, Christine Church, soprano; 10:15-10:30, Philipino sextet; 10:30-10:45, Albert Mesrop, tenor; 11-12, Vanderbilt hotel dance orchestra.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., Radio Dealers musical program, J. P. Quinn, director; 6-7:30, dinner music, Hallpryd string quartet.

WHN, New York, N. Y. (361.2), 8:30 p. m., Strand Roof orchestra; 9-10, Northminster service.

WIP, Philadelphia, Pa. (508.2), 6:05 p. m., songs, Charles Higgins; 6:15, Clarence Seamon's concert orchestra; 7, Uncle Wip's bedtime stories; 8, talk, auspices Philadelphia College of Pharmacy; 8:15, talk, University of Pennsylvania; Lenten talk; 9:15, concert and dance, Executive Radio Council, Third District; 10:05, Benjamin Franklin dance orchestra; 11:05, organ recital, Karl Bonawitz.

WJAR, Providence, R. I. (305.9), 7:05 p. m., studio program.

WJZ, New York, N. Y. (454.3), 4:30 p. m., Sherry's tea orchestra; 7, Freddie Rich and his Hotel Astor dance orchestra; 8, course on Jewish History and Literature, Dr. Lewis Finkelstein; 8:30, Liederkranz society orchestra; 10:30, Waldorf-Astoria dance orchestra.

WKAR, East Lansing, Mich. (286), 12:30 a. m., special dance program, Pastime Players orchestra.

WLIT, Philadelphia, Pa. (394.5), 4:30 p. m., dance orchestra; 7:30, Arcadia cafe concert orchestra.

WMBF, Miami Beach, Fla. (384.4), 10-2 a. m., Rosebrook's Radio serenaders, Nautilus "Lucky Seven" orchestra.

WNYC, New York, N. Y. (526), 6:30-7 p. m., Sam Wooding's Club Alabam orchestra; 7:45-8, Chateau Four; 8-8:10, talk by public officials; 8:15-8:30, song recital; 8:30-9, Police quartet; 9:15-10, orchestral feature; 10:10-10:20, travel talk, Board of Education.

WOO, Philadelphia, Pa. (508.2), 4:45 p. m., organ recital, Mary E. Vogt.

WRC, Washington, D. C. (468.5), 7 p. m., Irving Boernstein's Washington hotel orchestra; 8, Bible talk; 9, Elizabeth Howlson, soprano; 9:15, "Chemical Warfare and Its Relation to the Business of the District of Columbia," Brigadier General Amos A. Fries; 10, dance music, Vincent Lopez's Hotel Mayflower orchestra; 10:30, Crandall's Saturday Nighters; 12, Sidney Seidenman's Colonial room orchestra.

WREO, Lansing, Mich. (285.5), 12 midnight, dance program, Frank Logan and his Arcadian orchestra.

WTAM, Cleveland, Ohio (489.4), 6-7 p. m., dinner music, Hotel Statler concert orchestra; 9-12, Ev Jones and his WTAM dance orchestra.

WWJ, Detroit, Mich. (352.7), 3 p. m., Detroit News orchestra.

Central Time Stations

The following schedules of programs are given in Central time. To change to Eastern time, add one hour; Mountain time, subtract one hour; Pacific time, subtract two hours.

KFNF, Shenandoah, Iowa (266), 6:30 p. m., concert, Riverton, Rev. Harry Richmond, director; 8:30, concert from Mound City, George Walker.

KFRU, Bristow, Okla. (394.5), 7:30-8 p. m., Sunday school lesson, Dr. Thomas Murray; 9-12, Kiwanis club of Wagoner; Indian trio; 5 minute talk, R. E. McGuire.

KSD, St. Louis, Mo. (545.1), 7 p. m., dinner dance, City club.

KTHS, Hot Springs National Park, Ark. (374.8), 8:30-10 p. m., Charles L. Fischer Eastman hotel orchestra; 10:10:45, Meyer Davis-New Arlington hotel orchestra.

KYW, Chicago, Ill. (535.4), 6:35-7 p. m., children's bedtime story, Uncle Bob; 7-7:30, Congress hotel; 8-8:58, Jessie Mandeville, soprano; E. L. King, baritone; Raymond Sykes, tenor; Francis J. Valentine, pianist; Stephenson & Heather, vocal duo; 9:35-11:30, Congress classic; 12-1 a. m., Congress carnival; 1-2, Insomnia club.

WBCN, Chicago, Ill. (266), 7-8 p. m., fireside hour, George R. Cleveland; Dr. S. Wall, saxophonist; Charles Edrington, tenor; 8-12, popular program, Parker & Cameron; 12-1 a. m., Owl matinee, Clifton Newton Moore, harmonica player; Bobby Allen, tenor; Bob Duffy, tenor.

WCAL, Northfield, Minn. (336.9), 12 midnight, musical program, students of St. Olaf college.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 6 p. m., dinner concert, Community Amusement association; 8, fireside philosophies, Rev. Roy L. Smith; 8:30, Tommie Malie, Sammie Stept; 10, Minneapolis Athletic club orchestra; Tommie Malie, Sammie Stept.

WCEE, Elgin, Ill. (275), 7-8 p. m., WTAS orchestra; Frank Morris; 10:30-12, WTAS orchestra, Frank Morris, Fanny and Eddie Cavanaugh.

WDAF, Kansas City, Mo. (365.6), 3:30-4:30 p. m., Star's Radio orchestra; 6-7, Trianon ensemble; 11:45-1 a. m., Merry Old Chief, Plantation players; Eddie Kuhn's Kansas City Athletic club orchestra; Johnnie Campbell's Kansas City club orchestra.

WEBH, Chicago, Ill. (370.2), 7-8 p. m., Oriole orchestra; Sunday school lesson; Dan Russo, Ted Fiorito; 9-10, Oriole orchestra; Marie Kelly, reader; Eleanor Gilmour, soprano; Pat Barnes; 11-12, Oriole orchestra; Loos Brothers; Marie Kelly, reader; songs, Frank Sylvano, Kay Ronayne, Banks Kennedy, Ned and Ches, Ralph Snyder.

WFAA, Dallas, Texas (475.9), 6-7 p. m., musicians, Garland, Texas; 8:30-9:30, Forest Avenue high school band; 11-12, Adolphus hotel orchestra.

WGN, Chicago, Ill. (370.2), 6 p. m., organ recital, Lyon & Healy; 6:30-7, Drake concert ensemble, Blackstone string quintet; 8-9, jazz quartet; 10-11, Drake hotel dance orchestra.

WHAS, Louisville, Ky. (399.8), 4-5 p. m., Louisville Conservatory of music; Paul G. Clemmons, tenor; Blanche Stephens, accompanist; 7:30-9, Arthur Findling, baritone.

WJAD, Waco, Tex. (352.7), 10:30 p. m., old home town.

WJJD, Mooseheart, Ill. (302.8), 6:30-7:15 p. m., Albert F. Brown, organist; 7:15-8, Moosheart theater orchestra; 10:30-1 a. m., concert, Garod studio; Charley Straight and his orchestra.

WLBL, Stevens Point, Wis. (278), 12 midnight, Enemies of Sleep.

WLS, Chicago, Ill. (344.6), 7 p. m., lullaby time, Ford and Glenn; 7:20, WLS staff review night, Harmony Girls, Walter Peterson, Wonderbean, old time fiddlers, Glenn's Cornhuskers, WLS Harmony trio; Sears-Roebuck 4 Aces of Harmony, Ford and Glenn; 11:15-12, Senate theater review.

WMAQ, Chicago, Ill. (447.5), 6 p. m., program, New Trier high school; 8, Russell Pratt, Fred Daw; 8:30, "Nova Scotia," Clarence Hough; 9, weekly Chicago theater revue.

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

WMH, Cincinnati, Ohio (422.3), 10 p. m., Murray Hortons Hotel Alms orchestra; 10:30, Ed. H. Shoelwer, pianist; popular songs, Angelo Devoto; Eugene Perazzo, accompanist; popular songs, Gay Anderson; 11:15, Murray Hortons Hotel Alms orchestra.

WOAW, Omaha, Nebr. (526), 6 p. m., dramatic hour, Davis Studio of Expression; 6:30, to be announced; 6:45, Willard Robison and his orchestra; 7:30, weekly address, Omaha Chamber of Commerce; 9, program, auspices Omaha Printing company; 11, Frank W. Hodek, Jr., and his Nightingale orchestra; 11:30, Arthur Hays, organist.

WOC, Davenport, Iowa (483.6), 5:45 p. m., chimes; 6:30, sandman's visit, Val McLaughlin; 6:50, Sunday school lesson, Rev. M. A. Getzendaner; 9, musical program, Dr. C. L. Leigh; 11, Lonis Connor and his LeClaire hotel orchestra; Peter McArthur, baritone.

WQJ, Chicago, Ill. (447.5), 3-4 p. m., koffee klatsch; 7-8, Ralph Williams and his Rainbo Garden orchestra; Clyde Keutzer tenor; Allen Irwin, pianist; Milford Burdsall, baritone; Margaret Snook, accompanist; Agrtha Karlen, reader; 10-3 a. m., Ralph Williams and his Rainbo Skylarks; Jerry Sullivan; Harry Geise; Melodians; Alfred Tweed, tenor; Hick and Johnson, Hawaiian guitarists; Henri Therien, Joe Verges, New Orleans boys.

WSB, Atlanta, Ga. (428.3), 6 p. m., Sunday school lesson, Dr. Marion Hull; 8-9, Conyers glee club; 10:45, Hired Help jubilee.

WTAS, Elgin, Ill. (302.8), 8-10:30 p. m., WTAS orchestra.

Mountain Time Stations

The following schedules of programs are given in Mountain time. To change to Eastern time, add two hours; Central time, add one hour; Pacific time, subtract one hour.

KOA, Denver, Colo. (322.4), 9-12 midnight, Joe Mann and his Rainbow-Lane orchestra.

Pacific Time Stations

The following schedules of programs are given in Pacific time. To change to Eastern time, add three hours; Central time, add two hours; Mountain time, add one hour.

KFI, Los Angeles, Calif. (468.5), 5:30-6 p. m., Examiner's musical half hour; 6:45-7, Radiotorial talk; 7-7:45, Lako Arrowhead dance orchestra, Mel Lemon, leader; 7:45-8, The Bookshelf, Nancy; 8-9, Examiner program by Monrovia, Calif., Community Symphony orchestra; 9-10, Dorothy Francis, [illegible]

(Continued on page [illegible])

Leona May Smith, 8-year-old trumpeter, as she looks when she wakes up all the little brothers for the twilight meeting of the Boston Edison Big Brother club at WEEI. Mrs. H. C. Bretschneider, soprano, has become very popular with Rocky Mountain fans through her appearances at KOA, the General Electric station at Denver. Arthur T. Baker, flutist, is a member of the KGO Little Symphony orchestra and is often heard in solo numbers during the Sunday concerts of this Oakland station.

Headliners of the Week

PANETTI BROTHERS, two well-known vaudeville entertainers of the east coast, will give a novelty musical act Saturday at WBZ which will give the fans something new in the amusement line.

Municipal bands of Canada are still competing in CKAC's prize band contest. The City of Farnham will play this Sunday afternoon and the mayor will give a short talk.

A fiddlin' contest was held recently in Arkansas and out of the fifteen old timers from the Ozarks, J. C. Callico, John Alvis and F. A. Miller were chosen. You may hear these champions Monday, April 6, at KFMQ, Fayetteville. The first prize winner, J. C. Callico, and his fiddle went through the Civil War together. Monday night is also home night for KFRU, Bristow. All the entertainers are related in some way to the Etherical company.

Tuesday night the WOAI entertainers will present selections from the compositions of Brahms. The WOAI entertainers have won distinction in southern Texas for their classical interpretations.

You will be sure spring is here if you tune for WEMC, Berrien Springs, Wednesday. Mary Lamson is resuming her weekly bird talks. D. P. Smith will also give an interesting talk on the "Archaeology of Southwest Michigan." KOA is commencing tonight a series of talks on the "Legends of a Lost People." These stories are based on archaeological expeditions in Southwestern Colorado where immense ruins reveal to the watchful eye, histories of other Americans who lived a long time ago.

As a climax to the Lenten season, "The Risen King," an Easter cantata, will be sung Thursday by the Fletcher Methodist Episcopal church choir at WIP, Philadelphia.

The oratorio which is particularly suitable for Good Friday music, "Seven Last Words of Christ" will be given by many stations. KPO, San Francisco and WCCO, the Gold Medal station, are among the stations broadcasting this composition.

WTAS and WCEE announce that they are moving their studio from Kimball Hall to the Blackstone theater, Chicago, beginning this week.

FARNHAM BAND FROM CKAC SUNDAY

Saturday, April 4

(Continued from page 9)

Jones, pianist; 10-11, Packard Radio club, Ray Watts, Varsity trio, Blondy Clark and others in late popular song hits.

KFDA, Seattle, Wash. (454.3), 6:45-8:15 p. m., Moran school for boys; 8:30-10, Shorty's Melody boys; 10-11, Eddie Harkness and orchestra.

KFWB, Hollywood, Calif. (252), 7-8 p. m., dinner dance program; 8-10, KFWB feature popular song night; 10-11, Harry Seymour's hour of fun and frivolity; 11-1 a. m., Brandstatter's Hollywood Montmarte cafe dance orchestra, Mel Pedesky, leader.

KGO, Oakland, Calif. (361), 8 p. m., program, Baldwin Piano company; Eunille Lancel, mezzo-soprano; Audrey Beer Sorel, pianist; Sam Rodetsky, Joseph George Jacobsen, pianists; San Francisco trio; Eva Garcia, Joyce Holloway Bartbelsnn, pianists; Albert Gillette, baritone; 10-1 a. m., Henry Halstead's orchestra.

KGW, Portland, Dre. (491.5), 10 p. m., Colburn's Melody men.

KHJ, Los Angeles, Calif. (405.2), 6-8:30 p. m., Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:00, little stories, American history, Prof. Walter Sylvester Hertzog, pupils of Kathryn Montreville Cocke and Uncle John; 7-8, Al Malikah Shrine band and chanters; 8-11, Mission Bell program, Los Angeles Soap company, arranged by J. Howard Johnson; Russian string quartet; Luboviski trio; Philharmonic wind quintet; Andre Maguarre, flute, Alfred Brain, French horn, Henri de Busscher, oboe, Pierre Pierrier, clarinet, Frederick Mauritz, bassoon; mysterious soprano of KHJ; Claire Forbes Crane, concert pianist; 11-11:30, Art Hickman's Biltmore hotel dance orchestra, Earl Burtnett, leader; 11:30-1 a. m., The Lost Angels of KHJ, Majestic Six orchestra.

KNX, Hollywood, Calif. (336.9), 5:45-6:15 p. m., Wurlitzer pipe organ studio, Sid Ziff's sports talk; 6:15-7:30, dinner hour music; 7:30-8, Wurlitzer pipe organ studio; 8-9, program, El Encanto apartments; 9-10, KNX feature program; 10-11, Abe Lyman's Cocoanut Grove dance orchestra from Ambassador hotel; 11-2 a. m., Hollywood Night, presenting famous screen players.

KPD, San Francisco, Calif. (429.5), 6:30 p. m., "What Is Playing at the Local Theaters;" 8-10, Art Weidner's dance orchestra.

Sunday, April 5

Sunday silent night for: CFCA, CHNC, CKAC, CHIC, KFAB, KFAE, KFKU, KFKX, KFMQ, KFOA, KLX, KDB, KSD, WAHG, WBAV, WCAE, WCEE, WDAF, WDWF, WEAD, WEBJ, WEBW, WFI, WGST, WHAS, WHAZ, WIP, WJAD, WKAQ, WLBL, WOI, WOD, WSAC.

Eastern Time Stations

CKAC, Montreal, Can. (410.7), 4:30 p. m., band from Farnham.

KDKA, Pittsburgh, Pa. (309.1), 11 a. m., Sixth Presbyterian church; 2:30 p. m., Westinghouse Symphony orchestra; 4, Dr. Charles Heinroth, organist; 4:45, vesper services, Shadyside Presbyterian church; 6:30, Pittsburgh Athletic association orchestra; 7:30, Calvary Episcopal church; 9:15, Carnegie Tech. Kiltie band.

WBBR, New York, N. Y. (272.6), 9 p. m., I. B. S. A. choral singers; 9:20, I. B. S. A. choral singers; "Who Shall Live Happily Forever," Judge Rutherford; 10:10, I. B. S. A. choral singers, instrumental trio; 10:25, I. B. S. A. choral singers.

WBZ, Springfield, Mass. (333.3), 11 a. m., Church of the Unity, Rev. Charles A. Wing, pastor; Philharmonic male quartet; 7, Copley Plaza orchestra; 8, R. T. Kellom, musical saw soloist; 8:15, Alden Redmond, baritone; 8:30, Carl Malley, organist; 40 voices, First Church of Marlborough.

WCAE, Pittsburgh, Pa. (461.3), 10:45 a. m., Rodef Shalom temple; 3 p. m., Peoples Radio church; 4, Prof. Otto Kaltels, pianist; 6:30, William Penn hotel.

Dorothy M. Litchfield, whistler, is one of the popular entertainers of WBCN, Chicago. She is a member of the regular staff of this station and her merry warbling notes may be heard nightly.

WCAU, Philadelphia, Pa. (278), 5:10 p. m., Undenominational radio church, Rev. John W. Stockwell, pastor; 6, Meyer Davis Hotel Pennsylvania concert orchestra; 6:40, recital; 7, Hotel Pennsylvania concert orchestra; 8:30, Paul Specht's Melodians.

WCX, Detroit, Mich. (516.9), 10:30 a. m., services, Central Methodist Episcopal church.

WDWF, Providence, R. I. (440.9), 10 a. m., chimes; 5-6:15 p. m., Venetian serenaders; Philharmonic pipe organ.

WEAF, New York, N. Y. (491.5), 7:20-9:15 p. m., Roxy and his gang; 9:15-10:15, organ recital, Columbia university.

WEAR, Cleveland, Ohio (389.4), 2:15-3 p. m., Allen theater orchestra; 3:30-5, twilight concert, Ivan Francisci and his Hotel Cleveland orchestra; 9-10, fireside hour.

WEEI, Boston, Mass. (475.9), 7:20 p. m., Roxy and his gang, Capitol theater; 9:15, organ recital, Columbia university.

WFI, Philadelphia, Pa. (394.5), 4:30 p. m., chapel services, auspices Church Federation of Philadelphia.

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

WGR, Buffalo, N. Y. (319), 3-4 p. m., vesper service; 7-7, "Bob" Demming, organist; 7:15, Central Presbyterian church service, William Wall Whiddit, organist, Dr. Robert J. MacAlpine, speaker.

WGY, Schenectady, N. Y. (379.5), 11 a. m., St. Peter's Episcopal church; 3:25 p. m., WGY Symphony orchestra, William Fay, baritone; 7:30, Broadway M. E. church; 8:15, Waldorf-Astoria orchestra; 10, National Sports Alliance banquet.

WHN, New York, N. Y. (361.2), 5 p. m., Roseland dance orchestra; 5:30, Olcott Vail and his string trio; 10, Gem Razor entertainers; 10:45, Jannssen's Hofbrau Commanders orchestra.

WIP, Philadelphia, Pa. (508.2), 3:03, concert, Philadelphia Music league.

WJAR, Providence, R. I. (305.9), 7:20 p. m., Roxy and his gang; 9:15-10:15, organ recital.

WJZ, New York, N. Y. (454.3), 7 p. m., Hotel Pennsylvania dinner concert; 8:15, Mary Carr, soprano; 8:45, Waldorf-Astoria concert orchestra; 10, Godfrey Ludlow, violinist.

WLIT, Philadelphia, Pa. (394.5), 2 p. m., Arcadia cafe concert orchestra; 8, Friends of Camber Music concert.

WMAK, Lockport, N. Y. (265.5), 10:30 a. m., First Methodist Episcopal church, Rev. Paul Burl.

WMBF, Miami Beach, Fla. (384.4), 10-2 a. m., Rosebrook's Radio serenaders, Nautilus "Lucky Seven" orchestra.

WNYC, New York, N. Y. (526), 9-11 p. m., Brooklyn Mark Strand theater program, Edward L. Hyman, director.

WDD, Philadelphia, Pa. (508.2), 10:15 a. m., services, Bethany Temple; 2:30 p. m., Sunday school exercises, Bethany Temple; organ recital, Clarence K. Bawden.

WREO, Lansing, Mich. (285.5), 10 a. m., chimes, Plymouth Congregational church; 10:30, services, Plymouth Congregational church, Dr. Edwin Bishop, pastor; 7:30 p. m., services, First Baptist church, Rev. Ralph W. Hobbs, pastor.

WWJ, Detroit, Mich. (352.7), 11 a. m., services, St. Paul's Episcopal cathedral; 2 p. m., Detroit News orchestra; 7:20, Roxy and his gang.

Central Time Stations

KFAB, Lincoln, Nebr. (240), 4 p. m., church service.

KFNF, Shenandoah, Ia. (266), 10:45 a. m., First M. E. church; 2:30 p. m., services, Rev. and Mrs. Hanley; 3, M. E. Sunday school, Mrs. M. H. Shum; 6:30, Golden Rule circle; 8, Christian church.

KFRU, Bristol, Dakla. (394.5), 9:30 a. m., Etherical Bible school, W. S. Symonds, director; 11, Dr. Thomas Murray; 5 p. m., vesper services, Tulsa University Little Symphony orchestra.

KFUO, St. Louis, Mo. (545.1), 9:15 p. m., "The Fulfillment of the Prophecy," Prof. William Arndt.

KTHS, Hot Springs National Park, Ark. (374.8), 11-12:30 p. m., Central Methodist church; 8:30-10, Meyer Dovis-New Arlington hotel orchestra; 10-10:45, Phil Baxter's singing orchestra.

KYW, Chicago, Ill. (535.4), 11 a. m., Central church service, Rev. Dr. Frederick F. Shannon; 4-5 p. m., Chicago Evening American; 7, Chicago Sunday Evening club; Rev. Leyton Richards.

Harold and Leo Williamson of Des Moines have been heard from many of the middle west stations. They will play Friday at WHO, their home station.

WBAP, Fort Worth, Tex. (475.9), 11 a. m., St. Paul's M. E. church, Rev. C. D. Meade, pastor; Mrs. F. L. Jaccard, organist; 4 p. m., Rialto theater; 11-1, Crazy hotel orchestra.

WBCN, Chicago, Ill. (266), 4-5 p.m., Lain & Son classical concert; 5:15-6:15, vesper services, Presbyterian church, talk, Rev. Richard D. Hughes; 7-8, classical hour, Redeemer church; 8-10, Ralph Bechtel, pianist; Henry Vocke, tenor; Midway dancing orchestra; Albert Blaba, concertina players; Borden Brothers; Hernes Brothers; Drexel male quartet.

WCBO, Zion, Ill. (344.6), 8 p. m., mixed quartet, Celestial bell quartet; brass quartet; Mrs. Mayfield, soprano; Mrs. Faassen, contralto; R. F. Reid, baritone; Mrs. John Marshall, reader; Eleanor Pihl, pianist.

WCCD, Minneapolis-St. Paul, Minn. (416.4), 10:20 a. m., Plymouth Congregational church; 4:10 p. m., House of Hope Presbyterian church; 7:45, Hennepin Avenue M. E. church; 9:15, Selim Grotto band; Mrs. Mildred Langtry Meland, contralto.

WDAF, Kansas City, Mo. (365.6), 4-5 p. m., St. Mark's Lutheran choir; 5-5:30, Sunday school lesson, Dr. Walter L. Wilson; Radio quartet.

WEBH, Chicago, Ill. (370.2), 5-6 p. m., twilight musicale; 7-9, artists program.

WEBW, Beloit, Wis. (268), 4:30 p. m., vesper services, Beloit college.

WEMC, Berrien Springs, Mich. (286), 11 a. m., Radio Lighthouse quartet; Opal Hoover, saxophonist; Mrs. H. B. Taylor, soprano; 11:45, sermon, Pastor W. R. French; 8:15 p. m., Radio Lighthouse choir; Martha Hutchinson, soprano; Mrs. Lela Euchell, contralto; Ernest Hurd, tenor; 9, sermon.

WFAA, Dallas, Tex. (475.9), 6-7 p. m., Radio Bible class, Dr. William M. Anderson; 7:30-9, First Baptist church; 9:30-11, Jack A. Davis orchestra.

WGN, Chicago, Ill. (370.2), 11:45 a. m., program, Chicago theater; 2 p. m., organ recital, Lyon & Healy; 3, Albin Steindel, violinist; 3:30, Chicago Musical college; 9-10, "An Evening with the Composers," Charles H. Gabriel, Jr.; Ethel Wakefield, soprano; Drury Lenington, tenor.

WHAS, Louisville, Ky. (399.8), 9:57 a. m., organ music; 10, Fourth Avenue Presbyterian church; 4:30, choral evensong service, Christ church cathedral.

WHD, Des Moines, Iowa (526), 11 a. m., church service, University Church of Christ; 4 p. m., program, Dean Holmes Cowper, director; 7:30, Reese-Hughes orchestra.

WJJO, Mooseheart, Ill. (302.8), 7:45-9 a. m., Catholic service; 9:40-10:15, Protestant services; 3-4, concert; 12-2:30 a. m., Rendezvous cafe.

WLS, Chicago, Ill. (344.6), 6:30 p. m., Ralph Emerson, organist; 7-7:55, WLS "Little Brown Church in the Vale."

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; 7:30, services, First Presbyterian church of Walnut Hills, Dr. Frederick McMillan; 8:30, Western and Southern orchestra, William Kopp, director; Joseph Vito, harpist.

WMC, Memphis, Tenn. (499.7), 11 a. m., First Baptist church, Rev. A. U. Boone, pastor.

WDAI, San Antonio, Tex. (394.5), 11 a. m., First Presbyterian church, Dr. P. B. Hill, pastor; 7:30 p. m., Central Christian church, Dr. Hugh McLellan, pastor; 9:30, "Stabat Mater," WOAI entertainers.

WOAW, Omaha, Nebr. (526), 9 a. m., Radio chapel service, Rev. R. R. Brown; 2:15 p. m., matinee program, St. Mary Magdalene church choir, Henry Bock, director; 6, Bible study period, Mrs. Carl R. Gray; 9, North Side Christian church, Rev. F. K. Hargrove.

WDC, Davenport, Ia. (483.6), 8 p. m., services, First Presbyterian church, Rev. Otis Walter; sermon, "Christ Triumphant," musical numbers; 9:30, Palmer Little Symphony, Erwin Swindell, conductor.

WORO, Batavia, Ill. (275), 6:30-7 p. m., Bible questions, B. M. Hice; 7-7:30, I. B. S. A. choral singers; Mrs. Lillian French Read, soprano; 7:30-8 Bible lecture, D. J. Morehouse.

WQJ, Chicago, Ill. (447.5), 10:30 a. m., Dr. Preston Bradley's sermon; 8-10, Ralnbo Garden orchestra; Vincent Gullotta, violinist; L. F. Kunstman, baritone; Grace Nelson, fourteen-year-old pianist; Alvina Bocker, soprano; Pearl Heckel, accompanist.

WRBC, Valparaiso, Ind. (278), 7:30 p. m., Immanuel Lutheran church.

WSB, Atlanta, Ga. (428.3), 11 a. m., First Presbyterian church; 5-6 p. m., St. Marks Epworth league; 7:30, Wesley Memorial church.

WSUI, Iowa City, Ia. (483.6), 7 p. m., children's hour, Mrs. Alice McLeod Mills, director; 9-9:30, familiar hymns, Presbyterian choir.

WTAS, Elgin, Ill. (302.8), 7-12 midnight, WTAS orchestra, Husk O'Hara; Frank Morris, Fanny and Eddie Cavanaugh.

Mountain Time Stations

CFAC, Calgary, Can. (434.5), 7 p. m., Central Methodist church.

KDA, Denver, Colo. (322.4), 11:30 p. m., Palm Sunday service, Augustana Lutheran church; 4 p. m., Sunday afternoon music, Augustana church; 7:30, Augustana Lutheran church.

Pacific Time Stations

KFI, Los Angeles, Calif. (468.5), 10-10:45 a. m., L. A. Church Federation service, Rev. Donald E. Henley of First Friends church; 11-12, Third Church of Christ Scientist, services; 4-5 p. m., vesper hour, arranged by Paul Haupt; 6:45-7, musical appreciation talk; 7-8, stage acts and orchestra from Metropolitan theater; 8-9 Franz Hoffman, Dutch bass-baritone in classical recital; 9-10, Examiner Rose Room dance Orchestra; 10-11, Packard Eight dance orchestra, Bill Hennessey, leader.

KFWB, Hollywood, Calif. (252), 7-8 p. m., Russian Gypsy trio; 8-10, Jack Warner's clown night with Eddie Borden, Syd Chaplin, Chuck Reisner, Charlie Wellman and others, dance orchestra; 10-11, Brandstatter's Hollywood Montmarte calf dance orchestra, Mel Pedesky, leader.

KGO, Oakland, Calif. (361), 10:15 a. m., annual communion and breakfast, Knights of Columbus; 3:30 p. m., KGO Little Symphony orchestra; 7:30, First Congregational church.

KGW, Portland, Dre. (491.5), 10:30 a. m., First Presbyterian church; 3 p. m., municipal concert; 8, St. Mary's cathedral pre-Easter concert.

KHJ, Los Angeles, Calif. (405.2), 6:30-7 p. m., Art Hickman's Biltmore hotel concert orchestra; Edward Fitzpatrick, director; 7-7:30, organ recital, Arthur Blakely, organist; 7:30-8:15, program, International Bible students' association; the Orpheus Four; 8:15-10, program, Silverwoods, Inc., arranged by J. Howard Johnson.

KNX, Hollywood, Calif. (336.9), 5-6:15 p. m., Radio sunset service, Rev. Frank Dyer, Rev. Chas. F. Aked; 7-8, program, First Presbyterian church of Hollywood; 8-9, Ambassador hotel concert orchestra, Josef Rosenfeld, director; 9-11, program, Globe Ice Cream company, Paul Finstein's KNX string quintet.

KPD, San Francisco, Calif. (429.5), 8:30-10:30 p. m., Rudy Seiger's Fairmont hotel orchestra.

Monday, April 6

Monday, silent night for: CFCA, CHIC, CKAC, KFAB, KFOM, KFMQ, KGW, KYW, WBAV, WBCN, WCAU, WDWF, WEBH, WEAO, WEBJ, WGN, WHAS, WJY, WKAQ, WLBL, WLS, WMAQ, WDC, WDAI, WQJ, WRED, WSAC.

Eastern Time Stations

KOKA, Pittsburgh, Pa. (309.1), 6:15 p. m., KDKA Little Symphony orchestra; 8, Girl Scout program; 8:15, address, University of Pittsburgh; 8:30, concert.

WAHG, Richmond Hill, N. Y. (315.6), 8-8:15 p. m., Walter Scott, violinist; 8:15-8:25, Horace John Taylor, reader; 8:25-9, Synchrophase string trio; 9-9:15, popular songs, Judith Roth; 9:15-9:30, Walter Scott; 9:30-9:55, Synchrophase string trio; 10:05-10:15, Victor Wilbur, baritone; 10:15-11:30, the Criterions; 12-2 a. m., special program, Adamo Synphonic orchestra.

WBAV, Columbus, Ohio (293.7), 8-10 p. m., WBAV orchestra.

WBBR, New York, N. Y. (272.6), 8 p. m., Syrian oriental music, Toufic Moubaid, Elizabeth Awad; 8:10, Ruth de Boer, contralto; 8:20, world news digest, editor Golden Age magazine; 8:40, Ruth de Boer; 8:50, Syrian oriental music.

WBZ, Springfield, Mass. (333.3), 6 p. m., Westinghouse Philharmonic trio; 7:15, "Bringing the World to America," Our World; 7:30, lecture on John Galsworthy, Prof. Robert Emmons Rogers; 8, Philharmonic trio; 8:15, mixed quartet, Etta Bradley, soprano; Cordelia MacClure Lee, contralto; W. D. Broadbent, tenor; Daniel Ross, baritone; 8:45, Mrs. Dora Boedeker Gottsche, mezzo-soprano; 9, Aleppo drum corps, Shriners band; 9:30, Jean Stimmel, speaker; 9:45, McEnelly's singing orchestra; 11:30, McEnelly's singing orchestra.

WCAE, Pittsburgh, Pa. (461.3), 6:30 p. m., dinner concert, William Penn hotel; 8, current music chats, Mrs. Ethel Davis; 8:30, Eleanor Olive-Edstrom, contralto; Miss Cunningham, soprano; Ethel Davis, accompanist; 9, A & P Gypsy string ensemble; 11, flight of mythical dirigible.

WCX, Detroit, Mich. (516.9), 4:15 p. m., musical program; 6, dinner concert, Book-Cadillac hotel; 8:30, musical program.

WEAF, New York, N. Y. (491.5), 6 p. m., Hotel Waldorf-Astoria; 7, Beth Tregaskis, contralto; 7:15, musical program, Mark Strand theater; 8:30, Ernesto Berumen concert pianist; 8:45, Metropolitan Life Insurance company's health talk; 9, A. & P. Gypsies; 10, Westell Gordon, tenor; Willem Durieux, cellist; Dorothy Hoyle, violinist; Marian Carley, pianist; 10:20, Knickerbocker trio; 10:30-11:30, Ben Bernie's Hotel Roosevelt orchestra.

WEAR, Cleveland, Ohio (389.4), 7-8 p. m., Loew's State theater.

WEEI, Boston, Mass. (475.9), 6:30 p. m., Big Brother club; 7:15, W. A. Murphy, baritone; 7:30, Dok-Eisenbourg and his Sinfonians; 8, minstel show, Prospect Street Congregational church; 8:45, health talk; 9, A & P Gypsies; 10, organ recital, Boston Chamber of Commerce.

WFI, Philadelphia, Pa. (394.5), 3 p. m., piano solos, Loretta Kerk; 6:30, Meyer Davis' Bellevue Stratford concert orchestra; 7, bedtime stories.

WGBS, New York, N. Y. (315.6), 3-3:10 p. m., interview with Marguerite Harrison, traveler, "Experiences in Russia," Terese Rose Nagel; 3:20-3:30, talk, Mrs. Franklin Roosevelt; 3:40-3:50, talk, Mrs. Grace H. Childs of the Women's City club; 6-6:30, Uncle Geebee; 6:30-7:30, Lew Kreuger's dance orchestra.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., Radio Dealers' lousical program, J. P. Quinn, director; 6:30-7:30, dinner music, an M. A. Schmidt program; 8-8:35, Danny Engle and Charley Sellers in a comedy program; 8:35-8:55, recital, Francis Bush and Margaret Pierce; 9-10, recital, E. M. Farris, featuring Margaret Blakeslee, William Kam, Leo Considine, Mitchell Gracie; 10-10:30, Jennie G. Kendall, pianist; 11-1 a. m., supper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Geiser, director.

WGY, Schenectady, N. Y. (379.5), 6:30 p. m., Hotel Ten Eyck trio; 7:30, Myrtle Shaw, pianist; Sarah A. Spencer, soprano; J. F. Quinlan, baritone; "Discovery of the Vacuum and Some of Its Uses," Charles M. Ripley.

