VC1BH28537 OCT 24 24

New Eight Tube Super-Heterodyne Panel Layouts; How Detectors Operate; Trouble Finding on Kennedy Model XV Receiver; Week's Advance Programs

Vol. XI

Copyright 1924 By Radio Digest Publishing Co.

SATURDAY, OCTOBER 25, 1924

RESTRICT GIANT STATIONS

WMAQ STARTS NEW RADIO-PHOTOLOGUES

LECTURES GIVEN BY NOTED TRAVELOGUE TALKERS

Print Pictures in Paper on Day of Lecture for Listeners in to Follow

CHICAGO.—Here is something new. Every Saturday night, from 8:40 to 9:00, the Daily News Station, WMAQ, broadcasts a Radio-Photologue with the aid of some noted lecturer and traveler.

In the picture section of the paper every Saturday, pictures of the trip or the country to be visited in the lecture are printed. In the evening, when the lecture starts, all the listener has to do is take this page, clamp on the head set or turn on the loud speaker and follow the talk with the aid of the photographs.

The station has booked Radio-Photologues and speakers of wide repute far into the coming spring. Among those who will lecture in the near future are the following: Clara E. Laughlin, who will lecture on Italy; Professor Isaac J. Cox, on the Argentine Republic and Chile; Charles A. Kent, the Buried Races of Mexico.

HOOVER MEET RECOMMENDS BARS BE KEPT

Solves Many Problems

Suggests Trial Super Station—Creates New Wave Bands-Asks Non-Censorship of Air

WASHINGTON.—The Third Radio conference is now a matter of history. Into the record the following has been written: the big points of its accomplish-

1. It opposed the withdrawal of limitations on high power stations.

2. It created new wave band chan-nels to include from 200 to 545 meters.

It recommended that the depart-



ment of commerce leave its hands off programs as it does at present. This to avoid censorship. 4. It abolished the 300 meter wave length from sea use because of its interference with broadcasting. The 600 meter length will be used only for dis-

5. It recommended that interconnection be encouraged as the most important development of the past eighteen months.

6. It recommended that station classifications be changed from class A and B to class 1 and 2, etc.

7. It recommended that class C stations not be abolished but new wave lengths assigned them.

(Continued on page 2)

Left to right: Anna Cockburn, one of the most frequently requested artists at WSAI and one of Cincinnati's foremost piano soloists. Florence Johns of "Best People," new playing in New York. Miss Johns frequently plays before the microphone at WEBJ. Anna Binto is one of America's most youthful have Pinto is one of America's most youthful harp virtuoso. Her concert recitals have been feavirtuoso. Her concert recitals have been featured at WJZ for over three years. She played a special recital there on September 21.

BY

MAIL

ONLY

Postpaid

COMPLETE REPORT OF THIRD RADIO CONFERENCE

(Continued from page 1)

power experimental stations be placed under strict supervision.

9. It stated that between the hours

of 7 and 11 in the evening no ship reports should be sent.

10. It asked that Congress appropriate more money for the use of the department in inspection work.

The results of the conference's work remains to be seen.

The conference was attended by more than three hundred delegates and was declared to be the most representative gathering of all branches of Radio which has ever been held.

Divide Sessions

President Coolidge, Secretary Hoover, and many of the leading men in all branches of the Radio industry addressed the conference. For the purpose of cxpedition, Secretary Hoover arranged at the beginning of the conference to hold general sessions once a day. The remainder of the time, the conference was divided up into eight sections, each dealing with a special subject. It was deemed that this would make it much easier to reach committee agreements so that recommendations could be arranged and made to the general conference. At the first two Radio conferences all worked for the good of Radio it is expected that the third conference, when its work has been thoroughly digested, will also have accomplished considerable good.

"The day is not far, when technical developments in the broadcasting art will enable our country, through super-power stations, to reflect its culture and to speak its best thought to other nations of the world. At that time the United States will take the same position of leadership in world wide broadcasting that it occupies today in world wide Radio telegraphic communication," said David Sarnoff, vice president of the Radio Corporation of America, addressing the con-

Recommends Linking of Stations

He said, that the fundamental elements in the broadcasting situation from the standpoint of the art are: 1. Stations of comparatively limited range connected by wire. 2. Stations linked and rebroadcast by short wave transmission. 3. Super power development for a service direct to large areas of population.

C. P. Edwards, chief of the Canadian Radio Service told the conference that this country is vitally interested in Radio conditions in the United States because of its proximity and the fact that the wave lengths assigned in Canada have to conform with those assigned to this country. W. P. Terrell, chief of the Radio section of the department of commerce said that he taces two big problems. One

Tribune, said that the Radio problem is now vital with the newspapers of the United States. He pointed out to the Questions and Answers..... conference the tremendous responsibility which devolves on every man who has charge of a broadcasting station. Present Radiocasting will have a direct bearing on the citizenship of the future, he said.

"There is increasing progress in knowledge of the factors entering the Radio interference and methods of elimination various types of interference." said George K. Burgess, director of the bureau of standards. Mr. Burgess stated that the preliminary results of a statistical study of interference to broadcast reception conducted by the bureau of standards with the co-operation of about 200 observers in the past two years, located from 1 to 400 miles from two selected broadcasting stations show that the principal obstacles to broadcast reception are, in the following order: "other broadcast stations, atmospherics, radiating receiving sets, amateurs, commercial stations and non-Radio electrical interference."

Appoint Committees At the opening of the regular business session of the conference Secretary Hoover announced the appointment of 8 sub-committees, each with a chairman and secretary. The purpose of this arrangement was to allow the conference to proceed more smoothly and expeditiously. The committees with their chairmen follow:

Subcommittee No. 1, General Allocation of Frequency for Wave Length Bands, W. D. Terrell, chairman subcommittee No. 2, Allocation for Frequencies for wave lengths to Broadcasting Stations, Dr. George K. Burgess, chairman; subcommittee No. 3, General Problem of Radio Broadcasting, Gen. Geo. O. Squier, chairman; subcommittee No. 4, Problems of Marine Communication, Hon. Wallace H. White, Jr., chairman; subcommittee No. 5. Amateur Problems, H. P. Maxim, chairman; subcommittee No. 6, Interference Problems (not covered by other committees), Maj. L. B. Bender, chairman; subommittee No. 7, Interconnection, Judge > B. Davis, chairman; subcommittee No.

8. It is recommended that all high mittee was formed by three members given to the administration and to exchosen from each of the above seven committees—twenty-one members in all.

Newspaper Men Meet

Walter A. Strong, chairman of the Radio committee of the American Newspaper Publishers Association, called a meeting of the newspaper publishers operating Radio stations during the conference. Its recommendations adopted were submitted to the conference.

They pledged co-operation in broadcasting events of national importance. expressed the belief that listeners are 'opposed to any form of direct advertising by Radio. They pledged the publisher-broadcasters to a program of education "to instruct the listeners-in to avoid unnecessary interference caused by certain receiving sets."

"No Monopoly" Says Coolidge

"The administration, through Secretary Hoover, has from the beginning insisted that no Radio monopoly should be allowed to arise" said President Coolidge, addressing the assembled conference at the White House. "And" he conutinued, "to prevent it the control of channels" through the ether should remain as much in the hands of the government, and therefore of the people, as the control of navigation upon our waters. While we retain the fundamental rights in the hands of the people to the control of these channels we should maintain the widest degree of freedom in their use."

The President pointed out the responsibility which rests upon broadcasters for clean programs, and continued, "In many other countries the governments in order to assure these guarantees, have taken over the actual conduct of the program by Radio. We have not believed that this was consistent with American institutions, but we believe that freedom and development in these matters would secure wider use in the art and more perfection in its conduct. We have been prepared to trust our people to preserve the high standards and ideals which must accompany this great agency of communication.

"I wish to thank you," continued the

8, Co-ordinating committee. This com- | President, "for the co-operation you have press the appreciation which I feel is due to you gentlemen who have contributed so much to the development of this new advance in our civilization. It is a fresh evidence that the genius for progress has not left the American people, and that our citizens can be relied upon to conduct their own business in a way best calculated to promote public welfare."

Received Thousands of Telegrams During the course of the conference literally thousands of telegrams were received at the department of commerce many of which expressed the hope that no monopoly would be permitted.

"There is just one cardinal principle in the direction of the department of commerce in the relations of the government to Radio," said the secretary in referring directly to these telegrams. He continued:

'We intend to encourage wherever it lies in our power the development of this art in every direction to its maximum of service to the American people. It cannot so develop if there is any monopoly. With 530 broadcasting stations operating today and with four or five alternative methods of interconnections in prospect, or in service, there is no monopoly today nor would it be allowed."

Favor Interconnection

High power transmission and interconnection was favored by Powell Crosley, Jr., of the Crosley Radio company, in a talk before the conference. Mr. Crosley said that there is a very great misconception on the part of listeners in regarding interconnection and particularly among the owners of small sets. Many believe that high powered stations would interfere with their reception.

He spoke particularly of the benefit which the farmers of the country would derive from interconnection and high power stations. He also referred to the fact that while static is the worst form of interference, electrical contrivances in the home as well as out of it cannot be abolished but they will yield in a large measure to super power. The spark of

(Continued on page 4)

CONTENTS

Radio Digest, Illustrated, Volume XI, Number 3, published Chicago, Illinois, October 25, 1924. Published weekly by Radio Digest Publishing Company, 510 N. Dearborn Street, Chicago, Illinois. Subscription rates, yearly, Five Dollars; Foreign Postage One Dollar additional; single copies Ten Cents. Entered as second-class matter at the postoffice at Chicago, Illinois, under the Act of March 3, 1879.

All the Live News of Radio......1 to 8 Secrets of Selectivity and Regeneration, Part II—Selectivity in Series of Tuned

is the electrical device interference, including high power transmission, electric signs, trolley cars, etc., and second the wave length situation.

Press Vitally Interested

Joseph Nolan of the Oakland (Calif.)

Tribune, said that the Radio problem is

Secrets of Selectivity and Regeneration, Part II—Selectivity in Series of Tuned

Circuits, by William W. Harper

Advance Programs for the Week at the Larger Stations

Il to 14

Eight Tube Super-Heterodyne Receiver, Chapter III—Panels and Shielding, by

Harry J. Marx

Editorial Indi-Gest; Condensed by Dielectric

Operating and Trouble Shooting for Owners of Kennedy Model XV Receiver

Helpful Hints to Get the Most from Radio, Chapter VI—Crystal and Tube De- 19

tectors, by Thomas W. Benson

Looking Ahead

Operating and Remedying Troubles in the operation of the Freed-Eisemann neutrodync set will be an interesting topic for the many users of this popular receiver. Read this article of the "Operating and Trouble Shooting" series next week. Then, too, in another article, Charles Manley will discuss neutrodynes in general, and tell how to get the best possible results from them.

Two Pages Behind the Scenes at KYW await the readers. One of the first on the air, this popular Westinghouse station has remained very popular as the Radio audience has grown into the millions in númber.

How to Put the Finishing Touches on the Eight Tube Super-Heterodyne will be told by H. J. Marx in the concluding article of this series next issue. Mr. Marx will give simple explanation of the tuning intricacies of this popular set.

Resistance Is Detrimental to Selectivity. How? Read what William W. Harper has to say next issue on this subject. His extraordinary analysis of the selective set problem is worth more than ordinary attention.

A Radio Table with Enclosed Battery Compartment is the practical piece of furniture to be described next week by Charles F. Smisor in his series, "Console and Cabinet Making for Receiving Sets.'

Newsstands Don't Always Have One Left

WHEN YOU WANT

YOU WANT IT!

BE SURE OF YOUR WEEKLY COPY BY SUBSCRIBING NOW

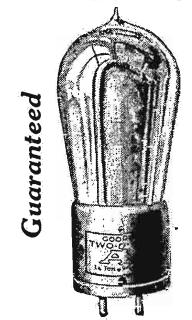
SEND IN THE BLANK TODAY

Publisher Radio Digest, 510 N. Dearborn St., Please find enclosed check M. O. for Five Dollars (Six. Foreign) for One Radio Digest, Illustrated. Year's Subscription to Address .

The "Goode" Two-o-One



Le Ton d'argent



QUARTER AMPERE

GUARANTEED SATISFACTORY

All "GOODE" Tubes Sold Direct to the Consumer-No Dealer Profits ONE-"Goode"

Detector-Amplifier \$2.39 THREE-"Goode"

The Goode Tube Corporation Incorporated OWENSBORO - - KENTUCKY

Laboratory Tested and Approved



Lincoln "Long 45" Tuner Condenser, inductance and tickler coil all in one. Add a socket, rhcostat grid-condenser and leak . . . and you have a wonderfully efficient complete sct. Coast-to-coast range with clearness of reception equal to big expensive scts. List price \$10.00.

Lincoln Low-Loss Condenser Lincoln Low-Loss Grounded Rotor Condenser, 23-plate model is most efficient electrically, strongest mechanically. Several radical improvements. List price \$4.50.

Lincoln Oscillascope

The "superhet" depends for efficiency on its oscillating circult. The Lincoln Oscillascope permits such delicate control of oscillations that it produces amazing results. List price \$6.50.

Lincoln Collapsible Loops Correctly designed mechanically and electrically. Insures quality reception... and is most convenient. List price \$6.50. The Lincoln Collapsible Four-Point Tapped Loop is ideal for "superhet" and other radio-frequency circuits. List price \$8.00.



The Lincoln Kit Includes the "Long 45" Tuner. Everything for a 1-tube set with coast-to-coast range. Easy to assemble, easy to add to. List price \$21.50.

Write for Catalog All Lincoln products fully guaranteed. If your dealer cannot supply you, order direct giving his name. Write his name. Write for illustrated cat-alog giving full descriptions.

Lincoln Radio Corporation Chicago, Ill. 224 N. Wells St. -

CROSLEY DEDICATES **NEW WLW STUDIOS**

SIGNS DIRECT PERFORMER BEFORE MICROPHONES

Overcome All Voice and Instrument Reverberation by Use of Specially Accoustically Treated Studios

CINCINNATI.—Dedication of the new WLW broadcasting studios of the Crosley Radio corporation took place at eight o'clock Monday evening, October 13, with a special program of favorite artists and personages. With few exceptions, it was supplied by those familiar to the station's

Several new features are found in apparatus design that will make this station one of the foremost in the broadcasting field. One of the most important contributions to the Radio art is found in the combination inicrophone stand and signal system, developed in the engineering lab-

oratory of the station.
Signs Direct Performer

By means of this stand, it is possible for the musician or speaker to know when to broadcast without the studio director personally informing him Small signs are placed on the top of a pedestal, arranged so as to be seen from any position in the studio. One is "Prepare" and the other, "Broadcast." These signs are automatically controlled by the studio di-

This device tends to do away with the little delays which occur in broadcasting studios where the microphones have to be adjusted for the individual work and where only one studio is used. It is unnecessary to move the microphone from one position to another to take care of a single artist or an ensemble.

Use Two Studios Exceptionally large ensembles can be accommodated in the large studio which is 27 feet by 28 feet. In the solo studio, which is 14 feet by 28 feet, ample room Is found for a small orchestra and the studio director's office. An auditorium, 41 feet by 21 feet, is provided for visitors. who are able to see the artists through the plate glass partitions of the two studios and hear just what the Radio audience does by means of a loud speaker.

Groups of four colorful chairs are placed throughout the auditorium. Tapestries adorn the end walls, while a large mirror hangs above the heavy, handsome Italian chests. Large over-stuffed davenports are at each end of the room while overhead lighting gives the necessary

artistic touch.

Ventilate with Noiseless Fans

Monks cloth covers the walls of the two studios, its special mission being to take care of the perfect reproduction of the music and voice without reverberation. The ceilings are especially treated accoustically as an adjunct to the walls. Noiscless ventilators keep the studios and auditoriums at even temperature.

A triangular shaped room, located between the two studios, is equipped with an amplifier and switches in the telephone circuit for use in remote control. The operator and studio director can see and control the microphones from this room.

TENNESSEE STATION TO JOIN CLASS B SOON

Announce Power Increase for WOAN at Lawrenceburg

is to have another large broadcaster on the air soon when WOAN makes its debut as a 500-watt, class B station. The massive steel towers have been constructed and when the 500-watt transmitter is installed probably about November 15, the station will be ready for use. This station belongs to James D. Vaughan, music publisher, and has been operating on 200 watts for some time.

"OLD BILL"—VOICE OF HASTINGS



W. G. "Bill" Hay, announcer at Station KFKK, who landed in third place in the recent first annual Radio Digest Gold Cup Award. Mr. Hay is admired by thousands of Radiophans throughout this country, and next to his family and work, he likes his pipe the best.

BRITISH TO RELAY U. S. RADIOCASTS

Difficulties Still Remain for America to Overcome in Perfecting Rebroadcasting System

LONDON.—In an interview to the press recently, Capt. A. D. G. West, assistant chief engineer of the British Broadcasting company, was optimistic regarding the relaying of American broadcasting in England this winter.

Capt. West is confident that the greatest difficulties have been overcome and Cape Bauld, which is the northernmost that reception of America will be con- cape of that island.

siderably easier this year than last. He has made good use of the experience gained last winter in modifying his receiving apparatus and is convinced that it is as nearly perfect as any such apparatus yet produced.

"I am of the opinion that, at the point we have reached, it only remains for America to overcome the difficulties on that side," said Capt. West, "and we of the B. B. C. shall be able to provide concerts for English listeners in

Radio Operates Fog Signal WASHINGTON, D. C.—The Newfoundland government has just established an automatic Radio fog signal beacon at

WNAC HOLDS FIRST **CARILLION CONCERT**

LEFEVERE, NOTED ARTIST, COMES FROM MALINES

Concert Said to Be First Ever Broadcast Here and Second in Radiocasting History

BOSTON.—For the first time in the musical history of the United States a carillion concert was broadcast from Station WNAC on October 15.

This rare and highly melodious instrument consists of a set of 23 or more perfectly tuned bells, arranged on a chromatic scale in the manner of a piano. It is located at St. Stephen's church in Cohasset, Mass., and is the gift of Mrs. Hugh Bancroft as a memorial to her mother. It was dedicated a short while

For the occasion of this concert Monsieur Kamiel Lefevere, one of Belgium's most famous carillioneurs, came to this country from his home in Malines, where he is assistant carillioneur at St. Rombold's cathedral.

It is in Belgium that most of the carillions are today. Most of them date back of the seventeenth century. Their history is exceedingly interesting.

Date Before 1600

In the beginning of the sixteen hundreds there were several famous bell founders who mastered the art of casting musical bells and tuning them perfectly. It was during this time that most of the carillions of Holland, Northern France and Belgium were made.

They differ from the ordinary set of chimes in that all chime music is confined to the very simplest airs and only in the key of C. On the carillion any musical composition that can be played on any instrument can be used, and in any desired key.

The carillioneur plays on a keyboard which in a general way resembles the keyboard of an organ with short levers in place of keys. These levers are attached by wires to the clappers of the

First Carillion Concert Here

The secret of art used in the casting and turning of the bells was lost over 250 years ago. It was only three years ago that it was rediscovered in England and carillion manufacture was resumed.

The carillioneur is trained at the school in Malines. It is the only one in existence and under the direction of Jeff Denyn, known as the greatest carillioneur of all time.

The only other time a carillion concert has ever before been broadcast was at the recent Wembly exposition in England M. Lefevere was the artist then.