WHAZ, Troy, N. Y. (379.5), 9 p. m., vocal and instrumental concert; 10, Zita's orchestra; "Should the Government Furnish Electric Service," M. S. Sloan.

WHN, New York, N. Y. (361.2), 7:30 p. m., health talk, Dr. Landis; 7:35, Hotel Carlton Terrace orchestra; 8, "Storage Batteries," H. B. Shontz; 8:05, Roseland dance orchestra; 8:50, Littmann's employees orchestra; 9:30, Dan Gregory and his Crystal Palace orchestra; 10-11, Jack Shack; 11:30-12, Silver Slipper revue.

WIP, Philadelphia, Pa. (508.2), 4 p. m., garden talk, Chas. K. Hallowell; 6:05, Clarence Seamon's concert orchestra; 7, Uncle Wip's bedtime stories.

WJAR, Providence, R. I. (305.9), 8 p. m., studio program; 9, A. & P. Gypsy string ensemble.

WJZ, New York, N. Y. (454.3), 7 p. m., Hotel Commodore concert orchestra; 8:10, Marjorie Mott Drehr, soprano; 8:25, "Unwritten History," Cosmo Hamilton; 8:40, Colgate musical club concert; 10:30, Waldorf-Astoria dance orchestra.

WLIT, Philadelphia, Pa. (394.5), 4:30 p. m., Iris Virginia Gruber, contralto; 7:30, Dream Daddy's bedtime stories; 9:30, concert from Stanley theater; 10, Arcadia cafe dance orchestra; vaudeville features from Fay's Knickerbocker theater.

WMAK, Lockport, N. Y. (265.5), 8 p.m., musical program, Jessamine Crane.

WMBF, Miami Beach, Fla. (384.4), 10-2 a. m., Rosebrook's Radio serenaders; Nautilus "Lucky Seven" orchestra.

WNYC, New York, N. Y. (526), 7-7:30 p. m., dance program; 7:35-7:45, health talk; 7:45-8, dance program; 8:15-8:30, talk by public official; 8:30-9:30, studio program; 10:10-10:20, "Trend of the Times," Dr. Sydney Ussher; 10:35-11:35, the Carolinians.

WDD, Philadelphia, Pa. (508.2), 4:45 p. m., organ recital, Mary E. Vogt; 7:30, A. Candelori's concert orchestra; 8, concert from WEAF; 10:03, organ recital, Mary E. Vogt; 10:30, Vincent Rizzo's dance orchestra.

WDR, Newark, N. J. (405.2), 6:16 p. m., Dove Harmon's Cinderella orchestra; 7:30, Ivy male quartet; 8, garden talk; 8:30, Al Reid's hour; 9:40, Dr. Sigmund Spaeth, music critic; 11:30, "The Commanders."

WRC, Washington, D. C. (468.5), 4:20 p. m., talk, National Geographic society; 4:30, tea music, Meyer Davis' New Willard hotel trio; 6, children's Radio music club, Peggy Albion.

WWJ, Detroit, Mich. (352.7), 6 p.m., dinner concert; 8, Detroit News orchestra; 9, concert from New York.

Central Time Stations

KFAB, Lincoln, Nebr. (240), 7:30-9:30 p. m., Collegians orchestra; Orville Andrews, Buick song bird; Honolulu Royals, Hawaiian entertainers; Lamperti Four quartet.

KFKU, Lawrence, Kan. (275), 6:50 p. m., piano tuning-in number; 7, music; 7:15, "Training for the Weight Events," Karl Schlademan; 7:30, "Make Up," Prof. Allen Crafton; 7:45, elementary Spanish lesson XIV.

KFKX, Hastings, Nebr. (288.3), 9:30-11:30 p.m., dance program, Ralph Britt's University Six orchestra.

KFMQ, Fayetteville, Ark. (299.8), 9 p. m., three prize fiddlers of the Ozarks, J. C. Callico, John Alvis, F. A. Miller.

KFNF, Shenandoah, Iowa (266), 6:30 p. m., Smith-Belding orchestra.

KFRU, Bristow, Okla. (394.5), 7-8 p. m., speaker, Ed Overholser; "Aggiegrams," Hon. J. A. Whitehurst; 8-10:30, Etherical quartet; Mrs. Cliff Bradley, Cliff Bradley, piano readings.

KFUO, St. Louis, Mo. (545.1), 9:15 p. m., "Judas, Betrayest Thou the Son of Man with a Kiss?" J. T. Mueller.

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

KTHS, Hot Springs National Park, Ark. (374.8), 8:30-9 p. m., vocal recital, W. C. Brown; 9-10, Meyer Davis-New Arlington ensemble; 10-11, Charles L. Fischer Eastman hotel orchestra; 11:30-12:30 a. m., Meyer Davis-New Arlington hotel orchestra.

Mrs. Erma H. Miranda is the leader of the college choir which may be heard Sunday, April 6, at WEBW, Beloit, Wisconsin, the college station, during the Sunday vesper service.

WBAP, Fort Worth, Texas (475.9), 7:30-8:30 p. m., "Ten Million Dollar" square dance; 9:30-10:45, Waco "Trail Blazers."

WCBD, Zion, Ill. (344.6), 8 p. m., string quartet; Richard F. Hire, violinist; Hermann Becker, cellist; Erma Reynolds, soprano; Edith Carey, contralto; Arthur Mann, baritone; Lois Wiedman, reader; Mrs. A. E. Hunneryager, pianist.

WCCD, Minneapolis-St. Paul, Minn. (416.4), 8 p. m., "Test Your Seed Corn," C. D. Bull; 8:15, "Caring for Baby Lambs," A. A. Dowell; 8:30, Ski-U-Mah night; 10, Original George Osborn's Nicollet hotel orchestra; Russell Murphy, baritone.

WCEE, Elgin, Ill. (275), 10:30-12 midnight, Charline star Monday program; WTAS orchestra.

WDAF, Kansas City, Mo. (365.6), 6-7 p. m., Cecile Burton, reader; Trianon ensemble; 11:45-1 a. m., Merry Old Chief, Plantation players.

WEBW, Beloit, Wis. (268), 8 p. m., concert, Beloit college.

WEMC, Berrien Springs, Mich. (286), 8:15 p. m., Radio Lighthouse Music makers.

WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Buddy's Blue Melody Boys' orchestra; 8:30-9:30, Magnolia Petroleum Company's Dallas band, Paul E. Ashley, director.

WGN, Chicago, Ill. (370.2), 6:30-7 p. m., Drake concert ensemble, Blackstone string quintet.

WGST, Atlanta, Ga. (270), 9-10 p. m., "Talk Back Home" hour, Georgia Tech. students.

WHD, Des Moines, Iowa (526), 7:30-8 p. m., Stewart Watson, American baritone; Helen Birmingham, accompanist; 8-9, program, Dean Holmes Cowper, director; 11:15-12, L. Carlos Meier, organist.

WJAO, Waco, Texas (352.7), 8:30-10 p. m., musicale, Miss Jennings, director.

WJJD, Mooseheart, Ill. (302.8), 6:30-7:15 p. m., Albert F. Brown, organist; 7:15-8, Mooseheart Novelty orchestra; "Child Care," M. P. Adams; 10:30-1 a. m., Garod studio; Charley Straight and his orchestra.

WLW, Cincinnati, Ohio (422.3), 4 p. m., pupils of Helen Ahecherle in recital; 6, dinner hour concert; 10, program, Eta Chapter of the Sinfonian fraternity; Sinfonian male quartet; violin solos, Raymond Baum-

(Continued on page 11)

PRIZE FIDDLERS HEARD AT KFMQ

Monday, April 6

(Continued from page 10)

gartner; piano solos Wilbert Little and Gus Riherd: feature dance program, Bob Deikman and his orchestra.
WMC, Memphis, Tenn. (499.7), 7:30 p. m., farm talk, C. W. Watson; 8:30, Hotel Gayoso orchestra.
WOAW, Omaha, Nebr. (526), 6 p. m., Arthur Hays, organist; 6:30, dinner program; 9, program, Hannan-Van Brunt company.
WORO, Batavia, Ill. (275), 7-8 p. m., boys and girls hour, Uncle Dan; 8-10, Watch Tower choral singers; Adelaide Jones, soprano; Esther Arneson, pianist; John T. Read, bass; "The Birth of Jesus," Calvin Swingle.
WRBC, Valparaiso, Ind. (278), 7:30 p. m., musical and educational porgram.
WSB, Atlanta, Ga. (428.3), 8-9 p. m., John McCrindle, Scotch bass; Vera Sue Hampton, pianist; 10:45, Warners Seven Aces.
WSUI, Iowa City, Iowa (483.6), 7:30-7:45 p. m., "Modern English," Prof. Thomas A. Knott; 7:45-8, "Current Social and Economic Problems," Dale Yoder; 8, readings.
WTAS, Elgin, Ill. (302.8), 8-10:30 p. m., Villa Olivia night program.

Mountain Time Stations

KOA, Denver, Colo. (322.4), 8 p. m., Fred Schmitt and his Rialto theater orchestra; 8:10, program, Pueblo Commerce club, Thomas A. Christian, director; Arlon chorus; Pueblo male octet; double male quartet; "Out Where the West Begins," Frank S. Hoag.
KOB, State College, N. M. (348.6), 7:30-8:30 p. m., "Superstitions in Medicines," Dr. McBride.

Pacific Time Stations

KFAE, Pullman, Wash. (348.6), 7:30-9 p. m., Herbert Kimbrough, contralto; Lusinn Barakian, soprano; Dorothy Saga, violinist; "What to See in Venice," Prof. Carl M. Brewster; "Our Moral Duty to Mental Defectives," Prof. F. W. Clower; Tau Nu Kappa "Boilermakers," Archer Ruley, pianist; Loy Naffziger, saxophonist; Earl McCune, trumpeter; Ray Treasher, banjoist; "Growing Crops in 1925," Prof. E. G. Schafter; "Farm Outlook for April," R. M. Turner.
KFI, Los Angeles, Calif. (468.5), 5:30-6 p. m., Examiner's musical half hour; 6:45-7, Raditorial talk; 7-8, Evening Herald Radiolians dance orchestra, Charlie Malson, tenor; 8-9, program, Walter M. Murphy Motors company; 9-10, vocal and instrumental; 10-11, Examiner: Ray West and his Alexandria hotel dance orchestra.
KFOA, Seattle, Wash. (454.3), 6:45-8:15 p. m., Sherman, Clay & company program; 8:30-10, Goodrich Silvertown Cord orchestra.
KFWB, Hollywood, Calif. (252), 7-7:30 p. m., dinner dance music; 7:30-8, Maxwell House Coffee string quintet; 8-10, KFWB feature program, Hi Moulton's dance orchestra, Charlie Wellman, tenor; Bill Hatch, piano; 10-11, Harry Seymour's hour of fun and frivolity; 11-1 a. m., Brandstatter's Hollywood Montmarte cafe dance orchestra, Mel Pedesky, leader.
KGO, Oakland, Calif. (361), 3 p. m., studio musical program; 4-5:30, Henry Halstead's dance orchestra; 8, Arion trio; "The Origin, Formation and Development of Soil," C. F. Shaw; "How to Get Out of a Rut," Albertine Richards Nash; "Chats About New Books," Joseph Henry Jackson; 10-1 a. m., Henry Halstead's orchestra.
KGW, Portland, Ore. (491.5), 6 p. m., dinner concert, F. W. Goodrich, organist; 7, Pre-Easter address.
KHJ, Los Angeles, Calif. (405.2), 8-10 p. m., program, Sierra and Schalk Chemical company, arranged by G. Allison Phelps.
KLX, Oakland, Calif. (508.2), 6-7 p. m., organ recital; 8-9:30, educational program; 9:30-10, American theater orchestra; 10, meeting, Lake Merritt Ducks.
KNX, Hollywood, Calif. (336.9), 5:45-6:15 p. m., Wurlitzer pipe organ studio, Sid Ziff's sports talk; 6:15-7, dinner hour music; 8-10, KNX feature program; 10-11, Goodrich Silvertown Cord orchestra, Lilyan May Challenger, contra-contralto; 11-12, Abe Lyman's Cocoanut Grove dance orchestra from Ambassador hotel.
KPO, San Francisco, Calif. (429.3), 7-7:30 p. m., Rudy Seiger's Fairmont hotel orchestra; 8-9, Theodore J. Irwin, organist; Victor Vogel, bass; 9-10, San Francisco Conservatory of music.

Eastern Time Stations

CKAC, Montreal, Can. (410.7), 7:30 p. m., Windsor hotel trio; 8:30, studio concert; 10:30, Harold Leonard's Red Jackets.
KOKA, Pittsburgh, Pa. (309.1), 6:15 p. m., Pittsburgh Athletic association orchestra; 7:45, "Overcoming Racial Prejudices," Dr. John Ray Ewers; 8:30, Pittsburgh Advertising club; 9, Brunswick hour of music; 11, Pittsburgh Post studio; 11:30, Grand theater.
WBZ, Springfield, Mass. (333.3), 6:45 p. m., songs, Violet Gridley; 7:45, Charles R. Hector with his St. James theater orchestra; 8:15, talk, Georgina B. Such; Mrs. E. B. Heywood, soprano; Vincenzo, tenor; 9, Brunswick hour of music.
WCAE, Pittsburgh, Pa. (461.3), 6:30 p. m., William Penn hotel; 8, program from New York; 8:30, Gold Dust Twins; 9, Eveready hour; 10, Goodrich Silvertown Cord orchestra.
WCAU, Philadelphia, Pa. (278), 7 p. m., Paul Specht's Melodians; 7:30, N. Snellenburg and company recital; 8:15, talk, Clara Zillessen; 8:20, Media Melodians; 8:35, Bownit-Teller trio; 8:55, recital; 9:15, "What We See and Hear in Music," talk, Maude Hanson Pettit; 10:30, Charles Verna and his dance orchestra.
WCX, Detroit, Mich. (516.9), 4:15 p. m., musical program; 6, dinner concert, Book-Cadillac hotel; 8:30, musical program; 10, the Red Appla club.
WNYC, New York, N. Y. (526), 7-7:30 p. m., studio features; 7:35-8:35, Riesenfeld's Rialto program; 8:45-8:55, talk by public official; 9-10, studio features; 10:10-10:20, Board of Education lecture service.
WOO, Philadelphia, Pa. (508.2), 4:45 p. m., organ recital, Mary E. Vogt.
WOR, Newark, N. J. (405.2), 6:16 p. m., Hotel Lorraine orchestra; 6:30, "Man in the Moon" stories.
WRC, Washington, D. C. (468.5), 6:45 p. m., children's hour, Peggy Albion; 7, dinner music, Meyer Davis' New Willard hotel orchestra; 8, "Show Shopping," Leonard Hall; 8:10, to be announced; 8:30, "The Political Situation in Washington Tonight," Frederick William Wile; 9, Brunswick hour of music; 10:30, dance music, Meyer Davis' Le Paradis band.
WWJ, Detroit, Mich. (352.7), 6 p. m., dinner concert; 8, concert from New York.

Central Time Stations

KFDM, Beaumont, Texas (315.6), 8 p. m., Pierce Goodell Piano company program.
KFMQ, Fayetteville, Ark. (299.8), 9 p. m., student orchestra, D. C. Hansard.
KFRU, Bristow, Okla. (394.5), 10:30-12 midnight, Jimmie Wilson's Catfish string band.
KFUO, St. Louis, Mo. (545.1), 9:15 p. m., "The Denial of Peter," Rev. E. Duever.
WMC, Memphis, Tenn. (499.7), 7:30 p. m., health talk, Dr. E. E. Francis; 8:30, musical program, Mrs. Marie Greenwood Worden, director; 11, midnight frolic, Bennett's Moonlight syncopators.
WOAI, San Antonio, Texas (394.5), 8:30 p. m., Brahm's program, WOAI entertainers; 9:30, Jimmy Joy's orchestra.
WOAW, Omaha, Nebr. (526), 6 p. m., "Advice to the Lovelorn," Cynthia Grey; 6:25, dinner program, May Seed and Nursery company; 9, Frank Mach, violinist; 10, to be announced.
WOC, Davenport, Ia. (483.6), 6:30 p. m., Sandman's visit, Val McLaughlin; 7:30, musical program, WEAF.
WORO, Batavia, Ill. (275), 8-10 p. m., program, Hammond Musical college.
WQJ, Chicago, Ill. (447.5), 7-8 p. m., Rainbo Garden orchestra; Isabelle Freeman, soprano; Loretta Streahl, contralto; Ellen Doolittle, pianist; 10-1 a. m., Ralph Williams and his Rainbo Skylarks; Ned and Ches; Will Rossiter; Tommy Jancosek, harmonica player; Mack Sisters; 1-2, Hotsy Totsy hour.
WSB, Atlanta, Ga. (428.3), 8-9 p. m., Vick Myers Melody orchestra; 10:45, Radiowl entertainment.
WTAS, Elgin, Ill. (302.8), 8-10:30 p. m., WTAS orchastra, special features.

Mountain Time Stations

CNRR, Regina, Can. (312.3), 8 p. m., Regina Rover Scout band.

Pacific Time Stations

KFI, Los Angeles, Calif. (468.5), 5:30-6 p. m., Examiner's musical half hour; 6:45-7, Raditorial talk; 7-8, Aeolian residence pipe organ recital, Dan McFarland, organist; 8-9, Jane of the Examiner program; 9-10, program, American glee singers; 10-11, Packard ballad hour with Ray Watts, Billy and Polly Hall, Dorothy Cleveland, Barney Weber and others.
KFOA, Seattle, Wash. (454.3), 6:45-8:15 p. m., studio program, William Taggart, director; 8:30-10, studio program, A. M. Turner; 10-11, Eddie Harkness and his orchestra.
KFWB, Hollywood, Calif. (252), 7-8 p. m., instrumental and vocal numbers from light operas; 8-10, movie night at KFWB, presenting many famous stars of the silver-sheet; 10-11, Harry Seymour and his helpers in an hour of laughs, song and dance; 11-1 a. m., players night at Brandstatter's Hollywood Montmarte cafe, Mel Pedesky's dance orchestra.
KGO, Oakland, Calif. (361), 8 p. m., KGO Little Symphony orchestra; Arthur S. Garbett, speaker; Mrs. Clarence W. Page, contralto; Miriam Bubb, pianist; 10-1 a. m., Henry Halstead's orchestra.
KGW, Portland, Ore. (491.5), 6 p. m., special pre-Easter sarvice; 8, Oregon Agricultural college extension service lecture; 8:30, concert, courtesy Woolach & Powell; 10, Multnomah hotel strollers.
KHJ, Los Angeles, Calif. (405.2), 6-6:30 p. m., Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, little stories of American history, Prof. Walter Sylvester Hertzog; weekly visit of Sandman and Queen Titania of Fairyland; Uncla John; 7:30, "Hawaiian Islands," Fred L. Goddard; 8-10, program, Henly and Scott, arranged by Uncle John; 10-11, Art Hickman's Biltmore hotel dance orchestra, Earl Burtnett, leader.
KNX, Hollywood, Calif. (336.9), 5:45-6:15 p. m., Wurlitzer pipe organ studio; sports talk, Sid Ziff; 6:15-7:30, program, R. C. "Cliff" Durant; 7:30, style talk, Myer Siegel, Jr.; 7:40, "Health," Dr. Robt. T. Williams; 8-9, KNX feature program; 9-10, program, Independent Furniture Manufacturing company; 10-12, movie night at tha Ambassador, Abe Lyman's Cocoanut Grova dance orchestra.
KPO, San Francisco, Calif. (429.5), 7-7:30 p. m., Rudy Seiger's Fairmont hotel orchestra; 8-10, U. S. Army band.

Arlene Baker is one of the promising pupils of Erwin Swindell, musical director of WOC, Davenport. She gives charming pianologues at this station and has received so far only sixteen thousand votes of popularity.

Dr. A. M. Harding (below) will direct the old time fiddling concert at KFMQ, Fayetteville, Ark., Monday, April 6. Three prize winning fiddlers from the Ozarks will take part in the program.

Vincent H. Percy, organist of WEAR, Cleveland, who plays the Metcalf Memorial organ every Tuesday and Thursday, knows all about the construction of this great musical instrument because he drew the plans and specifications.

Tuesday, April 7

Tuesday, silant night for: CFCA, CHNC, CHIC, KFAB, KFAE, KFKU, KFKX, KFNF, KLX, KOA, KOB, WAHG, WBAV, WBBR, WCAL, WCBD, WEAO, WEMC, WGST, WHAZ, WHO, WJAD, WMAK, WOI, WOO, WSAC, WSUI.

WOWF, Providence, R. I. (440.9), 8:30-9:30 p. m., Vincent Lopez Arcadia dance orchestra.
WEAF, New York, N. Y. (491.5), 6 p. m., Hotel Waldorf-Astoria; 7, Claire Brookhurst, contralto; 7:15, art talk, American Federation of art; 7:30, Eagle Neutrodyne trio; 8, talk, Dudley F. Fowler; 8:10, Nicolas Stember, Russian pianist; 8:30, Gold Dust Twins; 9, Eveready hour; 10-11, American opera ensemhle.
WEAR, Cleveland, Ohio (389.4), 7-8 p. m., Metcalf Memorial organ recital, Vincent H. Percy; 8-10, program from WEAF.
WEBJ, New York, N. Y. (233), 7-7:30 p. m., Bert Roborn's society orchestra; 7:45-8, Eugene Burns, tenor; 8:15-8:30, Don Roberts and Al Panotadosi, composers; 8:30-9, Sieberts Midnight serenaders.
WEEI, Boston, Mass. (475.9), 6:30 p. m., Big Brother club; 7:15, J. A. Lane interviewed by Whit; 7:30, Dok-Eisenbourg and his Sinfonians; 8, from New York; 8:30, Gold Dust Twins; 9, Eveready hour; 10, Goodrich Silvertown Cord orchestra.
WFI, Philadelphia, Pa. (394.5), 6:30 p. m., Meyer Davis' Bellevue Stratford concert orchestra; 7, bedtime stories; 8, concert from WEAF; 8:30, Gold Dust Twins; 9, Eveready hour; 10, Goodrich Silvertown Cord orchestra.
WGBS, New York, N. Y. (315.6), 6-6:30 p. m., Uncle Geebee; 6:30-7:30, Jersey collegians; 7:30-7:50, playlet, Washington Square players under direction of Randolph Somerville; 8:30-8:45, Scotty Wood, contralto; 9-9:30, Harding Hotel Seville orchestra; 9:30-10, program, Herald-Tribune; 10-10:15, J. R. Cooper, bass; Vee Lawnhurst, pianist..
WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., Radio Dealers' musical program, J. P. Quinn, director; 6-7:30, dinner music, Hallpryd string quartet; 8-11, jointly with WEAF, including the Gold Dust Twins and Eveready hour.
WGY, Schenectady, N. Y. (379.5), 6:30 p. m., New Kenmora hotel orchestra; 7:30, "Distortion in Vacuum Tubes," Dr. Peter I. Wold; 7:45, WGY orchestra; "Dramatic Standards," Dorothy Meadows; 9, Brunswick hour of music; 10, travel talk from WJZ; 10:30, Meyer-Davis orchestra, WRC, WJZ; 11:30, Stephen E. Boisclair, organist.
WHN, New York, N. Y. (361.2), 6:30 p. m., Strand Roof orchestra; 7, Wigwam club orchestra; 7:30, health talk, Dr. Landis; 7:35, Will Oakland's Chateau Shanley; 10:30, New Rockwell terrace revue; 11:30, Club Alabam orchestra; 12-12:30 a. m., Parody club revue.
WIP, Philadelphia, Pa. (508.2), 6:05 p. m., baseball talk, Monte Cross; 6:15, Harvey Marburger's dance orchestra; 7, Uncle Wip's bedtime stories; 8:15, Laserow quartet; 8:50, Charles J. Teasley, baritone; 9, Yunger Nannerchor; 10:05, Emo's weekly movie broadcast; 10:30, Harvey Marburger's dance orchestra.
WJAR, Providence, R. I. (305.9), 8 p. m., studio program; 9, Eveready hour; 10, Goodrich Silvertown Cord orchestra.
WJZ, New York, N. Y. (454.3), 7 p. m., "Dogs," Frank Dale; 7:15, Hotel Vanderbilt orchestra; 9, Brunswick hour of music; 10, Over the Seven Seas; 10:30, Meyer Davis' Le Paradis orchestra.
WKAQ, San Juan, P. R. (340.7), 8-9:30 p. m., WKAQ orchestra.
WLIT, Philadelphia, Pa. (394.5), 7:30 p. m., Dream Daddy's bedtime stories.
WMBF, Miami Baach, Fla. (384.4), 10-2 a. m., Rosebrook's Radio serenadors; Nautilus "Lucky Savan" orchastra.
KSD, St. Louis, Mo. (545.1), 6 p. m., Benjamin Rader's orchestra.
KTHS, Hot Springs National Park, Ark. (374.8), 8:30-9:45 p. m., Charles L. Fischer Eastman hotel orchestra; 9:45-10:45, Meyer Davis-New Arlington hotel orchestra.
WBAP, Fort Worth, Texas (475.9), 7:30-8:30 p. m., concert, Ruby Wilson; 9:30-10:45, concert, Mrs. Pearl Calhoun Davis.
WBBM, Chicago, Ill. (226), 9-10 p. m., Sturtevant's Birchwood orchestra; Nate Caldwell, Lew Clark, Vernon Buck, Jack Perry, Ned Santry, Maurice Silverman.
WCCO, Minneapolis-St. Paul, Minn. (416.4), 6:15 p. m., Biley's St. Paul hotel concert orchestra; 7:30, lecture; 8-10, national program.
WCEE, Elgin, Ill. (275), 7-8 p. m., WTAS orchestra; 10:30-12, WTAS orchestra; Frank Morris; Fanny and Eddie Cavanaugh.
WDAF, Kansas City, Mo. (365.6), 6-7 p. m., Tell-Me-a-Story lady; Maudellen Littlefield, pianist; Trianon ensemble; 11:45-1 a. m., Newman Nighthawk night.
WEBH, Chicago, Ill. (370.2), 7-8 p. m., Oriole orchestra; Elsie Clement, pianist; Guy L. Hague, baritone; Riviera theater; 9-10, Oriole orchestra; Dennis Sisters; Frank Magini, Victor Young, violinist; Ted Fiorito, accompanist; Frank Papile, accordionist; 11-12, Oriole orchestra; Frank Magini; Dennis Sisters; Ted Florito, pianist; Banks Kennedy, Jack Penewell, twin guitarist; Riviera theater.
WEBW, Beloit, Wis. (268), 8 p. m., program, Fairbanks, Morse company.
WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Hauulea School of Hawaiian music; 8:30-9:30, G. Haydin Jones and soloists; 11-12, Dwight Brown, organist.
WGN, Chicago, Ill. (370.2), 6 p. m., organ recital, Lyon & Healy; 6:30-7, Drake concert ensemble, Blackstone string quintet; 8-9, Florence Brower, soprano; Thelma Bolinger; 10-11, Drake hotel dance orchestra.
WHAS, Louisville, Ky. (399.8), 4-5 p. m., concert, Louisville Conservatory of music; 7:30-9, Carl Zoeller's Melodists.
WJJO, Mooseheart, Ill. (302.8), 6:30-7:15 p. m., Albert F. Brown, organist; 7:15-8, Mooseheart concert band; "Child Care," M. P. Adams; 10:30-1 a. m., Garod studio; Charley Straight and his orchestra.
WLBL, Stevens Point, Wis. (278), 8 p. m., musical program, auspices Stevens Point Chamber of Commerce.
WLS, Chicago, Ill. (344.6), 6:30 p. m., Ralph Emerson, organist; 7, lullaby time; 7:20, Bill Fortorelli, Phil Robison; Grace Wilson; WLS Harmony trio; 8, R. F. D. program; 9, Alice La Tarte, pianist; 9:10, WLS theater; 9:30, Alice La Tarte, pianist; 10, Senate Symphony orchestra; 10:10, Nemeroff string quartet; 10:30, Glenn's Cornhuskers; 10:40, Ford and Glenn time; 11, Solemn Old Judge's weekly frolic; 12, Ralph Emerson, organist.
WLW, Cincinnati, Ohio (422.3), 4 p. m., pupils of Leo Stoffregen and William Kyle in recital; auction bridge, Lucy Blackburn; 6, WLW dinner hour concert; 8, Ned Jackman, baritone; Herbert Schock, pianist; 8:30, dialogue: "Sam Jones Tries to Borrow $500;" Louis C. George and Harry J. Piogstedt; songs, Ruth Crumrine, Ruth Crawford, accompanist; 9, Formica Insulation company program; the Formica (10-piece) concert orchestra; soma close harmony, Messrs. R. A. Groenke and Mischler.
WMAQ, Chicago, Ill. (447.5), 6 p. m., Chicago theater organ; 6:25, Hotel LaSalle orchestra; 8, Harry Hansen, litarary editor; 8:20, Clara E. Laughlin, travol talk; 8:30, lecture, University of Chicago; 8:50, weekly

Wednesday, April 8

Wednesday, silent night for: CFCA, CHNC, CHIC, CKAC, KFDM, KFKU, KFKX, KFMQ, KGO, WBAV, WBBR, WCAL, WCBO, WOWF, WEBJ, WEBW, WFAA, WGST, WGY, WHAZ, WJAO, WJY, WLBL, WMAK, WMC, WOAI, WOAW, WOI, WORO, WREO.

Eastern Time Stations

CFCA, Toronto, Can. (356.9), 8:30 p. m., Toronto Plectoral sextet.
KDKA, Pittsburgh, Pa. (309.1), 6:15 p. m., Pittsburgh Athletic association; 7:30, kindergarten good night circle; 8:15, address, University of Pittsburgh; 9, Dry Schlitz hour of music.
WAHG, Richmond Hill, N. Y. (315.6), 7-12 p. m., program, Brooklyn Daily Eagle, including musical and dramatic stars.
WBZ, Springfield, Mass. (3 [illegible] ture story, Thornton W. Burgess [illegible] Morize; 8:15, Mrs. Mar[illegible]

(Continued on page 1[illegible])

"SEVEN LAST WORDS OF CHRIST"

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

Eastern Time Stations

Saturday, April 4: 6:05, WIP; 6:30, WGBS; 7:45, WNYC; 8:05, WEAF; 8:30, WGBS; 9:15, WNYC; 9:30, WBZ; 10:30, WEAF, WMH; 12, WAHG.

Sunday, April 5: 7:20, WEAF, WEEI; 8:30, WCAU; 10, WHN, WNYC.

Monday, April 6: 7:30, WEEI; 8, WGR, WWJ; 8:25, WAHG; 8:30, WOR; 9, WAHG, WEAF, WEEI; 10:15, WAHG; 10:20, WEAF.

Tuesday, April 7: 6:30, WGBS; 7, WCAU; 7:30, WEAF, WEEI, WGBS; 7:35, WNYC; 8:15, WEBJ; 8:20, WCAU; 8:30, WEAF, WEBJ, WEEI, WFI; 8:35, WCAU; 9, WCAE, WEAF, WEEI, WFI, WJY, WNYC; 9:30, WGBS.

Wednesday, April 8: 8, WGR, WWJ; 8:45, WCAU; 9, WEAF; 10:15, WJZ.

Thursday, April 9: 6:30, WGBS; 8, WEAF, WJY; 8:10, WJZ; 8:30, WEAF; 9, WEAF, WNYC; 10:15, WJY.

Friday, April 10: 6:30, WGBS; 7, WEBJ; 8, WAHG, WEAF; 8:30, WEAF; 9:15, WAHG; 10, WGR; 10:05, WAHG.

Central Time Stations

Saturday, April 4: 7, WBCN, WLS; 7:20, WLS; 8, WBCN, WMAQ; 8:30, WCCO; 9, WBCN, WEBH; 10, WEBH, WGN, WQJ; 10:30, WJAD; 11, WBCN, WEBH, WLS, WQJ; 11:15, WLS; 11:45, WDAF; 12, KYW, WBCN, WEBH, WLBL, WQJ; 1, KYW, WQJ; 2, WQJ, WEBH.

Sunday, April 5: 8, WBCN; 9, WBCN; 11, WBAP.

Monday, April 6: 6, KFKX; 7:30, KFAB, WBAP; 8:30, WCCO; 9, WOAW, WGST; 10, WOI; 11:30, KTHS; 11:45, WDAF.

Tuesday, April 7: 6:30, WFAA; 8, WBCN; 8:30, WLW; 9, WBBM, WEBH; 10, WBCN, WEBH, WGN, WQJ; 10:30, KFRU; 11, WBCN, WEBH, WQJ, WMC; 11:30, KFRU; 11:45, WDAF; 12, WEBH, WQJ; 1, KYW, WQJ.

Wednesday, April 8: 7:30, KFAB; 8, WBCN, WGN; 9:45, KYW; 10, WGN, WQJ; 10:45, WLW; 11, KYW, WEBH, WQJ; 11:45, WDAF; 12, KYW, WBAP, WQJ; 1, KYW, WQJ.

Thursday, April 9: 6:30, WFAA; 7, WBCN; 8, WBCN; 8:15, WOI; 9, WEBH; 9:30, WBAP; 10, WGN, WQJ, WEBH; 10:03, WLW; 11, WEBH, WQJ; 11:45, WDAF; 12, WBCN, WEBH, WQJ; 12:15, KTHS; 1, KYW, WQJ.

Friday, April 10: 6:30, WFAA; 7:30, KFAB, WBAP, WHO; 8, WDAF; 9, KYW, WBBM, WCCO, WEBH; 9:30, WBAP; 10, KYW, WEBH, WGN, WQJ; 11, KYW, WEBH, WQJ, WMC; 11:45, WDAF; 12, KYW, WQJ; 1, KYW, WQJ.

Mountain Time Stations

Monday, April 6: 8, CFAC, KOA.
Tuesday, April 7: 6, KOA.
Wednesday, April 8: 8, KOA.
Friday, April 10: 8, KOA.

Pacific Time Stations

Saturday, April 4: 8, KFWB, KNX; 9, KNX; 10, KFI, KFWB; 11, KNX; 11:30, KHJ; 12, KHJ, KNX; 1, KNX.

Sunday, April 5: 7, KFI, KFWB; 8, KFWB; 9, KFWB, KNX.

Monday, April 6: 7:30, KFWB; 8, KHJ, KNX; 8:30, KFOA; 9, KFJ; 10, KFWB, KLX.

Tuesday, April 7: 7, KFWB; 8, KFI, KFWB, KHJ, KNX; 9, KFWB; 10, KFI, KFWB, KNX.

Wednesday, April 8: 8, KFI, KFWB; 8:30, KFOA; 9, KFI, KFWB, KNX, KPO; 9:30, KHJ; 10, KFWB.

Thursday, April 9: 7, KFWB; 8, KFWB, KGO; 9, KFWB, KNX; 10, KFI; 11, KNX.

Friday, April 10: 7, KFWB; 7:30, KHJ; 8, KFI, KHJ; 9, KNX; 10, KFBW; 10:30, KGW; 12, KNX; 1, KNX.

Louise Rennick is one of the attractive pianists from the Marguerite Manley Siedel School of Music, Columbus, who entertains at WEAO and will play your favorite selections.