Applause mail proved at Station WNAC that the concert was regarded as one of the most unusual and remarkable ever

WOR Resumes Dance and Social Lessons

Murray, Famous Instructor, Tells How in Weekly Program

NEWARK.-Jimmy Caruso's ensemble, a favorite with Radio listeners, opened the regular Monday evening (October 6) festivities from WOR, and ushered in the broadcast by America's best known dance instructor, Arthur Murray, who resumed his instructions on up-to-the-minute dances and social etiquette.

Professor Murray's Radio dance lessons will be broadcast weekly from 76 Radio

The instructions are supplemented with music played by the Carolinians under the direction of Charles M. Koch, a feature in itself. The famous orchestra proved as popular as any single Radio



HOOVER PARLEY ENDS

(Continued from page 2) the marine Radio will always be heard to some extent.

C. W. Horn of the Westinghouse Electric and Manufacturing company also addressed the conference on interconnection and told in some detail of the experiments of his company with short wave lengths.

Experiment with Short Wave

He told in particular of the short wave length experiments which the Westinghouse company has recently been making between eastern points. He said that the broadcaster now must try to utilize short wave lengths. In this connection Mr. Horn spoke of the experience which his company had had with the Wills-Firpo fight which was broadcast to Buenos Aires, Argentina, and which was sent by short wave length. He said that his company is "now ready to do some-

The marine Radio situation was discussed by George S. Davis, representing the American Steamship Owners association. While he went into various phases of the situation his chief plea concerned the abolishment of the spark system in the marine service.

Explains Shipping Benefits

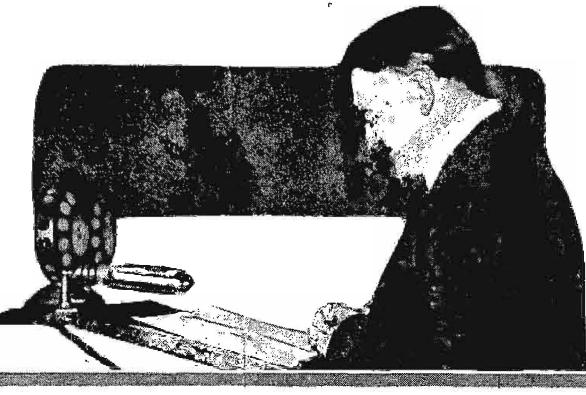
Mr. Davis said that Radio is a most valuable adjunct to the shipping business and he spoke in particular of the SOS call, the weather reports, the Radio compass and the Radio beacon as being a great boon to the shipping interests.

It costs between \$4,000 and \$5,000 as an average to equip a ship with Radio and this has led to a large investment by the ship owners. They should not, he contended, be asked to do away with the spark system because of this. Mr. Davis admitted that the marine code signals have interfered with broadcasting but said these same problems of interference have always been existent. You cannot, he said, legislate interference out of the way, any more than you can legislate against static. The ship owners have solved many problems in the marine service through co-operation. Marine interference is small as compared with all other interference. There is more interference from regeneration than from code. He told the conference that the ship owners view with concern any attempt to abolish the spark system from the marine service.

Capt. Eckersley Talks

The Radio situation as it exists in England today was explained in some detail to the conference by Capt. P. P. Eckersley formly throughout England and later this representing the British Broadcasting was supplemented by what are known as the conference that it considered the was receiving a program.

IS SATISFIED WITH CONFERENCE



Secretary of Commerce Herbert Hoover, who has just closed the Third National Radio Conference at Washington. Sixteen stations, stretching from coast to coast, were linked together for the simultaneous broadcasting of his opening speech. He was well pleased with the manner in which the conference handled the various prob-lems on super power stations and the elimination of interference. Miller Photo

company. He spoke of the work now relay stations which are linked up by being done in England as compared to its wire. Within the past few months he beginning and of the differing conditions between English and American broadcasting.

Capt. Eckersley amused the conference by stating that the British government in 1922 as a great concession allowed a broadcasting station to entertain the public a half an hour a week. By the end of 1922, however, England had awakened to the possibilities of Radio. He admitted, however, that it is even now miles behind the United States.

He spoke of the combination of the six big English manufacturers for the erection of a broadcast station and told of the government's licensing of receivers. In 1922, he said, only about 10,000 licenses had been granted. Today England is celebrating the issuance of its millionth license.

English Distribute Stations

The Radio manufacturers first erected eight broadcast stations distributed uni-

said, this service has again been supplemented by a new super power station. Capt. Eckersley stated that through the distribution of these stations fully 50 per cent of the listeners in England use crystal sets and the new super power station reaches crystal sets within a radius of 100 miles.

the two continents. He said that in his opinion very high powered stations would be necessary to accomplish this.

He also suggested the possibility of a world broadcasters association which might be mutually helpful.

Would Cut C Stations

Several of the committees of the conference urged that the class "C" licenses issued by the department should not be renewed and one of the committees suggested that in the future not more than two class "B" licenses be allowed in any one locality on the same wave length.

The allocation committee reported to

present general organization of broadcasting stations satisfactory. The committee suggested that no change be made in regard to the broadcast development class of stations.

"There are at present only two such stations," said the committee, "and they are considered as experimental. There seems to be no good reason to change their requirements or to attempt to fit them more closely into the general scheme of broadcasting stations than at

The same committee recommended that a small continuing committee be designated by the conferences to remain in Washington and collaborate with the Radio supervisors in a reassignment of the broadcasting station frequencies in accordance with its suggestions.

Oregonian Orchestra Gives First Concert

Organized as Result of Questionnaire Asking Concert

PORTLAND.—The first concert given by the newly organized Morning Oregonian concert orchestra was Radiocast from the paper's station, KGW, on Oc-

A questionnaire was circulated for several weeks asking listeners-in to tell what kind of music they enjoyed most. Seventy-five per cent asked for high grade concert music. The orchestra is the result. They will play every Monday night.

Four noon-time concerts, lectures and dance programs will be given during the week. On Friday night the climax will come in the form of the big Hoot Owl

Capt. Eckersley urged the linking up of Present King George with Set for Buckingham Palace

LONDON.—Great Britain has in King George a very enthusiastic Radiophan. Not long ago His Majesty accepted a specially-designed Radio set for Buckingham Palace, presented by the British Broadcasting company as representative of British Radio manufacturers.

Mahogany and ebony, beautifully inlaid with ivory, boxwood, and mother-of-pearl were used in the cabinet, which was executed by a famous furniture manufacturing concern. Within two minutes of the installation of the set, King George

Why it is Better

Look at this illustration—see for yourself the eleven distinctive features in the construction of the Federal Condenser. Every feature is a distinct point of superiority essential to clear, sharp tuning and clear reception.

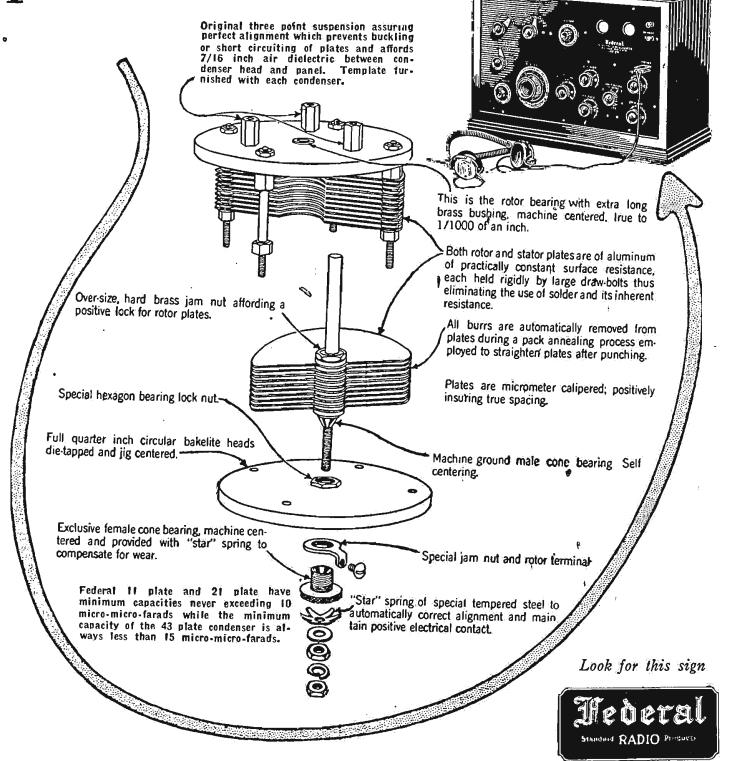
You can get the outstanding advantages of Federal Tone and Federal Selectivity in your pet hook-up only by insisting on Federal Parts.

There are over 130 Federal Standard Radio Parts bearing the Federal iron-clad performance guarantee. Use them—for your own protection and enjoyment.

FEDERAL TELEPHONE & TELEGRAPH COMPANY BUFFALO, N. Y.

Boston New York Philadelphia Pittsburgh Chicago San Francisco Bridgeburg, Canada





WGN FEATURES NEW MUSICAL PROGRAM

PRESENTS OPERATIC ARIAS EVERY OTHER SUNDAY

Celebrated Chicago Symphony Orchestra Under Nathanial Finston Leads List of New Acquisitions

CHICAGO.-The Chicago Theater symphony concerts and twin organ recitals, presented every Sunday morning, have

been added to the musical programs of Station WGN. Musical Director

Nathaniel Finston of the Chicago The-



Nathaniel Finston

ater alternates on every second Sunday symphony concerts and grand opera in English with the twin organ recitals by Mr. and Mrs. Jesse Crawford. The concerts and organ recitals go on the air at 11:45 every Sunday morning and run for a full hour.

In addition to this Sabbath feature, WGN has augmented its schedule with

three hours of classical music every Sunday afternoon—known as the Tribune Master Artists' Concerts, offered between 2:30 and 5:30 p. m. Only faculty artists are booked for the Sunday concerts, part of which is an hour and a half of concert and organ music relayed from the Central Music hall, presented by the Chicago Musical college.

The Lyon & Healy Artists series of concerts, formerly broadcast by WMAQ, have also been annexed by WGN and are put on the air between 2:30 and 3:00 every afternoon except Saturday and Sunday. Organ recitals will be broadcast by WGN every evening between 6:00 and

Give all Types of Music

The widespread popularity of the Chicago theatre symphony orchestra is due to a peculiar "secret" behind its presentation. The secret is that it presents symphonic, operatic, ballet, or popular music with the same expertness as other celebrated organizations which specialize in only one type of music.

To Nathaniel W. Finston, musical director, goes most of the glory for the organization. Though a surprisingly young man, his success is not surprising when you are fold that at 13 he was one of the musical prodigies of America, noted for his violin talent. His training and education is strictly American in background and entirely liberal in scope.

Introduces Sunday Concerts. Under his administration of musical affairs at the Chicago, he introduced the Sunday noon popular symphony concerts, now entering the fourth season. Last season, seven operas in English were given as part of the Sunday noon concert season, and during the forthcoming season. at least seven more are planned.

The greatest of symphonic works, to delight the heart of the conservatory student, or the music for the untutored ear of the masses, have, as a matter of policy, been balanced on each program.

Plays at WEEI; Gets Concert Engagement

Young Entertainer Booked Five Minutes After Performance

BOSTON.-While the new Edison station WEEI is not listed as an entertainment booking office the staff in the broadcasting department is always glad to do anything possible to provide talent at concerts or to get their artists profes-

This co-operation on the part of the

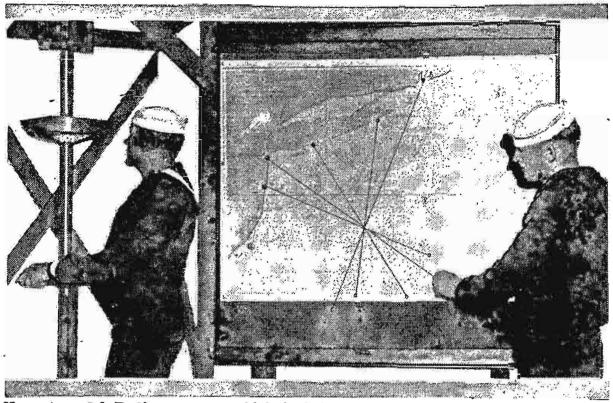
broadcast officials is taken as a high commentary on the type of programs being broadcast from WEEL. Miss Lillian Clark, the 14-year-old harpist who played from the Edison station Tuesday evening, not only received honorable mention in the "listeners columns," of the newspapers but her debut was directly responsible for a concert engagement.

A few minutes after her recital a man called the Radio station and inside of two minutes she was booked to appear at a concert later in the week.

Municipal Band to Broadcast

MADRID, Spain.-The famous Municipal Band of Madrid, one of the most celebrated bands in Europc, will now give concerts over the ether lanes, on a schedulc to be definitely arranged later. The tentative plan is to have daily concerts from 10 a. m. to 12:30 p. m., local time.

LATEST AID TO U.S. NAVIGATORS



Newest model Radio compass which is being used by the U. S. Navy in finding the direction of ships and taking compass bearings. It is being used by most of the first class liners of today for this purpose. This unit was part of the Navy exhibit at the recent Radio World's Fair, and caused much comment on the part of visitors who wondered how ships were steered in a fog. By obtaining sufficient bearings from other ships, land or compass stations, the exact position of a vessel is determined, using the crossed strings as shown above.

Vast Throng Hears Great Conference

Place Loud Speakers on Tabernacle Grounds and Broadcast Huge Mormon Meeting from KFPT

SALT LAKE CITY.—The proceedings of the great Mormon or Latter-Day Saints Church conference, an institution older than the state of Utah, were Radiocast from Station KFPT located on the Deseret News building.

Loud speakers were set up on the tabernacle grounds so that thousands of people unable to find seats in the big auditorium might be able to hear.

Herber J. Grant, president and prophet of the church, opened the session. Con-cerning Radio he said: "It is the most marvelous and wonderful invention of the age. It is almost beyond human comprehension in its ability to carry the human voice thousands of miles through space."

It is estimated that the proceedings of the conference reached over one million

Transmit Good Photos

LONDON, Eng.—Among the remarkable achievements exhibited at the sixty-nintly annual exposition of the Royal Photographic society, were a number of photographs transmitted by Radio. The absence of the streaky effect so long discernible in such photographs was an improvement particularly noticeable

How I Average \$12 a Day in RADIO WORK

By Howard Houston

"Y ES, Mr. Crosby, I'll have the set installed tonight.. yes, all ready to 'listen-in' . . . sure you'll be able to get Washington by 9 o'clock."

Another hour and a half job! And another ten dollar bill in my pocket! It all seems like a dream. But let me tell you the whole story from the very start.

A few months ago, I was driving a bread wagon, selling bread to retail stores. I had a good route though, and if I do say so myself, I had built up a pretty good business. But try as I could, thirty-five dollars a week was all I could make that job pay.

I'd be working there now if it hadn't married as soon as I would be earning more money. But the old job didn't hold out much promise—and I didn't see how I was qualified for any other work that would pay more.

It was Mary who gave me the tip. "You can't earn big money," she said, "unless you're some kind of a specialist. Learn some line of work—become an expert in it." But what business, profession or trade was there that wasn't overcrowded? Where could an ambitious fellow stand a good chance to earn big money and get ahead? Stenographers, accountants, clerks — all down the line—every well established line of work was overcrowded, and the pay was small.

Then Mary said, "Why not find a new field?" That was a good thought. The men who went into the railroad .business early "cleaned up." The same was true of the movie game, the automomobile businessbut what was the coming field? What new development was there that looked like a new promising industry?

We both jumped. to our feet.

"RADIO." Why hadn't we thought of it before? All around us was the evidence of the tre-

systematized.

radio plant.

mendous development of Radio. The broadcasting stations sprouting up all around—the rapid increase in Radio Stores — new radio manufacturing plants-everybody talking about the latest radio program. Radio had captured America almost overnight-and thousands of men who were on their toes were due to make fortunes out of

Thousands of Men Needed

my route, I went to several radio business firms. "Sure, there was an open-

ness firms. "Sure, there was an open-ing. Oh, they'd pay big money—but did you know Radio?"

That was my cuc. Learn Radio. Be-come a Radio Expert—and I did!

I've only started. I've followed the path

of least resistance. Sort of built up a business of my own installing, building, and repairing radio sets. Any small job

pays me at least \$5—and usually \$10. I can easily make from \$50 to \$100 a week—and more as I get my work

soon having a very quiet wedding-what

we must decide after that-is which end

of Radio will be best. You see, there are dozens of different kinds of work

had several offers-one to take charge

of a radio department, another with a

broadcasting station, another to give radio entertainments, and a good offer as superintendent of construction in a

on is which will not only pay the most money now but will lead to the most

rapid advancement in the future.

What we want to decide

I've already

in this field, it's so big.

What Mary and I have got to decide after our honeymoon-oh, yes, we are

Well, that really is my whole story.

The very next day after I had finished



Easy to Learn Radio at Home in Spare Time

Just a word about this Radio business. Some fellows think you've got to have some training before you start to learn Radio. That's bunk. I didn't know the difference between an amplifier and a doorknob before I started. But let me give you a tip. Don't experiment with your Radio course. Get the best. The National Radio Institute has been teaching Radio ever since 1914. The government recognizes its course by allowing credits to its graduates when they are trying for a license, so you

see you can be confident you're getting the best training possible—and that means a lot.

This course is the only absolutely complete one now being offered which qualifies for a government first class commercial license. It gets you the bigger paying take in Bodies. jobs in Radio.

Send for Free Book "Rich Rewards in Radio"

Incidentally, the National Radio Institute publish a mighty interesting book on Radio. They send it out without cost to anyone who wants to learn about Radio. It is filled with facts, photos, and figures on the Radio Industry, and tells all about its course which quickly prepares you right at home in spare time for one of the big pay positions in Radio.

Take my advice and Mary's—and send for that, no matter how little you know of Radio, or what your plans are. For a short time they are offering a reduced rate for those who enroll now. Act promptly and save money. Just mail the coupon today. Address the National Radio Instituto, Dept. 55KA, Washington, D. C.

1,			-			
				-		_
1	NATION	AL R	DICA	INST	TUTE	E.
1	NATION Dep	t. 55K	A, W	ashing	ton, I). C
				vlthout		

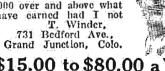
Please send me without cost or obligation your Free Book, "Rich Rewards in Radio," which tells all about the opportunities in Radio, and how sparc time study at home will qualify me for a big paying radio position. Also full details are not also full details. ing radio position. Also full details on your Free Employment Servico.



Pay Increases Over \$100 a Month I am averaging anywhere from \$75 to \$150 a month more than I was making before enrolling with you. I would not consider \$10,000

Doubles Salary I can very easily make double the amount of money now than before I enrolled with you. Your course has benefitted me approximately \$3,000 over and above what I would have carned had I not taken it.

721 Redford Ave.



Before I enrolled with you I was making \$15 a week on a farm. Now, I earn from \$2,080 to was making \$15 a week on a farm. Now, I earn from \$2,080 to \$4,420 a year and the work is a hundred times easier than before. Since graduating a little over a year ago, I have earned almost \$1,000 and I believe the course will be worth at least \$100,000 to me. (Signed) George A. Adams. Route 1, Box 10, Tamaqua, Pa.

too much for the course. (Signed) A. N. Long, 121 No. Main St., Greensburg, Pa.