Wednesday, April 8

(Continued from page 11)

soprano; Angus MacDonald, baritone; Mrs. Jessie Downie, accompanist; 8:30, Boston University jazz band; 9, Mrs. Margaret MacFarlane, soprano; Angus MacDonald, baritone; 9:15, McEnelly's singing orchestra; 9:45, Yvonne Crosby.

WCAE, Pittsburgh, Pa. (461.3), 8:30 p. m., William Penn hotel; 8:30, Mrs. E. C. Sheets, contralto; 9, program, Atwater Kent Radio artists; 10:30, Nixon restaurant orchestra.

WCAU, Philadelphia, Pa. (278), 8 p. m., building and loan talk; 8:30, the LaPalina Boy; 8:45, N. B. T. Boys; 9-10, Miss Cinderella's orchestra; 9:40, Bonwit-Teller orchestra; 10:10, Radio talk.

WCX, Detroit, Mich. (516.9), 4:15 p. m., musical program; 6, dinner concert, Book-Cadillac hotel; 8:30, musical program.

WEAF, New York, N. Y. (491.5), 4-4:40 p. m., Morl's orchestra; 4:40-5, children's stories; 6-7, dinner music from Waldorf-Astoria hotel; 7-7:30, Light Opera quartet; 7:30-8:30, U. S. Army band from Washington, D. C.; 9-10, Ipana hour, Bristol Myers.

WEAO, Columbus, Ohio (293.9), 8 p. m., program, Student Social center.

WEAR, Cleveland, Ohio (389.4), 7-8 p. m., Ivan Francisco and his Hotel Cleveland orchestra.

WEEI, Boston, Mass. (475.9), 6:30 p. m., Big Brother club; 7:15, Lena York, violinist; 8, Traveler Shoe orchestra; 8:30, M. B. Cohan's half hour musicale; 9, Gillette Safety Razor band; 10, Dok-Elsenbourg and his Sinfonians.

WFI, Philadelphia, Pa. (394.5), 6:30 p. m., Meyer Davis Bellevue Stratford concert orchestra; 7, bedtime stories.

WGBS, New York, N. Y. (315.6), 3:40-4 p. m., Emily B. Mansfield; 6-6:30, Uncle Geebee; 6:30-7:30, Jimmy Lent's orchestra.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., Radio Dealers musical program, J. P. Quinn, director; 6:30-7:30, dinner music, Gertrude Hutchinson and Lester Erlenbach, pianist; 8-8:55, Two-in-One Players present original Radio plays, "The Radio Widow," and "Purchased Love," directed by Mabel Stacy; 9-10, Atwater Kent program, jointly with WEAF; 10-10:30, Jos. O. Klaiering, tenor; 10:30-10:45, address, Harold B. Brookins, president of the Buffalo Florists' club; 11-1, supper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gleser, director.

WGY, Schenectady, N. Y. (379.5), 7 p. m., Albany Strand theater orchestra.

WHN, New York, N. Y. (361.2), 6:30 p. m., violin solos, Olcott Vail; 7, Harry Richman and his entertainers; 9:30-10, Roseland dance orchestra; 11:30-12, Silver Slipper revue; 12-12:30, Strand Roof orchestra.

WIP, Philadelphia, Pa. (508.2), 4 p. m., talk, "Mental Machinery in Need of Repair," Dr. E. F. Barr; 6:05, Benjamin Franklin hotel concert orchestra; 7, Uncle Wip's bedtime stories.

WJAR, Providence, R. I. (305.9), 7:30 p. m., New York studio.

WJZ, New York, N. Y. (454.3), 7 p. m., Hotel Commodore dinner music; 8:25, Charles Fleischmann, violinist, 8:15, Marie Birkhahn, pianist; 9, Charles Fleischmann, violinist; 10:15, Radio Franks, Wright & Bennenger; 10:30, Billy Wynne and his Greenwich Village Inn orchestra.

WKAQ, San Juan, P. R. (340.7), Municipal band.

WLIT, Philadelphia, Pa. (394.5), 7:30 p. m., Dream Daddy's bedtime stories; 8:30, concert of the Philadelphia Elks Lodge, direction Artie Bitting; 10, Arcadia cafe dance orchestra.

WMBF, Miami Beach, Fla. (384.4), 10-2 a. m., Rosebrook's Radio serenaders; Nautilus "Lucky Seven" orchestra.

WNYC, New York, N. Y. (526), 7-7:30 p. m., dance program; 7:30-8, dance program; 8-8:10, "Timely Topics," F. P. Bent; 8:30-9, course in appreciation of music, 9:15-10, song recital.

WOD, Philadelphia, Pa. (508.2), 4:45 p. m., organ recital, Mary E. Vogt; 7:30, A. Candelori's concert orchestra, concert from WEAF; 9, Atwater Kent program; 10:03, organ recital, Mary E. Vogt; Vincent Rizzo's dance orchestra.

WOR, Newark, N. J. (405.2), 6:16 p. m., Harry Cox and his orchestra; 7:30, Vincent Lopez; 8, Lionel Storr, baritone; 8:15, Emily Roosevelt, soprano; 8:30, Lionel Storr, baritone; 8:15, topics of the day, Spencer Armstrong; 9:30, Chickering artists series; 11, Ciro orchestra.

WRC, Washington, D. C. (468.5), 4:10 p. m., George F. Ross, pianist; 4:20, talk, Outlook; 4:30, tea music, Meyer Davis' New Willard hotel trio.

WSAC, Clemson College, S. C. (336.9), 8 p. m., educational program, Extension division; 8:30, instrumental and vocal solos, College musicians.

WWJ, Detroit, Mich. (352.7), 6 p. m., dinner concert; 8, Detroit News orchestra; Anne Campbell, Detroit News poet; Templeton Moore; 9, concert from New York; 10, Jean Goldkette's Victor Recording orchestra.

Central Time Stations

KFAB, Lincoln, Nebr. (240), 7:30-10 p. m., Harriet Cruse; Jolly Jazzerettes; Olive Fletcher, pianist; Mrs. F. Graham Campbell, soprano; Serenaders orchestra.

KFNF, Shenandoah, Ia. (266), 6:30 p. m., concert, Henry Field Seed company; 8:30, concert from Conway, Willard Strong, director.

KFRU, Bristow, Okla. (394.5), 8-10:30 p. m., Muskogee, Oklahoma Kiwanis club orchestra, artists; Daisy Maude Webb, soprano.

KFUD, St. Louis, Mo. (545.1), 9:45 p. m., "Father Forgive Them," Rev. W. F. Wilk; "The Seven Words," Trinity choral society.

KSD, St. Louis, Mo. (545.1), 7 p. m., program, West End Lyric theater.

KTHS, Hot Springs National Park, Ark. (374.8), 8:30-9 p. m., Sousaphone solos, Al Kunze; Phil Wall, pianist; 9-10, Meyer Davis-New Arlington hotel orchestra; 10-11, Charles L. Fischer Eastman hotel orchestra.

WBAP, Fort Worth, Texas (475.9), 7:30-8:30 p. m., Junior Euterpean club, Mrs. J. E. Cooley, director; 9:30-10:45, Johnny Jackson's Texas hotel orchestra; 12-1 a. m., Frensley Moore's Black and Gold serenaders.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 8-9 p. m., program from New York; 10:30, Dick Long's Nankin cafe orchestra; 11:30, Eddie Dunstedter, organist.

WCEE, Elgin, Ill. (275), 7-8 p. m., WTAS orchestra; 10:30-12, WTAS orchestra; Frank Morris, Fanny and Eddie Cavanaugh.

WDAF, Kansas City, Mo. (365.6), 6-7 p. m., address, speaker, Health Conservation association; address, speaker, Meat Council of Greater Kansas City; Tell-Me-a-Story lady; Trianon ensemble; 8-9:15, Star's Radio orchestra; Marvel de Voll-Fell, violinist; Ann Meservey, pianist; Olive do Garmo-Peck, vocalist; 11:45-1 a. m., Merry Old Chief, Plantation players.

WEBH, Chicago, Ill. (370.2), 7-8 p. m., Oriole orchestra; "Books of the Day," Lewellyn Jones; Riviera theater; 9-10, talk, M. S. Szymczak; Frederick Agard, tenor; hraaa quartet; 11-12, Loos brothers; Ted Fiorito, Dan Russo; Frederick Agard.

WEMC, Berrien Springs, Mich. (286), 8:15 p. m., Clotilde James, pianist; 8:25, Mrs. A. A. Fellows, soprano; 8:35, Mary Lamson, hird talk; 8:45, Hoot-Owl quartet; 9, "Archeology of South-West Michigan," D. P. Smith; 9:20, Thomas Johnson, baritone.

WGN, Chicago, Ill. (370.2), 6 p. m., organ recital, Lyon & Healy; 6:30-7, dinner concert, Drake concert ensemble, Blackstone string quintet; 8-9, jazz program; 10-11, Drake hotel dance orchestra.

WHAS, Louisville, Ky. (399.8), 4-5 p. m., concert, Louisville Conservatory of music; state-wide, city-wide music contest, Federation of Women's clubs; 7:30-8:30, K. & I. railroad orchestra; 8:30, Samuel Insull, speaker.

WHO, Des Moines, Ia. (526), 6:30-7:30 p. m., Reese-Hughes orchestra; 7:30-9, Ed Lytton, baritone; Helen Birmingham, accompanist; Sam Caplan, violinist; artists, American Academy of Fine Arts; 9-9:45, Des Moines theater symphonic orchestra; 10:45-11, Bankers Life Radio orchestra.

WJJD, Mooseheart, Ill. (302.8), 6:30-7:15 p. m., Albert F. Brown, organist; "Child Care," M. P. Adams; 10:30-1 a. m., Garod studio; Charley Straight and his orchestra.

WLS, Chicago, Ill. (344.6), 6:30 p. m., Ralph Emerson, organist; 7:15, WLS Tribe of Lone Scoute program; 8, R. F. D. program; 9, Jack Friedenberg and his banjo; 9-10, "Parsifal;" 10, Glenn's Cornhuskers; 10:10, Edgewater glee club; 10:40, Ford and Glenn time.

WLW, Cincinnati, Ohio (422.3), 4 p. m., Shut-In program; 6, dinner hour concert; 10, Advertisers club; 10:45, The Hillsboro Hill Billy orchestra, E. D. Frump, director; Milnor Electric instrumental trio.

WMAQ, Chicago, Ill. (447.5), 6 p. m., Chicago theater organ recital; 6:30, stories for children, Georgene Faulkner; 8, weekly lecture, Northwestern university; 8:25, piano concerto, Jeanette Durno; 9, WMAQ players.

WOC, Davenport, Ia. (483.6), 6:30 p. m., bedtime stories, Val McLaughlin; 6:50, "Practical Hygiene for the Home," J. H. Craven; 9, organ recital, Erwin Swindell; Margaret Mathewson, soprano.

WQJ, Chicago, Ill. (447.5), 7-8 p. m., Rainbo Garden orchestra; Merrie Boyd Mitchell, soprano; James Mitchell, baritone; Howard Hanks, pianist; 10-1 a. m., Rainbo Skylarks; Clarence Theders, tenor; Alfred Tweed, harmonica and guitar soloist; Melodians; Fred A. Jacobson, reader; Zeigler Sisters; Hickey and Johnson; Larry Brundate, Harry Kraemer; 1-2, Hotsy Totsy hour.

WRBC, Valparaiso, Ind. (278), 7:30 p. m., lenten service.

WSB, Atlanta, Ga. (428.3), 10:45 p. m., Ruby Freeman Boensch, blues singer.

WSUI, Iowa City, Iowa (483.6), 7:30-7:45 p. m., "The American Constitutional System," Prof. Frank E. Horack; 7:45-8, "The Psychology of Learning," Prof. Frederick B. Knight; 8-8:15, "Appreciation of Literature," Prof. Frank L. Mott.

WTAS, Elgin, Ill. (302.8), 8-10:30 p. m., WTAS dance program, Frank Morris, Fanny and Eddie Cavanaugh.

Mountain Time Stations

KDA, Denver, Colo. (322.4), 8 p. m., Fred Schmitt and his Rialto theater orchestra; 8:10, Denver Tourist bureau, "Legends of the West," Joseph Emerson Smith; incidental Indian music, native tribesmen; 10-12, Joe Mann and his Rainbow-Lane orchestra.

KDB, State College, N. M. (348.6), 7:30-8:30 p. m., international code lesson, Dean R. W. Goddard.

Pacific Time Stations

KFAE, Pullman, Wash. (348.6), 7:30-9 p. m., Florenee Lester, soprano; Thelma Johnson, pianist; Cooper Sisters; "Radio Frequency Amplifiers," Dean H. V. Carpenter; "Life in a College Hall," Mrs. Constance Hoig; "Damping Off of Seedlings," B. F. Dana; "Marketing Dairy Products," Don G. Magruder; "Farm Women's Camps," Maud Wilson.

KFI, Los Angeles, Calif. (468.5), 5:30-6 p. m., Examiner's musical half hour; 6:45-7, Raditorial talk; 7-7:30, Nick Harris, detective stories; 7:30-8, program, Goodwin, Klinger & MacKay company; 8-11, program, Beverley Hills Shrine club radio contest.

KFOA, Seattle, Wash. (454.3), 6:45-8:15 p. m., Hopper Kelly company program; 8:30-10, around the world in song, Clara Moyer Hartle.

KFWB, Hollywood, Calif. (252), 7-8 p. m., dinner dance music; 8-10, KFWB feature program, Hollywood string quintet, Billy Runn, pianist; 10-11, Harry Seymour's hour of fun; 11-1 a. m., Brandstatter's Hollywood Montmarte cafe dance orchestra, Mel Pedesky, leader.

KGW, Portland, Ore. (491.5), 6 p. m., Hotel Portland dinner concert; 8, concert, Seventh U. S. Infantry band.

KHJ, Los Angeles, Calif. (405.2), 6-6:30 p. m., Art Hickman's Biltmoro hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, little stories, American history, Prof. Walter Sylvester Hertzog; bedtime story by Uncle John; 7:30-8, program, students University of Southern California; 8, Dr. Mars Bumgardt, scientific lecturer; 8:30-9:30, Jewish program, arranged by Mrs. Max Breetwor; 9:30-10, Piggly Wiggly girls trio; 10-11, Art Hickman's Biltmore hotel dance orchestra, Earl Burtnett, leader.

KLX, Oakland, Calif. (508.2), 6-7 p. m., organ recital; 8-10, American theater orchestra; 10-11:30, Sweet's ballroom.

KNX, Hollywood, Calif. (336.9), 5:45-6:15 p. m., Wurlitzer pipe organ studio; 6:15-7, dinner hour music; 7-8, Ambassador hotel concert orchestra, Josef Rosenfeld, director; 8-9, program, Security Trust and Savings bank; 9-10, program, Clear Lake Beach company; 10-12, Hollywoodland dance orchestra.

KPO, San Francisco, Calif. (429.5), 7-7:30 p. m., Conn Band Instrument company; 8-9, Atwater Kent artists; 9-10, Merrill & Merrill musical instrument brokers.

Thursday, April 9

Thursday, silent night for: CHNC, KFAB, KFAE, KFDM, KFDA, KLX, KDA, KOB, KSD, WAHG, WBAV, WCEE, WDWF, WEAO, WEBJ, WEBW, WEMC, WHAZ, WJAD, WJJD, WLBL, WDD, WSAC, WSUI.

Eastern Time Stations

CKAC, Montreal, Can. (410.7), 8:30 p. m., concert from CNRM.

KDKA, Pittsburgh, Pa. (309.1), 6:15 p. m., Broudy's orchestra; 7:30, Uncle Ed; 8, program, National Stockman and Farmer studio; 8:30, concert; 11, Pittsburgh Post studio.

WBBR, New York, N. Y. (272.6), 8 p. m., Watchtower instrumental trio; 8:20, Sunday school lesson, S. M. Van Sipma; 8:40, instrumental trio, Carl Park, Malcolio Carment, George Twaroschk.

WBZ, Springfield, Mass. (333.3), 6 p. m., Philharmonic trio; 7:30, "Psychology of Advertising," Prof. Glenn Newton Merry; 8, Donald Pirnie, baritone; Dorothy B. Hulroney, pianist; 8:30, Chickering program; 9:30, Philharmonic trio; 11, Hotel Brunswick orchestra; 11:30, Don Ramsays Radio four; 11:45, Hotel Brunswick orchestra.

WCAE, Pittsburgh, Pa. (461.3), 6:30 p. m., William Penn hotel; 8, concert from WEAF; 9, Victor artists; 10, Goodrich Silvertown Cord orchestra.

WCAU, Philadelphia, Pa. (278), 7:30 p. m., N. Snellenburg Symphony orchestra; 8:35, Bonwit-Teller orchestra; 8:55, "What We See and Hear in Music," Maude Hanson Pettit; 9:05, recital; 10, talk, Dr. John W. Stockwell.

WCX, Detroit, Mich. (516.9), 4:15 p. m., musical program; 6, dinner concert, Book-Cadillac hotel; 8:30, musical program.

WEAF, New York, N. Y. (491.5), 4-4:15 p. m., recitations with music, Mme. Annie Barnouw; 4:15-4:30, Maetha Miller, pianist; 4:30-4:45, Alice Maude Russell, soprano; 6-7, dinner music from Waldorf-Astoria hotel; 7-7:30, services, Federation of churches; 7:30-7:40, Alberto Terrasi, baritone; 7:40-8, Columbia university American history lecture; 8-8:30, Cushman serenaders; 8:30-9, Packard Motor company; 9-10, Atwater Kent Manufacturing company; 10-11, Goodrich Silvertown Cord orchestra; 11-12, Vincent Lopez and his Hotel Pennsylvania orchestra.

WEAR, Cleveland, Ohio (389.4), 7-8 p. m., Vincent H. Percy, organist; 8-11, program from WEAF.

WEEI, Boston, Mass. (475.9), 6:30 p. m., Big Brother club; 7:15, Sagers half hour of hospitality; 7:45, Joe Toye on "Telecrom Timely Topics;" 7:55, Pathe news flashes; 8, from New York; 8:30, from New York; 9, Victor concert hour; 10, Goodrich Silvertown cord orchestra.

WFI, Philadelphia, Pa. (394.5), 8:30 p. m., Meyer Davis' Bellevue Stratford concert orchestra; 7, bedtime stories; 8, concert from WEAF; 9, Victor concert; 10, dance orchestra from WEAF.

WGBS, New York, N. Y. (315.6), 6-6:30 p. m., Uncle Geebee; 6:30-7:30, Van and his collegians; 9-9:15, Ethel Fox, soprano; 9:15-9:30, new astrology, Belle Bart.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., Radio Dealers' musical program, J. P. Quinn, director; 6-7:30, dinner music, Hallpryd string quartet; 8-11, jointly with WEAF, including a Variety hour and the Goodrich Silvertown Cord orchestra.

WGY, Schenectady, N. Y. (379.5), 6:30 p. m., Hotel Ten Eyck orchestra; 7:30, "A Few Moments with New Books," L. L. Hopkins; 7:45, program, Toronto Conservatory of music, Frank Blachford, violinist; Leo Smith, cellist; Harvey Robb, pianist; 9, Marine band, WRC, WJZ; 11:30, Stephen Boisclair, organist.

WHN, New York, N. Y. (361.2), 6:30 p. m., Olcott Vail, violinist; 7, Silver Slipper revue; 11:30, Wigwam club revue; 12, Parody club revue; 12:30-1 a. m., Club Moritz revue.

WIP, Philadelphia, Pa. (508.2), 6:05 p. m., Benjamin Franklin concert orchestra; 7, Uncle Wip's bedtime stories; 8, talk, auspices of University of Pennsylvania; 8:15, Philadelphia Police band; 9, Lenten cantata, "The Risen King," Fletcher Methodist Episcopal church choir; 11, Harvey Marburger's dance orchestra.

WJAR, Providence, R. I. (305.9), 8 p. m., program from New York; 9, Victor presentation; 10, Goodrich Silvertown Cord orchestra.

WJZ, New York, N. Y. (454.3), 7 p. m., Hotel Commodore concert; 7:55, "The Fetich of Fashion," John B. Kennedy; 8:10, Scotch and Irish songs, John Cassidy; 8:25, 60th anniversary of Battle of Appomattox; 9, U. S. Marine band; 10, Crescent ensemble; 10:45, Jacques Green and his Club Deauville orchestra; Clark's Hawaiians.

WKAQ, San Juan, P. R. (340.7), 8:30-10 p. m., concert, LaCafetera.

WLIT, Philadelphia, Pa. (394.5), 4:30 p. m., Marcella North, pianist; 7:30, Dream Daddy's bedtime stories.

WMAK, Lockport, N. Y. (265.5), Murray Whiteman's midnight serenaders.

WMBF, Miami Beach, Fla. (384.4), 10-2 a. m., Rosebrook's Radio serenaders; Nautilus "Lucky Seven" orchestra.

WNYC, New York, N. Y. (526), 6:30-7 p. m., Irving Bloom and his Club Tokio orchestra; 7:35-8, song recital; 8-8:10, talk by public official; 8:15-8:45, con-

DANCE
(Central
Saturday,
Wtam, Wtas
Wmh, Wrc,
9:05, Wbz,
Wjz, Wrc;
Weaf, Wgbs,
10:15, Wmh;
11, Wahg,
Wfaa, Wmbf,
Wrc, Wtam;
12, Kfoa,
Knx, Kyw,
Kfwb, Khj,
Khj.
Monday,
Weel, Wtas;
9, Knx, Kpo,
Wmbf; 9:20,
Wbap, Weaf,
9:35, Wnyc,
Wgr; 10:30,
Wcee, Wmc,
Wdaf; 12, K
Kfbw, Knx.
Tuesday,
Wgbs, Wtas;
9, Kfmq,
Weei, Wfi,
9:30, Ckac,
Wip, Wiz,
Kths; 10,
Wtas; 10:30
Wcee, Webh,
Wmc; 11:45
Kfoa, Kgo,
Knx; 1, Kfw
Wednesday
Wtas; 8:30,
Weei, Wfi,
9:30, Wbap,
10, Kths,
Woaw, Wor,
10:30, Whn;
Wlw; 11,
Wmbf; 11:45
Kgw, Khj,
Koa, Wbap;
Thursday,
Wtas; 9,
Webh, Weei,
Wmbf; 9:30,
9:45, Wjz;
Weaf, Wgn,
Wtas; 10:03,
Whn; 11,
Whn, Wmc
11:30, Whn;
12, Kgo,
Wfaa; 1, K
Friday, A
Wjar, Wtas
Webh, Wgr,
9:30, Wcau,
Kths, Wgn,
Wqj, Wtas;
11, Wcee,
Wmbf; 11:45
12, Kfoa, K
Knx.

SUNG FRIDAY AT MANY STATIONS

The Harmony Girls (above) are pioneer Radio stars. They sing every Saturday night at WLS, Chicago. Caterina Gobbi (right) is a young Italian with an exceptional soprano voice who has just arrived in this country. She will make her Radio debut at WEAF, April 4.

cert program; 9-9:30, Municipal Instrumental trio; 9:30-10:30, orchestral feature.

WOO, Philadelphia, Pa. (508.2), 4:45 p. m., organ recital, Mary E. Vogt.

WOR, Newark, N. J. (405.2), 6:15 p. m., music while you dine.

WRC Washington, D. C. (468.5), 7 p. m., Lee House trio; 8, "Cuban Night," U. S. Army band; address, representative of Cuban government; Dr. Leo S. Rowe, introduction speech; song recitals, Conchita MacMillan, Estrella Amores, sopranos; Mrs. Ethel Holtzelaw Gawler, soprano; Arsenio Ralon, violinist; Helen Corbin Heine, pianist; 10, Vincent Lopez' Hotel Mayflower orchestra; 11, Paul Specht's Cafe Pandora orchestra.

WWJ, Detroit, Mich. (352.7), 6 p. m., dinner concert; 8, program from New York.

Central Time Stations

CNRW, Winnipeg, Can. (384.4), 8:30 p. m., old time songs, Hazel Mills, soprano; Mrs. D. G. Edmond, contralto; Emile Mignacca, violinist; Frank Redlich, cellist; Burt Book, pianist; 10, Frank Wright's Country club dance orchestra.

KFAB, Lincoln, Nebr. (240), 3 p. m., Rialto Symphony orchestra, Juan Schaefer, director.

KFKU, Lawrence, Kan. (275), 6:50 p. m., piano tuning-in number; 7, music; 7:15, "Underground Mining," Prof. C. M. Young; 7:30, "Engineering as a Vocation," Dean P. F. Walker; 7:45, Psychology lesson XIV, Dean R. A. Schwegler.

KFMQ, Fayetteville, Ark. (299.8), 7:30 p. m., Pi Beta Phi sorority; "Life in Other Worlds," A. M. Harding; "The Work of Leaves," J. T. Buchholz; "Adjusting Education to Individual Needs," J. J. Weber; "Some Phases of Household Management," Madge Johnson.

KFNF, Shenandoah, Iowa (266), 6:30 p. m., concert from Sabetha, T. A. Van Kuren, director; 8:30, music from Elmo, Lucile Speer, director.

KFRU, Bristow, Okla. (394.5), 10:30-11:30 p. m., P. J. Craker, organist.

KFUO, St. Louis, Mo. (545.1), 9:15 p. m., "Saved by Grace," Prof. Martin S. Sommer.

KSD, St. Louis, Mo. (545.1), 7 p. m., Holy Thursday service, St. Francis Xavier church.

KTHS, Hot Springs National Park, Ark. (374.8), 8:30-9 p. m., Jacques Renard, violinist; 9-10, Lawson Reid, organist; 10-11, Meyer Davis-New Arlington hotel orchestra; 12:15-1:30 a. m., Phil Baxter's singing orchestra.

WBAP, Fort Worth, Tex. (475.9), 7:30-8:30 p. m., Thorpe Springs Christian college; 9:30-10:45, Burleson Hawaiian guitar club, Mrs. E. J. Thompson, director.

WBBM, Chicago, Ill. (226), 9-10 p. m., Gray Dawn orchestra, Nate Caldwell, Jorry Cromack, Vernon Buck, Ned Santry, Albert Tilton, Jr.

WCBD, Zion, Ill. (344.6), 8 p. m., Treble Clef chorus; Carl Huth, harpist; Miriam Hollingshead, flutist; M. P. Barton, tenor; S. D. Inman, soprano; Mrs. Blanche Reynolds Kessler, reader; Mrs. L. J. Hite, pianist.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 6 p. m., annual Twin City clean-up week; 7-10, program from New York.

WOAF, Kansas City, Mo. (365.6), 6-7 p. m., book talks, Louis Mecker; Tell-Me-a-Story Lady; Trianon ensemble; 11:45-1, Merry Old Chief; Plantation players; Eddie Kuhn's Kansas City Athletic club orchestra; Johnnie Campbell's Kansas City club orchestra.

WEBH, Chicago, Ill. (370.2), 7-8 p. m., Oriole orchestra; Robert York, tenor; Riviera theater; 9-10, Oriole orchestra; Belle Forbes Cutter, soprano; saxophone quintet; John Stamford, tenor; 11-12, Oriole orchestra; John Stamford, tenor; Belle Forbes Cutter, soprano.

WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Lone Star Five's orchestra; 8:30-9:30, East Dallas Christian church; 11-12, Edward Cramer, violinist; 12-1 a. m., Hunt's hoperial orchestra.

WGN, Chicago, Ill. (370.2), 6 p. m., organ recital, Lyon & Healy; 6:30-7, Drake concert ensemble, Blackstone string quintet; 8-9, classical program; 10-11, Drake hotel dance orchestra.

WGST, Atlanta, Ga. (270), 7-8 p. m., Mrs. Eunice Curry Prescott, contralto; "Some Facts About the Universe," Prof. D. L. Stamy.

WHAS, Louisville, Ky. (399.8), 7:30-9 p. m., concert, auspices John E. Harmon, Jr.

WHO, Des Moines, Iowa (526), 7:30-9 p. m., Iowa Wesleyan glee club; 11-12, Gail Fitch and his orchestra.

WLS, Chicago, Ill. (344.6), 6:30 p. m., Ralph Emerson at our Barton organ; 7, lullaby time, Ford and Glenn; 7:20, E. Warren K. Howe's classical program.

WLW, Cincinnati, Ohio (422.3), 4 p. m., French lesson, Madame Ida Telmpidis; 6, dinner hour concert; State Memory contest; 6:45, Sckatary Hawkins; 10, three-minute message, Civil Service department of United States government; 10:03, Cooper corporation orchestra, directed by Wm. C. Stoess; male quartet; 11, "Mertes-Master" Old Fiddlers' contest.

WMAQ, Chicago, Ill. (447.5), 6 p. m., Chicago theater organ recital; 6:25, Hotel LaSalle orchestra; 6:30, Daddy; 8, garden talk, James H. Burdett; 8:15, investment talk; 8:30, musical program, Carol Richert; 8:50, University of Chicago lecture; 9:15, Rushmore ensemble singers.

WMC, Memphis, Tenn. (499.7), 7:30 p. m., science talk, Brother Joseph; 8:30, musical program, William Newton.

WOAI, San Antonio, Tex. (394.5), 9:30 p. m., Jimmie Joy's orchestra.

WOAW, Omaha, Nebr. (526), 6 p. m., every child's story hour, Grace Sorenson; 6:20, to be announced; 6:45, Randall's Royal Fontenelle orchestra; 9, program, May Seed and Nursery company; 10:30, Frank W. Hodek, Jr., and his Nightingale orchestra.

WOC, Davenport, Ia. (483.6), 6:30 p. m., bedtime stories, Val McLaughlin; 7, musical program, WEAF; 11, Lonis Connor and his LeClaire hotel orchestra; songs, Peter MacArthur.

WORD, Batavia, Ill. (275), 8-10 p. m., Sunday school lesson; Rowena male quartet.

WQJ, Chicago, Ill. (447.5), 7-8 p. m., Rainbo Garden orchestra; Otto A. Moore, baritone; La Verne Hanson, pianist; Mildred Perlin, reader; Lucille Mathews, violinist; Gertrude Mathews, accompanist; 10-1, Rainbo Skylarks; Lew Butler, Giant of Radio; Ned and Ches; Marie Wright, soprano; Ila Shannabrook, soprano; Henri Therien, Joe Verges, New Orleans Boys; Verdi trio; Rosemary Hughes, soprano; 1-2, Hotsy Totsy hour.

WSB, Atlanta, Ga. (428.3), 8-9 p. m., Boys' high school band; 10:15, Dr. Charles A. Sheldon, organist.

WTAS, Elgin, Ill. (302.8), 7-12 midnight, WTAS dance orchestra, special features.

Mountain Time Stations

CNRC, Calgary, Can. (434.5), 9 p. m., Symphony orchestra.

Pacific Time Stations

KFI, Los Angeles, Calif. (468.5), 5:30-6 p. m., Examiner's musical half hour; 6:45-7, Radltorial talk; 7-8, Garden's Music Shop Hawaiian string quartet; 8-9, program, Standard Oil company of California; 9-10, Patrick-Marsh dance orchestra, Betty Patrick, soloist; 10-11, Examiner's popular music night.

KFOA, Seattle, Wash. (454.3), 6-7 p. m., Moran school for boys.

KFWB, Hollywood, Calif. (252), 7-8 p. m., program, Hacienda Park orchestra, presented by John A. Evans corporation; 8-10, KFWB feature program; 10-11, instrumental and vocal; 11-1 a. m., Brandstatter's Hollywood Montmarte cafe dance orchestra, Mel Pedesky, leader.

KGO, Oakland, Calif. (361), 7:15 p. m., golf lesson, Joe Novak; 8, "Civilian Clothes," KGO players; 10-1, Henry Halstead's orchestra.

KGW, Portland, Ore. (491.5), 6 p. m., pre-Easter service; 8, Oregonian concert orchestra; 10, Multnomoh hotel strollers.

KHJ, Los Angeles, Calif. (405.2), 6-6:30 p. m., Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, little stories of American history, Prof. Walter Sylvester Hertzog; Mabel Hunt, readings; Uncle John; 7:45, "Care of Body," Dr. Philip M. Lovell; 8-10, program, Institute of Musical Art; 10-11, Art Hickman's Biltmore hotel dance orchestra, Earl Burtnett, leader.

KNX, Hollywood, Calif. (336.9), 5:45-6:15 p. m., Wurlitzer pipe organ studio; sports talk, Sid Ziff; 6:30-7:30, program, Los Angeles County Association of Optometrists, Zieglar's orchestra; 7:30, business talk, J. R. Douglas of Security bank; 8-9, KNX feature program; 9-10, program, the May company; 10-11, Abe Lyman's Cocoanut Grove dance orchestra from Ambassador hotel; 11-12, campus night by and for students of the University of California, Southern branch.

KPO, San Francisco, Calif. (429.5), 7-7:30 p. m., Rudy Seiger's Fairmont hotel orchestra; 8-10, program, Dean Gross, baritone.

Friday, April 10

Friday, silent night for: CHNC, CHIC, CKAC, KFKU, KFKX, KFMQ, KGO, KLX, WBBR, WBZ, WCBD, WEAO, WEBW, WFI, WGST, WHAZ, WIP, WKAQ, WLBL, WLW, WMAK, WOAI, WOI, WSAC, WSUI.

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

Eastern Time Stations

Saturday, April 4: 6, WGR, WTAM; **6:15,** WIP; **6:30,** WFI, WHN; **7,** WRC; **7:10,** WEAF; **7:30,** WBZ, WLIT; **8,** WBBR, WBZ, WFI; **8:15,** WNYC; **8:30,** KDKA, WCAE, WJY; **8:40,** WBBR; **9,** WBZ, WEAF, WRC; **9:15,** WIP; **9:45,** WBZ, WEAF, WGBS; **10,** WEAF, WGBS; **10:30,** WGBS; **11:05,** WIP.

Sunday, April 5: 6, WCAU; **6:30,** KDKA, WCAE; **6:40,** WCAU; **7,** WCAU, WJZ; **8,** WLIT; **8:15,** WJY; **8:45,** WGY, WJZ; **9,** WEAR, WNYC; **9:15,** KDKA, WEAF, WEEI; **10,** WJZ; **10:30,** WMAK.

Monday, April 6: 6:05, WIP; **6:30,** WFI, WGR; **7,** WEAF, WEAR, WGY, WJZ; **7:15,** WEAF, WEEI; **7:30,** WGY, WOO, WOR; **8,** KDKA, WAHG, WBBR, WEEI, WMAK, WOO; **8:30,** CHNC, KDKA, WCAE, WEAF, WNYC; **8:35,** WGR; **8:40,** WBBR, WJZ; **9,** WCAE, WGR, WHAZ, WWJ; **9:30,** WLIT; **10,** WEAF, WEEI, WGR, WHAZ; **10:03,** WOO; **10:05,** WAHG; **11,** WCAE; **12,** WAHG.

Tuesday, April 7: 6, WGR, WWJ; **6:15,** WOR; **6:30,** WCAE, WFI, WGY; **7,** WEAF, WEAR, WNYC; **7:30,** CKAC, WCAU, WJY; **7:45,** WGY; **8,** WCAE, WEAR, WEEI, WFI, WGR, WKAQ, WWJ; **8:15,** WIP; **8:30,** CKAC, KDKA, WGBS, WJY; **9,** KDKA, WGY, WIP, WJZ; **10,** WCAE, WEAF, WGBS; **11,** KDKA; **11:30,** KDKA, WGY.

Wednesday, April 8: 6, WEAF, WWJ; **6:05,** WIP; **6:15,** KDKA, WOR; **6:30,** WCAE, WFI, WGR, WHN; **7,** WAHG, WEAF, WEAR, WGY, WKAQ; **7:15,** WEEI; **7:30,** WEAF, WOO; **8,** WEAO, WOO, WOR; WSAC; **8:25,** WJZ; **8:30,** CFCA, WCAE, WCAU, WEEI, WLIT; **9,** KDKA, WAHG, WCAE, WEEI, WGR, WOO, WWJ; **9:30,** WOR; **9:45,** WNYC; **10,** WGR; **10:03,** WOO; **10:30,** WCAE.

Thursday, April 9: 6, WEAF, WGR, WWJ; **6:05,** WIP; **6:30,** WCAE, WFI, WGY, WHN; **7,** WEAR, WJZ, WOR; **7:15,** WEEI; **7:30,** WCAU, WEAF, WJY, WKAQ; **7:35,** WNYC; **7:45,** WGY; **8,** KDKA, WBBR, WCAE, WEAR, WEEI, WFI, WGR, WWJ; **8:15,** WIP, WJY WNYC; **8:25,** WJY; **8:30,** CKAC, KDKA; **9,** CHIC, WCAE, WEEI, WFI, WGBS, WGY, WIP, WJZ; **9:05,** WCAU; **9:30,** WJY; **10,** CHIC, WCAE, WJZ; **11,** KDKA; **11:30,** WGY.

Friday, April 10: 6, WEAF, WWJ; **6:30,** WCAE, WGR, WHN; **7,** WEAF, WEAR, WJZ, WSAC; **7:15,** WEEI; **7:30,** WEBJ, WEEI, WJY, WOO; **7:40,** WCAU; **8,** WBAV, WEBJ, WEEI, WGR, WNYC; **8:15,** WAHG; **8:30,** KDKA, WCAE, WEEI, WJY; **8:45,** WAHG; **9,** WEAF, WEEI, WGR, WNYC, WOO; **9:45,** WJZ; **10:30,** WOO.

Central Time Stations

Saturday, April 4: 6, WCCO, WFAA, WGN, WMAQ; **6:30,** KFNF, WGN; **6:45,** WOAW; **7,** KYW, WEBH, WQJ; **7:30,** WHAS; **8,** KYW, WEBH, WMC; **8:30,** KFNF, KTHS, WFAA; **9,** KFRU, WMAQ, WOAW, WOC; **9:35,** KYW; **10,** KFRU; **11:30,** WOAW; **12,** WCAL.

Sunday, April 5: 6:30, WLS; **7,** KYW, WBCN, WEBH, WLS, WORD; **7:30,** WHO; **8,** WCBD, WQJ; **8:15,** WEMC; **8:30,** KTHS, WCAL, WLW; **9,** KFDM, WGN, WHB, WOAW, WQJ, WSUI; **9:30,** WOAI, WOC; **12,** WHB.

Monday, April 6: 6, WGN, WLW, WOAW; **6:30,** KFNF, WGN, WFAA, WJJD, WOAW; **6:50,** WMAQ; **7,** KSD, WORD; **7:30,** WHO; **7:45,** WHA; **8,** KFRU, WCBD, WEBW, WHO, WORD; **8:15,** WEMC; **8:30,** KTHS, WFAA, WJAD, WMC; **9,** KTHS; **10,** WLW; **10:30,** WJJD; **11,** WCAL; **11:15,** WHO.

Tuesday, April 7: 6, KSD, WGN, WLW, WMAQ; **6:25,** WOAW; **6:30,** WGN, WJJD; **7,** WBCN, WQJ, WEBH, WEBW; **7:15,** WJJD; **7:30,** WBAP, WHAS; **8,** WCCO, WGN, WHB, WLBL, WLW, WORD; **8:30,** KTHS, WFAA, WMC, WOAI; **9,** KFDM, KYW, WLW, WOAW; **9:15,** WMAQ; 9:30, WBAP; **10,** KYW, WOAW; **10:30,** WJJD; **11,** WFAA.

Wednesday, April 8: 6, WGN, WLW, WMAQ; **6:30,** KFNF, WGN, WHO, WJJD; **7,** KSD, WBCN, WEBH, WQJ; **7:15,** WJJD; **7:30,** WHAS, WBAP; **8,** KFRU, WCCO, WDAF, WLW; **8:15,** WEMC; **8:25,** WMAQ; **8:30,** KFNF; **8:45,** KYW, WEMC; **9,** KTHS, WHO, WMAQ, WOC; **9:20,** WEMC; **10,** WEBH; **10:30,** KFRU, WJJD; **11:30,** WCCO.

Thursday, April 9: 6, WGN, WLW, WMAQ; **6:30,** KFNF, WGN; **7,** WCCO, WEBH, WOC, WQJ; **7:30,** WBAP, WHAS, WHO; **8,** WCBD, WGN, WHB, WORD; **8:15,** WOI; **8:20,** KYW; **8:30,** KFNF, KTHS, WFAA, WMAQ, WMC; **9,** KTHS, WOAW; **9:15,** WMAQ; **10,** KYW; **10:30,** KFRU; **11,** WFAA, WLW.

Friday, April 10: 6, WGN, WMAQ; **6:15,** WCCO; **6:20,** WOAW; **6:30,** KFNF, WGN, WJJD, WMAQ; **7,** WEBH, WQJ; **7:15,** WJJD; **7:30,** KYW, WHAS; **7:45,** KSD; **8,** WEBH, WGN, WOC; **8:30,** KFNF, KTHS, WFAA, WJAD, WMC; **9,** KFDM, WEMC, WOAW; **9:15,** WMAQ; **10,** KTHS, WCCO; **10:30,** WJJD; **11,** KSD, KFRU.

Mountain Time Stations

Monday, April 6: 8:10, KOA.
Tuesday, April 7: 7:45, CFAC.
Thursday, April 8: 9, CFAC.
Friday, April 9: 7, CFAC; **8:10,** KOA.

Pacific Time Stations

Saturday, April 4: 6, KHJ; **6:15,** KNX; **6:45,** KFOA; **7,** KHJ; **7:30,** KNX; **8,** KGO, KFI, KHJ; **8:30,** KFOA; **9,** KFI.

Sunday, April 5: 6:30, KHJ; **7,** KGW, KHJ, KNX; **7:30,** KHJ; **8,** KFI, KNX; **8:15,** KHJ; **8:30,** KPO.

Monday, April 6: 6, KGW, KLX; **6:15,** KNX; **6:45,** KFOA; **7:30,** KFAE; **8,** KFI, KPO; **8:30,** KFOA; **9,** KPO.

Tuesday, April 7: 6, KHJ; **6:15,** KNX; **6:45,** KFOA; **7,** KFI; **8,** KFI, KGO, KPO; **8:30,** KFOA, KGW; **9,** KFI, KNX.

Wednesday, April 8: 6, KGW, KHJ, KLX; **6:15,** KNX; **6:45,** KFOA; **7,** KNX; **7:30,** KFAE, KFI, KHJ, KPO; **8,** KGW, KLX, KNX, KPO; **8:30,** KHJ.

Thursday, April 9: 6, KFOA, KHJ; **6:30,** KNX; **8,** KFI, KGW, KHJ, KNX, KPO.

Friday, April 10: 6, KGW, KHJ, KLX; **6:15,** KNX; **6:45,** KFOA; **7:15,** KLX; **7:30,** KNX; **8,** KNX, KPO; **8:30,** KFOA.

Eastern Time Stations

KOKA, Pittsburgh, Pa. (309.1), 6:15 p. m., Charlie Gaylord's orchestra; 7:30, Daddy Winkum; 8:15, address, University of Pittsburgh studio; 8:30, concert.

WAHG, Richmond Hill, N. Y. (315.6), 8-8:15 p. m., Davison sisters in songs and duets; 8:15-8:30, Sophie Kraman, violinist; 8:30-8:45, Jack Shatter, tenor; 8:45-9:15, M. Lamberti, concert cellist; 9:15-9:30, songs and duets, Dorothy and Jean Davison; 9:30-9:40, Sophie Kraman; 9:40-9:55, Nerold Tollessen, baritone; 10:05-10:15, Jack Shatter; 10:15-10:30, Elda Treulich, pianist; 10:30-10:45, Nerold Tollessen.

WBAV, Columbus, Ohio (293.7), 8 p.m., Dispatch Little Symphony orchestra; Sheldon & Speaker, banjo artists.

WBZ, Springfield, Mass. (333.3), 6 p. m., Leo Reisman Hotel Lenox ensemble; 7:30, Hotel Kimball trio; 8, Joseph Faustin, tenor; 8:15, Katherine Gravelin, pianist; 8:30, Hawaiian trio; 9, Albert D. Edwards, baritone; 9:15, Pasline Taylor trio; 9:30, Maria de Pesa, soprano; 9:45, Pauline Taylor trio; 10, Albert D. Edward, baritone; 10:15, Pauline Taylor trio; 10:30, Maria de Pesa recital.

WCAE, Pittsburgh, Pa. (461.3), 6:30 p. m., dinner concert, William Penn hotel; 8:30, artists, Madame Lelia Wilson-Smith.

WCAU, Philadelphia, Pa. (278), 6:30, Charles Verna's orchestra; 7:40, recital; 8:15, Checker-Berry orchestra; 9, Bonwit-Teller orchestra; 10:30, Paul Specht's orchestra.

WCX, Detroit, Mich. (516.9), 4:15 p. m., musical program, 6, dinner concert, Book-Cadillac hotel; 8:30, musical program; 10, dance music, Arcadio.

WOWF, Providence, R. I. (440.9), 8 p. m., lectures and talks of interest, Faculty of Brown university.

WEAF, New York, N. Y. (491.5), 4-5 p. m., WEAF ensemble; 6-7, dinner music from Woldorf-Astoria hotel; 7-7:20, Mischa Goodman, violinsit; 7:30-7:45, children's stories; 8-8:30, Happiness Candy boys; 8:30-9, Merry Music makers; 9-9:30, Sterlins Piano duo.

WEAR, Cleveland, Ohio (389.4), 7-11 p. m., studio program.

WEBJ, New York, N. Y. (233), 7-7:15 p. m., Koli Harmonica band; 7:30-7:45, Ada Weingartner, soprano; 7:45-8, Zanna Hanséu, pianist; 8-8:15, Sara V. Turits, soprano; 8:30-9, McLeans dance orchestra.

WEEI, Boston, Mass. (475.9), 6:30 p. m., Big Brother club; 7:15, musicale; 7:30, A. E. Richordson; 8, Neapolitan broadcast from Punkinville; 8:30, choir of Second church; 9, South Shore music club.

WFI, Philadelphia, Pa. (394.5), 3 p. m., special Good Friday sacred concert.

WGBS, New York, N. Y. (315.6), 6-6:30 p. m., Uncle Geebee; 6:30-7:30, Howard's Musical aces.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., Radio Dealers' musical program, J. P. Quinn, director; 6:30-7:30, Buffalo Trust dinner music; 8-9, Ontario M. E. church choir; 9-10, "Cherry Blossom" by the Zuleika Grotto Chanters; 10-11, Larkin string orchestra, Joseph Ball, director; 11-1 a. m., supper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gieser, director.

WGY, Schenectady, N. Y. (379.5), 12-3 p. m., Good Friday service, First Methodist Episcopal church, Rev. Philip L. Frick; 7, Albany Strand theater orchestra; 7:40, WGY orchestra; 8:30, "Our New Minister," WGY players; 10:30, Chamber music ensemble.

WHN, New York, N. Y. (361.2), 6:30 p. m., Olcott Vail, violinist; 7, Harry Richman and his entertainers; 7:30, Club Moritz revue; 9:30, Dan Gregory and his Crystal Palace orchestra; 10, Jimmy Clarke and his Whiteway entertainers; 10:25, "Storage Batteries," H. B. Shontz; 10:30, Roseland dance orchestra; 11:30, Club Alabam orchestra; 12-12:30 a. m., Parody club revue.

WJAR, Providence, R. I. (305.9), 8 p. m., studio program; 9, Astor Coffee orchestra; 11, Providence Biltmore hotel orchestra.

WJZ, New York, N. Y. (454.3), 7 p. m., Hotel Commodore dinner orchestra; 9:45, Symphonic string quartet.

WLIT, Philadelphia, Pa. (394.5), 7:30 p. m., Dream Daddy's bedtime stories.

WNYC, New York, N. Y. (526), 7-7:30 p. m., dance program; 7:35-8, resume of meeting of Board of Estimate; 8-9, studio features; 9-10, hour of German music; 10:10-10:20, "Books That Everyone Should Know," Professor Carter Troop.

WOO, Philadelphia, Pa. (508.2), 4:45 p. m., organ recital, Mary E. Vogt; 7:30, A. Candelori's concert orchestra; 9, WOO concert orchestra, Robert E. Golden, director; 10:03, organ recital, Mary E. Vogt.

WOR, Newark, N. J. (405.2), 6:15 p. m., Hotel Lorraino orchestra; 6:30, man in the moon stories; 7, Hotel Lorraino orchestra.

(Continued on pa

"SEVEN LAST WORDS OF CHRIST" SUNG FRIDAY AT MANY STATIONS

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

Eastern Time Stations

Saturday, April 4: 6:05, WIP; 6:30, WGBS; 7:45, WNYC; 8:05, WEAF; 8:30, WGBS; 9:15, WNYC; 9:30, WBZ; 10:30, WEAF, WMH; 12, WAHG.
Sunday, April 5: 7:20, WEAF, WEEI; 8:30, WCAU; 10, WHN, WNYC.
Monday, April 6: 7:30, WEEI; 8, WGR, WWJ; 8:25, WAHG; 8:30, WOR; 9, WAHG, WEAF, WEEI; 10:15, WAHG; 10:20, WEAF.
Tuesday, April 7: 6:30, WGBS; 7, WCAU; 7:30, WEAF, WEEI, WGBS; 7:35, WNYC; 8:15, WEBJ; 8:20, WCAU; 8:30, WEAF, WEBJ, WEEI, WFI; 8:35, WCAU; 9, WCAE, WEAF, WEEI, WFI, WJY, WNYC; 9:30, WGBS.
Wednesday, April 8: 8, WGR, WWJ; 8:45, WCAU; 9, WEAF; 10:15, WJZ.
Thursday, April 9: 6:30, WGBS; 8, WEAF, WJY; 8:10, WJZ; 8:30, WEAF; 9, WEAF, WNYC; 10:15, WJY.
Friday, April 10: 6:30, WGBS; 7, WEBJ; 8, WAHG, WEAF; 8:30, WEAF; 9:15, WAHG; 10, WGR; 10:05, WAHG.

Central Time Stations

Saturday, April 4: 7, WBCN, WLS; 7:20, WLS; 8, WBCN, WMAQ; 8:30, WCCO; 9, WBCN, WEBH; 10, WEBH, WGN, WQJ; 10:30, WJAD; 11, WBCN, WEBH, WLS, WQJ; 11:15, WLS; 11:45, WDAF; 12, KYW, WBCN, WEBH, WLBL, WQJ; 1, KYW, WQJ; 2, WQJ, WEBH.
Sunday, April 5: 8, WBCN; 9, WBCN; 11, WBAP.
Monday, April 6: 6, KFKX; 7:30, KFAB, WBAP; 8:30, WCCO; 9, WOAW, WGST; 10, WOI; 11:30, KTHS; 11:45, WDAF.
Tuesday, April 7: 6:30, WFAA; 8, WBCN; 8:30, WLW; 9, WBBM, WEBH; 10, WBCN, WEBH, WGN, WQJ; 10:30, KFRU; 11, WBCN, WEBH, WQJ, WMC; 11:30, KFRU; 11:45, WDAF; 12, WEBH, WQJ; 1, KYW, WQJ.
Wednesday, April 8: 7:30, KFAB; 8, WBCN, WGN; 9:45, KYW; 10, WGN, WQJ; 10:45, WLW; 11, KYW, WEBH, WQJ; 11:45, WDAF; 12, KYW, WBAP, WQJ; 1, KYW, WQJ.
Thursday, April 9: 6:30, WFAA; 7, WBCN; 8, WBCN; 8:15, WOI; 9, WEBH; 9:30, WBAP; 10, WGN, WQJ, WEBH; 10:03, WLW; 11, WEBH, WQJ; 11:45, WDAF; 12, WBCN, WEBH, WQJ; 12:15, KTHS; 1, KYW, WQJ.
Friday, April 10: 6:30, WFAA; 7:30, KFAB, WBAP, WHO; 8, WDAF; 9, KYW, WBBM, WCCO, WEBH; 9:30, WBAP; 10, KYW, WEBH, WGN, WQJ; 11, KYW, WEBH, WQJ, WMC; 11:45, WDAF; 12, KYW, WQJ; 1, KYW, WQJ.

Mountain Time Stations

Monday, April 6: 8, CFAC, KOA.
Tuesday, April 7: 6, KOA.
Wednesday, April 8: 8, KOA.
Friday, April 10: 8, KOA.

Pacific Time Stations

Saturday, April 4: 8, KFWB, KNX; 9, KNX; 10, KFI, KFWB; 11, KNX; 11:30, KHJ; 12, KHJ, KNX; 1, KNX.
Sunday, April 5: 7, KFI, KFWB; 8, KFWB; 9, KFWB, KNX.
Monday, April 6: 7:30, KFWB; 8, KHJ, KNX; 8:30, KFOA; 9, KFI; 10, KFWB, KLX.
Tuesday, April 7: 7, KFWB; 8, KFI, KFWB, KHJ, KNX; 9, KFWB; 10, KFI, KFWB, KNX.
Wednesday, April 8: 8, KFI, KFWB; 8:30, KFOA; 9, KFI, KFWB, KNX, KPO; 9:30, KHJ; 10, KFWB.
Thursday, April 9: 7, KFWB; 8, KFWB, KGO; 9, KFWB, KNX; 10, KFI; 11, KNX.
Friday, April 10: 7, KFWB; 7:30, KHJ; 8, KFI, KHJ; 9, KNX; 10, KFBW; 10:30, KGW; 12, KNX; 1, KNX.

Louise Kenuick is one of the attractive pianists from the Marguerite Manley Siedel School of Music, Columbus, who entertains at WEAO and will play your favorite selections.

The Harmony Girls (above) are pioneer Radio stars. They sing every Saturday night at WLS, Chicago. Caterina Gobbi (right) is a young Italian with an exceptional soprano voice who has just arrived in this country. She will make her Radio debut at WEAF, April 4.

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

Eastern Time Stations

Saturday, April 4: 6, WGR, WTAM; 8:15, WIP; 6:30, WFI, WHN; 7, WRC; 7:10, WEAF; 7:30, WBZ, WLIT; 8, WBBR, WBZ, WFI; 8:15, WNYC; 8:30, KDKA, WCAE, WJY; 8:40, WBBR; 9, WBZ, WEAF, WRC; 9:15, WIP; 9:45, WBZ, WEAF, WGBS; 10, WEAF, WGBS; 10:30, WGBS; 11:05, WIP.
Sunday, April 5: 6, WCAU; 8:30, KDKA, WCAE; 6:40, WCAU; 7, WCAU, WJZ; 8, WLIT; 8:15, WJY; 8:45, WGY, WJZ; 9, WEAR, WNYC; 9:15, KDKA, WEAF, WEEI; 10, WJZ; 10:30, WMAK.
Monday, April 6: 6:05, WIP; 6:30, WFI, WGR; 7, WEAF, WEAR, WGY, WJZ; 7:15, WEAF, WEEI; 7:30, WGY, WOO, WOR; 8, KDKA, WAHG, WBBR, WEEI, WMAK, WOO; 8:30, CHNC, KDKA, WCAE, WEAF, WNYC; 8:35, WGR; 8:40, WBBR, WJZ; 9, WCAE, WGR, WHAZ, WWJ; 8:30, WLIT; 10, WEAF, WEEI, WGR, WHAZ; 10:03, WOO; 10:05, WAHG; 11, WCAE; 12, WAHG.
Tuesday, April 7: 6, WGR, WWJ; 6:15, WOR; 6:30, WCAE, WFI, WGY; 7, WEAF, WEAR, WNYC; 7:30, CKAC, WCAU, WJY; 7:45, WGY; 8, WCAE, WEAR, WEEI, WFI, WGR, WKAQ, WWJ; 8:15, WIP; 8:30, CKAC, KDKA, WGBS, WJY; 9, KDKA, WGY, WIP, WJZ; 10, WCAE, WEAF, WGBS; 11, KDKA; 11:30, KDKA, WGY.
Wednesday, April 8: 6, WEAF, WWJ; 6:05, WIP; 6:15, KDKA, WOR; 6:30, WCAE, WFI, WGR, WHN; 7, WAHG, WEAF, WEAR, WGY, WKAQ; 7:15, WEEI; 7:30, WEAF, WOO; 8, WEAO, WOO, WOR; WSAC; 8:25, WJZ; 8:30, CFCA, WCAE, WCAU, WEEI, WLIT; 9, KDKA, WAHG, WCAE, WEEI, WGR, WOO, WWJ; 9:30, WOR; 9:45, WNYC; 10, WGR; 10:03, WOO; 10:30, WCAE.
Thursday, April 9: 6, WEAF, WGR, WWJ; 6:05, WIP; 6:30, WCAE, WFI, WGY, WHN; 7, WEAR, WJZ, WOR; 7:16, WEEI; 7:30, WCAU, WEAF, WJY, WKAQ; 7:35, WNYC; 7:45, WGY; 8, KDKA, WBBR, WCAE, WEAR, WEEI, WFI, WGR, WWJ; 8:15, WIP, WJY WNYC; 8:25, WJY; 8:30, CKAC, KDKA; 9, CHIC, WCAE, WEEI, WFI, WGBS, WGY, WIP, WJZ; 9:05, WCAU; 9:30, WJY; 10, CHIC, WCAE, WJZ; 11, KDKA; 11:30, WGY.
Friday, April 10: 6, WEAF, WWJ; 6:30, WCAE, WGR, WHN; 7, WEAF, WEAR, WJZ, WSAC; 7:15, WEEI; 7:30, WEBJ, WEEI, WJY, WOO; 7:40, WCAU; 8, WBAV, WEBJ, WEEI, WGR, WNYC; 8:15, WAHG; 8:30, KDKA, WCAE, WEEI, WJY; 8:45, WAHG; 9, WEAF, WEEI, WGR, WNYC, WOO; 9:45, WJZ; 10:30, WOO.

Central Time Stations

Saturday, April 4: 6, WCCO, WFAA, WGN, WMAQ; 6:30, KFNF, WGN; 6:45, WOAW; 7, KYW, WEBH, WQJ; 7:30, WHAS; 8, KYW, WEBH, WMC; 8:30, KFNF, KTHS, WFAA; 9, KFBU, WMAQ, WOAW, WOC; 9:35, KYW; 10, KFRU; 11:30, WOAW; 12, WCAL.
Sunday, April 5: 8:30, WLS; 7, KYW, WBCN, WEBH, WLS, WORD; 7:30, WHO; 8, WCBD, WQJ; 8:15, WEMC; 8:30, KTHS, WCAL, WLW; 6, KFDM, WGN, WHB, WOAW, WQJ, WSUI; 9:30, WOAI, WOC; 12, WHB.
Monday, April 6: 6, WGN, WLW, WOAW; 6:30, KFNF, WGN, WFAA, WJJD, WOAW; 6:50, WMAQ; 7, KSD, WORD; 7:30, WHO; 7:45, WHAA; 8, KFRU, WCBD, WEBW, WHO, WORD; 8:15, WEMC; 8:30, KTHS, WFAA, WJAD, WMC; 9, KTHS; 10, WLW; 10:30, WJJD; 11, WCAL; 11:15, WHO.
Tuesday, April 7: 6, KSD, WGN, WLW, WMAQ; 6:25, WOAW; 6:30, WGN, WJJD; 7, WBCN, WQJ, WEBH, WEBW; 7:15, WJJD; 7:30, WBAP, WHAS; 8, WCCO, WGN, WHB, WLBL, WLW, WORD; 8:30, KTHS, WFAA, WMC, WOAI; 9, KFDM, KYW, WLW, WOAW; 9:15, WMAQ; 9:30, WBAP; 10, KYW, WOAW; 10:30, WJJD; 11, WFAA.
Wednesday, April 8: 6, WGN, WLW, WMAQ; 6:30, KFNF, WGN, WHO, WJJD; 7, KSD, WBCN, WEBH, WQJ, 7:15, WJJD; 7:30, WHAS, WBAP; 8, KFRU, WCCO, WDAF, WLW; 8:15, WEMC; 8:25, WMAQ; 8:30, KFNF, 8:45, KYW, WEMC; 9, KTHS, WHO, WMAQ, WOC; 9:20, WEMC; 10, WEBH; 10:30, KFRU, WJJD; 11:30, WCCO.
Thursday, April 9: 8, WGN, WLW, WMAQ; 8:30, KFNF, WGN; 7, WCCO, WEBH, WOC, WQJ; 7:30, WBAP, WHAS, WHO; 6, WCBD, WGN, WHB, WORD; 8:15, WOI; 8:20, KYW; 8:30, KFNF, KTHS, WFAA, WMAQ, WMC; 9, KTHS, WOAW; 9:15, WMAQ; 10, KYW; 10:30, KFRU; 11, WFAA, WLW.
Friday, April 10: 6, WGN, WMAQ, 6:15, WCCO; 6:20, WOAW; 6:30, KFNF, WGN, WJJD, WMAQ; 7, WEBH, WQJ; 7:15, WJJD; 7:30, KYW, WHAS; 7:45, KSD; 8, WEBH, WGN, WOC; 8:30, KFNF, KTHS, WFAA, WJAD, WMC; 9, KFDM, WEMC, WOAW; 9:15, WMAQ; 10, KTHS, WCCO; 10:30, WJJD; 11, KSD, KFRU.

Mountain Time Stations

Monday, April 6: 8:10, KOA.
Tuesday, April 7: 7:45, CFAC.
Thursday, April 8: 8, CFAC.
Friday, April 9: 7, CFAC; 8:10, KOA.

Pacific Time Stations

Saturday, April 4: 6, KHJ; 8:15, KNX; 6:45, KFOA; 7, KHJ; 7:30, KNX; 8, KGO, KFI, KHJ; 8:30, KFOA; 9, KFI.
Sunday, April 5: 6:30, KHJ; 7, KGW, KHJ, KNX; 7:30, KHJ; 8, KFI, KNX; 8:15, KHJ; 8:30, KPO.
Monday, April 6: 8, KGW, KLX; 8:15, KNX; 6:45, KFOA; 7:30, KFAE; 8, KFI, KPO; 8:30, KFOA; 9, KPO.
Tuesday, April 7: 6, KHJ; 6:15, KNX; 6:45, KFOA; 7, KFI; 8, KFI, KGO, KPO; 8:30, KFOA, KGW; 9, KFI, KNX.
Wednesday, April 8: 6, KGW, KHJ, KLX; 6:15, KNX; 6:45, KFOA; 7, KNX; 7:30, KFAE, KFI, KHJ, KPO; 8, KGW, KLX, KNX, KPO; 8:30, KHJ.
Thursday, April 9: 6, KFOA, KHJ; 6:30, KNX; 8, KFI, KGW, KHJ, KNX, KPO.
Friday, April 10: 6, KGW, KHJ, KLX; 6:15, KNX; 6:46, KFOA; 7:15, KLX; 7:30, KNX; 8, KNX, KPO; 8:30, KFOA.

Wednesday, April 8

(Continued from page 11)

soprano; Angus MacDonald, baritone; Mrs. Jessie Downie, accompanist; 8:30, Boston University jazz band; 9, Mrs. Margaret MacFarlane, soprano; Angus MacDonald, baritone; 9:15, McEnelly's singing orchestra; 9:45, Yvonne Crosby.

WCAE, Pittsburgh, Pa. (461.3), 6:30 p. m., William Penn hotel; 8:30, Mrs. E. C. Sheets, contralto; 9, program, Atwater Kent Radio artists; 10:30, Nixon restaurant orchestra.

WCAU, Philadelphia, Pa. (278), 8 p. m., building and loan talk; 8:10, the LaPalina Boy; 8:15, N. B. T. Boys; 9-10, Miss Cinderella's orchestra; 9:40, Bonwit-Teller orchestra; 10:10, Radio talk.

WCX, Detroit, Mich. (516.9), 4:15 p. m., musical program; 6, dinner concert, Book-Cadillac hotel; 8:30, musical program.

WEAF, New York, N. Y. (491.5), 4-4:40 p. m., Mori's orchestra; 4:40-5, children's stories; 6-7, dinner music from Waldorf-Astoria hotel; 7-7:30, Light Opera quartet; 7:30-8:30, U. S. Army band from Washington, D. C.; 9-10, Ipana hour, Bristol Myers.

WEAO, Columbus, Ohio (293.9), 8 p. m., program, Student Social center.

WEAR, Cleveland, Ohio (389.4), 7-8 p. m., Ivan Francisco and his Hotel Cleveland orchestra.

WEEI, Boston, Mass. (475.9), 6:30 p. m., Big Brother club; 7:15, Lena York, violinist; 8, Traveler Shoe orchestra; 8:30, M. H. Cohen's half hour musicale; 9, Gillette Safety Razor band; 10, Dok-Eisenbourg and his Sinfonians.

WFI, Philadelphia, Pa. (394.5), 6:30 p. m., Meyer Davis Bellevue Stratford concert orchestra; 7, bedtime stories.

WGBS, New York, N. Y. (315.6), 3:40-4 p. m., Emily B. Mansfield; 6-6:30, Uncle Geebee; 6:30-7:30, Jimmy Lent's orchestra.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., Radio Dealers musical program, J. P. Quinn, director; 6:30-7:30, dinner music, Gertrude Hutchinson and Lester Erlenbach, pianist; 8-8:55, Two-in-One Players present original Radio plays, "The Radio Widow," and "Purchased Love," directed by Mabel Stacy; 9-10, Atwater Kent program, jointly with WEAF; 10-10:30, Jos. O. Kisselring, tenor; 10:30-10:45, address, Harold B. Brookins, president of the Buffalo Florists' club; 11-1, supper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gleier, director.

WGY, Schenectady, N. Y. (379.5), 7 p. m., Albany Strand theater orchestra.

WHN, New York, N. Y. (361.2), 6:30 p. m., violin solos, Olcott Vail; 7, Harry Richman and his entertainers; 9:30-10, Roseland dance orchestra; 11:30-12, Silver Slipper revue; 12-12:30, Strand Roof orchestra.

WIP, Philadelphia, Pa. (508.2), 4 p. m., talk, "Mental Machinery in Need of Repair," Dr. E. F. Harr; 6:05, Benjamin Franklin hotel concert orchestra; 7, Uncle Wip's bedtime stories.

WJAR, Providence, R. I. (305.9), 7:30 p. m., New York studio.

WJZ, New York, N. Y. (454.3), 7 p. m., Hotel Commodore dinner music; 8:25, Charles Fleischmann, violinist; 8:45, Marie Birkhahn, pianist; 9, Charles Fleischmann, violinist; 10:15, Radio Franks, Wright & Bessinger; 10:30, Billy Wynne and his Greenwich Village Inn orchestra.

WKAQ, San Juan, P. R. (340.7), Municipal band.

WLIT, Philadelphia, Pa. (394.5), 7:30 p. m., Dream Daddy's bedtime stories; 8:30, concert of the Philadelphia Elks Lodge, direction Attilio Miliong; 10, Arcadia cafe dance orchestra.

WMBF, Miami Beach, Fla. (384.4), 10-2 a. m., Rosebrook's Radio serenaders; Nautilus "Lucky Seven" orchestra.

WNYC, New York, N. Y. (526), 7-7:30 p. m., dance program; 7:55-8, dance program; 8-8:10, "Timely Topics," F. P. Bent; 8:30-9, course in appreciation of music; 9:45-10, song recital.

WOO, Philadelphia, Pa. (508.2), 4:45 p. m., organ recital, Mary E. Vogt; 7:30, A. Candelori's concert orchestra; 8, concert from WEAF; 9, Atwater Kent Radio artists; 10:03, organ recital, Mary E. Vogt; 10:30, Vincent Rizzo's dance orchestra.

WOR, Newark, N. J. (405.2), 6:15 p. m., Harry Cox and his orchestra; 7:30, Vincent Lopez; 8, Lionel Storr, baritone; 8:15, Emily Roosevelt, soprano; 8:30, Lionel Storr, baritone; 8:15, topics of the day, Spencer Armstrong; 9:30, Chickering artists series; 11, Ciro orchestra.

WRC, Washington, D. C. (468.5), 1:10 p. m., George F. Ross, pianist; 1:20, talk, Outlook; 4:30, tea music, Meyer Davis' New Willard hotel trio.

WSAC, Clemson College, S. C. (336.9), 8 p. m., educational program, Extension division; 8:30, instrumental and vocal solos, College musicians.

WWJ, Detroit, Mich. (352.7), 6 p. m., dinner concert; 8, Detroit News orchestra; Anne Campbell Detroit News poet; Templeton Moore; 9, concert from New York; 10, Jean Goldkette's Victor Recording orchestra.

Central Time Stations

KFAB, Lincoln, Nebr. (240), 7:30-10 p. m., Harriet Cruse; Jolly Jazzerettes; Olive Fletcher, pianist; Mrs. F. Graham Campbell, soprano; Serenaders orchestra.

KFNF, Shenandoah, Ia. (266), 6:30 p. m., concert, Henry Field Seed company; 8:30, concert from Conway, Willard Strove, director.

KFRU, Bristow, Okla. (394.5), 8-10:30 p. m., Muskogee, Oklahoma Kiwanis club orchestra, artists; Daisy Maude Webb, soprano.

KFUO, St. Louis, Mo. (545.1), 9:15 p. m., "Father Forgive Them," Rev. W. F. Wilk; "The Seven Words," Trinity choral society.

KSO, St. Louis, Mo. (545.1), 7 p. m., program, West End Lyric theater.

KTHS, Hot Springs National Park, Ark. (374.8), 8:30-9 p. m., Sousaphone solos, Al Kunze; Phil Wall, pianist; 9-10, Meyer Davis-New Arlington hotel orchestra; 10-11, Charles L. Fischer Eastman hotel orchestra.

WBAP, Fort Worth, Texas (475.9), 7:30-8:30 p. m., Junior Euterpean club, Mrs. J. E. Cooley, director; 9:30-10:45, Johnny Jackson's Texas hotel orchestra; 12-1 a. m., Frenseley Moore's Black and Gold serenaders.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 8-9 p. m., program from New York; 10:30, Dick Long's Nankin cafe orchestra; 11:30, Eddie Dunstedter, organist.

WCEE, Elgin, Ill. (275), 7-8 p. m., WTAS orchestra; 10:30-12, WTAS orchestra; Frank Morris, Fanny and Eddie Cavanaugh.

WDAF, Kansas City, Mo. (365.6), 6-7 p. m., address, speaker, Health Conservation association; address, speaker, Meat Council of Greater Kansas City; Tell-Me-a-Story lady; Trianon ensemble; 8-9:15, Star's Radio orchestra; Marcel de Voll-Pell, violinist; Ann Meserrey, pianist; Olive de Ormo-Peck, vocalist; 11:45-1 a. m., Merry Old Chief, Plantation players.