From \$15.00 to \$80.00 a Week



WQJ ENTERTAINS AT "KAFFEE KLATSCH"

300 IN ATTENDANCE EVERY SATURDAY AFTERNOON

Domestic Science Students Meet Weekly at Station to Discuss Lessons Over Coffee and Doughnuts

CHICAGO .- "and when I whipped in the eggs * * * well, Mrs Brown, the first way is the best * * why, it was so lovely and crisp * * * no idea what a time saver

So the "Kaffee Klatsch" is in session. Already 1500 have signed their membership cards in this new organization. They are the women who listen in to the daily domestic science programs Radiocast from the Calumet Baking powder and Rainbo Garden Station WQJ.

Every Saturday afternoon at 3 o'clock 300 of them gather together in the Radio room where they are served coffee and doughnuts. And here they have a chance to discuss the domestic science lessons of the week. Invitations for 300 women are sent out each week because of the impossibility of having the entire membership gather in the limited space.

Out-of-town listeners are regaled with a special "Kaffee Klatsch" program which is broadcast.

WQJ invites every listener to join the organization and attend the meetings.

CANADIAN LISTENERS HEAR BRITISH SAILORS

Concert Party of H. M. S. "Curlew" Entertains at CKAC

MONTREAL.—Time was when the thoughts of the sailor went no further than the sheets he sailed under. But

Rivaling the versatility of the most accomplished musicians and ranging from fuges and sonatas to monologues, the "Curlew Cyclones," concert party of H. M. S. Curlew, Radiocast entertainment from Station CKAC of the Montreal "La Presse," recently on their first appearance in North American waters.

DOLLIE AND JOHNNIE LISTEN IN



until the hunting season opened and then

gun as an aerial, a lot of noise is elim-

inated. Not only that, but the shotgun

may be used hunting afield for the pur-

Station Resumes Programs

MADISON. - Radiocasting from the

University of Wisconsin Station WHA

was resumed on October 13. Prof. W. H.

Lighty of the university extension di-

vision is in charge of all arrangements.

The station has made application for

University of Wisconsin

Dollie claims that by using the shot-

have received WOS, KFKX, WDAF and pose of receiving concerts when sitting WLS from their home in Speed, Missouri. Johnnie, the dog, has a special headset made to fit him. He listened in

Being "pals" when at home Dollie and Johnnie listen in together, and when out hunting they also work together. While Johnnie runs down rabbits and squirrels, Dollie yells with glee as her Dad shoots them. Then Dollie and Johnnie help to

equipment added during the summer. The

around the campfire.

carry them home. a class B rating in view of the new

SAVANT ASKS HELP IN **OBTAINING MARS DATA**

Radiophans Requested to Report Times of Unusual Phenomena

NEW YORK CITY-Assistance of all Radiophans has been asked by Prof: David Todd, noted astronomer, in an attempt to ascertain whether or not Mars' magnetism, or other factors, were responsible for the electro-magnetic phenomena registered when Mars was close to the

This Radio check-up may give the world much knowledge concerning the

Prof. Todd asks that all fans who listened in between July 24 and September 24 and noticed a strengthening and diminishing of whatever was on the air, send in a record of it with the times of the differences in intensity. Reports covering a day or so will be greatly helpful, but those of only an hour will have

These reports should be addressed to Prof. Todd, Chairman of the Mars checkup at the Aerial League of America, 280 Mádison avenue, New York city.

This information will be tabulated and compared with other tabulations of the magnetic variations registered for the same period of time, and data from astronomic observations of Mars. It is expected that the results will make it possible to ascertain whether Mars and other planets affect the earth's conductive media and aid or interfere with our Radio communication.

Scientists are placing great reliance on the results of the check up. Everyone who noticed any particular phenomena is requested to send in a report with the time at which it occured.

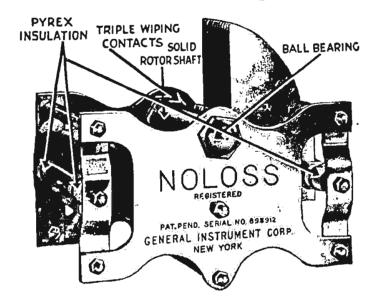
Broadcast Description of Murderer Leads to Arrest

LONDON .- Considerable interest has been created in England by the arrest of a murderer at sea by the use of Radio. William Breant murdered his mother-inlaw in Liverpool, and then escaped and put to sea aboard an oil-tanker. A Radio message to the ship caused the captain

NOLOSS

signed off.

Insulated with Pyrex



Air, Isolantite, Pyrex, Corantum and Quartz are the only recognized zero or minimum loss insulations in existence. GENERAL INSTRUMENT CORPORATION INSULATES WITH AIR, ISOLANTITE, PYREX, CORANTUM AND QUARTZ. Thus you are assured greater distance, increased selectivity and clearer reception. By eliminating energy waste these condensers overcome losses and give power to your set.

Туре	Maximum Capacity	Minimum Capacity	Price
51X	.00025 mfd.	9 mmfd.	\$6.00
51 A	.0003 mfd.	11 mmfd.	6.00
511)	.0005 infd.	13 mmfd.	6.50
51 F	.001 mfd.	20 mmfd.	7.00
52D	.0005 mfd.	13 mmfd.	9.00
52F	.001 mfd.	$20~\mathrm{mmfd}$.	9.50

At your dealers or direct from

GENERAL INSTRUMENT CORP.



423 Broome Street **NEW YORK CITY**





113 Fourth Avenue, New York

EXPLAIN DISASTERS BY NEGREI'S THEORY

RINGS GATHER CHARGES AT STATION'S MID-POINTS

Rumanian Savant Advances Theory as Cause of Recent Catastrophe at Army Base in Bucharest

By Frederick Delano

PARIS .- That Radio waves can and do produce charges of electricity in certain pieces of iron-such as rings-which discharge as small sparks and have caused many of the hitherto inexplicable disasters, such as that of last May in Bucharest, is the interesting and novel theory of the Rumanian savant, General Negrei, director of the technical department of the Rumanian Army and Professor of ballistics of the Bucharest Military school.

The explanation of this phenomena advanced by General Negrei is simple and is backed by a heavy barrage of mathematics and scientific data.

Rings Act as Condensers

The general maintains that from his own studies and experiments, as well as from the findings of many other savants, it appears that Radio waves produce, in such objects as iron rings broken by a small cut, and not attached to or in connection with the earth in any manner, small electric charges. In other words, these iron rings act as condensers to store the tiny amount of energy radiated by various wireless stations—actually the reception of energy by induction.

This energy would not, under ordinary circumstances, be of any serious consequence. But after a long time of charging, if a small enough distance existed between such a "condenser" and the ground or if a path to the earth were found, the ring might then discharge its load across any intervening air, in the form of a tiny spark. The rest is obvious, in case the spark were to come in contact with even a grain of powder in one of the big ammunition centers.

Mid-Points Dangerous The action of such Radio waves in producing induced energy in iron rings is probably greatest, says General Negrei, at the meeting point of two series of Radio waves. Thus, in the Bucharest explosion, it will be found that Bucharest is centrally located between the big sta- the usual lunch hour programs.

PATT LEAVES WDAF TO FINISH COLLEGE



John F. Patt

KANSAS CITY, Mo.-John F. Patt, formerly assistant Radio editor of the Kansas City Star and announcer for WDAF, has been granted a leave of absence from the Star to complete his college work at the University of Kansas at Lawrence. While attending school Mr. Patt will be assistant director of the new 500watt station which is being installed by the university and which will be opened about the first of

January, Leo Fitzpatrick is the director and chief announcer of the station. He will continue to act in this capacity,

tions of Nauen (Germany) and Salonica. This explosion, which brought about these investigations was that of Fort Cotroceni, just outside the city, on May 28, 1924. The entire fort was destroyed, serious property damage was done, and many lives were lost.

Explains Other Disasters

This theory would also explain, points out the general, the mysterious burning of the two steamers at Toulon, which is halfway between Paris and Bizerta. Likewise the Italian steamer Volturno, which caught fire from unknown causes in mid-Atlantic, may well have been in the exact range between the big Ste. Assise station near Paris and one of the American Radio centers. The explosion, in 1921, of Fort Cotroceni, near Bucharest, could also be explained thus, according to the Rumanian savant.

Start CKY Farm Service

MANITOBA -Farmers and others interested in agriculture are invited to write the Manitoba Agricultural college asking questions coming within the scope of the college courses. They will be read and answered from Station CKY during

Football Radiocasts

October 25

Chicago-Ohio at Columbus, WEAO (360), Harvard-Dartmouth, WBZ (337).

Michigan-Wisconsin at Michigan, WGN

Minnesota-Iowa at Iowa City, WHAA

Pitt-Tech at Pittsburgh, WCAE (462). Princeton-Notre Dame at Princeton, WEAF (492), WGY (380), WJZ (455).

November 1 Harvard-Boston, WBZ (337).

Purdue-Chicago at Chicago, KYW (536), WMAQ (447.5).

Iowa-Illinois at Illinois, WGN (370). West Point-Yale at New Haven, WEAF (492), WGY (380), WJZ (455). Wooster-Ohio at Columbus, WEAO

Government Fosters Private Radiocasters

Recommend Stations Be Used for National Emergencies

WASHINGTON .- The government will foster and encourage the development of privately owned and operated Radio stations in such a manner that they will be available for national defense in case of a national emergency.

This is the outstanding feature of a report recently issued by the Interdepartmental Radio Advisory committee concerning the government's Radio policy.

According to the report this encouragement should consist in utilizing the services of commercial stations wherever government interests warrant it to accomplish certain services.

Recommendation is made by the committee that no station be erected in the vicinity of a government station until it has been investigated by the interdepartmental organization and found to fulfill necessary qualifications.

In the program, just made public, a wide range of subjects is discussed including regulation of both government 650 meters thirteen different harmonics and private stations and the government can be counted in the Eiffel Tower arc interest in Radio communication.

RYAN TO ANNOUNCE **GRID YARNS AT WGN**

TRIBUNE STATION TO GIVE 5 BIG MIDWEST GAMES

Complete Story of Michigan-Wisconsin, Illinois-Iowa, Notre Dame-Nebraska and Illinois-Ohio

CHICAGO.-WGN has contracted with the American Telephone and Telegraph company for direct private lines from

three stadiums for the broadcasting of the biggest midwest

football games. Illinois tied Michigan last season for Conference championship, so WGN put this year's Illinois - Michigan contest on the air last Saturday, October 18, broadcasting

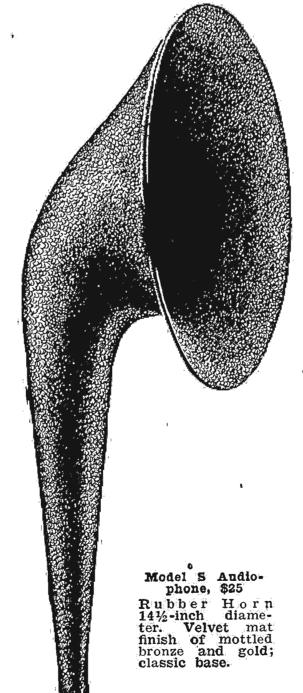
from Urbana, Ill.
Quinn A. Ryan,
publicity director and announcer of WGN, is reporting the gridiron combats for the station. Mr. Ryan covered the Big Ten games for the Chicago Tribune for three

years and was for a long time associated with the paper in various capacities. He has been reporter, advertising writer, house organ editor and one of the book reviewers of the Tribune, and conductor of two humorous sports columns. He will be remembered as the comic announcer who made known each act in verse last winter and fall in the Chicago theater shows broadcast by WMAQ.

Quinn A. Ryan

The other games to be broadcast by WGN are: Michigan vs. Wisconsin, at Ann Arbor, Oct. 25; Illinois vs. Iowa, at Urbana, Nov. 1; Notre Dame vs. Nebraska, at South Bend, Nov. 15, and Illinois vs. Ohio State, at Urbana, Nov. 22.

"L'Antenne," the French Radio weekly, announces that between 162 meters and transmission.





Both Must be Musical Instruments

TF you are to enjoy the rich resonance L of an old Cremona violin, your loud speaker must also be a true musical instrument. So designed and powered as to respond as faithfully to the inspiring crescendos of a Wagner opera as to the whispers of a Moonlight Sonata.

The new Bristol AUDIOPHONE does that. With its joyous, open-throated Rubber horn, and its finely adjusted transformer, it is on a musical plane with the noblest instrument or voice at your favorite station.

In addition to Model S, shown here the Bristol line includes Model J, \$20, Baby Grand, \$15, and the "Baby" at \$12.50. Send for bulletins AY-3017 and 3011, mentioning the name of your dealer.

> THE BRISTOL COMPANY Waterbury, Conn.

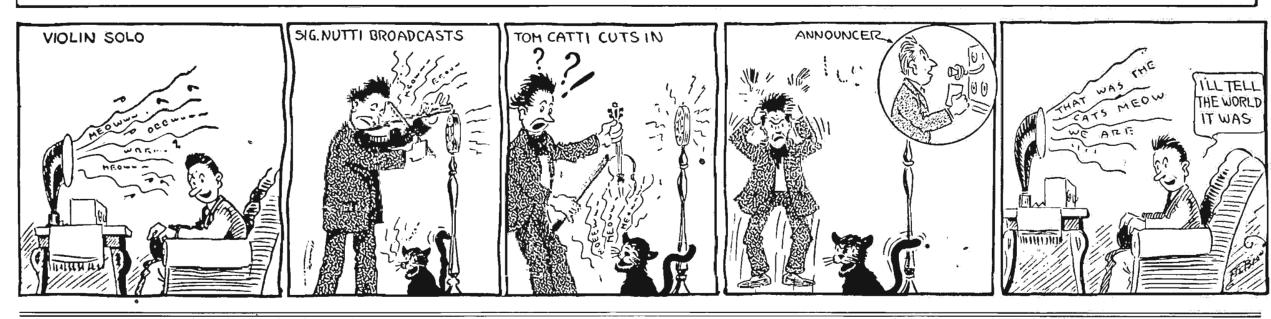
BRISTOL AUDIOPHONE

SPEAKER LOUD

THE ANTENNA BROTHERS

Spir L. and Lew P.

Paging Mr. Darwin



SEEK NEW LOCATION WITH PORTABLE SET

TRUCK CARRIES COMPLETE TRANSMITTING STATION

Collapsible Masts 55 Feet High Carry Braided Wire Aerial to Give Greater Flexibility

CHICAGO-"This is Station WJAZ broadcasting on a wave length of 268 meters and using 100 watts output." If you should hear this phrase, it will mean that you have been listening to the new portable transmitter which this station is using.

It is built upon a motor truck and is self-contained. Everything necessary for the broadcasting of programs is carried. This truck is capable of charging all the batteries used while the station is in operation.

The aerial is extremely novel, consisting of four heavily braided copper wires with an extremely fine wire making them very flexible. The masts used to support this aerial are similiar to the ones used by the government during the war. They

of the mast is fifty-three feet.

The entire framework and body of the truck, including the iron strips on the floor are connected together and grounded. The grounded strips are brought together to one point at the side of the truck where a heavy connection lug is attached.

Special arrangements are provided whereby the microphones can be placed as far as 300 feet from the truck, allowing broadcasting of performances in halls while the truck is parked outside. Three microphones may be used, one for announcing, one for orchestra and one for studio purposes where necessary.

Use Gold Plated Wiring

The entire wiring of the set is by bus bars. Each is gold plated following the Zenith practice. Three stages of pushpull amplification are used in the line amplifier which is connected to a fivewatt speech amplifier.

This portable transmitter is making a tour of the cities surrounding Chicago to determine the best location for the erection of the new Zenith station. Many towns have been visited, and the Chamber of Commerce in numerous other towns have asked that the truck visit them

After a program the aerial can be taken down, packed up, the truck closed and started on its way in ten minutes.

According to reports of the United States shipping board, the Leviathan is are built in sections so that they may equipped with the best Radio installation.

collapse into each other. The total height | New Chicago Station Slated to Open Soon

Bureau of Navigation Assigns WBCN as Official Call

CHICAGO .- "WBCN, Chicago." Chicago Radiophans will soon hear this call if the promise of the Western Electric company to deliver the new 500-watt broadcasting set to the Southtown

Economist early in November holds good. The call letters, "WBCN," have been officially assigned to the Economist station, which is to be operated by the publishing firm of Foster & McDonnell. Word of the assignment came from the

Bureau of Navigation recently.

The significance of the letters is:
"World's Best Community Newspaper."

A number of distinct innovations in programs are in store for WBCN listeners, according to Robert Northrop, director, who announces that the new station's policy will be considerably different than the average.

Improvements at CKY

WINNIPEG, Man.-Improvements at the Manitoba Station CKY, involving raising of the masts and alterations in the studio and operating plant, are now under way.

JACKSON GIVES BOOK CRITICISM FROM KGO

Word Pictures of Books and Their Makers Entertaining

OAKLAND-Last year there were about 6000 books published in the United States. The average reader will find only a few of them of sufficient interest to be worth his time to read. So now comes Radio to help him select.

On the KGO Monday evening programs, Joseph Henry Jackson, well-known authority on books, tells in his own way just what he thinks are the better books, and also something about authors.

Here is a sample of the way Jackson begins a book chat: "Last week I promised to tell you about two books, one of them good and one of them bad. I apologize-they are both bad."

Hear WLS in Alaska

CHICAGO.-WLS Unlimited has inade its longest journey. Breaking all previous distance records by traveling the spaces of the air for almost two and a half thousand miles, L. E. Edwards, a United States Army lieutenant stationed at Chilkoot Banks, Hames, Alaska, 2,400 miles away, tuned in on the program of the Sears-Roebuck Agricultural Foundation's station.

Look for the Name WALNART on Your Radio

This trade mark is your guarantee of reliable, dependable radio apparatus. Look for the name Walnart. It means trouble-proof radio products. They

Unbreakable unconditionally guaranteed tube sockets, "B" Battery and Inductance Switches, Variable Condensers (plain and vernier), Vernier Adjusters, Dials, Variable Grid Resistances, Lettered Binding Posts, etc.

You cannot afford to buy inferior parts.

Write for literature

WALNART ELEGIPIC MFG. CO. GREEN ST. AT JACKSON BLVO., CHICAGO



popular Inart "Tel-Walnart "Tel-Posts" (lettered blinding posts). designations and plain. 800 and up, list 5c. Plain, 4c.



Walnart Frigtion Vernler Adjuster. Bakellte knob. List 25e.



Walnart Fllament Switch.

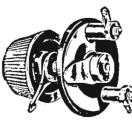


Pusb

with Bakelite-dilecto, come in two or three gang types, for standard or UV-199 tubes. Single sockets, 50c.

Walnart Variable Condensers, plain and vernier, do not "cutout" or develop wobbti-

reutout" or develop wobbtiness. Plates accurately
pressed, permanently aligned
and locked in slotted studs
fastened in Bakelite ends.
List prices: Plain, 3-plate,
\$1.25; 5-plate, \$1.50; 13plate, \$2.00; 17-plate, \$2.50;
23-plate, \$2.75; 43-plate,
\$3.00, Vernier, 13-plate,
\$4.00; 23-plate, \$4.50; 43plate, \$5.50.



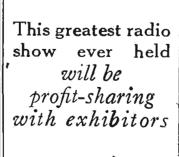
Walnart Variable Grid Resistance. List \$1.00. 4ixed

and pull type, 30c. Makers of Good Goods Only".