WEBH, Chicago, Ill. (370.2), 7-8 p. m., Oriole orchestra; "Books of the Day," Lewellyn Jones; Riviera theater; 9-10, talk, M. S. Szymczak; Frederick Agard, tenor; brass quartet; 11-12, Loos brothers; Ted Fiorito, Dan Russo; Frederick Agard.

WEMC, Berrien Springs, Mich. (286), 8:15 p. m., Clotilde James, pianist; 8:25, Mrs. A. A. Fellows, soprano; 8:35, Mary Lamson, bird talk; 8:45, Hoot-Owl quartet; 9, "Archeology of South-West Michigan," D. P. Smith; 9:20, Thomas Johnson, baritone.

WGN, Chicago, Ill. (370.2), 6 p. m., organ recital, Lyon & Healy; 6:30-7, dinner concert, Drake concert ensemble, Blackstone string quintet; 8-9, jazz program; 10-11, Drake hotel dance orchestra.

WHAS, Louisville, Ky. (399.8), 4-5 p. m., concert, Louisville Conservatory of music; state-wide, city-wide music contest, Federation of Women's clubs; 7:30-8:30, K. & I. railroad orchestra; 8:30, Samuel Insull, speaker.

WHO, Des Moines, Ia. (526), 6:30-7:30 p. m., Reese-Hughes orchestra; 7:30-9, Lil Lytton, baritone; Helen Birmingham, accompanist; Sam Caplan, violinist; artists, American Academy of Fine Arts; 9-9:15, Des Moines theater symphonic orchestra; 10:45-11, Bankers Life Radio orchestra.

WJJD, Mooseheart, Ill. (302.8), 6:30-7:15 p. m., Albert F. Brown, organist; "Child Care," M. P. Adams; 10:30-1 a. m., Oarod studio; Charley Straight and his orchestra.

WLS, Chicago, Ill. (344.6), 6:30 p. m., Ralph Emerson, organist; 7:15, WLS Tribe of Lone Scouts program; 8, R. F. D. program; 9, Jack Friedenberg and his banjo; 9:10, "Parsifal;" 10, Glenn's Cornhuskers; 10:10, Edgewater glee club; 10:40, Ford and Glenn time.

WLW, Cincinnati, Ohio (422.3), 4 p. m., Shut-in program; 6, dinner hour concert; 10, Advertisers club; 10:45, The Hillsboro Hill Billy orchestra, E. D. Promp, director; Milnor Electric instrumental trio.

WMAQ, Chicago, Ill. (447.5), 6 p. m., Chicago theater organ recital; 6:30, stories for children, Georgene Faulkner; 8, weekly lecture, Northwestern university; 8:25, piano concerto, Jeanette Durno; 9, WMAQ players.

WOC, Davenport, Ia. (483.6), 6:30 p. m., bedtime stories, Val McLaughlin; 6:50, "Practical Hygiene for the Home," J. H. Craven; 9, organ recital, Erwin Swindell; Margaret Mathewson, soprano.

WQJ, Chicago, Ill. (447.5), 7-8 p. m., Rainbo Garden orchestra; Merrie Boyd Mitchell, soprano; James Mitchell, baritone; Howard Hanks, pianist; 10-1 a. m., Rainbo Skylarks; Clarence Theders, tenor; Alfred Tweed, harmonica and guitar soloist; Melodians; Fred A. Jacobson, reader; Zeigler Sisters; Hickey and Johnson; Larry Brundate, Harry Kraemer; 1-2, Hotsy Totsy hour.

WRBC, Valparaiso, Ind. (278), 7:30 p. m., lenten service.

WSB, Atlanta, Ga. (428.3), 10:45 p. m., Ruby Freeman Roensch, blues singer.

WSUI, Iowa City, Iowa (483.6), 7:30-7:45 p. m., "The American Constitutional System," Prof. Frank E. Horack; 7:45-8, "The Psychology of Learning," Prof. Frederick B. Knight; 8-8:15, "Appreciation of Literature," Prof. Frank L. Mott.

WTAS, Elgin, Ill. (302.8), 8-10:30 p. m., WTAS dance program, Frank Morris, Fanny and Eddie Cavanaugh.

Mountain Time Stations

KOA, Denver, Colo. (322.4), 8 p. m., Fred Schmitt and his Rialto theater orchestra; 8:10, Denver Tourist bureau, "Legends of the West," Joseph Emerson Smith; incidental Indian music, native tribesmen; 10-12, Joe Mann and his Rainbow-Lane orchestra.

KOB, State College, N. M. (348.6), 7:30-8:30 p. m., international code lesson, Dean R. W. Goddard.

Pacific Time Stations

KFAE, Pullman, Wash. (348.6), 7:30-9 p. m., Florence Lester, soprano; Thelma Johnson, pianist; Cooper Sisters; "Radio Frequency Amplifiers," Dean H. V. Carpenter; "Life in a College Hall," Mrs. Constance Holz; "Damping Off of Seedlings," B. F. Dana; "Marketing Dairy Products," Don G. Magruder; "Farm Women's Camps," Maud Wilson.

KFI, Los Angeles, Calif. (468.5), 5:30-6 p. m., Examiner's musical half hour; 6:45-7, Radiotorial talk; 7-7:30, Nick Harris, detective stories; 7:30-8, program, Goodwin, Klinger & MacKay company; 8-11, program, Beverley Hills Shrine club radio contest.

KFOA, Seattle, Wash. (454.3), 6:45-8:15 p. m., Hopper Kelly company program; 8:30-10, around the world in song, Clara Moyer Hartle.

KFWB, Hollywood, Calif. (252), 7-8 p. m., dinner dance music; 8-10, KFWB feature program, Hollywood string quintet, Billy Bunn, pianist; 10-11, Harry Seymour's hour of fun; 11-1 a. m., Brandstatter's Hollywood Montmartre cafe dance orchestra, Mel Pedesky, leader.

KGW, Portland, Ore. (491.5), 6 p. m., Hotel Portland dinner concert; 8, concert, Seventh U. S. Infantry band.

KHJ, Los Angeles, Calif. (405.2), 6-6:30 p. m., Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, little stories, American history, Prof. Walter Sylvester Herzog; bedtime story by Uncle John; 7:30-8, program, students University of Southern California; 8, Dr. Mars Baumgardt, scientific lecturer; 8:30-9:30, Jewish program, arranged by Mrs. Max Brecher; 9:30-10, Piggly Wiggly girls trio; 10-11, Art Hickman's Biltmore hotel dance orchestra, Earl Burtnett, leader.

KLX, Oakland, Calif. (508.2), 6-7 p. m., organ recital; 8-10, American theater orchestra; 10-11:30, Sweet's ballroom.

KNX, Hollywood, Calif. (336.9), 5:45-6:15 p. m., Wurlitzer pipe organ studio; 6:15-7, dinner hour music; 7-8, Ambassador hotel concert orchestra, Josef Rosenfeld, director; 8-9, program, Security Trust and Savings bank; 9-10, program, Clear Lake Beach company; 10-12, Hollywoodland dance orchestra.

KPO, San Francisco, Calif. (429.5), 7-7:30 p. m., Conn Band Instrument company; 8-9, Atwater Kent artists; 9-10, Merrill & Merrill musical instrument brokers.

Thursday, April 9

Thursday, silent night for: CNNC, KFAB, KFAE, KFOM, KFOA, KLX, KOA, KOB, KSO, WANO, WBAV, WCEE, WOWF, WEAO, WEBI, WEBW, WEMC, WNAZ, WJAO, WJJO, WLBL, WOO, WSAC, WSUI.

Eastern Time Stations

CKAC, Montreal, Can. (410.7), 8:30 p. m., concert from CNRM.

KOKA, Pittsburgh, Pa. (309.1), 6:15 p. m., Broudy's orchestra; 7:30, Uncle Ed; 8, program, National Stockman and Farmer studio; 8:30, concert; 11, Pittsburgh Post studio.

WBBR, New York, N. Y. (272.6), 8 p. m., Watchtower instrumental trio; 8:20, Sunday school lesson, S. M. Van Sipma; 8:40, instrumental trio, Carl Park, Malcolm Carmont, George Twaroschk.

WBZ, Springfield, Mass. (333.3), 6 p. m., Philharmonic trio; 7:30, "Psychology of Advertising," Prof. Glenn Newton Merry; 8, Donald Pirnie, baritone; Dorothy B. Mulroney, pianist; 8:30, Pickering program; 9:30, Philharmonic trio; 11, Hotel Brunswick orchestra; 11:30, Don Ramsay's Radio four; 11:45, Hotel Brunswick orchestra.

WCAE, Pittsburgh, Pa. (461.3), 6:30 p. m., William Penn hotel; 8, concert from WEAF; 9, Victor artists; 10, Goodrich Silvertown Cord orchestra.

WCAU, Philadelphia, Pa. (278), 7:30 p. m., N. Snellenburg Symphony orchestra; 8:35, Bonwit-Teller orchestra; 8:55, "What We See and Hear in Music," Maude Hanson Pettit; 9:05, recital; 10, talk, Dr. John W. Stockwell.

WCX, Detroit, Mich. (516.9), 4:15 p. m., musical program; 6, dinner concert, Book-Cadillac hotel; 8:30, musical program.

WEAF, New York, N. Y. (491.5), 4-4:15 p. m., recitations with music, Mme. Amale Burnaw; 4:15-4:30, Martha Miller, pianist; 4:30-4:45, Alice Maude Russell, soprano; 6-7, dinner music from Waldorf-Astoria hotel; 7-7:30, services, Federation of churches; 7:30-7:40, Alberto Terrasi, baritone; 7:40-8, Columbia University American history lecture; 8-8:30, Cushman serenaders; 8:30-9, Packard Motor company; 9-10, Atwater Kent Manufacturing company; 10-11, Goodrich Silvertown Cord orchestra; 11-12, Vincent Lopez and his Hotel Pennsylvania orchestra.

WEAR, Cleveland, Ohio (389.4), 7-8 p. m., Vincent H. Percy, organist; 8-11, program from WEAF.

WEEI, Boston, Mass. (475.9), 6:30 p. m., Big Brother club; 7:15, Sagers half hour of hospitality; 7:45, Joe Toyo on "Telecrom Timely Topics;" 7:55, Pathe news flashes; 8, from New York; 8:30, from New York; 9, Victor concert hour; 10, Goodrich Silvertown cord orchestra.

WFI, Philadelphia, Pa. (394.5), 6:30 p. m., Meyer Davis' Bellevue Stratford concert orchestra; 7, bedtime stories; 8, concert from WEAF; 9, Victor concert; 10, dance orchestra from WEAF.

WGBS, New York, N. Y. (315.6), 6-6:30 p. m., Uncle Geebee; 6:30-7:30, Van and his collegians; 9-9:15, Ethel Fox, soprano; 9:15-9:30, new astrology, Belle Bart.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., Radio Dealers' musical program, J. P. Quinn, director; 6-7:30, dinner music, Hallpryd string quartet; 8-11, jointly with WEAF, including a Variety hour and the Goodrich Silvertown Cord orchestra.

WGY, Schenectady, N. Y. (379.5), 6:30 p. m., Hotel Ten Eyck orchestra; 7:30, "A Few Moments with New Books," L. L. Hopkins; 7:45, program, Toronto Conservatory of music, Frank Blachford, violinist; Leo Smith, cellist; Harvey Robb, pianist; 9, Marine band, WRC, WJZ; 11:30, Stephen Boisclair, organist.

WHN, New York, N. Y. (361.2), 6:30 p. m., Olcott Vail, violinist; 7, Silver Slipper revue; 11:30, Wigwam club revue; 12, Parody club revue; 12:30-1 a. m., Club Moritz revue.

WIP, Philadelphia, Pa. (508.2), 6:05 p. m., Benjamin Franklin concert orchestra; 7, Uncle Wip's bedtime stories; 8, talk, auspices of University of Pennsylvania; 8:15, Philadelphia Police band; 9, Lenten cantata, "The Risen King," Fletcher Methodist Episcopal church choir; 11, Harvey Marburger's dance orchestra.

WJAR, Providence, R. I. (305.9), 8 p. m., program from New York; 9, Victor presentation; 10, Goodrich Silvertown Cord orchestra.

WJZ, New York, N. Y. (454.3), 7 p. m., Hotel Commodore concert; 7:55, "The Fetich of Fashion," John B. Kennedy; 8-10, Scotch and Irish songs, John Cassidy; 8:25, 60th anniversary of Battle of Appomattox; 9, U. S. Marine band; 10, Crescent ensemble; 10:15, Jacques Green and his Club Deauville orchestra; Clark's Hawaiians.

WKAQ, San Juan, P. R. (340.7), 8:30-10 p. m., concert, LaCafetera.

WLIT, Philadelphia, Pa. (394.5), 4:30 p. m., Marcella North, pianist; 7:30, Dream Daddy's bedtime stories.

WMAK, Lockport, N. Y. (265.5), Murray Whiteman's midnight serenaders.

WMBF, Miami Beach, Fla. (384.4), 10-2 a. m., Rosebrook's Radio serenaders; Nautilus "Lucky Seven" orchestra.

WNYC, New York, N. Y. (526), 6:30-7 p. m., Irving Bloom and his Club Tokio orchestra; 7:35-8, song recital; 8-8:10, talk by public official; 8:15-8:45, concert program; 9-9:30, Municipal Instrumental trio; 9:30-10:30, orchestral feature.

WOO, Philadelphia, Pa. (508.2), 4:45 p. m., organ recital, Mary E. Vogt.

WOR, Newark, N. J. (405.2), 6:15 p. m., music while you dine.

WRC Washington, D. C. (468.5), 7 p. m., Lee House trio; 8, "Cuban Night," U. S. Army band; address, representative of Cuban government; Dr. Leo S. Rowe, introduction speech; song recitals, Conchita MacMillan, Estrella Amores, sopranos; Mrs. Ethel Boltzelaw Gawler, soprano; Arsenio Ralon, violinist; Helen Corbin Heine, pianist; 10, Vincent Lopez' Hotel Mayflower orchestra; 11, Paul Specht's Cafe Pandora orchestra.

WWJ, Detroit, Mich. (352.7), 6 p. m., dinner concert; 8, program from New York.

DANCING

(Central Time)

Saturday, April 4: 8, Wlam, Wtas; 9, Wmbf, Wmh, Wrc, Wtco, Wtam; 9:05, Whz, Wip; 9:30, Wjz, Wrc; 10, Wcco, Weaf, Wgbs, Wgn, Wqj; 10:15, Wmh; 10:45, Kths; 11, Wahg, Wcee, Webh, Wfaa, Wmbf, Woaw, Woc, Wrc, Wlam; 11:45, Wdaf; 12, Kfoa, Kgo, Kgw, Knx, Kyw, Wlbl; 1, Kfwb, Khj, Kyw; 1:30, Khj.

Monday, April 6: 8, Weei, Wlas; 8:30, Whn; 9, Knx, Kuo, Whn, Wlit, Wmbf; 9:20, Wkx; 9:30, Wbap, Weaf, Woo, Wjz; 9:35, Wnyc; 10, Kths, Wgr; 10:30, Whn; 11, Wcee, Wmbf; 11:45, Wdaf; 12, Kgo, Knx; 1, Kfbw, Knx.

Tuesday, April 7: 8, Wgbs, Wtas; 8:30, Wnyc; 9, Kfmo, Kgo, Webh, Weei, Wfi, Wjar, Wmbf; 9:30, Ckac, Wcau, Whn, Wip, Wjr, Woai; 9:45, Kths; 10, Wgn, Wqj, Wtas; 10:30, Whn; 11, Wcee, Webh, Whn, Wmbf, Wmc; 11:45, Wdaf; 12, Kfoa, Kgo, Kgw, Khj, Knx; 1, Kfwb.

Wednesday, April 8: 8, Wtas; 6:30, Whn; 9, Weei, Wfi, Wmbf, Wwj; 9:30, Wbap, Wjz, Woo; 10, Kths, Wgn, Wgr, Woaw, Wor, Wqj, Wtas; 10:30, Whn; 10:45, Who, Wlw; 11, Wcee, Whn, Wmbf; 11:45, Wdaf; 12, Kgw, Khj, Klx, Knx, Koa, Wbap; 1, Kfwb.

Thursday, April 9: 8, Wlas; 9, Kgo, Weaf, Webh, Weei, Wfi, Wjar, Wmbf; 9:30, Wjz, Wnal; 9:45, Wjz; 10, Kths, Weaf, Wgn, Wip, Wqj, Wlas; 10:03, Wlw; 10:30, Whn; 11, Webh, Who, Whn, Wmak, Wmbf; 11:30, Whn; 11:45, Wdaf; 12, Kgo, Kgw, Khj, Wfaa; 1, Kfwb.

Friday, April 10: 8, Wjar, Wlas, Wwj; 9, Webh, Wgr, Whn, Wmbf; 9:30, Wcau, Whn; 10, Kths, Wgn, Wgr, Wjar, Wqj, Wtas; 10:30, Whn; 11, Wcee, Webh, Whn, Wmbf; 11:45, Klx, Woaf; 12, Kfoa, Khj; 1, Kfwb, Knx.

Central Time Stations

CNRW, Winnipeg, Can. (384.4), 8:30 p. m., old time songs, Hazel Mills, soprano; Mrs. D. G. Edmond, contralto; Emily Mignecca, violinist; Frank Redlich, cellist; Burt Book, pianist; 10, Frank Wright's Country club dance orchestra.

KFAB, Lincoln, Nebr. (240), 3 p. m., Rialto Symphony orchestra, Juan Schaefer, director.

KFKU, Lawrence, Kan. (275), 6:50 p. m., piano tuning-in number; 7, music; 7:15, "Underground Mints," Prof. C. M. Young; 7:30, "Engineering as a Vocation," Dean P. F. Walker; 7:45, Psychology lesson XIV, Dean R. A. Schwegler.

KFMQ, Fayetteville, Ark. (299.8), 7:30 p. m., Pi Beta Phi sorority; "Life in Other Worlds," A. M. Harding; "The Work of Leaves," J. T. Buchholz; "Adjusting Education to Individual Needs," J. J. Weber; "Some Phases of Household Management," Madge Johnson.

KFNF, Shenandoah, Iowa (266), 6:30 p. m., concert from Sabetha, T. A. Van Kuren, director; 8:30, music from Elmo, Lucile Speer, director.

KFRU, Bristow, Okla. (394.5), 10:30-11:30 p. m., P. J. Craker, organist.

KFUO, St. Louis, Mo. (545.1), 9:15 p. m., "Saved by Grace," Prof. Martin S. Sommer.

KSO, St. Louis, Mo. (545.1), 7 p. m., Holy Thursday service, St. Francis Xavier church.

KTHS, Hot Springs National Park, Ark. (374.8), 8:30-9 p. m., Jacques Renard, violinist; 9-10, Lawson Reid, organist; 10-11, Meyer Davis-New Arlington hotel orchestra; 12:15-1:30 a. m., Phil Baxter's singing orchestra.

WBAP, Fort Worth, Tex. (475.9), 7:30-8:30 p. m., Thorpe Springs Christian college; 9:30-10:15, Burleson Hawaiian guitar club, Mrs. E. J. Thompson, director.

WBBM, Chicago, Ill. (226), 9-10 p. m., Oray Dawn orchestra, Nate Caldwell, Jerry Cromark, Vernon Buck, Ned Santry, Albert Tillon, Jr.

WCBO, Zion, Ill. (344.6), 8 p. m., Treble Clef chorus; Carl Huth, harpist; Miriam Hollingshead, flutist; M. P. Barton, tenor; S. D. Inman, soprano; Mrs. Blanche Reynolds Kessler, reader; Mrs. L. J. Hire, pianist.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 6 p. m., annual Twin City clean-up week; 7-10, program from New York.

WOAF, Kansas City, Mo. (365.6), 6-7 p. m., book talks, Louis Mecker; Tell-Me-a-Story Lady; Trianon ensemble; 11:45-1, Merry Old Chief; Plantation players; Eddie Kuhn's Kansas City Athletic club orchestra; Johnnie Campbell's Kansas City club orchestra.

WEBN, Chicago, Ill. (370.2), 7-8 p. m., Oriole orchestra; Robert York, tenor; Riviera theater; 9-10, Oriole orchestra; Belle Forbes Cutter, soprano; saxophone quintet; John Stamford, tenor; 11-12, Oriole orchestra; John Stamford, tenor; Belle Forbes Cutter, soprano.

WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Lone Star Five's orchestra; 8:30-9:30, East Dallas Christian church; 11-12, Edward Cramer, violinist; 12-1 a. m., Hunt's Imperial orchestra.

WON, Chicago, Ill. (370.2), 6 p. m., organ recital, Lyon & Healy; 6:30-7, Drake concert ensemble, Blackstone string quintet; 8-9, classical program; 10-11, Drake hotel dance orchestra.

WGST, Atlanta, Ga. (270), 7-8 p. m., Mrs. Eunice Curry Prescott, contralto; "Some Facts About the Universe," Prof. D. L. Stamy.

WHAS, Louisville, Ky. (399.8), 7:30-9 p. m., concert, auspices John E. Harmon, Jr.

WHO, Des Moines, Iowa (526), 7:30-9 p. m., Iowa Wesleyan glee club; 11-12, Orll Fitch and his orchestra.

WLS, Chicago, Ill. (344.6), 6:30 p. m., Ralph Emerson at our Barton organ; 7, lullaby time, Ford and Glenn; 7:30, E. Warren K. Howe's classical program.

WLW, Cincinnati, Ohio (422.3), 4 p. m., French lesson, Madame Ida Telmpidis; 6, dinner hour concert; State Memory contest; 6:45, Sekalary Hawkins; 10, three-minute message, Civil Service department of United States government; 10:03, Cooper corporation orchestra, directed by Wm. C. Stoess; male quartet; 11, "Merles-Master" Old Fiddlers' contest.

WMAQ, Chicago, Ill. (447.5), 6 p. m., Chicago theater organ recital; 6:25, Hotel LaSalle orchestra; 6:50, Daddy; 8, garden talk, James H. Burdett; 8:15, investment talk; 8:30, musical program, Carol Richert; 8:50, University of Chicago lecture; 9:15, Rushmore ensemble singers.

WMC, Memphis, Tenn. (499.7), 7:30 p. m., science talk, Brother Joseph; 8:30, musical program, William Newton.

WOAI, San Antonio, Tex. (394.5), 9:30 p. m., Jimmie Joy's orchestra.

WOAW, Omaha, Nebr. (526), 6 p. m., every child's story hour, Grace Sorenson; 6:20, to be announced; 6:45, Randall's Royal Fontenelle orchestra; 9, program, May Seed and Nursery company; 10:30, Frank W. Hodek, Jr., and his Nightingale orchestra.

WOC, Davenport, Ia. (483.6), 6:30 p. m., bedtime stories, Val McLaughlin; 7, musical program, WEAF; 11, Louis Connor and his LeClaire hotel orchestra; songs, Peter MacArthur.

WORD, Batavia, Ill. (275), 8-10 p. m., Sunday school lesson; Houcena male quartet.

WQJ, Chicago, Ill. (447.5), 7-8 p. m., Rainbo Garden orchestra; Otto A. Moore, baritone; La Verne Hanson, pianist; Mildred Perlin, reader; Lucille Mathews, violinist; Gertrude Mathews, accompanist; 10-1, Rainbo Skylarks; Lew Butler, Giant of Radio; Ned and Ches; Marie Wright, soprano; Ila Shannabrook, soprano; Henri Therien, Joe Verges, New Orleans Boys; Verdi trio; Rosemary Hughes, soprano; 1-2, Hotsy Totsy hour.

WSB, Atlanta, Ga. (428.3), 8-9 p. m., Boys' high school band; 10:45, Dr. Charles A. Sheldon, organist.

WTAS, Elgin, Ill. (302.8), 7-12 midnight, WTAS dance orchestra, special features.

Mountain Time Stations

CNRC, Calgary, Can. (434.5), 9 p. m., Symphony orchestra.

Pacific Time Stations

KFI, Los Angeles, Calif. (468.5), 5:30-6 p. m., Examiner's musical half hour; 6:45-7, Radiotorial talk; 7-8, Garden's Music Shop Hawaiian string quartet; 8-9, program, Standard Oil company of California; 9-10, Patrick-Marsh dance orchestra, Betty Patrick, soloist; 10-11, Examiner's popular music night.

KFOA, Seattle, Wash. (454.3), 6-7 p. m., Moran school for boys.

KFWB, Hollywood, Calif. (252), 7-8 p. m., program, Hacienda Park orchestra, presented by John A. Evans corporation; 8-10, KFWB feature program; 10-11, instrumental and vocal; 11-1 a. m., Brandstatter's Hollywood Montmartre cafe dance orchestra, Mel Pedesky, leader.

KGO, Oakland, Calif. (361), 7:15 p. m., golf lesson, Joe Novak; 8, "Civilian Clothes," KGO players; 10-1, Henry Halstead's orchestra.

KGW, Portland, Ore. (491.5), 6 p. m., pre-Easter service; 8, Oregonian concert orchestra; 10, Multnomah hotel strollers.

KHJ, Los Angeles, Calif. (405.2), 6-6:30 p. m., Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, little stories of American history, Prof. Walter Sylvester Herzog; Mabel Hunt, readings; Uncle John; 7:15, "Care of Body," Dr. Philip M. Lovell; 8-10, program, Institute of Musical Art; 10-11, Art Hickman's Biltmore hotel dance orchestra, Earl Burtnett, leader.

KNX, Hollywood, Calif. (336.9), 5:15-6:15 p. m., Wurlitzer pipe organ studio; sports talk, Sid Ziff; 6:30-7:30, program, Los Angeles County Association of Optometrists, Ziegler's orchestra; 7:30, business talk, J. H. Douglas of Security bank; 8-9, KNX feature program; 9-10, program, the May company; 10-11, Abe Lyman's Cocoanut Grove dance orchestra from Ambassador hotel; 11-12, campus night by and for students of the University of California, Southern branch.

KPO, San Francisco, Calif. (429.5), 7-7:30 p. m., Rudy Seiger's Fairmont hotel orchestra; 8-10, program, Dean Gross, baritone.

Friday, April 10

Friday, silent night for: CNNC, CNIC, CKAC, KFKU, KFKX, KFMO, KCO, KLX, WBBR, WBZ, WCBO, WEAO, WEBW, WFI, WGST, WHAZ, WIP, WKAQ, WLBL, WLW, WMAK, WOAI, WOI, WSAC, WSUI.

Eastern Time Stations

KOKA, Pittsburgh, Pa. (309.1), 6:15 p. m., Charlie Gaylord's orchestra; 7:30, Daddy Winkum; 8:15, address, University of Pittsburgh studio; 8:30, concert.

WANO, Richmond Hill, N. Y. (315.6), 8-8:15 p. m., Davison sisters in songs and duets; 8:15-8:30, Sophie Kraman, violinist; 8:30-8:45, Jack Shatter, tenor; 8:45-9:15, M. Lamberti, concert cellist; 9:15-9:30, songs and duets, Dorothy and Jean Davison; 9:30-9:40, Sophie Kraman; 9:40-9:55, Nerold Tollessen, baritone; 10:05-10:15, Jack Shatter; 10:15-10:30, Elda Treulich, pianist; 10:30-10:45, Nerold Tollessen.

WBAV, Columbus, Ohio (293.7), 8 p.m., Dispatch Little Symphony orchestra; Sheldon & Speaker, banjo artists.

WBZ, Springfield, Mass. (333.3), 6 p. m., Leo Reisman Hotel Lenox ensemble; 7:30, Hotel Kimball trio; 8, Joseph Fantin, tenor; 8:15, Katherine Gravelin, pianist; 8:30, Hawaiian trio; 9, Albert D. Edwards, baritone; 9:15, Pauline Taylor trio; 9:30, Maria de Pera, soprano; 9:45, Pauline Taylor trio; 10, Albert D. Edwards, baritone; 10:15, Pauline Taylor trio; 10:30, Maria de Pera recital.

WCAE, Pittsburgh, Pa. (461.3), 6:30 p. m., dinner concert, William Penn hotel; 8:30, artists, Madame Lella Wilson-Smith.

WCAU, Philadelphia, Pa. (278), 6:30, Charles Verne's orchestra; 7:10, recital; 8:15, Checker-Berry orchestra; 9, Bonwit-Teller orchestra; 10:30, Paul Specht's orchestra.

WCX, Detroit, Mich. (516.9), 4:15 p. m., musical program; 6, dinner concert, Book-Cadillac hotel; 8:30, musical program; 10, dance music, Arcadia.

WOWF, Providence, R. I. (440.9), 8 p. m., lectures and talks of interest, Faculty of Brown university.

WEAF, New York, N. Y. (491.5), 4-5 p. m., WEAF ensemble; 6-7, dinner music from Waldorf-Astoria hotel; 7-7:20, Mischa Goodman, violinist; 7:30-7:45, children's stories; 8-8:30, Happiness Candy boys; 8:30-9, Merry Music makers; 9-9:30, Sterling Piano duo.

WEAR, Cleveland, Ohio (389.4), 7-11 p. m., studio program.

WEBJ, New York, N. Y. (233), 7-7:15 p. m., Kell Harmonica band; 7:30-7:15, Ada Weingartner, soprano; 7:45-8, Zanna Hancet, pianist; 8-8:15, Sara V. Turtis, soprano; 8:30-9, McLean's dance orchestra.

WEEI, Boston, Mass. (475.9), 6:30 p. m., Big Brother club; 7:15, musicale; 7:30, A. E. Richardson; 8, Neapolitan broadcast from Punkinville; 8:30, choir of Second church; 9, South Shore music club.

WFI, Philadelphia, Pa. (394.5), 3 p. m., special Good Friday sacred concert.

WGBS, New York, N. Y. (315.6), 6-6:30 p. m., Uncle Geebee; 6:30-7:30, Howard's Musical aces.

WGR, Buffalo, N. Y. (319), 2:30-4:30 p. m., Radio Dealers' musical program, J. P. Quinn, director; 6:30-7:30, Buffalo Trust dinner music; 8-9, Ontario M. E. church choir; 9-10, "Cherry Blossom" by the Zuleika Circle Chapter; 10-11, Larkin string orchestra, Joseph Ball, director; 11-1 a. m., supper-dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gleier, director.

WGY, Schenectady, N. Y. (379.5), 12-3 p. m., Good Friday service, First Methodist Episcopal church, Rev. Philip L. Frick; 7, Albany Strand theater orchestra; 7:40, WGY orchestra; 8:30, "Our New Ministers," WGY players; 10:30, Chat his music ensemble.

WHN, New York, N. Y. (361.2), 6:30 p. m., Olcott Vail, violinist; 7, Harry Richman and his entertainers; 7:30, Club Moritz revue; 9:30, Dan Gregory and his Crystal Palace orchestra; 10, Jimmy Clarke and his Whiteway entertainers; 10:25, "Storage Batteries," H. B. Shontz; 10:30, Roseland dance orchestra; 11:30, Club Alabam orchestra; 12-12:30 a. m., Parody club revue.

WJAR, Providence, R. I. (305.9), 8 p. m., studio program; 9, Arthur Cotter orchestra; 11, Providence Biltmore hotel orchestra.

WJZ, New York, N. Y. (454.3), 7 p. m., Hotel Commodore dinner orchestra; 9:15, Symphonic string quartet.

WLIT, Philadelphia, Pa. (394.5), 7:30 p. m., Dream Daddy's bedtime stories.

WNYC, New York, N. Y. (526), 7-7:30 p. m., dance program; 7:35-8, resume of meeting of Board of Estimate; 8-9, studio features; 9-10, hour of German music; 10-10:20, "Books That Everyone Should Know," Professor Carter Troop.

WOO, Philadelphia, Pa. (508.2), 4:45 p. m., organ recital, Mary E. Vogt; 7:30, A. Candelori's concert orchestra; 9, WOO concert orchestra, Robert E. Golden, director; 10:03, organ recital, Mary E. Vogt.

WOR, Newark, N. J. (405.2), 6:15 p. m., Hotel Lorraine orchestra; 6:30, man in the moon stories; 7, Hotel Lorraine orchestra.

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WBBM, Chicago, Ill. (226), 9-10 p. m., Gray Dawn orchestra, Nate Caldwell, Jerry Cromack, Vernon Buck, Ned Santry, Albert Tilton, Jr.

WCBD, Zion, Ill. (344.6), 8 p. m., Treble Clef chorus; Carl Huth, harpist; Miriam Hollingshead, flutist; M. P. Barton, tenor; S. D. Inman, soprano; Mrs. Blanche Reynolds Kessler, reader; Mrs. L. J. Hire, pianist.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 6 p. m., annual Twin City clean-up week; 7-10, program from New York.

WDAF, Kansas City, Mo. (365.6), 6-7 p. m., book talks, Louis Mecker; Tell-Me-a-Story Lady; Trianon ensemble; 11:45-1, Merry Old Chief; Plantation players; Eddie Kuhn's Kansas City Athletic club orchestra; Johnnie Campbell's Kansas City club orchestra.

WEBH, Chicago, Ill. (370.2), 7-8 p. m., Oriole orchestra; Robert York, tenor; Riviera theater; 9-10, Oriole orchestra; Belle Forbes Cutter, soprano; saxophone quintet; John Stamford, tenor; 11-12, Oriole orchestra; John Stamford, tenor; Belle Forbes Cutter, soprano.

WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Lone Star Five's orchestra; 8:30-9:30, East Dallas Christian church; 11-12, Edward Cranor, violinist; 12-1 a. m., Hunt's Imperial orchestra.

WGN, Chicago, Ill. (370.2), 6 p. m., organ recital, Lyon & Healy; 6:30-7, Drake concert ensemble, Blackstone string quintet; 8-9, classical program; 10-11, Drake hotel dance orchestra.

Fitzpatrick, director; 6:30-7:30, little stories of American history, Prof. Walter Sylvester Hertzog; Mabel Hunt, readings; Uncle John; 7:45, "Care of Body." Dr. Philip M. Lovell; 8-10, program, Institute of Musical Art; 10-11, Art Hickman's Biltmore hotel dance orchestra, Earl Burtnett, leader.

KNX, Hollywood, Calif. (336.9), 5:45-6:15 p. m., Wurlitzer pipe organ studio; sports talk, Sid Ziff; 6:30-7:30, program, Los Angeles County Association of Optometrists, Zieglar's orchestra; 7:30, business talk, J. R. Douglas of Security bank; 8-9, KNX feature program; 9-10, program, the May company; 10-11, Abe Lyman's Cocoanut Grove dance orchestra from Ambassador hotel; 11-12, campus night by and for students of the University of California, Southern branch.

KPD, San Francisco, Calif. (429.5), 7-7:30 p. m., Rudy Seiger's Fairmont hotel orchestra; 8-10, program, Dean Gross, baritone.

Friday, April 10

Friday, silent night for: CHNC, CHIC, CKAC, KFKU, KFKX, KFMQ, KGD, KLX, WBBR, WBZ, WCBD, WEAO, WEBW, WFI, WGST, WHAZ, WIP, WKAQ, WLBL, WLW, WMAK, WDAI, WDI, WSAC, WSUI.

soprano; 9:45, Pauline Taylor trio; 10, Albert D. Edward, baritone; 10:15, Pauline Taylor trio; 10:30, Maria de Pesa recital.

WCAE, Pittsburgh, Pa. (461.3), 6:30 p. m., dinner concert, William Penn hotel; 8:30, artists, Madame Lelia Wilson-Smith.