HAROLD BOLSTER

on behalf of the Principal Radio Manufacturers and Dealers of America

Presents—



Main and Mezzanine **Floors**



Special Election : Week Program **Features**

"The World and his Girl will be there"

NEW YORK CITY

Featuring, in advance, the most striking developments in the Radio art and the Radio industry for the coming year

-Receiving Set Models for 1925 -Phonograph Radio Combinations for 1925

—Improved Equipment for 1925

American Radio Exposition Company Director: HAROLD BOLSTER General Manager: J. C. JOHNSON 522 FIFTH AVENUE Telephone: Vanderbilt 0068 NEW YORK

Secrets of Selectivity and Regeneration

Part II—Selectivity in Series of Tuned Circuits

By William W. Harper

point of critical regeneration; assuming pendent upon the wave length to which a ratio of approximately 1 to 5.) It folthe coupling to the antenna does not exceed the critical value.

Recent experimental investigations have disclosed that by increasing the number of tuned circuits the selectivity can be very noticeably improved in comparison to that obtainable in the simple receiver where only one circuit of low decrement is utilized. This system of gaining increased selectivity was first suggested by Alexanderson (see U. S. Patent No. 1,173,-079) and when designed so as to obtain the maximum effect of regenerative phenomenon very satisfactory selectivity is possible.

Selectivity Increased.

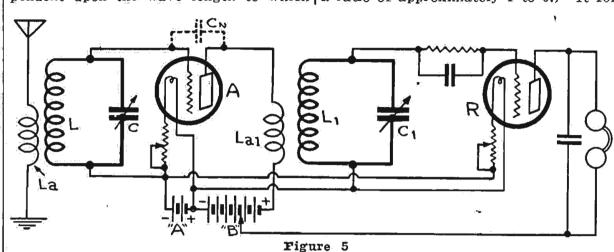
A simplified case of the application of these principles is illustrated in the circuit diagram of Figure 5. In this instance, two sharply tuned low resistance circuits are used, namely, LC and L1C1. The resistance of the circuit LC may be reduced to a very low value by regenerative action, which will be described later. The resistance of L1C1 in this case is made as low as possible by careful de-

It will be clear that in this arrangement the regenerative action is localized in the amplifier tube A and the detector tube R is substantially non-regenerative. This condition differs from the simple cases cited in the first article of this series (Figures 3 and 4), wherein the regeneration was confined to the rectifier tube. The superiority of regeneration external to the detector tube has recently been emphasized by Little (see Proc. I. R. E. Aug. 1924).

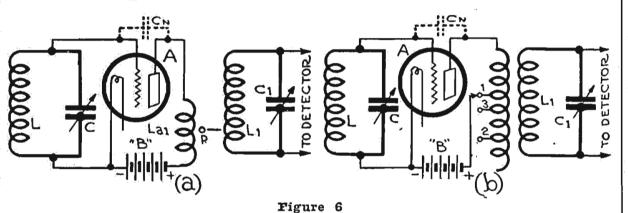
Many interesting and perplexing conditions arise in systems of this type. These conditions are mainly due to the regenerative phenomena which are likely to escape the observation of the experimenter.

The theory of a specific case, as depicted in Figure 5, will be useful in formu-

In the preceding article of this series, generative activity in a coupled amplifier. a review was given of the conditions in this scheme, the energy absorbed by necessary for selectivity in a simple La from a certain wave induces high frereceiver. It was shown that the limit of quency alternating current into the sec- we have also adopted critical coupling, selectivity in such a system is reached ondary tuned circuit LC. The frequency which, in this case, means that La1 is when the circuits are adjusted to the of these potentials created in LC is de- very much smaller than L1. (Usually by



this circuit is tuned. The grid of the lows that the period of the plate circuit amplifier, A, being connected to the high will be greatly above (indicating a lower potential point of the circuit LC, will wave length) that of either of the tuned follow the same cycles of potential varia- circuits LC and L1C1. Therefore, it is



variations in grid potential is the production of identical variations in the unidirectional plate current.

In other words, the signal energy inlating a fundamental concept of the re- duced into the LC circuit will be repeated

tion as this circuit. The result in these reasonably accurate to assume that the high frequency pulsations in the unidirectional plate current, resulting from the oscillating energy in circuit LC, will fail to excite by self-induction alternating current of appreciable amplitude in La1.

nitude and the reaction current (regencration) through the natural tube capacity will be negligible.

In the circuit under study, however, the tuned circuit L1C1 is coupled to La1 and the condition of approximate nonregeneration exemplified above does not hold Suppose the circuit LC is tuned to a 300-meter wave being emitted by a transmitter. The result would be the production of high frequency pulsations in the plate current of tube A. If circuit L1C1 is then tuned to 300 meters, or the frequency of these plate circuit pulsations, due to its low resistance, alternating potentials of considerable magnitude will be created. The electromagnetic field existing by reason of this oscillating energy in L1 will rise and fall through the primary coil La1 which causes the generation of alternating current in the plate circuit. This current is in phase and will combine with the small alternating component of the plate current which is present due to self-induction and the total alternating current will actuate the tube capacity Cn, giving rise to regeneration of the circuit LC. Hence, we see that the regeneration really starts because of the mutual relationship between La1 and L1.

Presence of Regeneration For a simple explanation for the presence of regeneration in a circuit as shown in the figure 5, we might say that the tuned circuit L1C1, due to its coupling to La1, also serves to tune the plate circuit, of which La1 is a part. The condition is then analogous to the simple receiver described in the preceding article where regeneration occurred due to the electrostatic coupling when the plate circuit was tuned by a variometer.

A multitude of factors enter at this point which have an important bearing on the regeneration. By redrawing the circuit of Figure 5 so as to embrace only those parts which we are interested in, these factors may be more clearly described. (Continued on page 10)

Reg. U. S. Pat. Off.

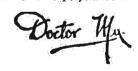


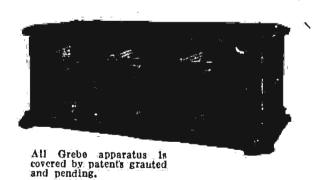


BROADCAST Receiver that A marks another long step forward in radio design and establishes a new set of standards in craftsmanship.

"Of what use is cleverness f speech?" -Confucius

Words even though selected and phrased with the greatest deliberation, cannot do full justice to the Grebe Synchrophase—and its performance.





Ask your quality dealer for a demonstration of the Grebe Synchrophase

A. H. GREBE & CO., Inc.

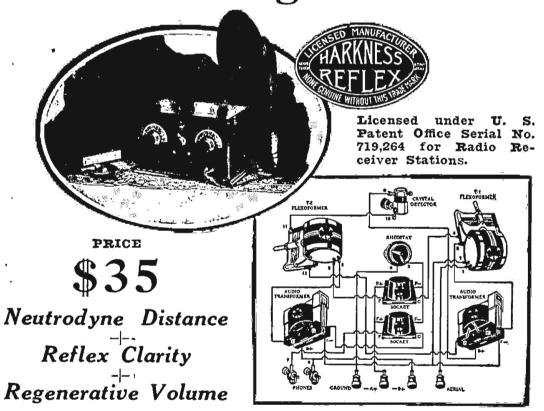
or write us for literature.

Van Wyck Blvd.

Richmond Hill, N. Y.

Western Branch: 443 South San Pedro St., Los Angeles, Calif.

Combines best features of leading circuits



HAT'S the Shamrock-Harkness Two Tube Reflex which has created such a sensation among experimenters and ama-

> Operates a loud speaker. Two tubes do the work of five. Cuts battery costs 60 per cent.

The Shamrock Kit contains all parts necessary to make the marvelous Shamrock-Harkness Two

SHAMROCK MANUFACTURING CO. Dept. 24-C, Market St. Newark, N. J.

FOR SELECTIVE TUNING

The set for the masses as well as the classes

teurs by its amazing performance. It combines the best features of the leading circuits in use

Does not squeal, howl or radiate. Stations can be logged. Amazing clarity and volume.

Tube Reflex. Build your own set and know your radio.

Mail coupon to-day for "Shamrock Radio Builder's Guide Book".

SHAMROCK MFG CO., Dept. 24C. Market St., Newark, N. J.
1 enclose 10 cents (U.S. stamps or coin) copy of "Shamrock Radio Ruilders' Guide Boo containing diagrams and complete instructions building 10 sets at prices ranging from \$15 to \$5
Name
Addross

SELECTIVITY SECRETS

(Continued from page 9)

Figure 6a is a simplified sketch of the fundamental circuits of the regenerative amplifier A of Figure 5. The circuit L1C1 is pictured as being separated some distance from the plate coil La1, indicating a loose coupling (less than critical). It will be clear, when LC and L1C1 are tuned to the same frequency, the amplitude of the alternating current excited in La1 by the field of L1 will increase as LIC1 is moved in the direction of the arrow, so as to approach La1. The latter is equivalent to increasing the coupling lengths. The same conditions in the LC between La1 and L1.

As this coupling is increased the reaction current (regeneration) through Cn is also increased resulting in the reduction of the resistance of the circuit LC At some point P the reaction current will have become so excessive that the resistance of the circuit LC will be reduced to zero and the amplifier A will sustain an oscillation. This is an undesirable condition for telephonic reception, and as mentioned in the first article, it is always necessary to operate at the locus of critieal regeneration just ahead of this point, where no oscillations are sustained.

Two Tuning Controls

The circuit of Figure 5 with the two tuning controls, C and C1, adding a variable coupling between La1 and L1 (the latter might be equivalent to the "tickler" control), constitutes a new form of regenerative circuit which has greater selectivity than the older types A distinct advance has therefore been made in this comparatively recent application of regeneration to coupled amplifier circuits.

It is undesirable in practice to have a variable coupling between La1 and L1, and by reference to Figure 6b a method is suggested by which this variable coupling may be dispensed with. If L1C1 is permanently arranged so as to be in close proximity to La1 we obviously find that the amplifier A will oscillate vigorously over the entire condenser scale.

In arranging La1 so that the number of turns may be varied it will be found that when LC and L1C1 are at resonance at the shortest wave length possible on the condenser scale, the oscillations may be stopped by reducing the number of

critical regeneration does not hold. In order to bring the amplifier back to this state it is necessary to move the tap on La1 to some other point, such as 2. We now have critical regeneration at the maximum wave length setting.

It is obvious that the regeneration decreases with increase in wave length.

Maximum Regeneration State

This follows from the decrement increase and voltage drop caused across L1 by the shunt condenser C1 when the circuit is tuned to the higher wave circuit further increase the magnitude of the effect. These factors cause a decreased amplitude in the potentials induced into La1, necessitating a greater coupling to attain the maximum regenerative state. Obviously this discrepancy may be materially improved by using as large a coil and small a condenser as possible. There is a limit to these proportions, however, since the wave length range which can be covered decreases with the decrease in maximum capacity of the tuning condenser. The distributed capacity of the coil is also a limiting factor. With the proper coils, condensers with maximum capacities as low as 225 micromicrofarads may be used.

Having substituted large coils for L and L1 and small condensers for C and C1. it will only be necessary to move the tap on coil La1 from point 1 to 3 to insure the maximum regenerative condition as the circuits are tuned from the lowest to the highest wave length. In many cases this difference may be neglected and the drop from critical regeneration at the high wave length may be so small as to be inappreciable as regards the total

In the cases cited, it is important to note that the electromagnetic coupling between Lal and L1 should satisfy the condition necessary for both critical regeneration and critical coupling. If, to attain critical regeneration, we must exceed the critical coupling value between La1 and L1, the selectivity of the second tuning circuit will be impaired. Careful design will make this impossible.

Conclusion

From the foregoing it is apparent that turns of La1 to some value as indicated in our circuit developments we are apat point 2. This is the locus of critical proaching a state of almost constant and regeneration in respect to the inductive automatically limited regeneration. Such value of La1. Retaining this tap on La1 a condition is highly desirable. The deat point 1, in tuning LC and L1C1 to sign of efficient receivers of this type is

complications than thus far have been described.

(The next article will tell of the influence of resistance and physical arrangement of parts on selective tuning circuits.—Editor's Note.)

WLW WILL AIRPHONE JOHN W. DAVIS SPEECH

Disregard Silent Night at Request of Radiophans

CINCINNATI-When John W. Davis, Democratic candidate for president, speaks from the Music Hall here, his address will be Radiocast by the Crosley Radio corporation Station WLW.

Although October 24 is a silent night it will be disregarded at the request of the public who have shown great interest in hearing Mr. Davis talk.

to the broadcasting studio will be used. nals from boats.

resonance at the maximum wave length, | unfortunately difficult, and the demands | With the introductory speeches and music it will be observed that the condition of of selectivity necessitate even greater it is expected that the program will be of great interest to listeners in all parts of the country.

Twilight Musicales Again Heard from Station WEBH

CHICAGO. - Twilight musicales were again put on the air at Station WEBH, the Edgewater Beach hotel, marking the beginning of a new season of one of the most popular features.

This early evening program attained so much acclaim last year that it was placed on as one of the regulars. It differs from the ordinary program in that it is composed of artists and soloists, seldom, if ever heard over the Radio.

Few listeners know that behind the scenes in the broadcasting station there . is stationed a licensed code operator whose only duty during the period the station is Special telephone wires from the Hall on the air is to listen in for distress sig-

UV-200



"The detector tube supreme." Noted for stability, long life, and uniformity. A sixvolt standard base tube for any receiving circuit.

Radiotron UV-200 with its long distance reception-clearness-and good volume-is the basis of many a receiver's splendid performance.

Radio Corporation of America

Sales Offices - Dept. 317 233 Broadway, New York

10 South LaSalle St., 433 California St.

Price \$4.00

Be sure that every vacuum tube you buy is marked RADIOTRON



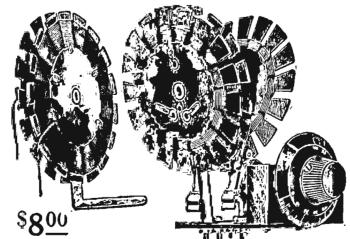


ROBERTS

The Wonder Circuit of the Year

Combining Neutrodyne — Regeneration — Reflex Developed by Walter Van B. Roberts, EE., Ph.D. Editorially Endorsed by Radio Broadcast, as Without Doubt The Best We Have Ever Seen. California Actually Heard at Princeton Research of the California Actually Heard at Princeton California Calif University On The Loud Speaker, WITH TWO TUBES.

ROBERTS UNITS consist of Five Chils in Two Mountings Ready for Installation. Packed complete with all instructions, Hook-up, Schematic Print, Cut of Com-plete Set, etc.



Build a Roberts and Reach the Coast Coils Mfg. under Zig-Zag Pat. Aug. 21, 1923

Complete Kit of High-Grade Parts for the

Roberts Two Tube Knockout Set Genuine Bakelite Panel, completely drilled. General Radio Condensers, F. M. C. Transformer, Sockets, Condensers, Genuine Roberts Units, Baseboard, Dials, Knobs, Busbar, Spaghetti-Everything, except Tubes, Batteries, Cabinet.

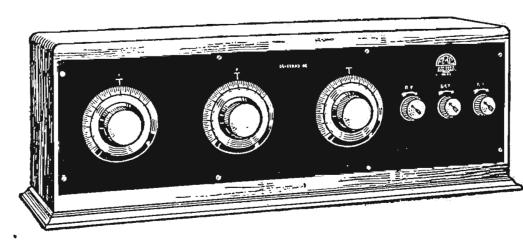
\$60 with Portena Folding (Lunp for Local Use)

\$53 Without

571 Hudson Street

J. NAZELEY COMPANY, Dept. C (Sole Mfgs.)

NEW YORK



THE Andrews

Radio Receiving Set

—the first set to combine selectivity and tone quality with distance and volume

Hitherto in buying a radio set you have had to choose between one with high selectivity and fine tone quality and one with great distance and volume. Up to this time both groups of qualities could not be found in one set.

Now the Andrews Deresnadyne 5-tube Radio Receiving Set, using the new and exclusive principle of the Deresonated and Balanced

Plate Circuit, for the first time successfully combines these absolute essentials of fine Broadcast Receiving. Mr. Robert J. Casey, head of the Chicago Daily News Laboratory, says about it: "The circuit combines selectivity, range and quality in a degree that will astonish the old experimenter." Hear the Deresnadyne at your dealer's. Or write to us for a complete description.

without accessories

ANDREWS RADIO COMPANY - 327 S. LA SALLE ST. - CHICAGO

SCREEN STARS AT KFI THURSDAY NIGHT

Wednesday, October 22

Silent night for: CKAC, WFAA, WFI, WGY, WOAW,

Silent night for: CRAC, WFAA, WFI, WGY, WOAW, WRC, WSAI.
CHYC, Montreal, Can. (Eastern, 341), 7-8:45 p. m., church service, American Presbyterian church.
CKAC, Montreal, Can. (Eastern, 425), 1:45 p. m., Mount Royal hotel luncheon concert.
CNRM, Montreal, Can. (Eastern, 341), 8 p. m., Vander Haeghe trio; Frances James, solutano; Mildred Page, reader; "Forests as a Basis of National Development," Elwood Wilson.

Haeghe trio; Frances James, solirano; Mildred Page, reader; "Forests as a Basis of National Development," Elwood Wilson.

KDKA, E. Pittsburgh, Pa. (Eastern, 326), 7:30 a. m., free hand calisthenies, O. Shannon; 12:15 p. m., Daugherty's orchestra; 6:30, Gregorio Scalzo's orchestra; 7:15, Radio rhymster; 7:30, talk, American Red Cross; 8:15, "The Role of Chemistry in Everyday Life;" C. G. King; 8:30, "Another Air Cooled Program."

Rife, C. G. King, 8:30, Another Art Cooled Program."

KFAE, Pullman, Wash. (Pacific, 330), 7:30 p. ul., Scotch songs and readings, Janet Rae; Mary Elizabeth Turner, pianist; "Continuous Cow Testing;" Don G. Magruder; "Value of Bateriology in Certain Farm By-Products," S. C. Vandecaveyc; readings.

KFI, Los Angeles, Calif. (Pacific, 469), 5:30-6 p. m., Examiner news bullctin, Dr. Ralph L. Powers; 6:45-7:30, Nick Harris detective storics; orchestra; 7:30-8, Sigma Pi violin trio; 8-9, Evening Herald concert; 9-10, Examiner studio program; 10-11, special dramatic program; 11-12, Ambassador hotel Cocoanut Grove orchestra.

KFKB, Milford, Kas. (Central, 286), 8-9 p. m., Abe Martin's band; 9-10, lecture, Dr. Osborn; male quartet; 10-11, lecture, Dr. Brinkley; Jublice boys orchestra.

Martin's band; 9-10, lecture, Dr. Osolin, mare quartet; 10-11, lecture, Dr. Brinkley; Jubilee boys orcliestra.

KFNF, Shenandoah, la. (Central, 266), 7:30 p. in., Spurgeon Mercantile company.

KFOA, Seattle, Wash. (Pacific, 455), 12:30-1:30 p. in., noonday lunchcon program, Seattle Rotary club; 8:30-9, Mary Fistonich, contralto; 9-9:15, Earl Gray's@band.

KFSG, Los Angeles, Calif. (Pacific, 278), 2:30-4:30 p. in., divine healing service; testimonics; "Jesus Christ, the Same Yesterday, Today and Forever," Aimee Semple McPherson; ladies' revival chorus; Fiorence Glauser, soprano; Ruth Frances Thomas, planist; Esther Fricke Green, organist; 6:30-7:30, Gray studio children's program, Mrs. Edward Hughes and daughters, Mary Elizabeth and Helen, in nature study continunity.

KGO, Dakland, Calif. (Pacific, 312), 4-5:30 p. iu., concert orchestra, Hotel St. Francis.

KGW, Portland, Orc. (Pacific, 492), 12:30 p. m., concert, Bill Darby's orchestra; 5, children's program, story by Annt Nell; 8, Kiwanis (uartet; 9, "The Value of Radio," Daniel Nelson Clark; 10, dance music, George Olsen's Metropolitan orchestra; Mildred Nichols, violinist.

KHI Los Angeles, Calif. (Pacific, 395), 12:30-1:15

music, George Olsen's Metropolitan orchestra; Mildred Nichols, violinist.

KHJ. Los Angeles, Calif. (Pacific, 395), 12:30-1:15 p. m., concert; garden talk, Fred C. McNabb, of Aggler & Musser Seed coupany; 2:30-3:30, matinee musicale; 6-6:30, Art Hickman's concert orchestra; 6:30-7:30, children's hour, "American History," Prof. Walter Sylvester Hertzog; Dick Winslow, screen juvenile and reporter; "Baby" Murlel MacCormac, screen juvenile; bedtime story, Uncle John; 8-10, lecture, Dr. M. F. Baungardt; concert, courtesy, Redlands Chamber of commerce; Mr. A. E. Isham, sccretary; 10-11, Art Hickman's dance orchestra.

KOB, State College, N. M. (Mountain, 360), 7:30-8:30 p. m., "Results of the New Mexico State Club Deimonstration Contest," W. L. Elser; "Range Management, LI," Prof. John Lantow; "Needed Food Legislation," Prof. H. W. Titus.

Prof. H. W. Titus. KPD, San Francisco, Calif. (Pacific, 423), 1-2 p. m., Rudy Selger's Fairmont hotel orchestra; 4:30-5:30,

Headliners of the Week

S TAMP collectors will enjoy the talk given by H. A. Diamant Wednesday night. Mr. Diamant is a stamp expert and will probably be glad to answer questions about your private collections. Mayor Curley of Boston will also be on the air most of the week at WEEI.

Out where the supply of motion picture stars is hard to exhaust, Los Angeles, KFI will put on a movie night Thursday when all the pretty stars of the Van Pelt Wilson productions will be heard over the ether. Tune in and see whether you can tell they are pretty girls. To turn to politics, Coolidge is the enigma of the voting public. What "Silent Cal" thinking about? Jonathan A. Rawson will help you to answer this question, if you listen to his talk, "Coolidge Closeups," at

Dr. George Weider Spohn, head of the Department of English at St. Olaf college, who gave book talks from WCAL all last year, is on the air again this fall. Tune in Friday for his remarks on the new scientific books of the year.

The air will be full of gay music Saturday. Sometime ago WIP produced "In a Persian Garden" with such success that this opera will be given again this evening. The jolly light opera "Mikado" will delight the listeners-in of WJZ.

Wilda Wilson Church is the English language doctor of KGO, Oakland. Perhaps if you tune in Monday nights, those oross-word puzzles will solve themselves more easily.

If you do not mind discussing your love affairs with half a million or more listening in, write to WOAW, Omaha, about your broken heart. Then tune in for this station at 6 p. m. Tuesday and hear the solution of your problem as given by Cynthia Grey, who will give "Advice to the Lovelorn."

WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3, Loretta Kerk, pianist; closing prices, Chicago grain market; 6:30, Meyer Davis Bellevue Stratford concert orchestra;

6:30, Meyer Davis Bellevue Stratford concert orchestra;
7, Sunny Jim, the kiddies' pal.
WGN, Chicago, III. (Central, 370), 1:40 p. m., Juncheon concert, Drake Concert ensemble, Blackstone string quintet; 2:30, Lyon & Healy artist series; 3-4, rocking chair time; 5:30, Skeezix time; 6-6:30, studio program; 6:30-7, 8-8:30, dinner concert, Drake Concert ensemble, Blackstone string quintet; 8:30-9, Joseph Mertz, tenor; Bessie Ryan, soprano; John P. O'Mears, tenor; 10-11, Jack Chapman Drake dance orchestra.

O'Mears, tenor; 10-11, Jack Chapman Drake dance orchestra.

WGR, Buffalo, N. Y. (Eastern, 319), 12:30-1 p. m., George Albert Bouchard, organist; 2:30, Radio Dealers program; 6:30, dinner music; 8:15, Malie and Little, songsters; 8:50, address, "Esperanto," D. E. Parrish; 9-11, popular musical program, Bishop-Hoorber Publishing company; 11, supper-dance musle, Vincent Lopez Hotel Statler orchestra; Harold Gieser, director.

WGY, Schenectady, N. Y. (Eastern, 380), 7:45 p. m., book talk, William F. Jacob; 8, program; 11:30, Stephen Boisclair.

WHAA, lowa City, la. (Central, 484), 3-9:30 p. m., assembly program for high schools; 12:30-1 p. m., "Domestic Mythology," Prof. C. W. Hart.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., selections, Alamo theater orchestra; "Just Among Home Folks"; readings, selected, Courier-Journal and Times editorials; 7:30-9, K. & 1. Terminal Italiroad orchestra, J. Clark Martin, director.

WHB, Kansas City, Mo. (Central, 411), 2-3 p. m., ladieg' hour program, Sweeney Radio trio; 7-8, "Monumental Effect on Landscape," C. L. Van Nostrand; music, Sweeney Radio trio.

WHK, Cleveland, Ohio (Eastern, 283), 6 p. m., Ponce

strand; music, Sweeney Radio trio.

WHK, Cleveland, Ohio (Eastern, 283), 6 p. m., Ponce
De Leon orchestra, Herbert Hayward, director, Grebe's
Hanna restaurant; sports, current news.

WHN, New York, N. Y. (Eastern, 360), 2:15-2:30 p. m.,
Jimmy Clarke and his entertainers: 2:30-3, Original
Kansas City Five, courtesy, Harry Moss; 3-3:30, Fenton Sisters, songs: 3:45-4, "Peeps at Celebrities,"



Rudy Seiger's Fairmont hotel orchestra; 5:30-6:30, children's hour stories, Big Brother of KPO; 7-7:30, Rudy Seiger's Fairmont hotel orchestra; 8-11, E. Max Bradfield's Versatile band; lesson in conversational French, Edna K. Barker, director; Marie L. Bontin, instructor; Eleanore Stadtegger, soprano; Mrs. (Tyde White, accompanist; banja duets, Frank Moore, Charles

Payne.

KSD. St. Lauis, Mo. (Central, 546), 6:15 p. m., Abergh's rencert ensemble, Arne Arnesen, violinist; 9, "Stamps," H. A. Dlamant.

H. A. Dlamant.

KYW, Chicago, III. (Central, 536), 6:30 a. m., morning exercises, Y. M. C. A.; 11:35, table talk, Mrs. Anna J. Peterson; 6:30-7; children's bedtime story, Uncle Bob; 7-7:39, dinner concert, Joska de Babary's orchestra, Coon-Sanders' "Orlginal Nighthawks;" 7:30-8, program, Duncan Sisters Music Publishing company; 8-8:30, program, Radio Age; 8:30-8:15, "Around the Tawu" with KYW in Chicago; 8:35-9:05, Radio Age; 9:05, "Good Roads," talk, Chicago Motor club; 9:15, talk, DeWitt C. King; 9:45-12:30, midnight revue, Coan-Sanders' "Original Nighthawks;" 12:30, W. Remilngton, Welch, organist.

W. Rendington Welch, organist.

WBAP. Fort Worth, Tex. (Central, 476), 7:30-8:30
n. m., Boyd quartet; 9:30-10:15; popular dance music.

Texas hotel orchestra.

WBAY, Columbus, Ohio (Eastern, 423), 13 m., Ha Lorbach Owens, Idaulsi, WBBR, New York, N. Y. (Eastern, 273), 8 p. in., in-atrinoental selections; 8:10, Isabella Sternthal, so-prano; 8:20, Bible lecture; 8:50, Isabella Sternthal; 8:50, Instrumental selections.

8:50, Instrumental selections.

WBZ, Springfield, Mass. (Eastern, 337), 6 p. m., dinnor concert. Westinghouse Philharmonic trio; 7:05, information concerning civil service examinations; 7:30, bedtime story for the kiddles; 7:40, Westinghouse Philharmonic trio; William S. Tilton, barltone; Ituhy

Tilton Kingsly, accompanisl; 8:15, "James D. Moyni-han, whistler; John S. O'Comell, accompanist; 9, Florence Haggett, sopranc; 9:30, P. Harold Morrison, baribine; Helen Morrison lumlar, accompanist; 10, musicale; 11, Leo Relsman and his Hotel Brunswick orchestra; 11:30, songs, Bill Coty, Jack Armstrong; 12, Leo Relsman and his Hotel Brunswick orchestra. 12. Leo Relsman and his Hotel Brunswick orchestra. WCAE, Pittsburgh, Pa. (Eastern, 462), 3 p. m., Fred Rosenfeld, planist; 6:30, dinner concert, William Penn holel; 7:30, Sunshine Girl; 7:45, special feature; 8:15, special feature; 8:30, musleal program, WCAL, Northfield, Minn. (Central, 360), 9:45 a. m., Olaf college chapel service.

WCAY, Milwaukee, Wis. (Central, 266), 6:30 p. m., con Store night: Howard's orchestra; Badger Opera quartet: Jerome Treis, cornetist; Mis, Itauminger; solgang; Tony Wuchferl, reader.

WCX, Detroit, Mich. (Eastern, 517), 4:15 p. m., musical program; 6. dinner concert; 7. musical program.

WCX, Detroit, Mich. (Eastern, 517), 4:15 p. m., musical program; 6, dinner concert; 7, musical program, WDAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., the Star's string trio; 5-7, school of the air, piano tuning-in number on the Duo-Art; address, auspices Health Conservation association; address, representative of the Meat Council of Greater Kansas City; the Tell-Me-a-Story lady; music, Hotel Michlebach Trianon ensemble; 8-9:15, program, string instrument pupils of Anton Sculert; 11:45-1 a. m. Nighthawk froite, the "Merry Old Chiel" and the Plantation players.

WDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., daily almanae; 12:02 n. m., organ recital, Stanley theater; Arcadia cale concert orchestra; sermon, auspires of Philadelphia Federation of Churches; 2, Arcadia care concert orchestra; "Care of Children," Mrs. Louis Love; Edna Phiestone, planist; 7:30, Dream Daildy's bedtime stories; 8, Arnold Abbott's "Conversation Corner;" 8:15, dance music from Green wished.

Hills Farm orchestra, direction Herman Kentner; 10. Arcadia cafe dance orchestra.

WEAF, New York, N. Y. (Eastern, 492), 11-12 a. m., young mother's program; 12-12:20 p. m., chaptel services, Columbia university, address, Chaptain Raymond Knox; organ mosic, Walter Henry Hall; male chorus; 4-1:15. Bertha Bedell, soprano; 1:15-1:15, story telling, Hester Conway, New York Public library; 4:15-5:30, rhildren's week program; 6-7, dinner music, Waldorf-Astoria hutel; 7-7:30, services, United Synagogue of Auterica; 7:30-7:45, leffin Rosanoff, cellist; 7:45-8, talk, American agriculturist; 8-9, lecture-recital, Louise Stallings, mezzo-soprano and May Laird Brown; 9-9:45, Pheonix Male quartette; 9:45-10:30, Yans Hawalian ensembles.

requests for her appearance.

Brown; 9-9:45, Pheonix Male quartette; 9:45-10:30, Yans Hawalian ensemte. WEAO, Columbus, Ohio (Eastern, 360), 9 a. m., music, Marguerite Manley Siedel School of music talent; 11. a. m., musle, Siedel artists; 1:30 p.m., musle, Siedel

artists.

WEBH, Chicago, III. (Central, 370), 7 p. m., Edgewater Beach Oriole orchestra; Constant Sigrist, dramatic tenor; Mme. Hibbard, soloist; musical bits, Balaban & Katz Riviera theater; 9-10, Edgewater Beach Oriole orchestra; Marie Kelly, reader; musical bits, Balaban & Katz Riviera theater; Langdon Brothers, Hawaiian gultarists; 11-12, Edgewater Beach Oriole applearter; Nick Theory soloit. Oriole orchestra; Nick Lucas, sololst; Marie Kelly, reader; Langdon brothers, Hawalian guitarists.

WEEL, Boston, Mass. (Eastern, 306), 7 p. in., talk, Mayor Curley of Boston; 7:10, Big Brother club; 7:10, Elmer Orne, planist; 8. "Money in Onlons," Dorothy H. Goodwin; 8:15, Leviathan string orchestra; 9, concert, Madame Alice Faschl, operatic contralto; 10, musicale; 11, dance music, Dok-Eisenbourg and his

Betty Ross; 4-4:30, Samuel Shankman, pianist; 4:30-4:45, "Americanism," May M. Gooderson; 4:45-5, Metropolis trio; 5-6, John DeDroit and his New Orleans orchestra; 6:30-7, diuner music, Alamac hotel; 7-7:30, Huston Ray's Alamac orchestra; 7:30-7:45, ehats with Therese Kay of Emily Shops; 7:45-8, Samuel Polonsky, violinist; Louis Sugaman, piaoist; 8:10-8:20, "Parents and Children," Dr. David deSola Pool, Spanish-Portuguese synagoguc; 8:20-8:30, Cantor Noach Levine; 8:30-8:45, Jessic Darvill, soprano; 8:45-9, boys' perfod, Kilwanis club, Wm. J. Stuart; 9:15-9:30, Kathleen J. Burkc, soprano; 9:30-9:37, Evening Bulletin current news; 9:37-9:45, Fitzpatrick brothers; 9:45-10, Leo Wood's Air troopers; 10-11, Clover Gardens orchestra.

Gardens orchestra.

WHO, Des Moines, Ia. (Central, 526), 7:30-9 p. m.,
Bankers Life Radio orchestra, W. L. Marsh, director;
Irene Benson, contralto; Bernard Thompson, tenor;
Holson Matthews, accompanist; "Movie Chats," Doro-WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Gimbel

thy Day.

WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Gimbel tea room orchestra; 3, recital, artist pupils of Montani Vocal studios; Mary E. Steedle, lyric soprano; Mary C. Connelly, Inezzo soprano; John Ambrogi, tenor; John Bolandi, baribone; soprano solos, Mary Steedle; tenor solos, John Ambrogi; soprano solos, Mary E. Connelly; baritone and tenor duet from "La Forza del Destino," Polm Bolandi and John Ambrogi; I, Theodore Licelemedt, violinist; Walter Kruger, pianist; t'harles G. Dawes; 6:05, Walter Schwartz and his Venetian cafe orchestra; 7, Uncle Win's bedtime stories.

WJZ, New York, N. Y. (Eastern, 455), 10 a. m., honsewives league menn, Mrs. Julian Heath; 10:20, "Household Equipment," Ethel R. Peyser; 10:30, talk, Henry St. Visiting Nurse service; 10:40, Trihune institute, Bertha Baldwin; 10:50, Iashion talk, Eleanor Gunn; 12:30 p. m., "The Imporlance of Anglo-American Friendship," Sir Esme Howard; 1:15, Orlando's Hotel Belmont tea orchestra; 3:30, the Ambassadors; 4:30, Hotel Belmont tea orchestra; 7, Irving Selzer's Cafe Bonlevard orchestra; 8, Wall Street Journal review; 8:10, "Co-operative Economics," Mrs. Clara E. Breakey; 8:30, harmony songs, Hock and Jerouce; 8:45, "Air Mail Service," Cot. Paul Henderson; 9:10, Paylowa Ballet music, Manhattan Opera honse; 10:30, Billy Wynne's Greenwich Village Inn orchestra.

WKAQ, San Juan, P. R. (Central, 360), 6-10 p. m., Municibat band.

WKAQ, San Juan, P. R. (Central, 360), 6-10 p. ul.,

WKAQ, San Juan, P. R. (Central, 360), 6-10 p. ur., Municipal band.

WLS, Chicago, Ill. (Central, 345), 12-1 p. mr., Scars-Rochuck Four Humming birds; "What I Am Trying to Do in Solving My Marketing Problem," W. J. Dougan; 3:45-1:15, "Dressmaking Hints," Ellen Roso Dickey; "Halloween Party Suggestions," Julia Deal: Raiph Emerson, organist; 6:45, Ford Rush, Glenn Rowell: 6:50, Ralph Emerson, organist; 7, Inliaby time, Glenn Rowell and Ford Rush; 7:20, Scars-Rocbuck Four Aces of harmony; 7:30, Islami Jones and his College Inn orchestra: 7:45, Scars-Rocbuck Four Aces of harmony; 8-9, "What I Am Trying to Do to Solve the Farm Labor Problem," W. J. Dougan; (Continued on page 12)

ADDITIONAL PROGRAMS, RECEIVED TOO LATE FOR CLASSIFICATION, WILL BE FOUND ON PAGE EIGHTEEN-

MAYOR OF BOSTON TO TALK AT WE

Where to Hear Concerts

Central Standard Time

THESE are the stations for music lovers to dial, and you can hear, pro-I viding you dial correctly and read the programs carefully, everything from jazz to opera.

Wednesday: 6, WKAQ, WMAQ, WCX, WGN; 6:30, WCAY, WEAF, WGN, WLS: 6:40, WBZ: 6:45, KSD, WHN; 7, KYW, WBBR, WEBH, WTAM: 7:15, WBZ, WGR, WOO, WOR: 7:30, KFNF, WBAP, WCAE, KYW, WEBH, WHAS, WHN, WHO; 7:45, WLS: 8, CNRM, KFKB, KYW, WBZ, WDAF, WEAF, WGR, WOC; 8:30, WBZ, WGN, WMAQ, WOR: 8:45, WEAF; 8:55, WLW; 9, WBZ, WMH; 9:15, WMAQ; 9:30, WFAE, KFI, WOO; 10, KFI, KGW, KPO; 10:15, WLS: 10:30, KFOA, WBZ; 10:40, WLS; 11, KFI; 12, KFI; 12:30, KYW.

Thursday: 6, WCX, WEAF, WGN, WMAQ; 6:30, WLS, WOAW; 6:45, WEAF, WLS, WOAW, WTAY; 7, CKAC, WGY, WHK, WJAX, WJY, WLS; 7:15, WBZ, WIP, WRC; 7:30, KFNF, KDKA, KYW, WBAP, WGY, WEAO, WHAS, WRC; 7:45, WCAE, WEAF, WRC; 8, KFKB, WCBD, WHB, WJAX, WMH, WRC; 8:50, WBBR; '8:30, WFAA, WGN, WMC, WRC; 8:37, WHN; 9, KFKB, KBZ, WCAL, WOAW; 9:15, KYW, WMAQ; 9:30, KFI, WBAP; 10, KDKA, KGO, WSAI; 10:30, WCY, WLW; 11, KFI, WFAA, WSAI; 11:15, KFSG; 11:30, WEBH; 12, KFI, KFSG.