WCAU, Philadelphia, Pa. (278), 6:30, Charles Verna's orchestra; 7:40, recital; 8:15, Checker-Berry orchestra; 9, Bonwit-Teller orchestra; 10:30, Paul Specht's orchestra.

WCX, Detroit, Mich. (516.9), 4:15 p. m., musical program, 6, dinner concert, Book-Cadillac hotel; 8:30, musical program; 10, dance music, Arcadia.

WDWF, Providence, R. I. (440.9), 8 p. m., lectures and talks of interest, Faculty of Brown university.

WEAF, New York, N. Y. (491.5), 4-5 p. m., WEAF ensemble; 6-7, dinner music from Waldorf-Astoria hotel; 7-7:20, Mischa Goodman, violinsit; 7:30-7:45, children's stories; 8-8:30, Happiness Candy boys; 8:30-9, Merry Music makers; 9-9:30, Sterlins Piano duo.

WEAR, Cleveland, Ohio (389.4), 7-11 p. m., studio program.

WEBJ, New York, N. Y. (233), 7-7:15 p. m., Kell Harmonica band; 7:30-7:45, Ada Weingartner, soprano; 7:45-8, Zanna Hansen, pianist; 8-8:15, Sara V. Turits, soprano; 8:30-9, McLemns dance orchestra.

WEEI, Boston, Mass. (475.9), 6:30 p. m., Big Brother club; 7:15, musicale; 7:30, A. E. Richardson; 8,

Vail, violinist; 7, Harry Richman and his entertainers; 7:30, Club Moritz revue; 9:30, Dan Gregory and his Crystal Palace orchestra; 10, Jimmy Clarke and his Whiteway entertainers; 10:25, "Storage Batteries," H. B. Shontz; 10:30, Roseland dance orchestra; 11:30, Club Alabam orchestra; 12-12:30 a. m., Parody club revue.

WJAR, Providence, R. I. (305.9), 8 p. m., studio program; 9, Astor Coffee orchestra; 11, Providence Biltmore hotel orchestra.

WJZ, New York, N. Y. (454.3), 7 p. m., Hotel Commodore dinner orchestra; 9:45, Symphonic string quartet.

WLIT, Philadelphia, Pa. (394.5), 7:30 p. m., Dream Daddy's bedtime stories.

WNYC, New York, N. Y. (526), 7-7:30 p. m., dance program; 7:35-8, resume of meeting of Board of Estimate; 8-9, studio features; 9-10, hour of German music; 10:10-10:20, "Books That Everyone Should Know," Professor Carter Troop.

WDO, Philadelphia, Pa. (508.2), 4:45 p. m., organ recital, Mary E. Vogt; 7:30, A. Cnndelori's concert orchestra; 9, WOO concert orchestra, Robert E. Golden, director; 10:03, organ recital, Mary E. Vogt.

WDR, Newark, N. J. (405.2), 6:15 p. m., Hotel Lorraine orchestra; 6:30, man in the moon stories; 7, Hotel Lorraine orchestra.

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Friday, April 10

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WRC, Washington, D. C. (468.5), 4:10 p. m., Eleanor Glynn, pianist; 4:20, "Beauty and Personality," Elsie Pierce; 4:30, tea music, Meyer Davis' New Willard hotel trio; 6, children's hour, Peggy Albion.

WSAC, Clemson College, S. C. (336.9), 7 p. m., music memory contest, Prof. Bourland.

WWJ, Detroit, Mich. (352.7), 6 p. m., dinner concert; 8, Detroit News orchestra; 9, Jenn Goldkette's Victor Recording orchestra.

Central Time Stations

KFAB, Lincoln, Nebr. (240), 7:30-9:30 p. m., Lenhart orchestra.

KFOM, Beaumont, Texas (315.6), 8 p. m., Refinery band.

KFNF, Shenandoah, Iowa (266), 6:30 p. m., concert from Riverton, Rev. Harry Richmond, director; 8:30, concert from Hepburn, Mrs. Forrest Lee, director.

KFRU, Bristow, Okla. (394.5), 11-1 a. m., Brown Derby club meetings.

KFUO, St. Louis, Mo. (545.1), 9:15 p. m., "Christ Died for Our Sins," Dean Friiz.

KSD, St. Louis, Mo. (545.1), 12 m., "Tre Ore" service, St. Francis Xavier church; 7:45 p. m., "Seven Last Words of Jesus," Christ Church cathedral; Arthur Davis, organist.

KTHS, Hot Springs National Park, Ark. (374.8), 8:30-9 p. m., Charles L. Fischer orchestra; Tubby Vell, Doug Johnston, Burton Fischer; 9-10, Meyer Davis-New Arlington hotel orchestra; 10-11, Ray Mullin's Jack O'Lantern tea room orchestra.

WBAP, Fort Worth, Tex. (475.9), 7:30-8:30 p. m., Venus string band; 9:30-10:45, Wagner's Hawaiian trio; Fred and his "Talking Guitar."

WCCO, Minneapolis-St. Paul, Minn. (416.4), 6:15 p. m., Minneapolis Athletic club orchestra; 7:30, "Auto Comping," R. B. Anderson; 7:45, health talk; 8, Minneapolis-St. Cloud high school, debate; 9, "F. & R. Family;" 10, "The Seven Last Words," choir of Peoples church.

WCEE, Elgin, Ill. (275), 7-8 p. m., WTAS orchestra; 10:30-12, WTAS orchestra; Frank Morris, Eddie and Fanny Cavanaugh.

WOAF, Kansas City, Mo. (365.6), 6-7 p. m., speaker, Kansas City children's bureau; Trianon ensemble; 11:15-1, Merry Old Chief, Plantation players.

WEBH, Chicago, Ill. (370.2), 7-8 p. m., Oriole orchestra; Cambridge Sisters; violin trio; Riviera theater; 9-10, Oriole orchestra; Frederick Agard, tenor; Rita McFawn, soprano; 11-12, Oriole orchestra; Frederic Agard, tenor; Frank Papile, accordionist; Sandy Meek, tenor.

WEMC, Berrien Springs, Mich. (286), 9 p. m., Radio Lighthouse mixed quartet; 9:25, Thelma Abel, soprano; Nelva Mundt, contralto; 9:10, Bible chat, Wm. Lake.

WFAA, Dallas, Texas (475.9), 6:30-7:30 p. m., Paul Oretlen and his banjo quintet; 8:30-9:30, Treble and Bass Clef clubs, Mrs. Rosser Thomas, director.

WGN, Chicago, Ill. (370.2), 6 p. m., organ recital, Lyon & Healy; 6:30-7, Drake concert ensemble, Blackstone string quintet; 8-9, classical concert; 10-11, Drake hotel dance orchestra.

WHAS, Louisville, Ky. (399.8), 7:30-9 p. m., concert, auspices Louisville and Jefferson County Children's home glee club and orchestra; address, George Colvin.

WHO, Des Moines, Iowa (526), 7:30-9 p. m., artists, American Academy of Fine Arts; Williamson Brothers; Maynard Ray Tournier, tenor; Helen Birmingham, accompanist; Audrey Kramtz, violinist; Mr. and Mrs. Harry Kimball, tenor and contralto.

WJAO, Waco, Texas (352.7), 8:30-10 p. m., program, Alma Rosengren, director.

WJJO, Mooseheart, Ill. (302.8), 6:30-7:15 p. m., Albert F. Brown, organist; 7:45-8, Mooseheart children; 10:30-1 a. m., Garod studio, Charley Straight and his orchestra.

WLS Chicago, Ill. (344.6), 6:30 p. m., Ralph Emerson, organist; 7, lullaby time, Ford and Glenn; 7:20, Good Friday program; 8, R. F. D. program; 9-10, Radio drama; 9:30, Glenn's Cornhuskers; 10, Senate Symphony orchestra; 10:10, Leon Jones, tenor; 10:30, Glenn's Cornhuskers; 10:40, Ford and Glenn minstrels.

WLW, Cincinnati, Ohio (422.3), 12:15 p. m., dance program, Ahaus Brunswick orchestra.

WMAQ, Chicago, Ill. (447.5), 6 p. m., organ recital, Chicago theater; 6:30, Hotel LaSalle orchestra; 6:50, Family Altar league; 8, weekly wide-awake club, Mrs. Frances M. Ford; 8:30, musical geography, Mr. and Mrs. Marx E. Oberndorfer; 9, to be announced; 9:15, Easter music, choir Jackson Boulevard Christian church.

WMC, Memphis, Tenn. (499.7), 7:30 p. m., Radio talk; 8:30, Britting's Novelty orchestra; 11, midnight frolic.

WOAW, Omaha, Nebr. (526), 6 p. m., story hour, Doris Claire Secord; 6:20, to be announced; 7:15, current sport events, Ivan L. Gaddis; 9, Good Friday program.

WOC, Davenport, Ia. (483.6), 6:30 p. m., bedtime stories, Val McLaughlin; 8, Moose band.

WORD, Batavia, Ill. (275), 8-10 p. m., Bergey School of Opera.

WQJ, Chicago, Ill. (447.5), 7-8 p. m., Rainbo Garden orchestra; Everett G. Mitchell, baritone; Otis Pike Jester, soprano; Mary Thrash House, pianist; Henrietta Nolan, violinist; 10-1, Rainbo Skylarks; West Brothers; Zeigler Sisters; Lauretta Gilles; Nate Caldwell, pianologuist; Larry Brundage, Harry Kraemer; 1-2, Hotsy Totsy hour.

WRBC, Valparaiso, Ind. (278), 7:30 p. m., "The Crucified Redeemer."

WSB, Atlanta, Ga. (428.3), 5-6 p. m., Carolyn Hinkle Tison, Virginia Girl; 8-9, Training school for girls program; 10:45, entertainment.

WTAS, Elgin, Ill. (302.8), 8-10:30 p. m., WTAS orchestra.

Mountain Time Stations

CNRE, Edmonton, Can. (516.9), 8-10:30 p. m., All Saints Pro-Cathedral; Vernon Hartford, organist.

KOA, Denver, Colo. (322.4), 8 p. m., Fred Schmid and his Rialto theater orchestra; 8:10, Olinger Highlander Boys band.

KOB, State College, N. M. (348.6), 7:30-8:30 p. m., popular science course, Dr. D. S. Robbins; "From the Stone Axe to the Band Saw," D. M. Lang.

Pacific Time Stations

KFAE, Pullman, Wash. (348.6), 7:30-9 p. m., Prof. Heber Nasmyth, baritone; Mrs. Louise Nasmyth, pianist; Janet Rae, Scotch singer; Natalie Balakshin, pianist; College Y. M. C. A.; book chat, Alice Lindsey Webb; "Bee Work During Fruit Bloom," B. A. Slocum; "Importance of Legume Inoculation," Dr. S. C. Vandecareye; "Purebred Sires," Prof. R. T. Smith.

KFI, Los Angeles, Calif. (468.5), 5-5:30 p. m., Evening Herald, table talk, news; 5:30-6, Examiner's musical half hour; 6:15-7, Radiorial talk; 7-8, Examiner presenting Carl Meyer's dance orchestra; 8-11, program, Beverly Hills Shrine club Radio contest.

KFOA, Seattle, Wash. (454.3), 6:45-8:15 p. m., Sherman, Clay & company; 8:30-10, Plymouth Congregational church chorus; 10-11, Eddie Harkness and his orchestra.

KFWB, Hollywood, Calif. (252), 7-7:30 p. m., string orchestra; 7:30-8, popular songs; 8-9, classic instrumental trio; 9-10, KFWB Hollywood dance orchestra; 10-11, Harry Seymour's hour; 11-1 a. m., Brandstatter's Hollywood Montmarte cafe dance orchestra, Mel Pedesky, leader.

KGW, Portland, Ore. (491.5), 6 p. m., dinner concert; 8, lecture, University of Oregon extension division; 10:30, Hoot Owls.

KHJ, Los Angeles, Calif. (405.2), 6-6:30 p. m., Art Hickman's Biltmore hotel concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, little stories American history, Prof. Walter Sylvester Hertzog; Richard Headrick, screenland starlet; Uncle John; 7:30, program, A. T. & S. F. Railway, Gladys DeWitt, "The Santa Fe Trail;" 8-10, program, John Wright, the right tailor, arranged by Uncle John; 10-11, Art Hickman's Biltmore hotel dance orchestra, Earl Burtnett, leader.

KLX, Oakland, Calif. (508.2), 6-7 p. m., organ recital; 7:45-9:45, studio program; 9:45-10:30, Sweet's Ballroom.

KNX, Hollywood, Calif. (336.9), 5:45-6:15 p. m., Wurlitzer pipe organ studio; sports talks, Sid Ziff; 6:15-7:30, program, Beverly Ridge company; 7:30-8, program, Eastern Outfitting company; 8-9, program, West Coast theaters, Inc.; 9-10, the Royal Order of Doughnuts, Davis Perfection Bread company; 10-11, KNX feature program; 11-12, Abe Lyman's Cocoanut Grove dance orchestra from Ambassador hotel; 12-2 a. m., Wurlitzer Nighthawks from the Wurlitzer studio.

KPO, San Francisco, Calif. (429.5), 8-10 p. m., oratorio "Seven Last Words of Christ," R. C. Brown.

Index to Talks, Lectures and Addresses

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

Eastern Time Stations

Saturday, April 4: 7:15, WBZ; 7:30, WEAF; WHN; 7:45, KDKA; 8, WCAE, WJY, WNYC, WOR, WRC; 8:15, KDKA, WBBR, WIP; 8:30, WBZ; 9, WHN; 9:15, WRC; 9:30, WGBS; 10:10, WNYC.

Monday, April 6: 7:30, WHN; 7:35, WNYC; 8, WCAE, WHN, WJZ; 8:15, KDKA, WNYC; 8:25, WJZ; 8:45, WEEI; 10:10, WNYC.

Tuesday, April 7: 6:20, WGY; 7, WJZ; 7:30, WGY, WHN; 7:45, KDKA; 8, WEAF, WJZ; 8:15, WJY; 8:45, WNYC; 9:15, WCAU; 10, WGY, WJZ; 10:05, WIP; 10:10, WNYC.

Wednesday, April 8: 8, WCAU, WJZ, WNYC, WSAC; 8:15, KDKA; 8:30, WNYC; 9:30, WJZ; 10:10, WCAU; 10:30, WGR.

Thursday, April 9: 7:30, WGY, WHN; 7:40, WEAF; 7:45, WEEI; 7:55, WJZ; 8, WIP; 8:55, WCAU; 9:15, WGBS; 10, WCAU, WJY; 10:25, WHN.

Friday, April 10: 8, WDWF, WJZ; 8:15, KDKA; 10:10, WNYC.

Central Time Stations

Saturday, April 4: 6, WDAF, WOAW; 6:50, WOC; 7:30, WOAW; 8, WCCO; 8:30, WMAQ; 9:05, KYW.

Sunday, April 5: 6, WOAW; 6:30, WORD; 7:30, WORD; 8, WOC; 9, WEMC; 9:15, KFUO.

Monday, April 6: 6, WCCO, WDAF; 6:20, WMAQ; 7, WHB; 7:15, KSAC; 7:20, WJJD; 7:30, KFKU, WMC, WSUI; 8, WCCO, WDAF, WSUI; 8:15, WCCO; 9:15, KFUO.

Tuesday, April 7: 6, WDAF, WOAW; 7, WHB; 7:30, WCCO, WMC; 7:33, KYW; 8, WMAQ; 8:20, WMAQ; 9:15, KFUO; 11:05, KYW.

Wednesday, April 8: 6, WDAF; 6:50, WOC; 7:30, WSUI; 8, WMAQ, WSUI; 8:30, KYW, WHAS; 9, WEBH, WEMC; 9:15, KFUO.

Thursday, April 9: 6, WDAF; 6:45, WLW; 7, WGST; 7:30, KFMQ, WMC; 7:33, KYW; 8, KYW, WMAQ; 8:50, WMAQ; 9:15, KFUO.

Friday, April 10: 6, WDAF; 6:50, WOC; 7:30, KFKU, WCCO, WMC; 7:45, WCCO; 8, WCCO, WMAQ, WORD; 9:15, KFUO; 9:40, WEMC.

Mountain Time Stations

Monday, April 6: 7:30, KOB.

Wednesday, April 7: 7:30, KOB; 8:10, KOA.

Friday, April 10: 6:40, KOA; 7:30, KOB.

Pacific Time Stations

Saturday, April 4: 6:30, KHJ, KPO; 6:45, KFI; 7:45, KFI.

Sunday, April 5: 6:30, KPO; 6:45, KFI.

Monday, April 6: 6:45, KFI; 8, KGO, KLX.

Tuesday, April 7: 6:30, KHJ; 6:45, KFI; 7:30, KHJ, KNX; 7:40, KNX; 8, KGW.

Wednesday, April 8: 6:30, KHJ; 6:45, KFI; 7, KFI.

Thursday, April 9: 6:30, KHJ, KPO; 6:45, KFI; 7:15, KGO; 7:30, KNX; 7:45, KHJ.

Friday, April 10: 6:30, KHJ; 6:45, KFI; 8, KGW.

The Reader's View

Clarifying the Air

Anent the matter of clarifying signals and substitution of the British plan of words arbitrarily adopted may I make a suggestion?

It is of more importance for the listener to get quickly the city than it is the call letters. The 68 K's and W's have a strong similarity, but the names of cities have but little. Besides there are but few cities that have more than one station, and as soon as you hear the city you are prepared for the letters. Thus WEAY, WEAI, WDAY are confusing; but Houston station, WEAY; Fargo, WDAY, of Ithaca, WEAI are clear. In the cases of a few the state must be added; as Springfield, Massachusetts, and Springfield, Illinois; but there is only one Los Angeles, one Fargo, one Houston and if you lose the letters no harm is done.

In the large cities, as Chicago—possibly Edgewater Beach hotel—or Sears—San Francisco, General Electric, KGO, etc., might do. Spelling out a set of arbitrary words seems to me useless. Approach this matter from the standpoint of the listener and not that of the announcer and you will see a big difference.

May I make another suggestion while I am at it? In case of long services, as sermons or speeches why cannot the announcer break in long enough to tell who he is and not wait until the close? Possibly the listener has come in "late" or may not have heard clearly the opening station call. The loss of a phrase of the speech or of a piece of music is not of as much importance as the satisfaction of knowing the station.

Still again, it would help the listener very much if the announcer would give at the end a repetition of the personnel as at the beginning, because the listener may have come in late or may not have been so alive to the personnel as he is after hearing the performance. This is done by some, and is very gratifying.

Still again, it is not at all uncommon for an announcer to lower his voice at the close of a piece and we lose entirely the location, though the music has come through well. We have frequently had to go through several pieces before getting the location at all. I suppose the announcer becomes so familiar with his friend Mike as to get careless.

You will think me very critical, but we do enjoy the Radio so much that we want to get it all.

Do not forget that all fans do not log stations, but feel for them; and the city name is all he needs to know.

Very respectfully yours,

Olympia, Washington. J. M. Hill.

House Wiring and Antenna

There has been an enormous amount of Radio literature published, but the great drawback has been to locate the specific information wanted. Therefore I wish to express my appreciation for your accurate station listing, and especially for the two articles in a recent issue (Neutrodyne Trouble Shooting and Matching Tubes).

Others and myself, here, have had neutrodyne and tube troubles, and with a fairly large "fan" and dealer acquaintance I have been unable to find anyone familiar with these two subjects.

Personally, by the "cut and try" method, I have eliminated internal and extraneous noises to a quite satisfactory extent.

The proposition finally tapered to disagreeable noises with the antenna connected, but none when disconnected. Naturally I decided the remainder of my troubles to be a form of outdoor interference. However, as the last test possible to make, I opened the house main switch, located about 15 feet from the receiver, and the result was a delightful surprise. Since the receiver was quiet with antenna disconnected, the explanation seems to be that this interference was picked up through interaction between the house wiring and antenna, which parallel for 16 feet to outer wall.

After carefully tightening all connections on the main and branch terminals I placed a test load on the switch using the lamps and tester coils. The lower end of main switch blades were connected to the switch block terminals by rivets, and at a certain load the current arched as the rivets had worn loose, causing a loud coarse buzz or zipp in speaker though not noticeable to the eye.—A. K. Klingbeil.

Four Filter Eight Tube Super-Heterodyne

Part V—Wiring With Push Pull Amplification

By Jacques Fournier

THE assembly having been completed from Parts III and IV, we are now ready to begin the wiring. Figure 15 is presented to show all wiring which appears above the sub base, while figure 16 shows the wiring below the sub base. If these two drawings are used in conjunction with the schematic diagram shown as figure 2 in Part I, no difficulty should be encountered. It will be found a good plan to put in the filament wiring first and it is suggested that the positive filament bus be the first wire. In figure 16 this wire runs from hole 3 to hole 25, with short wires branching from it at holes 5, 8, 10, 12 and 16, with a wire leading up to hole 21. This bus is to be connected to the filament switch and the other side of the filament switch connects to the second binding post from the right, looking at the set from the bottom, as shown in figure 16. At the same time a short lead can be put in connecting the positive filament binding post to the minus B binding post.

Negative Filament Leads

The negative filament leads can now be put in by connecting a wire from the right hand binding post to the rheostat and another wire from the rheostat down to hole 26, across to 15, then to 11, 9, 7, 4 and 2, with a branch connecting to hole 20. These wires should be insulated with spaghetti tubing to avoid short circuits with high voltage leads which will be put in later.

The next two wires are the longest in the receiver; one of them runs from hole 1 to hole 23, while the other one connects the two-circuit jack at the left end of the base with hole 24. The oscillator coil is mounted with the pickup coil at the bottom, and the second of the two long leads just mentioned passes up through hole 24 and connects to the end of the pickup coil toward the bottom of that coil. The other long wire which passes up through hole 23 connects to the upper end of the pickup coil.

Filter Box Connections

Considering the upper side of the receiver it will be found convenient to connect the first grid leak and grid condenser to the G terminal of the first detector tube, which is at the left of the sub base behind the antenna coupler. Then connect the P terminal of that socket to the first

(Continued on page 18)

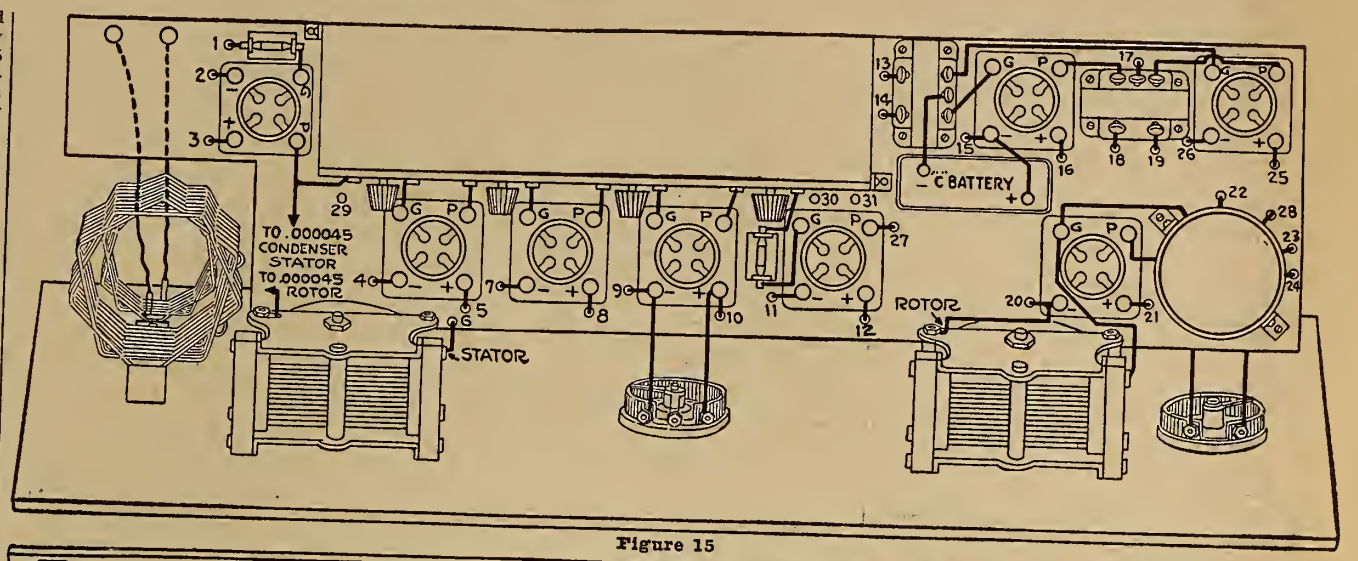

Figure 15

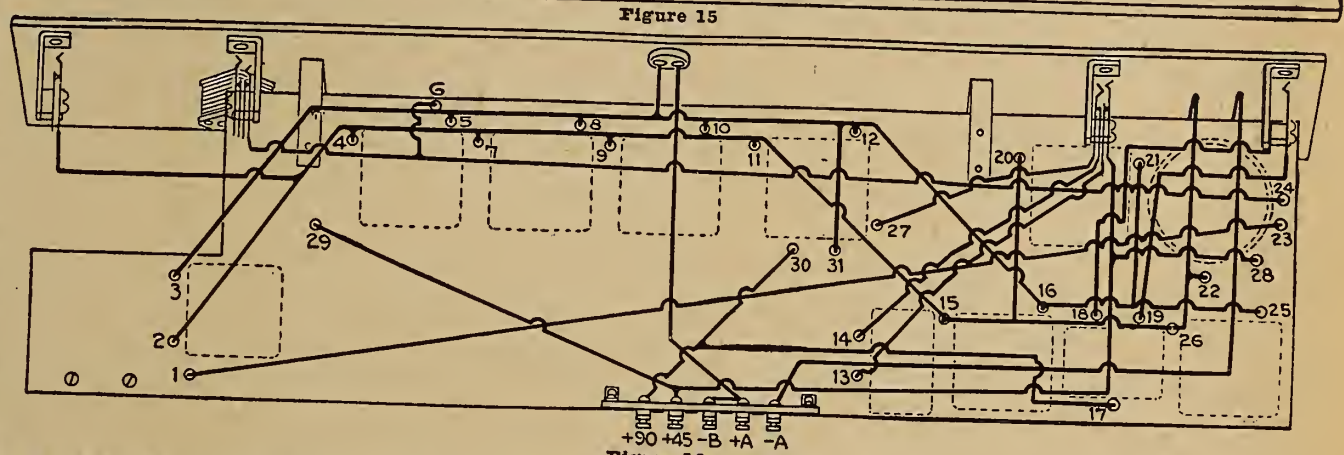

Figure 16

Radio Digest
PROGRAMS
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Automatons for Announcers?

SHORTLY after the inauguration ceremonies, some twenty-minute, cold-storage "egg" wrote to one of the newspapers severely criticizing Graham McNamee who did the announcing from Washington. This person indicated that his ideal of announcers would be one with about as much expression in his voice as on old-fashioned phonograph record. He criticized the announcer's pronunciation, his comment on the proceedings, and his conduct in general.

In the following issue of the paper, which was the Buffalo Evening News, there was a splendid editorial on the subject of announcers. Whether it was designed as an answer to the correspondent does not appear and really does not matter. Anyhow it should effectively answer him and other persons whose ideal in announcers is the machine type. It is called "Robots for Announcers." It may be significant to add that Marc A. Rose, the managing editor of the Buffalo Evening News, is a confirmed Radiophan.

The editorial follows:

"It was perhaps inevitable that a movement would be put under way to standardize the Radio announcer, the distant voice that presides as chairman, or toastmaster, over our broadcastings—which is to say, our aerial entertainment. This is the day of the standardized product, the day of the dead level. So certain persons in the Radio industry come forward with plans and specifications for the announcer. To begin with, he must have a voice of 'low middle range' and be of 'formal but friendly' manner.

"Radiophans would hardly endorse the idea of making automatons of these rulers of the air. The listener in likes in announcers a spice of personality, both of voice and manner. Granted they make themselves easily understood, the fan does not care whether they do their announcing in treble, tenor, baritone or bass. As to the manner of the announcer, let it be what it will, so long as there is individuality to it. A certain few of these who furnish prologue, interlude and epilogue for Radio programs have this quality in marked degree. One looks eagerly to hearing them because they add zest to the entertainment. The fans would keenly resent any attempt to reduce these friends of theirs to a dead level—they would not tolerate robots as announcers."

So ends the dissertation of the editorial writer in the Buffalo newspaper. He is entirely right and has the endorsement of Radio Digest. That is why this publication last year inaugurated its annual Gold Cup Award contest, wherein the people's choice for most popular announcer is awarded a priceless solid gold cup.

The Gold Cup Award is for the building of Radio personality and individuality in announcers. Register your vote for the man possessing the qualities which please you the most and you will find him far from a lifeless automaton.

Scientifically you can specify exactly what might be considered a "perfect" announcer—but you can't make the Radiophans like the product answering such specifications.

People are peculiar—especially Americans—in this regard. They know what they like, but more than likely cannot, or will not, say why or give the reasons. And you cannot "Bertillon" personality.

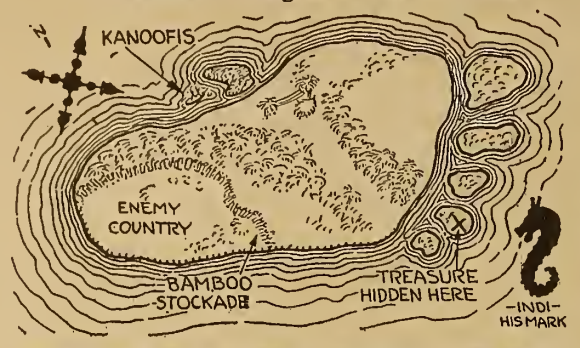
At any rate the second annual Radio Digest Gold Cup Award, which was launched last issue, will afford listeners in an excellent opportunity of telling the world what they like, and, incidentally, squelching the announcer standardization movement.

Luxury for Everybody

WHEN the automobile business started the price of a car was far beyond the reach of the average person. Radio is much different for if you do not have the price of a manufactured set you can build one to suit your needs and funds available. Radio has started at the other end of the scale. It began as an average boy's toy and is ending up as a rich man's luxury as well as a poor man's delight.

RADIO INDI-GEST

Consternation Reigns in Walla Walla



Eagle's-Eye View of Walla Walla—If They Had Any Eagles

WALLA WALLA (Special via Radio).—Mike and Izzy, the two trained chimpanzee antenna raisers, have been kidnapped. A rumor has been circulated around that they have been bribed to work for another station being erected by a hostile tribe living on the same island.

Both these boys are great favorites with the natives of the island and are very intelligent. In fact, they were fired from the Bronx zoo on the same day, less than three feet apart—(we don't know what this proves, but it is a fact nevertheless).

Always willing to work and oblige a person (if you stood over them with a club), they will be sadly missed. Indi claims that he won't miss them with his 30-30 if he sees them first.

The crowd wouldn't mind it so very much, but it happened at a time when the station was about to begin operation. Now we will have to wait until next week for the opening. However, here's a little info that may come in handy to anyone trying to tune to this famous station—BLAH.

The wave length will be 365 2/3 meters (a meter a day—gas or electric, we don't care. The extra two-thirds is for commission). You can only receive this station if you use DUD tubes. Now, we could tell you where to get these tubes, but just to prove that we know the readers of this paper have initiative of their own, we are going to let them figure out for themselves where they can be obtained. ('At's us, big hearted alla time.)

Shaka Little, the chief's daughter, will be one of the headliners. She will oscillate at a very high frequency; this was proven during a test. If your tubes aren't Duds, they will be when you get through receiving this program.

He Makes 'Em to Order

A piece of board—some copper wire—
A twisting dial—an old, worn tire—
And I can make you-all a set
That will get Mars—or you can get
Your friends in Heaven—Yes, or Hell—
And sit and hear those old friends tell
How cool it is—or just how hot!
And what they drink there for a "shot"!
Ninety dollars gets a set
That reaches 'em—and you can bet
That most of those that I now sell
Are made to reach (not Heaven) but Hell!
Send your order and your check
And I will make her up, by heck!

GEO. A. WRIGHT.

Here's the Words, Get the Air Outside

Dear Indi: An announcer heard the other evening from a small station in Iowa:

"The next thing on the program will be a fiddling trio, well it isn't exactly a fiddling trio, it's a fiddle, a banjo and a piano."

Also: "We got the words for that song, but we ain't got the music."

ADELE B.

My Radio, 'Tis of Thee

My Radio 'tis of thee
Music of air so free,
Of thee I sing.
The trusts for long hath tried
To harness thee, my pride.
Hark! Hear from every side,
Let freedom ring.

My Radio 'tis by thee
Great things to come I see
Thy name I love.
I love thy shocks and thrills
Although it runs up bills;
My wanderings it stills,
Thou art a dove.

Thy music swells the breeze,
It girdles land and seas
With free air song.
Let every fan awake
And of the fight partake,
The trusts designs to break,
Forever on.

Of old our fathers fought,
Liberty was dearly bought;
Lest we forget.
Quit you like men, be strong,
Buckle your armour on.
What if the fight be long,
We'll bust 'em yet.

JAMES E. PEPPERALL.

Put Lard in Your Set and You'll Get Greece

Q: I get England, Germany and France, could you please tell me why I can't get Italy.

A. Put a little spaghetti on your lead-in, and I think you'll get it.

N. O. A. LOT.

News Events of the Week

Condensed

By DIELECTRIC

WMH, in Cincinnati, should be listed among those stations exercising care in the choice of program features. The Habanera song was spiritedly sung from this station and on the same program appeared a very competent stringed quartet. We are coming back for more.

WEAF is not to blame for the unpopular "popular" Victor concert, of course, and it is not to them that these remarks are directed. The Victor company is justly looked to for superior musical performances of a high order, not presenting artists whose work could be surpassed with ease by a dozen or more contemporaries. Radio audiences expect to learn of classical music and concert artists comparatively unheard.

One of the most grandiose musical compositions on record is the triumphal march music in the opera of Aida. Always interesting, always inspiring, this number seemed to take an new life the evening I listened to the Little Symphony orchestra of KDKA, Pittsburgh, play it. That orchestra is maintaining its high standards, fortunately.

Most folks listening to dance music have some preference as to numbers, even though so much of the modern syncopation is distinguishable merely in name. To any of you entertaining a special liking for "That's My Girl," I would commend KFI, for nowhere else is it played as in the Pacific coast city of Los Angeles—at least for Radio listeners.

During a short visit to Jefferson City, Missouri, WOS had the adventures of "Hugo" presented to us and it's a pathetic story. One of those multitudious "request" numbers followed. Mr. Chappel sang "Because" in French. If you don't know why in English, try this!

One of the surprise programs run across once in a while came through Station WHAZ, Troy, N. Y. There we heard the Rensselaer Polytechnic Institute glee club and orchestra in an excellent program of choice selections. Here was a perfectly enjoyable concert from beginning to end, and one not anticipated that evening. Tune to them.

Miami Beach, Station WMBF, hasn't disappointed us as yet with the features presented or manner of announcing. They are fortunate to have the Rosebrook Serenaders on the list of performers. It's a good aggregation and possesses a skilled saxophonist. Listen for him.

From the studio of WEBH, Chicago, there came the pleasing violin concert rendered by Victor Young, a member of the Oriole orchestra. Everybody knows a violin can make dangerous the most placid listener, or quite a nervous dyspeptic—all in the manner of playing, so I hasten to add that Mr. Young must have brought delight to all listeners.