Friday: 6, WCX, WGN, WMAQ; 6:30, WEAF, WLS, WOAW; 6:45, WTAY; 7, CNRT, KYW, WBAV, WDAR, WEBH, WHK; 7:15, WEAF; 7:30, KDKA, KFNF, KYW, WBAP, WHAS, WHO. WOO: 8, KFKB, WGR, WCAY, WOC; 8:30, WGN; 9, WBZ, WEAF, WHN, WMAQ, WOAW; 9:30,

KFAE, KYW, WBAP, WOO; 9:45, WLS; 10, KFI, WBZ, WEBH, WHN; 10:40, WLS; 11, KFI; 11:15, KFSG; 12, KFI, KFSG, WEBH; 12:30, KYW.

10:40, WLS; 11, KFI; 11:15, KFSG; 12, KFI, KFSG, WEBH; 12:30, KYW.

Saturday: 6, WGN, 6:30, CKAC, WEAF, WGN; 6:45, WTAY; 7, WBBR, WEBH, WHK, WLS, WRC; 7:10, WHN; 7:15, WOR; 7:45, WBZ; 7:20, WHN; 7:30, CKAC, KDKA, KFNF, KSD, KYW, WEAF, WHAS; 7:40, WBBR; 8, KFKB, KYW, WIP, WMAQ; 8:15, WBZ, WSAI; 8:30, WFAA, WGN, WMC; 8:55, WHN; 9, WMAQ, WOAW, WTAY; 9:15, WSAI; 9:30, KYW; 9:45, WOR; 10, KGO, WEBH, WMH; 11, WAAW; 12, WCAL, WEBH.

Sunday: 6:15, WGR; 6:30, KFNF, WGY, WLS; 7, KYW, WEBH, WLS; 7:30, WHO; 8, WCBD, WHK, WJAX; 8:15, WEAF; 8:30, WCAL; 9, KSD, WGN, WHAA, WOAW; 9:30, KFSG, WFAA; 12, KFSG, WBAP.

Monday: 6, WMAQ; 6:30, WOO; 6:45, KSD; 7, WOR, WTAM; 7:15, WEAF, WGR; 7:30, KDKA, WAAW, WBAP, WCX, WHO, WOO, WRBC; 8, KFKB, WCAY, WCBD, WDAF, WHAZ, WLW, WMH; 8:10, WDAF, WHAZ, WLW, WGY, WJAX, 6:15, WTAY; 7, WBAV, WGY, WJAX; 6:15, WTAY; 7, WBAV, WGY, WJAX, WJY; 7:15, WEBJ; 7:30, KDKA, KFNF, WBAP, WHAS, WSAI; 8, KFKB, WHAB; 8:15, CKY; 8:30, WGN; 9, KOB, WCX, WOAW; 9:15, WCAY, WMAQ; 9:30, KFSG, WBAP; 10, KDKA, KGO, WLW; 10:30, KGW.



Elsie Herkenhoff, violinist with the Lazarus quartet, will play at WEAO, Columbus, Thursday night, October 23

Lennam, reader; 9:15, Joyce Bigelow, violinist; 10, faculty, Turner School of music: Laura S. Jones, violinist; Mary Steele, pianist; Arthur H. Turner, baritone. WCAE, Pittsburgh, Pa. (Eastern, 462), 4:30 p. m., Sunshine Girl; 6:30, dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 7:45, special feature; 8, special feature; 8:15, special feature; 8:30, Moore's Cafeteria weekly Radio review, E. T. Moores, Manager.

Cafeteria weekly Radio review, E. T. Moores, Manager.

WCAL, Northfield, Minn. (Central, 360), 9:45 a. m., St. Olaf college chapel service; 9, Bernice Armstrong, soprano; Audrey Armstrong, contralto; O. Matthew Lyders, baritone; Neil Kjos, clarinetist.

WCAY, Milwaukee, Wis. (Central, 266), 10:30 p. m., Arcadia ballroom orchestra; Tune Tinkers; Eulalie Pross, inezzo-soprano.

WCBO, Zion, Ill. (Central, 345), 8 p. in., male chorus; Mrs. Inman, soprano; Florence Farrar, contralto; Alexander DePew, flutist.

WCX, Oetroit, Mich. (Eastern, 517), 4:15 p. m., musical program; 8, dinner concert; 7, inusical program.

WOAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., the Star's string trio; 6-7, school of the air, piano tuning-in number on the Duo-Art; travelogue, Edgar Allen Linton; readings, Miss Cecile Burton; the Tell-Me-a-Story lady; music, Hotel Muchlebach, Trianon ensemble; 11:15-1 a m., Nighthawk frolic, the "Merry Old Chief" and the Plantation players.

WDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a, m., daily almanac; 12:02 p. m., organ recital, Stanley theater; Arcadia cafe concert orchestra; Edna Finestone, pianist: 5. Ouestion Period in series of edu-

theater; Arcadia cafe concert orchestra, Feri Sarkozi, director; 2, Arcadia cafe concert orchestra; Edna Flnestone, pianist; 5, Question Period in serles of educational talks, broadcast by faculty of Pierce school; 7:30, Dream Daddy's bedtime stories.

WEAF, New York, N. Y. (Eastern, 492), 11-11:15 a. m., Lee Lawnhurst, pianist; 11:15-11:30, "Winter Goodies," Prudence Penny; 11:30-11:45, Helen A. Ballard of Virginia Dare Extract company: 4-4:15 p. m., muslcal program; 4:15-5, lecture-recital, Minc. Charlotte Lund; N. Val Peary, pianist; 5-5:30, children's week program; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:45, Metroplitan concert quartette; 7:45-8, Carolyn Finncy Springer, contralto; 8-8:15, talk, Bank of America; 8:15-8:45, "Touring with the Packard," George E. Cooley, tour director; 8:45-9:15, Packard," George E. Cooley, tour director; 8:45-9:15,

Packard, George E. Cooley, tour director; 8:30-9:13, Michael Lambertl, cellist; Edythe Lambertl, soprano; 9:15-10, Albert Wiederhold, pianist; 11-12, Vincent Lopez and his Hotel Pennsylvania orchestra.

WEAO, Columbus, Ohio (Eastern, 360), 9 a. m., music, Marguerite Manley Sidel School of music talent; 11, music, Sidel artists; 1:30 p. m., music, Sidel artists; 2, pringerity chimes; requested songs, Robert Dervinger. , university chimes; requested songs, Robert Derringer, tenor; plano solos, Amllia Rittman; tenor solos, A. C. Gay; 8:30, concert, Lazarus quartet, Agnes Schlacchter, piano; Laura Lee Thomas, 'cella; Katherine ter, piano; Laura Lee Thomas, 'cell Zettler, violin; Elsie Herkenhoff, violin,

WEBH, Chicago, III. (Central, 370), 7-8 p. m., talk, delegate, United Lutheran church convention; 9-10, Edgewater Beach Orlole orchestra; Elizabeth Berry, soprano; musical bits, Riviera theater; Carro L. Kearns, barltone; 11-12, Edgewater Beach Orlole orchestra; Harry Davis, barltone; Nick Lucas; Edgewater Beach (rio. Edgewater Beach, Hotel late, revue. water Beach (rlo: Edgewater Beach Hotel late revue.

water Beach (rlo; Edgewater Beach Hotel late revue. VEEI, Boston, Mass. (Eastern, 306), 1 p. m., assembly luocheons, Boston Chamber of Commerce; 7, talk, Mayor Curley; 7:10, Big Brother club; 7:40, J. A. Horner, cornetist; 8, dance music, Herman Covitz and his Adams House orchestra; 9-12, program from WEAF. VFAA, Dallas, Tex. (Central, 476), 12:30-1 p. m., "Treating Yourself Right," Charles E. Osborne; 8:30-9:30, musicale, auspices of the Wednesday Morning Choral club; 11-12, Dwight Brown, organist. VEI Philadelphia Pa. (Eastern, 395), 1 p. m., Meyer

(FI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellovue Stratford concert orchestra; 3, closing prices, Chicago grain market; 3:05, West Philadelphia Mothers' Clim program; Housewives' Radlo exchange; 6:30, Meyer Davis Believue Stratford concert orchestra; 7, Snony Jim, the kiddies' pal; 8, "Coolldge Close-ups," Jonathan A. Rawson, dr.; 9, Radio play, Starlight players.

WGN, Chicago, III. (Central, 370), 1:10 p. m., luncheon concert, Drake Concert ensemble, Blackstone string quintet; 3-1, rocking chair (Ime; 5:30, Skeezlx tIme; 6:30, studio program; 6:30-7, 8-8:30, dinner concert, Drake Concert ensemble, Blackstone string quintet; 8:30-9. Chicago quartet, Nell Gwynn, soprano; Blanche Robinson, planist; 10-11, Jack Chapman Drake dance

WGR, Buffalo, N. Y. (Eastern, 319), 12:30-1 p. George Athert Bouchard, organist; 2:30, Radio Dealers program; 6, Hallpryd string quartet.

WGY, Schenectady, N. Y. (Eastern, 380), 6:30 p. m., dinner music, Trio of Hotel Ten Eyek; 7:15, book talk, William F. Jacob; 8, Pollsh music, Frank G. Novak and his Albanians; 11:30, Stephen Bolschaft, organist.

WHAA, Iowa City, Ia. (Central, 484), 12:30-1 p. m.,
"The English Cabinet of Today," 1'rof, 11. G. Plum.
WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., Alamo
theafer orchestra; "Just Among Home Folks"; readings, Courler-Journal and Times editorials; 7:30-9, cencert, auspices, Helen I. Mitchell; four-infinite di-gest of International Sunday school lesson, Dr. Harris

Mallinckrodt, rector; four-iolnoic welfare lalk.

VHB, Kansas City, Mo. (Central, 411), 2-3 p. ni., ladies' hour program, Sweeney Radlo (rio; 8-9, Varled musical program, South Side male quarte(; Charline Maddox, violinist; Cecile Truesdale Reasley, reader; Stella Subrowski Hodgins, soprano: Mrs. E. L. Thray-

lor, Mrs. Clyde Cummings, accompanists; 9-10, dance mustle, Sweeney Radlo orchestra.

WHK. Cleveland, Ohio (Eastern, 283), 6 p. m., Ponce de Leon orchestra, Herbert Hayward, director, Grehe's Hanna restaurant; sports, eurrent news; 8 p. m., program arranged by the Cleveland press.

WHN, New York, N. Y. (Eastern 360), 12:30-1 p. m., Chas. Strickland's Palas D'Or orchestra; 2:15-2:30, Mrs. Bob Schaefer, Radio girl; 2:30-3, Original Louisville Jazz band; 3-3:45, Boh Miller and Ira Schusters, songs; 3:45-4, Victor Wilbur, barltone; 4-4:15, Arthur Ball, tener; 4:15-4:45, Genevieve Williams, soprano; Sam Steinberg, violinist; Charles Strickland, planist; 4:45-5, "Tea Time Talk," Loretto C. Lynch; 5-6:30, orchestra; 6:30-7, dinner musle Alimae hotol; 7-7:30, Huston Ray's Alamae orchestra; 9:30-9:37, Evening Bulletin eurrent news; 9:37-9:50, Sano Marcov, baritone; 9:50-10, Johanna Stern, con-9:30-9:37, Evening Bulletin current news; 9:37-9:50, Sano Marcov, baritone; 9:50-10, Johanna Stern, contralto; 10-10:30, Spear's dance orchestra; 10:30-11, Phll Romano's Roseland dance orchestra; 11:11:15, Richard B. Gilbert and his taro-patch; 11:15-11:30, Cogert's revue; 11:30-12, Lou Gold's orchestra from the Wigwam clab; 12-12:30, Ted Lewis and his

wiax, Cleveland, Ohio (Eastern, 309), 8 p. m., Vinceot Percy, organist; 9 p. m., Ted Robinson, "Philosopher of Folly" of Cleveland Plain Dealer; C, Franklin

housewives league menu, Mrs. Inlian Heath; 10:20; are and decorations, Mrs. Roberts; 10:30, "Eat and Grow Thin." Vance Thompson; 10:40, "Fashions of the Stage," Cora Moore; 10:50, fashion talk, Eleanor Chum; 1 p. m. Nathno Ahas Hotel Tennsylvania orchestra; 3:30, Frank LaGorge, planist; Edna Bachman, soprane; Madeleine, Hulsizer, soprane; Grace Divine, contrally, 4:20 Rembard Lauthenia Hetal Competency contralto; 4:30, Bernhard Levitow's Hotel Comodore lea orchestra; 7, Bernhard Levitow's Hotel Commodore dinner concert; 7:55, Collier's Weekly, John B. Kennedy; 8:10, "Co-operative Economics," Mrs. Clara E. Breakey; 8:30, Anna Pinto, harpist; 9:30, "Football," Big Bill Edwards; 9:15, Wananaker organ recital;

Wednesday, October 22

(Continued from page 11)

'Farm Flickerings," E. B. Heaton; 9, poem period, H.

"Farm Flickerings," E. B. Heaton; 9, poem period, H. D. Saddler feature; 9:25, Dennis Sisters; 9:30, hook review; 9:45, Dennis Sisters; 10, Isham Jones and his College Inn orchestra; 10:15, Arthur Knopinski, violinist; 10:30, Isham Jones and his College Inn orchestra; 10:40, Glenn Rowell, Ford Rush.

WLW, Cincinnati, Ohio (Central, 423), 4 p. m., concert for shut-ins; 1lo lesson, Fred Smith, instructor; 8, Virginia entertainers; 8:55, nlano solos, Marjory Garrigus Smith; 9-10, Formica band and orchestra, Walter Esberger, director.

WMAQ, Chicago, III. (Central, 447.5), I p. m., speeches, weekly luncheon of the Association of commerce; 4:10, beauty, talk, Mime, Grate Earl; 4:30, program, pupils of Cosmopolitan School of music; 6, Chicago theater organ recital; 6:30, stories for children, Georgene Faulkner; 8, weekly lecture, Northwestern university; 8:30, WMAQ play-night, William Ziegler Nourse, director; 9:15, Evans Lloyd and "The 4 Voices"; 9:15, talk, Chicago charities.

WMC, Memphis, Tenn. (Central, 500), 12:30 p. m., dally concert, Shrine roof cafe.

WMH, Cincinnati, Ohio (Central, 309), 8 p. m., Goodrich Silvertown orchestra; 9, piano solos, Eugene Perazzo; soprano solos, Margaret Kountz; vocal ducts, Margaret and Mabel Kountz; violin solos, Helen Kilh; 9:45, "Blts of Cincinnati History," George W. Platt; 10, Auhurn's orchestra, Lawrence Aicholz, director; 12, Peacock Inn mildnight frolic.

10. Auhurn's orchestra, Lawrence Aicholz, director; 12. Peacock Inn midnight froife.

WOC, Oavenport, Ia. (Central, 484), 12 m., chimes; 7 p. m., sandman's visit; 8, Erwin Swindell, organist; Charles R. Hall, tenor.

W00. Philadelphia, Pa. (Eastern, 509), 11 a.m., organ recital, Mary E. Vogi; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 5:15, organ recital, Mary E. Vogi; 7:30, A. Candelorl and his orchestra from French room, Adelphia hotel; 8:15, band concert, Robert Curits Ogeden band, J. Lawrence Civilorial Advances of the contest of the con Grinnell, director; 9, WOO orchestra, Robert E, Golden, director; 10:03, organ recital, Mary E. Vogt; 10:30, Vincent Rizzo and his Hotel Sylvania dance or-

WOR, Newark, N. J. (Eastern, 405), 2:30-2:45 p. m., Francis l'chi, pianist; 2:45-3, William Dawson, tenor; 3-3:15, Francis l'chi; 3:15-3:30, William Dawson; 6:30-7, Gene Ingraham and his Great Notch Inn orchestra; 8-8:15, Gene Ingraham and his Great Notch Inn orchestra; 8:15-8:30, Frank Fowler, bass; 8:45-9, Jap Consul; 9:30-10, recital, Sonya Medvedleff Blinder, soprano, assisted by Diana Kasner, accompanist; 10:45-11, Ben Friedman entertainers. panist; 10:45-11, Ben Friedman entertalners.

WRC, Washington, O. C. (Eastern, 469), 3 p. m., fashion developments of the moment, women's wear; 3:10, songs; 3:30, songs; 3:15, Eleanor Glynn, planist; 3:50, sports for women; 4, songs; 6, stories for children, Peggy Alhlon.

WSAC, Clemson College, S. C. (Eastern, 360), 7 p. in., general farm news; timely bints, Boys' club work 10-minute talk, seasonal; 10-minute talk, animal hus-

WSB, Atlanta, Ga. (Central, 429), 5:30 p. m., bedfine story, Bonnie Barnhardt; 10:15, Fred Hughes, Radlowl

WTAM, Cleveland, Ohio (Eastern, 390), 8 p. m., "Old Pavorites Night," arranged by Uleveland Plain Pealer: "Songs of long ago," quartette, Mary E. Ket-iteman, soprano; Nell Habler Borgerman, contraito; Wilson J. Clark, barltone; Harper Garela Smyth, barl-tone; Florence Johnson, planist; Mrs. Harper Garela South hostess; direction of Harner Garela Smyth. Smyth, hosters; direction of Harper Garcia Smyth.

WTAY, Oak Park, III. (Central, 283), 6:45-7:45 p. in., George Plark, organist: 9:3:45, 10:15-11:15, Axel Phristensen, planalogues; ten minute (celinical talk, Radio Age; Guyon's Paradisc ballroom orchestra.

WWI, Oetroit, Mich. (Eastern, 517), 8 a. m., setting-up exercises, R. J. Horton; 9:50, talk, women's editor, Detroit News; 12 m., musical program; 3 p. m., Detroit News orchestra; 8:30, Detroit News orchestra; Templeton Moore, tenor.

Thursday, October 23

Silent night for: KFAE, KGW, KOB, KSO, WDAR, WGR, WHO, WOO.
CKAC. Montreal, Can. (Eastern, 425), 8 p. m., Basillea delt. Arthur Laurendeau, director; A. Letondal, ormal t.

KOKA, E. Pittsburgh, Pa. (Eastern, 326), 12:15 p. m., Scalzo's orchestra; 6:30, Vlctor Saudek's KDKA Little Symphony orchestra; 7:15, Unele Ed will take the Radio children on a trip to Coney Island; 7:30, talk, Automobile club; 8, farm program; 8:30, Victor Saudek's KDKA Little Symphony orchestra; Adele Eggers Furniss, eontralto; Albert G. Corless, tenor; Mrs. Grace Evelyn Schaney, accompanist; 11, concert, 1'itsburgh Post studio.

KFI, Los Angeles, Calif. (Pacific, 469), 5:30-6 p. m., Examiner news bulletins, Dr. Ralph L. Power: 6:45-7:30, Y. M. C. A., lecture; Bon Ton orchestra; 7:30-8, vocal selections, the Croshy sisters; 8-9, Hotel Amhassador concert orchestra; 9-10, Examiner concert; 10-11, vocal and instrumental recital.

KFKB, Milford, Kan. (Central, 286), 8-9 p. m., Ahe Martin's band; 9-10, lecture, Dr. Osborn; male quartet; 10-11, lecture, Dr. Brinkley; Jubilee boys' orchestra.

KFNF, Shenandoah, Ia. (Central, 266), 7:30 p. m.,

KFNF, Shenandoah, la. (Central, 266), 7:30 p. m., concert from Clearmont, featuring Loah Cheshire, Clement W. Rickman.

KFOA, Seattle, Wash. (Pacific, 455), 8:30 p. m., Scattle Post-Intelligencer program.

Post-Intelligeneer program.