Regardless to what orchestra or band you may listen there never will be an exact duplicate of the United States Marine band. Once in a while the selections chosen are without special interest to you, but surely no one fails to find enjoyment in the Marine band selection, "The Walls of Montezuma." WCAP, Washington, deserves thanks.

A. B. C. Course in Radio Fundamentals

Chapter II—The Electrical Circuit

By David Penn Moreton

THE path in which electricity moves is called the electrical circuit, and it is necessary to have a clear understanding of the fundamental properties of electrical circuits and the various quantities associated with them in order to get a clear understanding of the operation of the many different electrical circuits found in a Radio set. The electrical circuits found in a Radio are of numerous forms, but they all possess, to a very great degree, the same general properties and involve the same quantities. For example, the filament circuit of an ordinary vacuum tube, as shown in figure 4. This circuit is quite typical of all electrical circuits. It contains a source of electrical energy—the storage battery—an energy transforming device—the filament where electrical energy is transformed into heat energy; and the necessary connecting wires. It must be remembered at all times that the electrical circuit is closed on itself and like the circumference of a circle, it has no beginning nor end.

When there is a movement of electricity

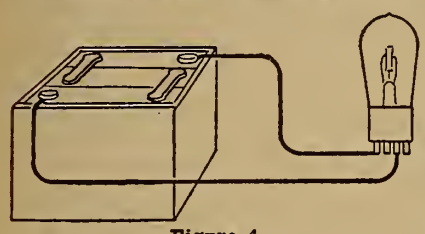


Figure 4

in an electrical circuit, there is said to be a current of electricity in the circuit. The exact nature of electricty is not known, yet the laws governing its action under definite conditions are quite well known, just as the laws of gravitation are known, yet we do not know the constitution of gravity. The laws which explain the operation of the majority of electrical circuits are very similar to the laws which explain the flow of a liquid in a line of pipe or hydraulic circuit. On account of the similarity of the two circuits, and

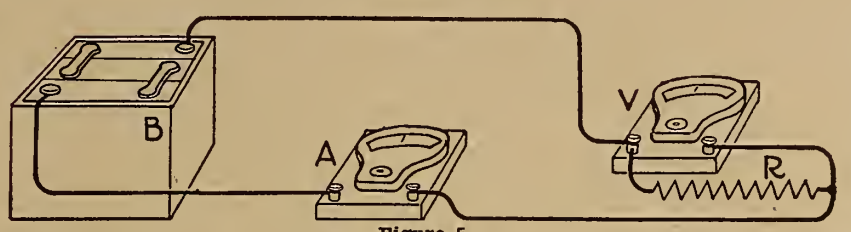


Figure 5

also on account of the laws governing the operation of the ordinary hydraulic circuit being quite obvious, simple hydraulic analogies will be used to illustrate what is supposed to be taking place in the electrical circuit.

Direct Current Flow

When the movement of electricity in the electrical circuit is in one direction there is said to be a direct current in the circuit. Such a current is produced by a battery or direct-current generator. When the movement of electricity is alternately in opposite directions, there is said to be an alternating current in the circuit. The laws governing the alternating current are quite different than the laws for the direct current. The discussion in this chapter will be confined to direct currents and the alternating current and its laws will be discussed later.

According to the electron theory of electricity there is a movement of something in the electrical circuit, yet this movement is not identical to the movement of a liquid in the hydraulic circuit. The electron theory will be discussed later.

The flow of water in a hydraulic circuit is usually expressed as so many gallons per minute, so many cubic feet per second, or any combination of volume and time units. The movement or flow of electricity in an electrical circuit is likewise expressed as so many units of quantity of electricity in a unit of time. The unit of quantity of electricity is called the coulomb. When there is a uniform flow of electricity of one coulomb through an electrical circuit in each second, there is said to be a unit of current of electricity in the circuit. This uniform rate of movement of electricity of one coulomb in each second is called an ampere.

Resistance in Circuits

The movement of a liquid through a pipe is opposed by a certain amount of opposition or resistance. Likewise there is a certain amount of opposition offered by the electrical circuit to the free movement of electricity around the circuit, and this opposition is called the resistance of the circuit and it is measured in a unit called the ohm. The resistance offered by various materials to the passage of electricity through them varies between wide limits. Those materials which offer a relatively low resistance, such as the metals, are called conductors; while those materials which offer a comparatively high resistance, such as glass, rubber, bakelite, porcelain, dry paper, etc., are called insulators. The terms conductor and insulator are only relative, as all materials will conduct to some degree even though they are called insulators.

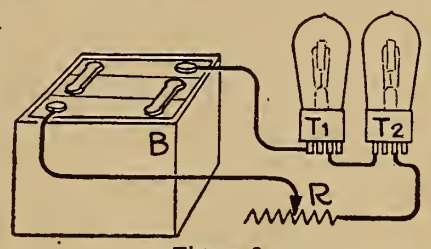


Figure 6

The electrical pressure — sometimes called the electro-motive force, electricity moving force, voltage or drop in potential —causes the electricity to move in the electrical circuit when the circuit is closed. The electrical pressure is measured in a unit called the volt. There are a number of different ways of producing an electrical pressure, but the two most common methods are by chemical action in the battery and by electromagnetic induction in the generator, both of which will be described later.

Many years ago a scientist by the name of Ohm experimentally discovered that there was a definite relation between the resistance of an electrical circuit, the

(Continued on page 20)

FOUR FILTER SUPER

(Continued from page 15)

terminal in the lower row on the filter box, which has been designated P1. The connections shown in figure 15 leading to the filter box all connect to the terminals in the lower row. The connections for the terminals in the upper row are shown in figure 17. In figure 15 it will be noted that there are no wires leading down through holes 29, 30 and 31. References to figure 17 will show the wires that pass down through those holes. Figure 16 shows where these three wires

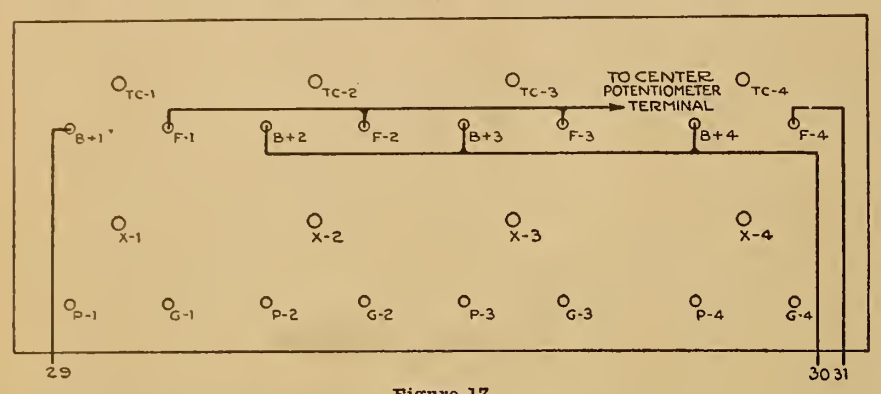


Figure 17

lead below the sub base. The wire from hole 29 runs to the plus 45 binding post, which is the second from the left, and is continued across to the right and then forward to one of the long springs on the double circuit jack, which is in the plate circuit of the second detector tube. It will be noted in figure 16 that a wire is tapped off which passes up through hole 28 to the oscillator coil.

Oscillator Coils

The plate coil is the center of the three coils wound on and this wire leading up through hole 28 connects to the upper end of this plate coil. Figure 2 shows the rotor plates of the oscillator condenser connected to one end of the grid coil and also to the negative filament lead. In figure 15 the rotor plates are connected to the negative filament where it comes up through hole 20 to the negative terminal on the oscillator tube socket. The grid coil is the topmost of the three coils wound on and its lower end is dropped through hole 22 to connect to the negative filament connection as shown in figure 16. The upper end of the grid coil connects to the grid of the oscillator tube as shown in figure 15, and its connection is continued around the circular part of the socket and up to the stator plates of the oscillator condenser C2. The lower end of the plate coil connects by a short wire directly to the P terminal of the oscillator tube socket.

Part of the connections at the left end of the panel and sub base have had to be omitted for clearness, as otherwise there would be too many wires and it would be impossible to follow them. Reference to figure 2 should make this wiring clear and it will be seen that the two ends of the secondary of the antenna coupler connect to the two short springs of the double circuit jack, while the center tap on the secondary of the antenna coupler connects to the single short spring on the closed circuit jack. The rotor plates of the midget condenser of .000045 mfd. capacity, in addition to connecting with the rotor plates of the loop condenser, as indicated in figure 15, also connect with the long spring of the two circuit jack, for which no connection is indicated in figure 16. The wire from the plate of the second detector tube which passes down through hole 27, and is the only wire remaining which carries any Radio frequency current, connects to the remaining long spring of the double circuit jack to the right.

Audio Frequency

With all the Radio frequency leads now in, and presumably placed up close against the under side of the sub base, the audio frequency leads can be put in and so bent that they will be about ½ inch below the sub base, where they are underneath. The input terminals of the first push pull transformer are run down through holes 13 and 14 and connect to the two short springs of the double circuit jack. One of these input terminals is marked P, so be sure that it connects to the short spring which makes contact with the long spring connected to the plate of the second detector tube when no plug is inserted. Next connect the two outer terminals on the output side of this first transformer to the grids of the amplifier tubes as shown in the upper right hand corner of figure 15. The center terminal on this output side connects to negative on the C battery, while the plus side of the C battery is connected to the negative filament circuit at the point where a wire comes up through hole 15.

The two outer terminals on the input side of the second transformer are to be connected to the plates, while the center terminal drops through hole 17 and, as shown in figure 16, connects to the plus 90 binding post beneath the sub base. It will be noted in figure 16 that this wire from the plus 90 binding post also goes up through hole 30 and, as shown in figure 17, connects to B plus 2, B plus 3 and B plus 4. To complete the audio frequency circuit, wires are dropped from the output side of the second transformer through holes 18 and 19, which, as is shown in figure 16, go to the spring and frame of the open circuit jack at the right hand end of the panel. The grid return on the second detector tube is shown in figure 17 as a wire from F4 which is to drop through hole 31 and, as shown in figure 16, connect to the plus filament bus beside hole 12.

The oscillator coil shown in figure 15 is the type wound on a solid tube. If the low loss coil was made, two U-shaped pieces of heavy brass are connected to the ends of the bakelite or hard rubber strip, one at the top and one at the bottom and also to the front panel, so that this coil will be supported in the same position as that shown for the solid tube coil. Since the average rheostat is not more than 1⅛ inch deep this coil will clear the rheostat by at least ½ inch.

Grounding Filter Box

As can be seen in figure 15, the filter box is held in position by two small right angles, one at the rear left hand corner and one at the front right hand corner. The machine screw which holds this right angle at the front right hand corner passes through the sub base and is secured on the underside by a hexagonal nut. The filter box is grounded by connecting this machine screw to the negative filament bus which passes it about ⅛ inch to the right. In addition to being bolted to the filter box, this right angle should also be soldered to it to make a good electrical connection.

The connection between the grid returns of the intermediate transformers and the center binding post of the potentiometer is not shown in figure 15. Figure 17 shows F1, F2 and F3 connected together and this wire is to be bent forward so that it passes just to the left of the third intermediate tube socket which will bring it right in line with the center terminal of the potentiometer to which it is connected.

Fixed condensers, with the exception of grid condensers, have not been shown in any of these diagrams as they would, in place, obstruct the view of the wiring and make it too complicated to follow. Condensers C10 and C11 are two of the .5 mfd. bypass condensers and they may be secured either to the back of the front panel on each side of the potentiometer or may be fastened to the upper or lower side of the sub base close to the potentiometer. The third .5 mfd. bypass condenser is condenser C9 in figure 2. C14 is the .006 mfd. fixed mica condenser, while C8 is the .002 mfd. fixed mica condenser. C14 and C8 can be attached to the wiring on the underside of the baseboard toward the right end of the panel and supported by their connections to the wiring.

The more experienced experimenter will doubtless now be able to adjust and operate the receiver by himself but for those not so familiar with this work the details on adjusting the filters, with instructions for tuning, will be presented next week. A picture layout for the connections, when two stages of audio are used instead of push pull, will also be shown. For those who have not as yet laid out the sub base it should be stated that in figure 11 the distance from the right edge of the sub base to the center of the output audio transformer should be 3¾ inches instead of 4¾ inches as shown in upper right corner.

(The wiring as explained above is identical in every respect with that in Mr. Fournier's own set. The method by which he adjusted the intermediate amplifiers when demonstrating this set to the editors will be presented just as clearly in the next article.—Editor's note.)

Audio Frequency Amplifier Tube Couplings

Combinations Are Often Desirable

By William Alexander

WHEN designing a set the reader has the choice of many different varieties of Radio frequency amplification; as it is done in the Neutrodyne, the Hetduogen, super-heterodyne or tuned Radio frequency. During the past Radio season most of the attention has been paid to Radio frequency amplification, to increase selectivity and gain greater range. Very little space has been devoted in most of the Radio periodicals to amplification of signals after they have passed the rectifying detector and are direct current pulsations.

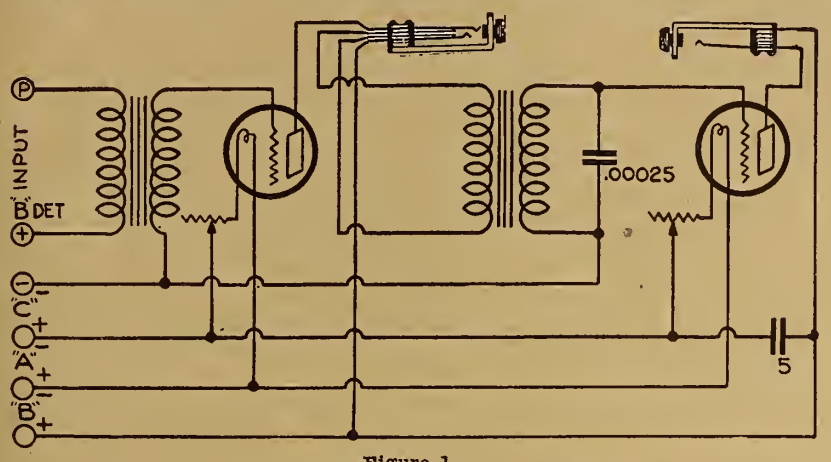


Figure 1

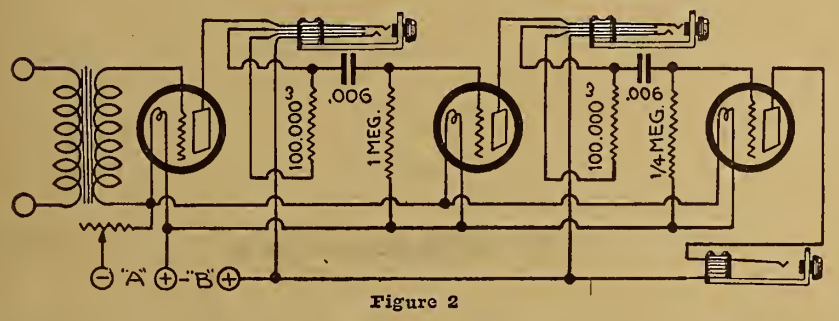


Figure 2

The writer proposes to present several methods of audio frequency amplification and combinations of those methods, as the combination which works well on one set is not always the most efficient on another. The system most commonly used is that of transformer coupling, with resistance coupling rapidly gaining in popularity. Push pull amplification, while a variety of transformer coupling, is used exclusively as the last stage of an audio frequency amplifier and may be used with either of the above mentioned systems.

Signals in the plate circuit of the detector tube consist of direct current pulsations varying in frequency from 16 to about 15,000 per second. If these pulsations are passed into a pair of head receivers they will be clearly heard, but will be comparatively faint. Strengthening of this energy is desirable, so that it will operate a loud speaker, and audio frequency amplification is the means resorted to for raising the strength of the energy sufficiently to operate a speaker.

Transformer Coupling

Taking up transformer coupling first, we find that the chief unit used is the audio frequency transformer. This consists of a core made up of either flat strips of iron or iron wire on which is wound several layers of fine wire, known as the primary, because the energy is put into this winding. The secondary, from which the energy is taken, also consists of many layers of fine wire, the number of turns depending on the ratio desired. This ratio of turns between secondary and primary is usually anywhere from 2 to 1 up to 6 to 1. A steady uni-directional current flows from the B battery, keeping the plate of the detector tube at a constant positive voltage in relation to the filament. Since only the changes or variations in a current are passed by a trans-

(Continued on page 20)

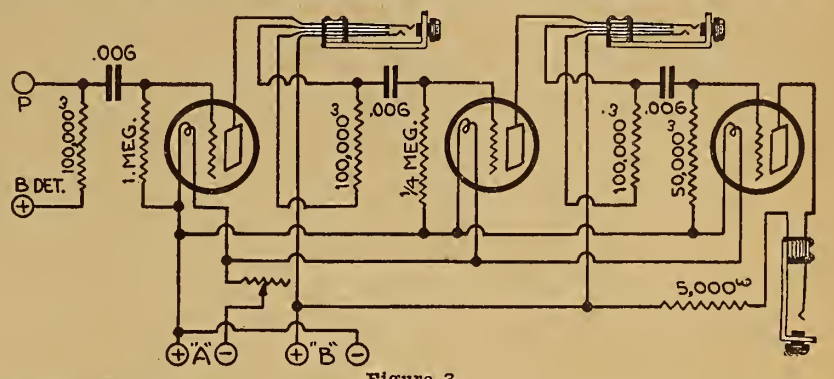


Figure 3

A. B. C. RADIO COURSE

(Continued from page 17)

electrical pressure acting in the circuit and the electric current produced in the circuit when the circuit was closed. His experiments disclosed the facts that, first the electric current increased and decreased with an increase and decrease in the electrical pressure, and second, that there was a decrease in current if there was an increase in resistance and conversely there was an increase in current if there was a decrease in resistance.

The value of the units in which current (the ampere), resistance (the ohm) and electrical pressure (the volt) are measured are so chosen that the current in an electrical circuit in amperes is equal to the electrical pressure in volts divided by the resistance in ohms. This relation may be written as follows:

$$\text{amperes} = \frac{\text{volts}}{\text{ohms}} \quad \text{.....I}$$

The current is usually represented by the symbol I, the electrical pressure by the symbol E and the electrical resistance by the symbol R. The above relation may be written by using these symbols and we have the following:

$$I = \frac{E}{R} \quad \text{.....II}$$

This relation between current, electrical pressure and resistance is known as Ohm's law because, as stated above, it was discovered by Ohm.

The above relation may be written in several forces as follows:

$$\text{Ohms} = \frac{\text{volts}}{\text{amperes}} \quad \text{.....III}$$

$$R = \frac{E}{I} \quad \text{.....IV}$$

and volts = amperes × ohms V

$$E = I \times R \quad \text{.....VI}$$

Ohm's law is perhaps the most important law in the many applications of electricity and a clear understanding of its application to a few fundamental circuits will be useful to the inexperienced.

Instruments to Measure Current

The instrument marked A in figure 5 is called an ammeter because it is used to indicate the value of the current in the circuit in which it is connected. An ammeter is usually of low resistance and its operation depends upon some effect of the electric current such as the heating effect, magnetic effect and chemical effect. The instrument marked V in figure 5 is called a voltmeter because it is used to indicate the difference in electrical pressure between the points on the electrical circuit to which its terminals are connected. A voltmeter has a high resistance as compared to an ammeter and its operation depends upon some effect of the electric current as in the case of the ammeter. A description of the common forms of ammeters and voltmeters will be given in a later chapter.

If the resistance of a certain coil of wire is known to be ½ ohm and this coil is connected to the terminals of a storage battery as shown in figure 5, whose electrical pressure between its terminals is 6 volts, the current produced in the coil can be determined by making use of relation 1 above, namely the current in amperes is equal to the pressure in volts divided by the resistance in ohms.

amperes = 6 divided by ½ = 12

A resistance is usually represented by a symbol such as the one marked R in figure 5. Such a symbol represents what is known as a non-inductive resistance, and an inductive resistance will be explained in a later chapter.

If a storage battery having a pressure of 6 volts between its terminals produces a current of 2 amperes in a coil of wire connected to the terminals, the resistance of the coil can be determined by making use of relation III above, namely, the resistance in ohms is equal to the pressure in volts divided by the current in amperes.

ohms = 6 divided by 2 = 3

If the resistance of a certain circuit is 10 ohms and it is desired to produce a current of 2 amperes in the circuit then the electrical pressure required can be determined by making use of relation V above, namely, the electrical pressure in volts is equal to the current in amperes times the resistance in ohms.

volts = 2 times 10 = 20

The resistance of any conductor depends upon the kind of material composing the conductor, the dimensions of the conductor and also the temperature of the conductor. The resistance offered by a conductor depends upon the nature of the current it is carrying, that is, whether the current is a direct current or an alternating current. The resistance of a conductor to an alternating current is greater than it is to a direct current. The following discussion will be confined to direct current considerations and the alternating current effect will be discussed at a later time.

Conductors of Electricity

Silver is the best conductor but on account of the cost, and lack of supply it is not generally used. Copper offers very little more resistance to the electric current than silver and since it is much cheaper and more plentiful it is generally used. Other metals, such as tungsten, zinc, tin and iron, offer a greater resistance to the electric current than copper does.

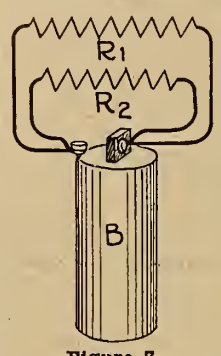


Figure 7

The greater the length of a conductor the greater its resistance and conversely the shorter the conductor the lower its resistance. The resistance of a conductor increases as the area of its cross-section decreases and conversely its resistance decreases as the area of its cross-section increases. Thus a conductor 100 feet long and ⅛ inch in diameter will have one-fourth the resistance of a conductor of the same material and same length but only 1/16 inch in diameter, because the area of the larger conductor is four times as great as the area of smaller conductor.

The resistance of materials changes due to a change in temperature. Some materials experience an increase in resistance with an increase in temperature such as silver, copper, iron, tungsten, etc., while some other materials experience a decrease in resistance with an increase in temperature the best example of which is carbon. For example a tungsten-filament lamp has less resistance when it is cold than it has when it is hot, and a carbon-filament lamp has a greater resistance when it is cold than it has when it is hot. When a tungsten-filament lamp is turned on it lights up almost instantly and it is more brilliant at first than it is later when the resistance of the filament has had time to increase and thus reduce the value of the current. The carbon-filament lamp lights up less rapidly as the resistance of the filament is a maximum when cold and this resistance decreases with an increase in temperature allowing a greater current to pass through the lamp.

Series Electrical Circuit

A series electrical circuit is one in which all the various parts of the circuit are connected together in such a manner that there is only one path for the current. Thus in figure 6 there are two tube filaments, T_1 and T_2 and a rheostat R connected in series to the terminals of the storage battery, and the same current passes through each part of the circuit. The resistance of such a circuit is equal to the combined resistance of the various parts of the circuit such as the filaments, rheostat connecting leads, etc. The two important facts about a series circuit are

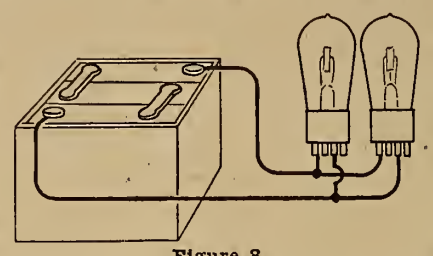


Figure 8

as follows: First, the electrical current at any instant is exactly the same in every part of the circuit. If an ammeter be connected in circuit at various points in the circuit it will indicate the same current provided there is no change in the resistance of the various parts of the current or the electrical pressure acting in the circuit. There is no accumulation of electricity at any point in the circuit and just the same amount of electricity returns to the storage battery or source of electrical pressure as leaves it. Thus in figure 6 there is the same current through the filaments of the two tubes. Second, the electrical pressure acting in a series circuit is distributed around the circuit in direct proportion to the resistance.

If the filaments of the two tubes in figure 6 have the same resistance the electrical pressure of voltage between the terminals of the two filaments will be the same. All of the electrical pressure produced in the battery is not used in producing current in the two filaments but a part of this pressure is required in overcoming the resistance of the rheostat, the connecting wires, etc. The resistance of the connecting wires is usually very small in comparison to the resistance of the remainder of the circuit and may be neglected in the majority of cases without series error. If the resistance of the rheostat be increased there will be an increase in the total resistance of the circuit and hence a decrease in the current. Likewise a decrease in the resistance of the rheostat will result in a decrease in the total resistance of the circuit and hence an increase in the current. As the resistance of the rheostat is decreased a larger part of the total electrical pressure of the battery will exist between the terminals of the tube filaments. In all cases the electrical pressure between the terminals of any part of the series circuit will have the same relation to the total electrical pressure as the electrical resistance of this portion of the circuit bears to the total resistance of the entire circuit.

A parallel electrical circuit is one in which the various devices are so connected that there are as many paths for the current as there are devices in series. Thus in figure 7 two resistances R_1 and R_2 are connected in parallel to the terminals of the dry cell. In figure 8 the filaments of the two tubes, T_1 and T_2 are connected in parallel to the terminals of the storage battery B. The current in each branch of a parallel or divided circuit is independent of the current in the other branches and depends upon the resistance of that branch, and the electrical pressure acting on that branch. In order to easily determine the resistance of a parallel circuit, use is made of a property of a circuit called its conductance which is equal to the reciprocal of the resistance of the circuit. Conductance is measured in a unit called the mho which is the ohm spelled backward.

For example, if two resistances of 4 and 6 ohms, respectively are connected in parallel their combined resistance may be determined as follows: The conductance of the 4-ohm branch will be ¼ mho and the conductance of the 6-ohm branch will be 1/6 mho. The combined conductance of the two branches will be equal to ¼ plus 1/6 or 5/12 mho. The reciprocal of the total conductance of 5/12 mho will be the value of the resistance of the parallel circuit which will be equal to 12/5 or 2 2/5 ohms. The resistance of a parallel circuit of any number of branches may be determined in this way.

(Magnetism, Electromagnetism and Electromagnetic Induction will be the subject under discussion in the next chapter.—Editor's Note.)

A. F. TUBE COUPLINGS

(Continued from page 19)

former from its primary to its secondary this steady current from the B battery does not of itself cause any effect in the secondary. If incoming signals cause this current to vary above or below the constant voltage, the changes cause currents to be induced in the secondary winding. In a 4 to 1 ratio transformer, where the secondary has four times as many turns of wire as the primary, the voltage in the secondary will be four times that of the change which caused it, originating in the primary.

A two stage transformer coupled audio frequency amplifier is shown in figure 1, page 19. The points to be especially noticed are the C battery and the .5 condenser from the B plus lead to the negative A. With tubes of the 199 and 201-A class a C battery is necessary to perfect reproduction when B battery voltages greater than 45 volts are applied. Since it is desired to keep the grids of the amplifier tubes negative in relation to the filament, the negative side of the C battery is always connected to the grid, while the positive side of the C battery is connected to the negative side of the filament circuit. The .5 mfd. condenser has been found to be of great aid in keeping Radio frequency oscillations out of the audio frequency stages. The fixed condenser of .00025 capacity will be noted across the secondary of the second audio frequency transformer. The use of this condenser may very slightly cut the volume, but clears up whatever distortion or "fuzziness" there may still be in the loud speaker.

(Continued on page 22)

Loud Speaker Field Current Control

Plug Drawn Breaks Speaker Unit Circuit

When using loud speakers that require a field current it is quite bothersome to disconnect it every time, and many times it is forgotten and thus the battery is run down and must be re-charged before the set can be used again. With the old types of loud speakers no means have been provided for to disconnect the current, and it has been quite difficult for the amateur to arrange a means of controlling this current.

In the illustration is shown a simple switch for controlling the field current, it being turned on every time the plug which connects to the loud speaker is placed into the jack. Usually the jack, which is used for the loud speaker, is seldom used for the phones, and this means should prove convenient, especially to those who have found it difficult to arrange a switch. The jack used should be either the single or double circuit filament control type and should be quite heavy, with a stout spring for the current control, so that no arc will form when the current is broken.—Evermont Fisel, Lebanon Junction, Kentucky.

WORKSHOP KINKS EARN A DOLLAR—

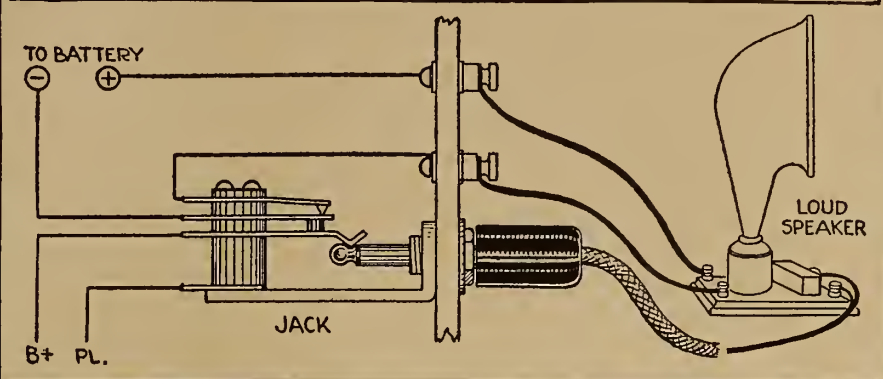
THERE are many little kinks worked out at home that would aid your fellow Radio worker if only he knew about them. There are new hook-ups, new ways of making parts and various unique ways of operating sets that are discovered every day. Radio Digest is very much interested in obtaining such material. 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

Aerial and Ground Condenser

Interference from local stations can be decreased in many cases by shunting a fixed condenser across the aerial and ground binding posts. This type of condenser may be made with two sheets of tin-foil, 3 inches square, separated by a sheet of paper. A permanent unit of the mica dielectric type condenser type, having a capacity of .000025 mfd. should be installed.

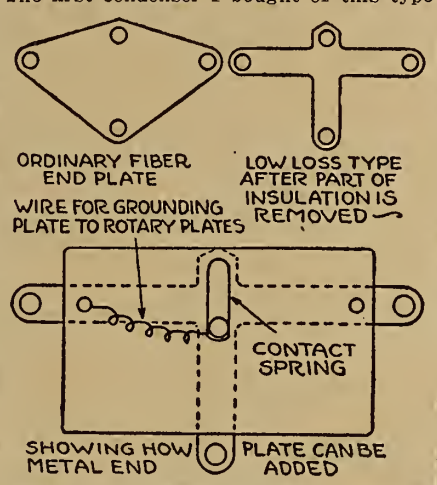
CIRCUIT JACK WITH DIAGRAM



Low-Lossing the Condenser

Low loss condensers put pep in the set. They make it selective, easy to tune and often eliminates body capacity.

If you have any condensers that are not of the low loss type you can convert them into such by a little work on them. For a long time I was under the impression that a low loss condenser had a very minimum amount of insulation. The first condenser I bought of this type dispelled the idea completely. The low loss condenser has a return for the magnetic field in the form of metal end plates—at least most types have, and a small amount of hard rubber insulation.



In converting a regular condenser to a low loss type, two things are necessary to make a complete job of it. First, cut away as much of the insulation as possible without damaging the condenser. Next, make metal end plates of aluminum, copper, or zinc, taking care that they are insulated from the stationary plates and ground them to the rotary plates. The easiest method of grounding them is to run a lead wire to the binding post at the back of the condenser.—C. L. Smith, Jackson, Miss.

Centering Instrument Shafts

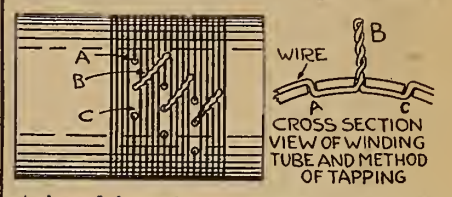
Procure a piece of medium stiff paper with one straight edge and of any convenient width with a length to reach around the circumference of the rotor or stator. Lay the paper around the part to be marked and cut the ends just so that they will touch—must not overlap—thus forming a length exactly equal to the circumference. Remove the strip and fold it in the exact center. The crease at the fold is marked. Replace the strip as before. The straight side of the strip at the points where the ends meet and where the center was marked are diametrically opposite and form the exact center point where the shaft passes through the rotor or stator.—John Odill, Norway, Mich.

Counterpoise Aids Tuning

If you happen to have two aerials on the roof try one of them as a counterpoise. Simply disconnect your regular ground from the set and in its stead put the lead-in from the other aerial. The aerials do not necessarily have to be arranged one above the other.

Coils Kept Tight on Tube with Wire Ends

When winding a coil on a tube and taps are wanted the difficulty arises in keeping the wire tight after the loop is made. The illustration shows a way to do this and when the coil is complete it is not necessary to have any binding material. At the place where the tap is to be taken off three holes are drilled in line with the direction of the wire and the wire is run down through the hole at A and brought up through the center hole. In order to do this the wire must be cut and the start or new end run down through the hole C and up through the center hole and both ends twisted at B.—M. Daugard, Syracuse, N. Y.



CROSS SECTION VIEW OF WINDING TUBE AND METHOD OF TAPPING

Too Much Expected

The one great evil which prevails today is the endeavor on the part of the individual tuning the set to get the loudest signals possible regardless of clarity. Much has been said about quality being the main consideration in a Radio set, but as we listen to some sets we feel sure this is only a secondary consideration. Much depends on the loud speaker unit itself. Some units will stand up and give good quality on strong signals, while it is important in others that they are not pushed to the limit. Don't strive to get the last drop of power from a set. Don't force the tubes nor use too much regeneration. Good quality will give you the enjoyment you should have from your Radio set.

To take the tinny sound out of a metal loud speaker horn, spatter it slowly with a mixture of hot paraffin and salt to which a little vinegar has been added to make it adhesive. When the horn cools apply several coats of black paint.

Questions and Answers

Winding a Coupler

(12889) JMcC, Nashville, Tenn.

I have a homemade coupler that does not work very well. I would like to get a little information on the proper way to wind it. The aperiodic primary and the secondary are wound on a tube 3¼ inches outside measure and the tickler on a tube 2⅜ inches outside measure and 2 inches long, the primary has 20 turns and is spaced from secondary 1¼ inches. The secondary has 36 turns and the tickler has 26 turns. The secondary is shunted by a 23-plate condenser. The set will tune to about 475 meters. I want to rewind coils so they will tune from 200 to 550 meters. Will you please tell me the proper numbers of turns for the coils. I want to use number 22 wire.

A.—For the wave length you wish to cover having the aperiodic primary the following number of turns is correct. Six turns on the primary, 40 turns on the secondary, and about 20 turns on the tickler. With a .0005 condenser you will have no trouble covering the range.

Tuning to Higher Waves

(12878) SDG, Grayville, Ill.

I have a Freshman Masterpiece. It is loud and I get distance and volume, but I am unable to get any station with a wave length higher than 484 meters, and as I like to get KSD and KYW, I would like to find some way to bring the tuning capacity of my set up to 550 meters. I can tune in the lowest. I thought maybe a condenser across the aerial and set would do it, but it did not help.

A.—In answer to your question, we wish to advise that a small fixed condenser across each one of the tuning condensers will help you tune to the higher waves.

Crystal in R. D. 125

(12459) CGD, Coin, Iowa.

Will R. D. 125 tuned Radio frequency diagramed in the December 20, 1924 issue work successfully and be selective? I have made one but the crystal only works a short time then it quits. I leave it for a day or two then maybe it will work for a short time and then quit. The crystal worked good in a small set at any time. The three coils and three condensers are equally divided on the panel and was wired as directed. I have traced each wire time and again to make sure. Is it possible for parallel wires to have any effect on it?

A.—The trouble in your case is most probably not the crystal but the battery. The battery in all probability is run down and when allowed to stand for a while it picks up again but soon after dies when put to use again.

Double Antenna

(12890) LY, Mound, La.

I have substituted a double wire antenna for my single. My signals now come in almost too strong at times and it is harder to tune out interference. Can I install a single wire beneath the double, and on the same poles, with separate lead-in, so I may use either one giving best results under different weather conditions, without the one not in use interfering with the other. If so, how far beneath the double should the single wire be run?

A.—It is possible to put up another antenna below the one you now have at a distance of 3 or 4 feet. If the signals come in too strong use less amplification.

When a storage battery fails to take a charge, it is an indication that it needs to be overhauled at a battery station.

A. F. TUBE COUPLINGS

(Continued from page 20)

The second form of coupling now in more or less general use is resistance coupling, the outstanding superiority of which is the quality of the output. It is an inherent defect of a transformer that it cannot equally amplify all frequencies and certain frequencies are passed more efficiently than are others. While remarkable strides have been made in the perfecting of audio transformers they are still not perfect and the chief claim of the resistance coupled method is the perfect reproduction secured. A resistance coupled amplifier can be adjusted to a point at which there is no distortion of any audible frequency and all frequencies are passed equally well. There is less amplification per tube where the resistance coupling is used, but to offset this slight disadvantage there is the purity of reproduction and the fact that there is less B battery current draw. As to actual cost, three stages of resistance coupling cost just about the same as two stages of transformer coupling, both as to initial investment and upkeep.

In figure 2 is a circuit using one stage of transformer coupling and two stages of resistance coupling. This is a very popular arrangement which gives excellent quality with a very low amount of distortion. The question will at once come up in the reader's mind that if there is no distortion in resistance coupling, how many stages can be used efficiently. It will be found that four stages can be used behind a regenerative detector, and behind a circuit using one stage of Radio frequency amplification and a detector, but where two stages of Radio frequency amplification are used, or with a superheterodyne or reflex, the use of more than three stages of resistance coupling is not to be recommended. It can be done, but complications are likely to follow. Figure 3 shows three stages of resistance coupled amplification with the necessary jacks for plugging in the phones after either the first or second stage.

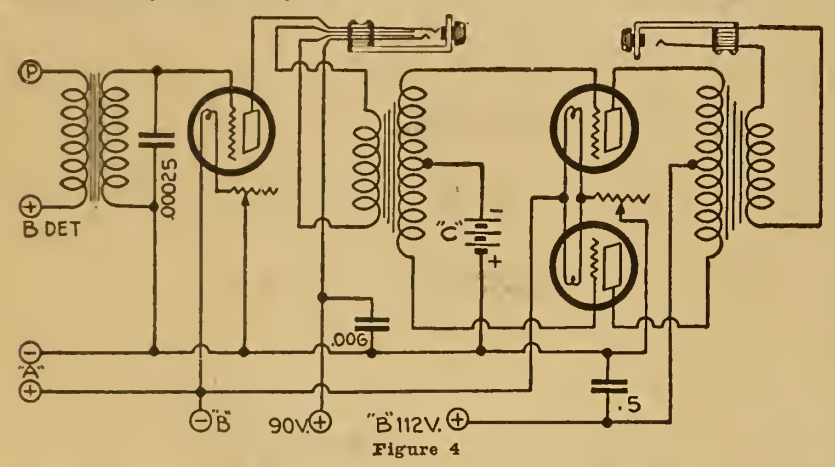


Figure 4

Push Pull

When powerful local signals are being received, and either of the above methods are used, it frequently happens that the last tube cannot handle the volume of energy delivered to it, which brought about the use of push pull amplification. While two tubes are used in such a unit they act as one stage and both halves of the cycle are utilized. Since the energy is great, and high plate potentials are always applied to such a unit, a C battery is essential to biasing of the grids. The amount of amplification from a stage of push pull is not apt to be as great as is to be obtained from a single stage using a 5 to 1 transformer, since the ratio of push pull transformers is usually about 2 to 1 or 2½ to 1. However, the reproduction will be far clearer and there will be considerable amplification because of the 2 to 1 ratio and the amplification constant of the tubes, which may be anywhere from 5 to 10.

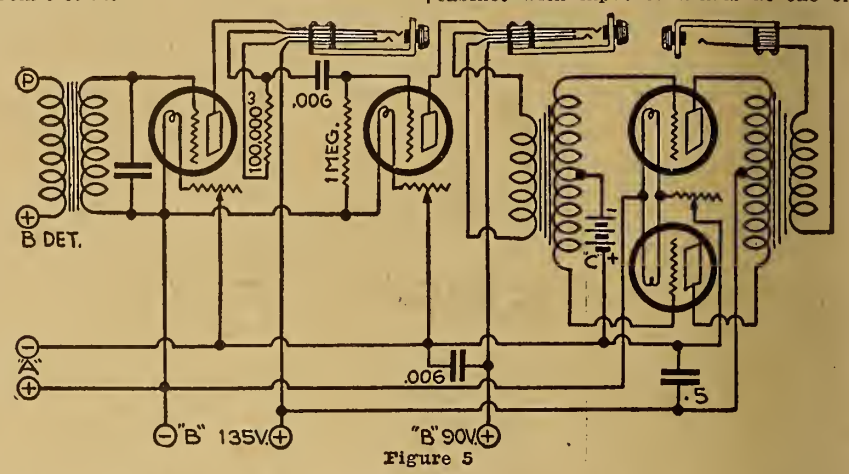


Figure 5

Figure 4 shows an excellent audio frequency amplifying system, which will give exceptional reproduction and is capable of handling a very great volume of energy. This is the best means known of getting pure reproduction without resorting to the use of resistance coupled amplification. The ideal amplifier is naturally one that will give the greatest amount of signal strength compatible with good quality and clearness. The nearest approach to such an amplifier, and one which is the best possible compromise between volume and clearness, is shown in figure 5. Making use of four tubes, it is a combination of transformer coupling, resistance coupling and push pull amplification, giving a high amplification for the first tube, a little less, but one without distortion for the second tube and the ability to handle volume on the last two tubes.

This amplifier, if built in a separate cabinet with input terminals at one end and output jack at the other, would be ideal for use after any type of receiver from a one tube regenerative to a six tube super-heterodyne.

Radiophone Broadcasting Stations

Corrected Every Week—Part V

State, City, Call

Alabama:
Auburn, WSY
Mobile, WEAP, WEBM
Montgomery, WKAN

Arizona:
Phoenix, KFAD, KFCB
Tucson, KFDH

Arkansas:
Camden, KFVC
Conway, KFKQ, KFRJ
Fayetteville, KFMQ
Hot Springs Nat'l Park, KTHS
Little Rock, KFMB, WCAV
Pine Bluff, KFPX

California:
Bakersfield, KDZB
Berkeley, KRE
Burlingame, KFQH
Fresno, KMJ
Hanford, KFRN
Hollywood, KFQZ, KFVF, KFWB, KNX
Holy City, KFQU
Long Beach, KFON
Los Angeles, KFCL, KFI, KFPG, KFPR, KFQG, KFSG, KHJ, KJS, KWH
Oakland, KFUS, KGO, KLS, KLX, KZM
Pasadena, KPPC
Paso Robles, KFNL
Redlands, KFRP
Richmond, KFOU
Sacramento, KFBK
San Diego, KDPT, KDYM, KFBC
San Francisco, KFPY, KFRC, KFUQ, KPO, KUO
San Jose, KQW
San Leandro, KFUU
San Luis Obispo, KFBE
San Pedro, KFVD
Santa Ana, KFAW
Santa Barbara, KFHJ
Santa Rosa, KFNY
Stanford Univ., KFGH
Stockton, KJQ, KWG
Taft, KFQC
Upland, KFWC
Whittier, KFOC

Colorado:
Boulder, KFAJ
Colorado Springs, KFUM
Denver, KFAF, KFEL, KFLE, KFUP, KLZ, KOA
Greeley, KFKA
Gunnison, KFHA

Connecticut:
Hartford, WTIC
New Haven, WPAJ
Storrs, WABL

Delaware:
Wilmington, WHAV

District of Columbia:
Washington, WCAP, WDM, WRC, WRHF

Florida:
Miami, WQAM
Miami Beach, WMBF
St. Petersburg, WDBI, WHBN, WSAG
Tampa, WDAE, WGBP
Winter Park, WDBO

Georgia:
Atlanta, WDBE, WGST, WSB
Macon, WCBW, WMAZ
Savannah, WEBZ

Idaho:
Boise, KFAU, KFDD
Kellogg, KFEY
Moscow, KFAN
Wallace, KFOD

Illinois:
Batavia, WORD
Broadlands, WSRF
Cambridge, WTAP
Carthage, WCAZ
Chicago, KYW, WAAF, WBBM, WBCN, WHBM, WDBY, WEBH, WGN, WJAZ, WLS, WMAQ, WQJ, WSAX
Chicago Heights, WCBZ
Decatur, WBAO
Elgin, WCEE, WTAS
Eureka, WFBB
Galesburg, WFBZ, WRAM
Harrisburg, WEBQ
Joliet, WWAE
Lake Forest, WABA
La Salle, WCBS
Monmouth, WBBU
Mooseheart, WJJD

State, City, Call

Illinois (Continued)
Oak Park, WTAY
Peoria, WJAN
Rockford, KFLV
Rock Island, WHBF
Spring Valley, WGBW
Streator, WTAX
Tuscola, WDZ
Urbana, WRM
Zion, WCBD

Indiana:
Anderson, WEBD
Culver, WHRH
Evansville, WGBF
Ft. Ben. Harrison, WFBY
Ft. Wayne, WHBJ
Greencastle, WLAX
Greentown, WIAK
Indianapolis, WBBZ, WFBM
Laporte, WRAF
Logansport, WHBL
South Bend, WGAZ
Seymour, WFBE
Valparaiso, WRBC
West Lafayette, WBAA

Iowa:
Ames, WOI
Atlantic, KFLZ
Boone, KFGQ
Burlington, WIAS
Cedar Falls, KFJX
Cedar Rapids, KFLP, WJAM, WKAA
Davenport, WOC
Des Moines, WHO
Fort Dodge, KFER, KFJY
Iowa City, KFQP, WSUI
Lamoni, KFFV
Le Mars, KFCY
Marshalltown, KFJB
Marengo, KFOL
Oskaloosa, KFHL
Shenandoah, KFNF
Sioux City, KFMR, WEAU
Waterloo, WRAN

Kansas:
Lawrence, KFKU
Manhattan, KSAC, WTG
Milford, KFKB
Wichita, KFOT, WEAH

Kentucky:
Louisville, WHAS, WLAP
Mayfield, WCBG

Louisiana:
Alexandria, KFFY, KFRF
Baton Rouge, KFGC
Jennings, WCBJ
New Orleans, WAAB, WAAC, WABZ, WBBS, WCAG, WCBE, WTAF, WWL
Shreveport, KFDX, WGAQ

Maine:
Bangor, WABI
Ellsworth, WHBK
Houlton, WCBL
Orono, WGBX

Maryland:
Baltimore, WCAO, WCBM, WFBR, WGBA
Takoma Park, WBES

Massachusetts:
Boston, WDBR, WEEI, WNAC, WTAT
Bridgewater, WFBN
Fall River, WGBH, WSAR, WTAB
Lowell, WQAS
Mattapoisett, WBBG
Medford Hillside, WGI
Roslindale, WEBY
South Dartmouth, WMAF
Springfield, WBZ
Taunton, WAIT
Webster, WKBE
Worcester, WCTS, WCUW

Michigan:
Berrien Springs, WEMC
Chesaning, WHBI
Dearborn, WWI
Detroit, KOP, WCX, WWJ
East Lansing, WKAR
Escanaba, WRAK
Flint, WEAA
Grand Rapids, WBDC, WEBK
Houghton, KFMW, WWAO
Lansing, WREO
Menominee, KFLR
Mt. Clemens, WABX
Owosso, WSMH
Petoskey, WBBP

State, City, Call

Michigan (Continued)
Port Huron, WAFD, WBBH
Saginaw, WABM

Minnesota:
Breckenridge, KFUJ
Collegeville, WFBJ
Minneapolis, KFDZ, KFMT, WAMD, WCCO, WHDI, WLB
Moorhead, WPAU
Northfield, KFMX, WCAL
St. Cloud, WFAM
St. Paul, AV7, KFOY
Virginia, KFUZ

Mississippi:
Coldwater, KFNG
Hattiesburg, WDBT
Oxford, WCBH

Missouri:
Butler, WNAR
Cape Girardeau, WSAB
Carterville, KFPW
Columbia, WAAN
Independence, KLDS
Jefferson City, WOS
Kansas City, WDAF, WHB, WOQ
Moberly, KFFP, KFOJ, KFUW
Springfield, KFUV
St Louis, KFQA, KFUO, KSD, WCK, WEW, WIL, WMAY,
Warrensburg, KFNJ

Montana:
Butte, KFKV, KFLA, KFUY
Havre, KFBB
Helena, KFCC, KFNY, KFSY
Missoula, KUOM

Nebraska:
Belden, KFQY
David City, KFOR
Harrington, KFRZ
Hastings, KFKX
Lincoln, KFAB, WFAV, WMAH
Norfolk, WJAG
Oak, KFEQ
Omaha, KFOX, KOCH, WAAW, WIAK, WOAW
Tecumseh, WTAU
University Place, WCAJ

Nevada:
Sparks, KFFR

New Hampshire:
Chesham, WSAU
Hanover, WFBK
Laconia, WKAV

New Jersey:
Atlantic City, WHAR, WPG
Camden, WABU, WFBI
Gloucester City, WRAX
Lambertville, WTAZ
Newark, WAAM, WBS, WNJ, WOR
New Brunswick, WEBA
North Plainfield, WEAM
Paterson, WBAN
Pitman, WFBT
Salem, WDBQ
Trenton, WOAX

New Mexico:
Albuquerque, KFLR
State College, KFRY, KOB

New York:
Buffalo, WEBR, WGR
Canton, WCAD
Cazenovia, WMAC
Freeport, WGBB
Ithaca, WEAI
Jamestown, WOCL
Kingston, WDBZ
Lockport, WMAK
New York, WBAY, WBBR, WDBX, WEAF, WEBI, WEBL, WFBH, WGBS, WHAP, WHN, WIY, WJZ, WMCA, WNYC, WQAO, WSAP
Richmond Hill, WAHG
Rochester, WABO, WHAM, WHEC
Schenectady, WGY
Syracuse, WFBL
Tarrytown, WRW
Troy, WHAZ
Utica, WSL

North Carolina:
Charlotte, WBT
Fort Bragg, AT9
Raleigh, WFBQ

North Dakota:
Devils Lake, KDLR
Fargo, WDAY, WPAK

State, City, Call

North Dakota (Continued)
Crafton, KFRH
Grand Forks, KFJM, KFRL

Ohio:
Bellefontaine, WHBD
Canton, AQ6, WHBC
Cambridge, WEBE
Cincinnati, WAAD, WHAG, WLW, WMH, WSAI
Cleveland, KDPM, WEAR, WHK, WTAM
Columbus, WBAV, WCAH, WEAO, WMAN
Dayton, AW5, WDBS, WEBT
Elyria, WGBL
Granville, WJD
Hamilton, WRK, WSRO
Lima, WOAC
Mechanicsburg, WHBS
Newark, WBBA
New Lebanon, WGBY
Pomeroy, WSAZ
Sandusky, WABH
Springfield, WCSO
Toledo, WABR, WTAL
Wooster, WABW
Yellow Springs, WRAV
Youngstown, WDBF

Oklahoma:
Bristow, KFRU
Chickasha, KFGD
Fort Sill, KFRM
Norman, WNAD
Oklahoma City, KFJF, KFQR, WKY
Tulsa, WLAL

Oregon:
Astoria, KFJI
Corvallis, KFDJ
Hood River, KQP
Portland, KFEC, KFIF, KFJR, KFQN, KFRQ, KGW

Pennsylvania:
Allentown, WCBA, WSAN
Altoona, WFBG
Arnold, WCBU
Buck Hill Falls, WCBY
Butler, WBR
Grove City, WSAJ
Harrisburg, WABB, WBAK, WHBG
Haverford, WABQ
Johnstown, WBBV, WGBK, WHBP, WTAC
Lancaster, WDBC, WGAL
McKeesport, WIK
Oil City, WHBA
Parkersburg, WQAA
Philadelphia, WABY, WCAU, WFBD, WFI, WIAD, WIP, WLIT, WNAT, WOO, WWAD
Pittsburgh, KQV, WCAE, WJAS
Reading, KDKA, WRAW
Scranton, WGBI, WGBK, WQAN
Sewickley, WHRE
State College, WPSC
Wilkes-Barre, WBAX, WBRE

Rhode Island:
Cranston, WKAP
East Providence, WKAD
Pawtucket, WHBO
Providence, WCBR, WEAN, WGBM, WJAR, WDWF, WSAD

South Carolina:
Charleston, WBBY
Clemson College, WSAC
Greenville, WGBT

South Dakota:
Brookings, KFDY
Rapid City, WCAT
Vermillion, WEAJ
Yankton, WNAX

Tennessee:
Bemis, WCBI
Columbia, WDBW
Knoxville, WFBC
Lawrenceburg, WOAN
Memphis, WGBC, WMC, WHBQ,
Nashville, WCBQ, WEBX
Tullahoma, WCBV

Texas:
Amarillo, WDAG, WQAC
Austin, KFQM, WCM
Beaumont, KFDM
Beeville, KFRB
College Station, WTAW
Dallas, WFAA, WRR
Denison, KFQT
Dublin, KFPL
El Paso, WDAH

State, City, Call

Texas (Continued)
Fort Worth, KFJZ, KFQB, KFRO, WBAP
Galveston, KFLX, KFUL
Greenville, KFPM
Houston, WEAY, WRAA, WSAV
Orange, KFGX
San Antonio, WCAR, WOAI
San Benito, KFLU
Tyler, WOAF
Waco, WJAD

Utah:
Ogden, KFCP, KFUR, KFWA
Salt Lake City, KDYL, KFOO, KFPH, 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, KDZE, KFHR, KFOA, KFQX, KHQ, KJR, KTW
Spokane, KFIO, KFPY
Tacoma, KFBG, KGB, KMO
Walla Walla, KFCF
Yakima, KFIQ

West Virginia:
Charleston, WPAZ
Martinsburg, WDBD

Wisconsin:
Beloit, WEBW
Fond du Lac, KFIZ
La Crosse, WABN
Madison, WHA
Marshfield, WGBR
Menomonie, WGBQ
Milwaukee, WCAY, WHAD, WSOE
Osseo, WTAQ
Sisiht, WAR
St. Croix Falls, WRAL
Stevens Point, WHBB, WLBL
Superior, WDBP, WEBC

Wyoming:
Laramie, KFBU

Alaska:
Juneau, KFIU
Kukak Bay, KNT

Hawaii:
Honolulu, KGU, KYQ

Philippine Islands:
Manila, KZKZ, KZRQ

Porto Rico:
San Juan, WGBO, WKAQ

Argentina:
Buenos Aires, B1, LOR, LOV, LOW, LOX, LOY, TCR

Australia:
Adelaide
Sydney, 2BL, 2FC
Melbourne, 2AB
Perth, 6WF

Austria:
Vienna, OHW, Radio Wien, Ravag

Brazil:
Bahia, Sociedade do Bahia
Belle Horizantes, Nat'l Telg. Service
Rio de Janeiro, Praia Vermelha, Sociedade de Rio de Janeiro
Sao Paulo, Radio Bondeirantes

British West Indies:
Curacao, Dept. of Finance

Canada:
Calgary, CFAC, CFCN, CFHC, CHBC, CHCM, CJCK, CKCX, CKLC, CNRC
Edmonton, CFCK, CJCA, CNRE
Hamilton, CFCU, CHCS, CKOC
Iroquois Falls, CFCH
Kingston, CFRC
Kitchener, CJCF
London, CFCW, CFLC, CJGC
Moncton, CNRA
Mont-Joli, CJCM
Montreal, CFCF, CHYC, CJCL, CKAC, CNRM
Nanaimo, CFDC

State, City, Call

Canada (Continued)
New Westminster, CFXC
Ottawa, CHXC, CKCO, CNRO
Quebec, CFCL, CKCI
Regina, CKCK, CNRR
Saskatoon, CFQC, CHUC, CNRS
Scarboro, CJYC
Sudbury, CFCR
Thorold, CFKC
Toronto, CFCA, CHIC, CHNC, CJBC, CJCD, CJCN, CJSC, CKCE, CKNC, CNRT
Vancouver, CFCQ, CFYC, CJCE, CKCD, CKFC
Victoria, CFCL, CFCT, CHCE
Winnipeg, CKY, CNRW

Chile:
Vina del Mar, ABC
Santiago, CRC

Cuba:
Caibarien, 6EV
Camaguey, 7AZ, 7SR
Camajuani, 6YR
Ciego de Avila, 7BY
Cienfuegos, 6BY, 6CX, 6DW, 6GR, 6GT
Colon, 5EV
Havana, PWX, Q2LC, 2AB, 2BY, 2CX, 2HP, 2HS, 2JP, 2KP, 2MG, 2OK, 2OL, 2RY, 2TW, 2WW
Sagua la Grande, 6HS
Santiago, 8AZ, 8BY, 8CX, 8DW, 8EV, 8FU, 8GT, 8HS
Tuinucu, 6KW, 6KJ

France:
Agen, Fr. Gov.
Lyons, YN
Paris, FPTT, Le Petit Parisien

Germany:
Berlin, L. P., Vox Haus, Telefunken Co.
Breslau, Schlesische, Rundfunk
Frankfort-on-Main, Sudwest-deutsche 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
Chelmsford, 5XX
Dundee, 2DE
Edinburgh, 2EH
Glasgow, 5SC
Hull, 6KH
Leeds, 2LS
Liverpool, 6LV
London, 2LO
Manchester, 2ZY
Newcastle, 5NO
Nottingham, 5NG
Plymouth, 5PY
Sheffield, 6FL
Stoke-on-Trent, 6ST

Italy:
Rome, IRO

Mexico:
Chihuahua, CZF
Mazatlan, CYR
Mexico City, CYB, CYH, CYL, CYX, CYZ, CZA, XDA
Monterey, 21A
Oaxaca, CYF

Netherlands:
Amsterdam, PA5, PCFF
Hague, PCGG, PCUU
Hilversum, NSF
Ymuiden, PCMM

New Zealand:
Auckland, 1YA, 1YL
Dunedin, 4XO, 4YO
Gisborne, 2YM
Wellington, 2YB, 2YK

STATION SCHEDULES

(Continued from last week)

Chile

ABC, Vina del Mar, Chile. 400 meters. Radio Corp. of Chile.
CRC, Santiago, Chile. 460 meters. Radio Corp. of Chile.
Valparaiso, Chile. Senor Placi do Munzo Rojas.

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.
2AB, Havana, Cuba. 240 meters. 20 watts. Alberto S. Bustamante.
2BY, Havana, Cuba. 300 meters. 100 watts. Frederick W. Borton.
2CX, Havana, Cuba. 320 meters. 10 watts. Frederich W. Borton.
2HP, Havana, Cuba. 295 meters. 100 watts. Credito y Construcciones Co.
2HS, Havana, Cuba. 180 meters. 20 watts. Julio Power.
2JP, Havana, Cuba. 270 meters. 20 watts. Julio Power.
2KP, Havana, Cuba. 195 meters. 10 watts. George A. Lindeaux.
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.
2OK, Havana, Cuba. 360 meters. 100 watts. Mario Garcia Velez.
2OL, Havana, Cuba. 290 meters. 15 watts. Oscar Collado.
2RY, Havana, Cuba. 275 meters. 20 watts. Raoul Karman.
2TW, Havana, Cuba. 430 meters. 20 watts. Roberto E. Ramirez.
2WW, Havana, Cuba. 210 meters 20 watts. Amadeo Saenz de Calahorra.
5EV, Colon, Cuba. 360 meters. 10 watts. Leopoldo V. Figueroa. Sun, 9-11 pm. Eastern.
6BY, Cienfuegos, Cuba. 300 meters. 100 watts. Jose Ganduxe.
6CX, Cienfuegos, Cuba. 170 meters. 20 watts. Antonio T. Figueroa.
6DW, Cienfuegos, Cuba. 225 meters. 10 watts. Eduardo Terry.
6EV, Cabarien, Cuba. 250 meters. 50 watts. Maria Josefa Alvares. Daily, 10:30 pm.
6GR, Cienfuegos, Cuba. 250 meters. 10 watts. Luis del Castillo.
6GT, Cienfuegos, Cuba. 190 meters. 5 watts. Juan Pablo Ros.
6HS, Sagua la Grande, Cuba. 200 meters. 10 watts. Santiago Ventura.
6KJ, Tuinucu, Cuba. 275 meters. 100 watts. Frank H. Jones.
6KW, Tuinucu, Cuba. 340 meters. 100 watts. Frank H. Jones. Slogan, "If You Hear the Koo of the Cuckoo You Are in Tune With Tuinucu." Mon, Tues, Fri, Sun, 10 pm, music. Wed, Thurs, Sat, 8 pm, music. Sat, 12 midnight, dance music. Havana.
6YR, Camajuani, Cuba. 200 meters. 20 watts. Diego Iborro.
7AZ, Camaguey, Cuba. 225 meters. 10 watts. Pedro Nogueras.
7BY, Ciego de Avila, Cuba. 235 meters. 20 watts. Eduardo V. Figueroa.
7SR, Camaguey, Cuba. 350 meters. 50 watts. Salvador C. Riondo. Slogan, "Cuba, the Land of Sunshine, Sugar and Tobacco." Mon, Tues, Thurs, 9 pm. Eastern.
8AZ, Santiago, Cuba. 240 meters. 20 watts. Alfredo Brooks.
8BY, Santiago, Cuba. 250 meters. 100 watts. Alberto Ravelo.
8CX, Santiago, Cuba. 245 meters. 50 watts. Pedro T. Azarate.
8DW, Santiago, Cuba. 275 meters. 50 watts. Pedro C. Andux. Daily, 4:30-8:30 pm, 10:30-12.
8EV, Santiago, Cuba. 180 meters. 75 watts. Eduardo Mateos.
8FU, Santiago, Cuba. 225 meters. 15 watts. Andres Vinent.
8GT, Santiago, Cuba. 260 meters. 50 watts. Juan F. Chibas.
8HS, Santiago, Cuba. 200 meters. 10 watts. Gillermo Polanco.

France

FPTT, Paris, France. 458 meters. 500 watts. Superior School P. T. T. Announcer, M. Chanton.
YN, Lyons-la-Doua, France. 480 meters. French Government.
Agen, France. 335 meters. French Government.
Paris, France, Le Petit Parisien. 340 meters. 500 watts.

Germany

LP, Berlin, Germany. 680 meters. 4,000 watts. Konigswusterhausen.
Berlin, Germany. 430 meters. 700 watts. Vox Haus.
Berlin, Germany. 750 meters. 1,000 watts. Telefunken Co.
Breslau, Germany. 415 meters. 1,500 watts. Schlesische Rundfunk, A. G.
Frankfort-on-Main, Germany. 467 meters. 1,500 watts. Sudwestdentsche Rundfunklenst.
Norag, Hamburg, Germany. 395 meters. 1,200 watts. Nordischer Rundfunk, A. G. Announcer, Hermann Beyer.
Konigsberg, Germany. 460 meters. 1,500 watts. Ostmarken Rundfunk, A. G.
Leipzig, Germany. 452 meters. 1,500 watts. Mitteldeutsche Rundfunk, A. G.
Munich, Germany. 485 meters. 1,500 watts. Deutsche Stunde in Bayern.
Munster, Germany. 407 meters. 1,500 watts.
Nuremberg, Germany. 340 meters. Relayed from Munich, Stuttgart, Germany. 437 meters. 1,500 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.
2DE, Dundee, Scot. 331 meters. British Broadcasting Co.
2EH, Edinburgh, Scot. 326 meters. British Broadcasting Co.
2LO, London, Eng. 365 meters. 1,500 watts. British Broadcasting Co.
2LS, Bradford, Eng. 310 meters. British Broadcasting Co.
2LS, Leeds, Eng. 346 meters. British Broadcasting Co.
2ZY, Manchester, Eng. 375 meters. British Broadcasting Co.
5IT, Birmingham, Eng. 475 meters. British Broadcasting Co.
5NG, Nottingham, Eng. 326 meters. British Broadcasting Co.
5NO, Newcastle, Eng. 400 meters. British Broadcasting Co.
5PY, Plymouth, Eng. 235 meters. 200 watts. British Broadcasting Co. Announcer, Clarence Goode.
5SC, Glasgow, Scot. 420 meters. British Broadcasting Co.
5WA, Cardiff, Wales. 351 meters. British Broadcasting Co.
5XX, Chelmsford, Eng. 1,600 meters. 14,000 watts. British Broadcasting Company, Marconi Wireless Telegraph Co., Ltd.
6BM, Bournemouth, Eng. 385 meters. British Broadcasting Co.
6FL, Sheffield, Eng. 301 meters. British Broadcasting Co.
6KH, Hull, Eng. 335 meters. British Broadcasting Co.
6LV, Liverpool, Eng. 315 meters. British Broadcasting Co.
6ST, Stoke-on-Trent, Eng. 306 meters. British Broadcasting Co.

Italy

IRO, Rome, Italy. 422 metera. 1,500 watts.

Mexico

CYA, Mexico City, Mex. 185 meters. Partido Liberal Avanzado.
CYB, Mexico City, Mex. 380 meters. 500 watts. El Buen, Tono. Tues, Sat, 7:30-9 pm. Thurs, 8-10 pm, concert. Mexican.
CYF, Oaxaca, Oax., Mex. Federico Zorrilla.
CYG, Mexico City, Mex. Secretaru de Guerra y Marina.
CYH, Mexico City, Mex. 340 meters. 100 watts. High Life.
CYL, Mexico City, Mex. 480 meters. 500 watts. La Casa del Radio. Announcer, George Marron. Slogan: "The Land of Eternal Summer. Daily ex Sun, 1:30-2 pm, weather, financial reports, music. Tues, Fri, 9-10:30 pm. Sun, 10:30 am, church. Mexican.
CYR, Mazatlan, Sin., Mex. Rosseter Y Cia.
CYX, Mexico City, Mex. 333 meters. 500 watts. Excelsior & Cia. Parker. Announcer, Rafael Lerdo de Tejada. Slogan, "Land of the Aztecs." Mon, 8-9:30 pm. Fri, 8:30-9:30 pm. Mountain.
CYZ, Mexico City, Mex. 400 meters. Liga Central Mexicana de Radio.
CZA, Mexico City, Mex. 70-500-1,070 meters. Aviation Dept., War Ministry. Announcer, Ricardo S. Bravo. Daily, 12:30-1 pm, time, weather, news; 6:30-7:30, time, markets, music. Mexican.
XDA, Mexico City, Mex. Variable wave. 4000 watts. Government station. Slogan, "Radio Chapultepec."
CZF, Chihuahua City, Mex. 400 meters. 250 watts. Chihuahua State Radio Broadcasting Station. Announcer, C. A. Nieto. Wed, Fri, 8-9:30. Mountain.
24A, Monterey, Mex. 285 meters. 200 watts. Tarnava & Cia. Daily ex Sun, 12-6 pm, news, markets, baseball. Wed, 8:30-10 pm. Mexican.

Netherlands

NSF, Hilversum, Netherlands. 1,050 meters. 500 watts. Dutch Radio Apparatus Factory.
PA5, Amsterdam, Netherlands. 1,050 meters. 200 watts. Smith and Hooghout.
PCFF, Amsterdam, Netherlands. 2,125 meters. Vas Diaz Press Office. Daily, hourly, 7:55-4:10 pm.
PCGG, The Hague, Netherlands. 1,050 meters. Nederlandsche Radio Industri.
PCMM, Ymuiden, Netherlands. 1,050 meters. Middelraad.
PCUU The Hague, Netherlands. 1,050 meters. Laboratorium Heussen.

New Zealand

1YA, Auckland, New Zealand. 260 meters. 200 watts. Auckland Radio Service.
1YL, Auckland, New Zealand. 260 meters. 500 watts. C. H. Pearson for Newcombe (Ltd.)
2YB, Wellington, New Zealand. 275 meters. 15 watts. Wellington Broadcasters (Ltd.)
2YK, Wellington, New Zealand. 275 meters. 15 watts. Dominion Radio Co.
2YM, Gisborne, New Zealand. 335 meters. 500 watts. Gisborne Radio Co.
4XO, Dunedin, New Zealand. 110 meters. Otago University.
4YA, Dunedin, New Zealand. 310 meters. 500 watts. British Electrical & Engineering Co.

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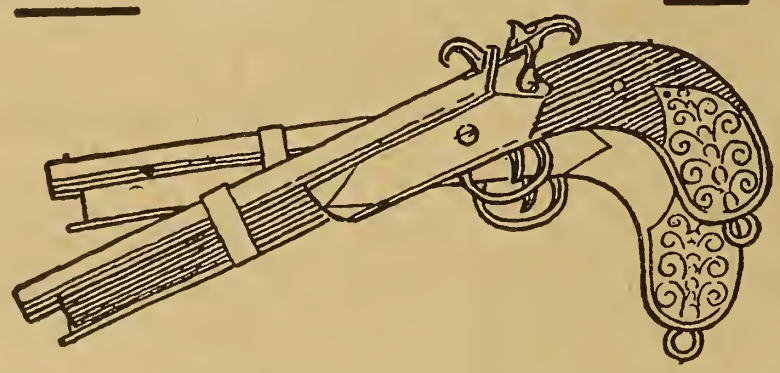

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Extravagant claims have been made by some radio manufacturers about their sets, and to purchasers of these sets this message is directed. Many purchasers have been disappointed in results obtained. Numerous owners have been unable to tune through the locals and bring in distant stations consistently, with quality and without interference. Some manufacturers blame your individual locality. **We don't.** The public is becoming discriminating and now knows what to expect and demand in radio.

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Zenith, "The King of All Supers," will with ease bring in distant stations loud, clear, with quality, and **without interference** while the locals are on, regardless of how unfavorable a location you live in, and we will prove it. Without obligation on your part we will install a Super-Zenith in your home, using either your equipment or ours. You are to be the judge and jury.

When you in your own home have become convinced that the Zenith is "The King of All Supers," our dealer will take your present radio set in trade. This challenge is unreserved **regardless** of what make of set you now own. Nine models of Zenith receivers, ranging in price from $100.00 to $475.00. Phone or write, and our dealer's service man will be with you the following evening.

Zenith is not sold by every little corner radio store. Zenith is handled only by selected dealers who give you service. We give the Zenith agency franchise only to dealers who will give you service AFTER THE RADIO IS SOLD. When you buy a ZENITH we are not through. Our exclusive dealer's serviceman will call once a week or oftener if you want him. This costs you nothing. In other words, Zenith dealers have done your shopping for you.

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Chicago, Illinois

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