KFSG. Los Angeles, Calif. (Paoifie, 278), 3:30-4:30
p. m., organ recital, courtesy, B. Earnest Ballard, assisted with Margaret Kennedy, soprano and Harold Lloyd, tenor; 7:30-9:15, auditorium service, exangelistle sermon and water baptism; music by choir; hand and organ; 9:15-10, Gray studio concert, courtesy, Butts Musie company, Carl Edward Hatch, violinist; Mora Leonard Hatch, pianist, and assisting artists; 10-11, organ hour, courtesy, Esther Fricke Green, at console; Alfred C. Green, tenor; Dr. Joseph Marple, tenor; S. R. Donaldson, trombonist; Tilda Rohr, Swiss tenor; S. R. Donaldson, trombonist; Tilda Rohr, Swiss

eontralto.

KGO, Oakland, Calif. (Pacific, 312), 4-5:30 p. m., concert orchestra, Hotel St. Francis: 8, piano duets, Grace Hendricks, Mattel Jones: Judith Rensch Scott, soprano; Erwin W. Wentz, cellist: travel talk, "Italy, Switzerland, and the Battlefields," J. E. Barnes; Orley See violin ensemble; Wandszetta Biers, soprano; 10-1 a. m., dance musle, Henry Halstead's orchestra.

KGW, Portland, Ore. (Pacific, 492), 12:30 p. m., Civic Music club; 5, children's program, stories by Uncle Dave. 9 p. in., concert.

Music club; 5, children's program, storics by Uncle Dave. 9 p. m., concert.
KHI. Los Angeles, Calif. (Pacific, 395), 12:30-1:15 p. m., Coy Barklay and orchestra, courtesy, Palace ballroom, Ocean Park; 2:30-3:30, matinec musicale; 6-6:30, Art Hickman's concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, children's hour, "American History," Prof. Walter Sylvester Hertzog; dramatic pupils of Carter Weaver; bedtime story, Uncle John; 7:30, "Art," by Harold Swartz, of Otis Art Institute; 8-10, program, courtesy, Bozzani Motor Car company, arranged by J. Howard Johnson; 10-10:30, concert, presenting Hutch Graham, singer and banjolst; 10:30-11. Art Hickman's dance orchestra, Earl Burtnett, director. Earl Burtnett, director.

KOB, State College, N. M. (Mountain, 360), 7:30-8:30

p. m., College Jazz orchestra; Dr. Asa Brunson, tu-berculosis specialist. KPO. San Francisco, Calif. (Pacific, 423), 1-2 p. in., Rudy Seiger's Fairmont hotel orchestra; 4:30-5:30, Rudy Seiger's Fairmont hotel orchestra; 5:30-6:30, children's hour stories, Big Brother of KPO: 7-7:3h, Rudy Seiger's Fairmont hotel orchestra; 8-9, Theodore I. Irwin, organist; 9-10, family club music and readings; 10-11, E. Max Bradfield's Versatile hand.

ings; 10-11, E. Max Bradfield's Versatile hand.

KYW, Chicago, III. (Central, 536), 6:30 a. m., morning exercises, Y. M. C. A.; 11:35, table talk, Mrs. Anna J. l'eterson; 2:35-1 p. m., afternoon frolic; 6:35-7, children's bedtime story, l'ucle Bob; 7-7:30, loska Belbabary's orchestra; Sanders' Original Nighthawks; 8-8:20, Hearst Music company; Madame Dorothy Hatbol, sonrano; Rohert Whinnery, barlione; 9:15, safely talk; Z. C. Elkin; 10-11:30, at home program, Com-Sanders' Original Nighthawks.

WAAW, Omaha, Nebr. (Central, 286), 7:30-8:30 p. m. educational program. Rev. E. M. Brown; J. W. Kriss. WBAP, Fort Worth, Tex. (Central, 476), 7:30-8:30 p. m., concert; 9:30-10:45, program, school of music, Texas Christian university, Prof. 11. D. Gnellek, director.

WBAY, Columbus, Ohio (Eastern, 423), 12 m., religious scrylce, Columbus Council of churches, Dr. T. W. Fessenden, Franklin Park M. E. church, speaker sacred music. WBBR, New York, N. Y. (Eastern, 273), 9:10 p. m.

WBBR, New York, N. Y. (Eastern, 273), 9:10 p. m., 1. B. S. A. trio; 9:20, vocal selections; 9:30, International Sunday school lesson, S. M. Van Sibma; 9:50, vocal selections; 10:05, I. B. S. A. trio.

WBZ, Springfield, Mass. (Eastern, 337), 6:30 p. m., songs, Bill Coty, Jack Armstrong; 7:05, letter from the New England Homestead; "At the Theaters," A. L. S. Wood; 7:30, bedtime story for the kiddies; 7:10, Charles R. Hector with his St. James theater orchestra; 8:15, Priscilla quartet, Eunice B. Truesdale, 2nd soprano; Ruth Sawyer Woodworth, 1st alto; Freida Elsa Riedle, 1st soprano; Edna Grace Merritt, 20d aito; John Heiser, accompanist; Mme. Regina Megans 20d aito; John Beiser, accompanist; Mme. Regina Mc-

Symphonic clowns, from the Parody club.

WIP. Philadelphia, Pa. (Eastern, 509), 1 p. m., Gimbel tea room orchestra; 3, rocital, students Seterberg School of Musle; piano solos, Herman Stein; ylolin solos, Michael Sorangelo; vocal solos, Florence O'Brien; solos, Michael Sorangelo; vocal solos, Filorence O'Brien; plano solos, Virginia Hunsberger; 6:95, musical program, direction, Charles Sansone, featuring the Richard brothers; 7, Uncle Wip's bedtime stories; Mary B. Reeves, Philadelphia Saving Fund society; 8, "Home Lighting for School Children," G. Bertram Regar; 8:15, Philadelphia Pollee hand, direction, Lleutenaut Joseph Kiefer; 9:15, talk, Dr. T. C. Beswick; 11:15, Harvey Marburger and his vaudeville orchestra.

opher of Folly" of Cleveland Plain Dealer; C, Franklin Morse, tenor; Rex Haller, soprano; Lou Lerner, pianist. WIY, New York, N. Y.' (Eastern, 405), 7:30-8 p. m., Berlitz weekly French lesson; 8-8:15, Josephine Evans, contralto; 8:15-8::30, Time pop question game; 8:30-8:45, Josephine Evans, contralto; 8:45-9, talk, Honorable Augustus Thomas, Democratic National committee; 9-10, Al Relser's Club Ferreri orchestra; 10-10:15, "Talk on Old Ships," Gordon Grunt; 10:15-10:30, John Cassidy, buritone. WJZ, New York, N. Y. (Eastern, 455), 10 a.

10:15, Walderf-Astoria dance orchestra.

WLS, Chicago, all. (Central, 345), 12-1 p. m., music oumbers, Hutter School of Music; "How 1 Nin Taking the Gamble Out of Farming," W. A. Dougan; 3:(5-4:15, homemakers' hour; "From Cook Slove to Casserole," Mrs. Grace Viall Gray; "The Modern Novel vs. the Old Time Story," Mrs. Lanra H. Bartholoniew; 6:30, Ralph Emerson, organist; 6:15, Our Mclody Girls, Roma and Irene; 7, lullaby time, Glenn Rowell, Ford Rush; 7:20, "Katlnka," Robert W. Steveos, director, H. D. Saddler feature. WLW, Cincinnati, Ohio (Central, 423), 4 p. m., French lesson, Madame Telmpidls; plano, solo, Adelaide

lesson, Madame Telmpldis; plano solo Adelaide Apfel; 10, message from United States Civil Service Bureau; 10:30, Doherty orchestra; 10:30, Milnor instrumedial trio; Badarlo comedy, "The Music Lesson," featuring Senator Schultz; Milnor trio; Doherly orchestra. orebestr

WMAQ, Chicago, III. (Central, 447.5), 1:10 p. iii. household hour, Mrs. Ellänbeth O. Hiller, director; 1:30, musleil program; 6, Chicago theater organ reThe Ariu again M

The Gyp semble WEAF'S

with an gram

DA

Wednes 6:30, Wo 7:30, Wi 8, Wiw, Kpo, Wlw; Wgn. Wtay; 16 Kfoa, Wb; Wdaf; 12 12:30, Ky Thursda

Wre; Wwj; Wlib, Wwj; Kfi, We Wlw; 10 Wlay; 1 Winh;

Wjy, Wi Weaf; 7: Weae, Wdaf, Wme: Webh, Wgy, Wgr, Wbz, Webh. Wdaf; Saturda Wmag, 7:30, Wtam;

Wfi; 9 10. Kpc Whn: 10:30. Webh, 11:15, Wdaf; 12:30, W Mond 6:30, Wiy; Wdar; 8:10.

Winh;

Wgr, Wme; Kgo. Tuesda Wwj; 6: Webj. W 8. Wsai

II; LIGHT OPERA AT WJZ SATURDAY



eital; 6:30, Hotel LaSalle orchestra; 8, "Automobile Tralls," Rockwell R. Stephens; 9, lecture, University of Chicago; 9:15, Walther League program.

WMC, Memphis, Tenn. (Central, 500), 12:30 p. m., daily program, Shrine roof cafe; 8:30, program, arranged and sponsored, Mrs. Louise Bowen.

WMH, Cincinnati, Ohio (Central, 309), 8 p. m., vocal solos and ducts, Gussie Bishop, Garnitta Springer, Ethel Fahnle, accompanist; 8:30, violin solos, Luke D. Ehrgott, Kurt Kenkle, accompanist; plano solos, Ethel Fahnle; 9, Avon dance orchestra, R. C. Fisher, director; 12, Peacock Inn midnight frolic.

WOAW, Omaha, Nebr. (Central, 526), 6 p. m., every childs' story hour, conducted by Grace Sorenson; 6:30, dinner program, Hook's Harmony masters; 9, Hotel Fontenelle concert orchestra; 10:30, Wowl frolic hy Frank W. Hodek, Jr. and his Omaha Nightingales.

WOC, Oavenport, Ia. (Central, 484), 12 m., chimes; 7 WOC. Oavenport, Ia. (Central, 484), 12 m., climes; 7
p. m., sandman's visit, Val McLaughlin; 9, the
Palmer School Radio orchestra; Ralph W. Fuller,

7 (00; 9, 3 (Whu, 2 (9:45, 4 (Whz, 7 (10:15, 1) (1:15, 7 (1:45, 121, While;

Wtay, tt: 10, 10, Wgn, Wip, 10W h n, K y w

% Webj, fi 6:45, fi 7:30, fi: 8, fi Kob, g in; 9, fi 9:30, w Wgn, t Kfoa,

Wgu. Wiay

ii:45. Kgw

Wwi; Woaw, Es; 7, Wine;

Wdar, 0, 10, Ksd, W; 12,

6:30. Wai Win. 10:30,

harllone.

WOO, Philadelphia, Pa. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogl; 12:02 p. m., Wanamaker crystal fea room orchestra, Robert E. Golden, director; 5:15, organ recital, Mary E. Vogt.

WOR, Newark, N. J. (Eastern, 405), 2:30-2:45 p. m.; Rita Lownsberry, planist; 2:15-3; Myrtle Wagner Whilt, soprano; 3-3:15, Rita Lownsberry; 3-15-3:30, Myrtle Wagner Whitt; 6:15-6:30, Radio for the Layrian Albert E. Sopra 6:23-7:59, Ton Cooper's

Myrtle Wagner Whitt; 6:15-6:30, Radlo for the Layman, Albert E. Sonn; 6:30-7:30, Tom Cooper's Country club orchestra.

WRC, Washington, D. C. (Eastern, 469), 6 p. m., children's hour, Peggy Albion; 7:30, the Better 'Ole club orchestra; 8:15, Ida Willis Seaton, soprano; 8:30, Katherine Floecker Chilen, planist; Georgada Mac-Hargue, controllo; 9, Scolch songs, Hook Kennedy; 9:15, muslc; 9:30, George Myers, tenor.

WSAL Chromatic Objection (Controllog), 10 p. m. guestel.

WSAI, Cincinnati, Ohio (Central, 309), 10 p. m., special program arranged by Mrs. Adolph Hahn; violin solos, Eric Sorantin; 11, bass solos, Ned Jackson; readings, Mrs. Harry Baker.

WSB, Atlanta, Ga. (Central, 429), 12 m., noon enter-taliment; 5:30, bedtione story, Bonnie Barnhardt; 8-9, Dr. Charles A. Sheldon, organist; Fred Hughes, tenor;

WTAY, Oak Park, III. (Central, 283), 6:45-7:45 p. m., Ann Peterson, planist; Marion Laffey, violinist; James J. Whalen, baritone; 9-9:45, Siloan Knight Templar Commandery band; 10:15-11:15, Reland Hinkle, tenor

Givon's Paradlee orchestra. WWJ, Oetroit, Mich. (Eastern, 517), 8 a. in., setting-inexercises, R. J. Horton; 9:30, talk, women's editor, Detroil News; 12 m., musical program; 3 p. m., Detroil News orchestra; 8:30, Detroil News orchestra; Graeme Gillies, bass; Highland Park Ffremen's frio; 10, Goldkette's orchestra; 11, Detroil News orchestra.

Friday, October 24

Silent night for: CKAC, KPO, WBBR, WFI, WMH, WOR, WRC, W8AI.
CKAC, Montreal, Can. (Eastern, 425), 1:45 p. m., Monni Royal hotel luncheon concert; J:30, 116 lessons.
CNRT, Toronto, Can. (Eastern, 400), 8 n. m., W. Edmond Capps, Jenor, Albert Dayld, Jenor; Charles Leslie, barttone; Alfred Alkinson, bass; Lillian Bull, planist; Wendell Hall, Eveready Redhead; "Forests as a Basis of National Development," Edwood Wilson, KOKA, E. Pittsburgh, Pa. (Eastern, 326), 7:30 a. m., free hand calisthenles, O. Shamnon; 12:30 p. m., International Sunday School Jesson, James J. Mace; 6:30, Winters Ellolson, organist; 7:15, Daddy Winkim, Badlo rhymater; 7:30, "The Constitution Convention," Charles II, Lewis; 8, feature; 8:15, "Football Coaching," Gny Williamson; 8:30, concert, Evan Lloyd, director, Jaleof, Edgad Thomuson Steel works, KFAE, Pullman, Wash, (Pacific, 330), 7:30 p. m., Phillis Benefiel, nianist; Toris McReynolds, violinist; "Reduction in Potato Ylvids Due to Running Out," G.



Mae Dearborn Schwab is one of the popular soloists to be heard regularly when dialing KGW, Portland.

L. Zundel: "Factors Determining the Type of Agriculture," F. J. Slevers; book chat, Alice L. Webb.
KFI, Los Angeles, Calif. (Pacific, 469), 5:30-6 p. m.,
Examiner news bulletins, Dr. Ralph L. Power; 6:45-8,
Aeolian organ recital; 8-9, Evening Herald program;
9-10, concert, Examiner studio; 10-11, vocal concert,
pupils, Myra Belle Vickers; 11-12, Amhassador hotel
Cocoanut Grove orchestra.
KFKB, Milford, Kan. (Central, 286), 8-9 p. m., Abe
Martin's band; 9-10, lecture, Dr. Osborne; male
quartet; 10-11, lecture, Dr. Brinkley; Jubilec boys'
orchestra.

orchestra.

KFNF, Shenandoah, Ia. (Central, 266), 7:30 p. m., concert, Highland Community church, John M. Bixler,

KFOA, Seattle, Wash. (Pacific, 455), 12:30-1:30 p. m., noonday luncheon program, members Council of the Seattle Chamber of Commerce; 8:30, Shorty's Melody

Seattle Chamber of Commerce; 8:30, Shorty's Melody boys, Gerald Clough, leader.

KFSG, Los Angeles, Calif. (Pacific, 278), 3:30-4:30 p. m., organ recital, Roy Reid Brignall, assisting artists; 7:30-9:15, "Crusaders Rally," silver band, G. N. Nichols, director; revival chorus; address, Judge Carlos S. Hardy; evangelistic sermon, Aimec Semple McPherson; 9:15-10, silver band, G. N. Nichols, director; N. E. Brown, Radio engineer: Marjorle Nell Snider, reader; 10-11, organ recital, B. Earnest Ballard; Margaret Kennedy, soprano; Harold Lloyd, tenor; George Skulteski, Russian basso.

George Skulteski, Russian basso.

KGO, Oakland, Calif. (Pacific, 312), 4-5:30 p. m., concert orchestra, Hotel St. Francis.

KGW, Portland, Ore. (Pacific, 492), 12:30 p. m., Multnomah Hotel strollers, Dwight Johnson, director; 5, children's program, story by Aunt Nell; 8, popular lecture, University of Orcgon; 10:30, Hoot Owls, George Olsen's Hoot Owl orchestra; Pantages theater, KHJ, Los Angeles, Calif. (Pacific, 395), 12:30-1:15 p. m., concert, Piggly-Wiggly girls; 2:30-3:30, matinee musicale; 6-6:30, Art Hickman's concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, children's hour, "American History," Prof. Walter Sylvester Hertzog; Sir Richard Headrick, screen juvenile; bedtime story, Unclc John; 8-10, program presented through courtesy of Mullen & Bluctt, arranged by G. Allison Phelps; 10-11, Art Hickman's dance orchestra, Earl Burtnett, director.

KPO, San Francisco, Calif. (Pacific, 423), 12:45 p. m.,

KPO, San Francisco, Calif. (Pacific, 423), 12:45 p. m., talk, Commonwealth club luncheon; 1-2, Rudy Seiger's Fairmont hotel orchestra; 4:30-5:30, Rudy Seiger's Michael Parks. Fairmont hotel orchestra.

Fairmont hold orchestra.

KSO, St. Louis, Mo. (Central, 546), 8 p. m., address, Hon. Burton K. Wheeler.

KYW, Chicago, III. (Central, 536), 6:30 p. m., morning exercises, Y. M. C. A.; 11:35, table talk, Mrs. A. J. Peterson; 6:35-7 p. m., children's bedtime story, Uncle Bob; Coon-Sanders' Original Nighthawks; 7:30-8, program, Duncan Sisters Music Publishing company; 8:20-8:45, speeches, ausplees of the American Farm Burcan federation: 'What the National Boys' and Girls' Olub Congress Means to America,' G. L. Noble: 'Farmors' Produce Markets,' A. C. Page; 9:30-12:30, midnight revue: 12:30, Remington Welch, organist. organist.

organist.

WBAP, Fort Worth, Tex. (Central, 476), 7:30-8:30
p. m., concert, Osceola quartet; 9:30-10:45, Will Foster, organist.

WBAV, Columbus, Ohio (Eastern, 423), 12 m., Ila Lorbach Owens, planist; 8 p. m., Ben Bennet, baritono; Schnelder's 'cello quartet,

WBZ, Springfield, Mass. (Eastern, 337), 6 p. m., dinner concert, Westinghouse Philharmonic trio; 7:05, current book review, Court Square Book store; 10, Denway trio, Margaret M. Henry, soprano; Lucy Dennett, violinist; Evelyn Hathaway, planist; 11, Westinghouse Philharmonic trio; Fablola Richardson, soprano; Mrs. Eleanor Turner iaZazzera, accompanist; 11:30, McEnelly's singing orchestra.

WCAE, Pittsburgh, Pa. (Eastern, 462), 6:30 p. m., dinner concert, William Penn hotel; 7:30, Unclo Kaybec; 8, special Teature; 8:15, special fealure; 8:30, Harmony Boys orchestra.

bec; 8, special Tenture; 8:15, special feature; 8:30, flarmony Boys orchestra; WCAL, Northfield, Minn. (Contral, 360), 9:45 a. m., St. Olaf college chapel service; 8:30, book lalk; "Scientific Research and Himan Welfare," "The New Decalogue of Science," Dr. George Welda Spohn, WCAY, Milwaukee, Wis. (Central, 266), 8 p. m., Oswald Jaeger night: Flectwood Diefenthaler, director, WCX; Detroit, Mich. (Eastern, 517), 4:15 p. m., miscal program; 6, dinner concert; 7, musical program; 6, dinner concert; 7, musical program.

Steal program; 6, dinner concert; 7, musical program.

WDAF, Kansas City, Mo. (Central, 411), 3:30-1:30
μ. m., the Star's string trlo; 6-7, school of the air, plane tuning-lu number on the Duo-Art; address, anspices, Kansas City children's bureau; the Tell-Meta-Story hidy; music, Hotel Muchlebach Trianon ensemble; 8-9:30, popular program, Star's Radio αrchestra; 11:45-1 a. m., Nighthawk frolle, the "Merry Old Chilef" and the Plantation players.

WOAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., dally almanar; 12:02 p. m., organ recital, Stanley theater; Arcadia cafe concert orchestra, Feri Sarkozi, director; 2. Arcadia cafe concert orchestra; playlet, members of National School of Elocution and Oratory; 7:30, Dream Daddy's bedtime stories; 8, "Turning the Pages," Arnold Abbott; 8:10, Grean Gills Farm Irio; Radio play, WDAR Walter Greenough players; amskeal sciections, direction Mrs. C. M. Maschal; 10:05, Arcadia cafe dance orchestra; meeting of Morning Glory club; songs, Lou Herscher, Carl Zochrn.

WEAF, Now York, N. Y. (Eastern, 492), 11-11:30 u.

Where to Hear Talks

Central Standard Time

TALKS, instructive, serious, humorous and even frivolous, are Radiocast daily and below are listed the stations.

Wednesday: 6, WDAF, WFI, WGY; 6:15, KDKA; 6:30, KDKA, WHN, WMAQ; 6:45, WEAF, WGY; 7, WHB, WBBR, WDAR, WOC, WSAC; 7:45, WOR; 8, WEBH, WLS, WMAQ; 8:15, KDKA; 8:30, CNRM, KOB; 8:45, KYW; 9, KFKB, KSD, WLS; 9:05, KYW; 9:15, KYW; 9:30, KFAE, WLS, KFSG; 9:45, WMAQ, WMH; 10, KFKB; 11, KGW.

Thursday: 6, WDAF, WGY; 6:05, WBZ; 6:30, KDKA, WBZ, WJY; 6:45, WGY; 7:45, WJY 8, KYW, WAAW, WFI, WMAQ; 8:30, WBBR; 9, KFKB, WJY, WMAQ; 9:15, KYW, WJY; 9:30, KFSG; 10, KFKB, WLW, WOAW; 11, KPO.

Friday: 6, WDAF, WEAF; 6:05, WBZ; 6:30, KDKA, WBZ, WEBI; 7, WDAR, WHB, WOC; 7:15, WJY; 7:20, WOC; 8, KSD, WEBH, WLS, WLW, WMAQ; 8:15, KDKA; 8:20, KYW;

8:30, KOB, WCAL, WMAQ; 9, KFKB, WLS; 9:30, KFAE; 10, KFKB, KGW. Saturday: 6, WDAF; 6:30, WBZ, WDAR; 6:45, WRC; 7, KDKA, WIP, WOC, WOR; 7:10, WBBR; 7:15, WIP; 7:30, WRC; 8, WEAF, WEBH, WFI, WHB, WLS; 8:40, WMAQ; 9, KFKB; 9:05, KYW; 9:30, KFSG; 10, KFKB; 12, WEBH.

Sunday: 6, WFAA; 7, CKY, KDKA; 8, KFKB, WHB; 9, KFKB, WFAA; 9:30, KFKB, WFAA; 9:30, KGO.

Monday: 6, WDAF, WOAW; 6:30, KDKA; 6:45, WEAF; 6:50, WDAR; 7, KDKA, WGR, WHB WRC; 7:30, WFI; 8:30, KOB, WFI; 9, KFKB; 9:30, KFAE; 10, KFKB, KGO.

Tuesday: 6, WDAF, WEBI, WOAW; 6:15, WOAF; 6:45, WDAF; 6:50, WDAR; 7, KDKA, WGR; 6:50, WDAR; 7, KDKA, WRC; 7:45, WSAI; 8, WMAQ; 9, KFKB, KSD, WSAI; 10, KFKB, KGW.

m., "A Trip to Athens and the Parthenon," Arthur J. Westermayr; 11:30-11:50, organ recital, Capitol theater; 4-4:45 p. m., club women's program with musie, Catherine R. Reger, soprano; 5-5:30, children's week program; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:30, children's stories, Blanche Eliz, Wade of G. R. Kinney Shoe company; 7:30-7:45, Dave Steingart, violinist; 7:45-8, Happiness boys; 8:15-8:45, Anna Citidae, soprano, accompanied by Invalda Control Anna Glidae, soprano, accompanied by Imelda George; 8:45-9. Sigmund Kempner, xylophonist; 9-10, B. Fischer & company Astor Coffee dance orchestra; 10-10:30, Morena Scoville, planist.

WEAO, Columbus, Ohio (Eastern, 360), 9 a. m., music, Margueritc Manley Sledel School of music talent; 11, music, Stedel artists; 1:30 p. m., music, Siedel artists.
WEBH, Chicago, III. (Central, 370), 7 p. m., Edgewater Beach Orlole orchestra; Agatha Karten, reader; Riviera theater; 9-10, Edgewater Beach Oriole orchestra; Frederick Agard, tenor; Rita McFawn, soprano; 11-12, Edgewater Beach Oriole orchestra; Winter Garden Four; songs, Sandy Meek; Dean Remick, pinnist.

Winter Garden Four; songs, Sandy Meek; Dean Remick, pianist.

WEBJ, New York, N. Y. (Eastern, 273), 7-7:30 p. m., Blybrun's review of the new plays on Broadway; 7:30-8:15, J. Vincent Moore and his entertainers; 8:15-9, dance music.

WEEI, Boston, Mass. (Eastern, 306), 7 p. m., talk, Mayor Curley; 7:10, Big Brother club; 7:45, "The Citizens' Committee to Protect Our Homes and Children;" 8, Leon Weltman of the Weltman Conservatory of Music; 8:15, Happy Hawkins and his Grand Gardens orchestra; 8:30, Charles H. Grant, Daritone; 8:40, Happy Hawkins and His Grand Gardens orchestra; 9, program from WEAF; 11, dance music, Dok-Eisenbourg and his Sinfonians.

WFAA, Dallas, Tex. (Central, 476), 12:30-1 p. m..

WFAA, Dallas, Tex. (Central, 476), 12:30-1 p. m., address, Dr. Robert S. Hyer.
WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3, closing prices, Chicago grain market; 3:05, composers of Nation program, songs and selections from the Hawation; 6:20 Mayor Dayle Bellevue Stratford concert orchestra;

Nation program, songs and selections from the Hawnian; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddles' pal.

WGN, Chicago, III. (Central, 370), 1:40 p. m., luncheon concert, Drake Concert ensemble, Blackstone string quintet; 3-4, rocking chair time; 5:30, Skeezix time; 6-6:30, studio program; 6:30-7, 8-8:30, dinner concert, Drake Concert ensemble, Blackstone string quintet; 8:30-9, Ballentine Bureau of Music; George D. Horne, baritone; 10-11, Jack Chapman Drake dance orchestra.

orchestra.

WGR, Buffalo, N. Y. (Eastern, 319), 12:30-1 p. m.,
George Albert Bouchard, organist; 2:30, Itadio dealers
program; 6:30, dinner music; 9-11, concert, Wheat's
Ice Cream company; 11, supper-dance music, Vincent
Lopez Hotel Statler dance orchestra, Harold Gieser,

director.

WGY, Schenectady, N. Y. (Eastern, 380), 8 p. m., drama, "The Bird and the Fish," WGY players; WGY orchestra; 10:30, college night program, dance orchestra and glee club of Union college; "College Athletics," Harold Anson Bruce; "Football, the American College Game," Harold Wittner.

WHAA, Iowa City, Ia. (Central, 484), 12:30-1 p. m., "The Lure of Newspiaper Work," 1 prof. W. S. Maulsby, WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., Alamo theater orchestra; "Just Among Home Floks"; readings, selected Conrier-Journal and Times editorials; 7:30-9, concert, auspices, Mrs, Jane Webster Murrell, WHB, Kansas City, Mo. (Central, 411), 2-3 p. m., ladies' hour program, Sweeney Radio trio; 7-8, weekly W. C. T. U. talk, Mrs. Fannie L. Taylor; music, Sweeney Radio trio.

WHK, Cleveland, Ohio (Eastern, 283), 6 p. m., Ponce

WHK, Cleveland, Ohio (Eastern, 283), 6 p. m., Ponce de Leon orchestra, Herbert Hayward, director, Grebe's Hanna restaurant; sports, current news; 8, concert pro-

Hanna restaurant; sports, current news; s, concert inorgram.

WHN, New York, N. Y. (Eastern, 360), 2:15-2:30 p. m., Gene Austin, baritone; 2:30-2:45, Judith Roth and Al Wilson; 2:45-3:45, Richard Hitter's Romance orchestra; 3:45-4, Uncle Robert's chat to children; 4-4:15, Mabel Livingston, children's poet; 4:15-4:30, Joseph C. Wolfe, baritone; 4:30-4:45, Madeline Groff, soprano; 4:45-5, Wm. J. Stuart, reader; 5-6, Chas, B. Allen and his Chanteeler orchestra; 6:30-7:30, dinner music, Hotel Alamac orchestra; 9:30-9:37, Evening Bulletin current news; 9:37-10, Dan Gregory's Crystal Palace orchestra; 10-10:15, Myrtle Wagner Whitt, soprano; Bertha L. Rodgers, planist; 10:15-10:20, songs, Bob Miller; 10:20-10:25, songs, Max Hitrig; 10:25-10:30, songs, Ira Schuster; 10:30-11, Fletcher Henderson's Roscland dance orchestra; 11-11:10, Jack Morissec, tenor; 11:10-11:20, Leonard and Leonard; 11:20-11:30, Rady O'P'lynn, baritone; 11:30-12, Sam Wooding's Chib Alabam orchestra; 12-12:30 a. m., Ted Lewis and his Symphonic clowns from the Parody clüb.

club.

WHO, Ocs Moines, Ia. (Central, 526), 7:30-9 p. m., Tologer, McRae, barltone; Rosalind Cook, pianist.

WIP, Philadelphia, Pa. (Eastern, 509), I p. m., Gimbel tea room orchestra; 3, recital, artists, Frank Oglesby studios, Vlda Hoffman, soprano; Marlon Gordon, soprano; Lynore McNulty, mezzo-soprano; Charles Kline, tenor; Magnus Shilling, bass; Flora Ripka, planist; 6:95, Jordan-Lewis danco orchestra; 7, Uncle Wip.

WJY, New York, N. Y. (Eastern, 405), 7:30-8:15 p. in., Billy Wynne's Greenwich Village Im orchestra; 8:15-8:30, looselonf current topics, William H. Ailen; 8:15-9:15, "How Corporate Carclessness Abets the Ab-

8:30, looseloaf current topics, William H. Allen; 8:159:15. "How Corporate Carclessness Abets the Abseender," Bernard J. McGinn, New York Board of
Trade and transportation; 9:15-9:15, "Income Thx,"
Frank Shevil; 9:45-10, lalk, Nalional Republican committee; 10-11, Hotel St. George trio.
WJZ, New York, N. Y. (Eastern, 455), 10 a. m.,
housewives league menu, Mrs. Julian Heath; 16:30,
"Be Your Own Decorator," Amy Mail Hicks; 10:40,
"Shoppors' Guide," Mrs. Pauline Peck; 10:50,
fashion lalk, Eleanor Gunn; 1 p. m., Henry Vander
Zandon's Hotel Ambassador trio; 3:30, Joseph Knecht's
Waldorf-Astoria grill orchestra; 4:30, Hotel Astor organ recital; 7, Savarin ensemble, Nathan Frako, diroctor; 8:10, "Co-operativo Economics," Mrs. Clara E.
Broakoy; 8:30, talk, E. W. Horbert; 9, "By-Ways of

Travel," Wirt W. Barnitz; 9:15, "The Mikado," Brooklyn Light Opera company; 10:30, Duke Yellman's Irene Castle orchestra.

WLS, Chicago, III. (Central, 345), 12-1 p. un., "What 1 am Trying to Do in Community Life," W. J. Dougan; 3:45-4:45, "Beauty Hints—Care of the Complexion," Ellen Rose Dickey; "A Trip to London," George H. Conner; 6:30, Ralph Emerson, organist; 6:45, Clara Koertgen; 6:50, Ralph Emerson, organist; 7, lullaby time, Glenn Rowell, Ford Rush; 7:20, 1sham Jones and hls College Inn orchestra; 7:45, Triple A trio; 7, lullaby time, Glenn Rowell, Ford Rush; 7:15-12, musical review, Ralph Emerson, organist; Harmony girls, Ingram and Carpenter; Walter Peterson, "The Kentucky Wonderbean"; Isham Jones and hls College Inn orchestra; Ford Rush, Glenn Rowell, WLW, Cincinnati, Ohio (Central, 423), 8 p. m., address, John W. Davis, presidential candidate.

WLW, Cincinnati, Ohio (Central, 423), 8 p. m., address, John W. Davis, presidential candidate.

WMAQ, Chicago, III. (Central, 447.5), 4:10 p. m., 'English as She Is Spoke,' Mrs. J. Elliott Jenkins; 4:30, program, Bush Conservatory of music, 6, Chicago theater organ; 6:30, Hotel LaSalle orchestra; 8, weekly wide-awake club program, Mrs. Frances M. Ford; 8:30, musical geography, Mrs. Marx E. Oberndorfer, Marx Oberndorfer; 9, program, Ottawa.

WMC, Memphis, Tenn. (Central, 500), 12:30 p. m., noon-day concert, Shrine roof garden; 8:30, program, Britling's Cafeteria orchestra; 11, midnight frolic.

WOAW. Omaha, Nebr. (Central, 526), 6 p. m., story hour conducted by Doris Claire Secord; 6:30, Creston, lowa; 9, Creston, lowa.

WOC, Davenport, Ia. (Central, 484), 12 m., chimes; 7 p. m., sandman's visit, Val McLaughlin; 7:20, "The Serving of Hot Lunches in the Rural Schools," Mrs. Richard Schmidt; 8, old-time music, James Simpson.

WOO, Philadelphia, Pa. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanainaker crystal tea room orchestra, Roert E. Golden, director; 5:15, organ recital, Mary E. Vogt; 7:30, A. Candelori and his orchestra from French Room, Hotel Adelphia; 8:30, Erno Rapee's Intimate concert from Fox theater; 10:03, organ recital, Mary E. Vogt; 10:30, Vincent Rizzo and his Hotel Sylvania dance orchestra.

WOR, Newark, N. J. (Eastern, 405), 2:30-2:45 p. un., Celia Newmark, soprano; 3:45-3:15, Bob Schafer; 3:15-3:30, Celia Newmark; 6;15-6:30, Vincent Buono, cornetist; 6:30-7, man In the moon storles; 7-7:15, Vincent Buono.

netist; 6:30-7, man in the moon stories; 7-7:15. Vincent Biono.

WRC, Washington, O. C. (Eastern, 469), 3 p. ni., fashion developments of the moment, women's wear; 3:10. Arthur McCornick, baritone; 3:20, "Beauty and Personality," Elsie Pierce; 3:25, current topics, editor of the Review of Reviews; 3:35, plano recital; 3:50, Magazine of Wall street; 4, song recital; 6, stories for children, Peggy Albion.

WSB, Atlanta, Ga. (Central, 429), 8-9 p. m., J. P. M. minstrel, Ted Hawkins, Riley Puckett; 10:45, Georgia

Hawkins, Riley Puckett; 10:45, Georgia

minstrel, Ted Hawkins, Riley Puckett; 10:45, Georgia Railway and Power company quartet.
WTAY, Oak Park, III. (Central, 283), 6:45-7:45 p. m., melody night: Glenn Bruce, dramatic reader; Sandy Meek, baritone: Black Cat orchestra.
WWJ. Oetroit, Mich. (Eastern, 517), 8 a. m., setting-nip exercises, R. J. Horton: 9:30, talk, women's editor. Detroit News; 12 m., musical program; 3 p. m., Defroit News orchestra; 8:30, Detroit News orchestra; Claudine Secor, soprano.

Saturday, October 25

Silent night for: KFAE, KFOA, KOB, WBAP, WCAY, WCX, WDAR, WGR, WHO, WJY, WLW, WOO.

WCX, WDAR, WGR, WHO, WIY, WLW, WOO, WWJ.

CAC, Montreal, Can. (Eastern, 425), 7 p. m., kiddies' storics in French and English; 7:30, Rex Buttle and 'his Mount Royal hotel concert orchestra; Napoleon Danscreau, cellist; 8:30, vocal and instrumental concert, auspices of "La Lyre," Mrs. J. A. Lariviere, Mrs. E. Gareau, J. F. DeBelleval, Gaston St. Jacques; 10:30, Joseph C. Smith and his Mount Royal hotel dance orchestra; Joseph C. Smith, violinist.

KDKA, E. Pittsburgh, Pa. (Eastern, 326), 1:30 p. m., Daugherty's orchestra; 3, Pitt-Tech football gamo; 6:30, Westinghouse band; 7:15, Richard the Riddler; 7:30, sport review, James J. Long; 7:45, World's Uniform Sunday school lessons, Carman C. Johnson; 8, "Inside Movie Gossip," Sam Comiy; 8:15, featuro; 8:30, concert, Westinghouse band, T. J. Vastine.

KFI, Los Angeles, Calif. (Paeific, 469), 5:30-6 p. m., Examiner news bulletins, Dr. Ralph L. Power; 6:15-8, dance orchestra; 8-9, Aeollan instrumental frio; 9-10, program from Evanions and the concerts of the story of the large transparent females of the large transparent females

dance orchestra; 8-9. Aeollan instrumental trio; 9-10. program from Examiner studio; 10-11, Packard Radio club; 11-12, Ambassador hotel Cucoanut Grove orchestra. KFKB, Milford, Kans. (Central, 286), 8-9 p. m., Abe Martin's band; 9-10, lecture, Dr. Osborn; male quar-tet; 10-11, lecture, Dr. Brinkley; Jubilee boys or-

chestra.

KFNF, Shenandoah, Ia. (Central, 266), 7:30 µ. m., program; DeForest Harmony boys; 10:30, midnlght frolic, Sredhouse branch,

KFSG, Los Angeles, Calif. (Pacific, 278), 3:30-1:30 µ. m., Gray studio program featuring Jalented "tols" from children's church; 7:30-9:30, andtforium service, "divine healing," Almee Semplo McPherson; altar call; lemple choir; Marion McGlashen Muller, Salvation, Viene sanguage.

tion Army sopraire.

KGO, Oakland, Calif. (Pacific, 312), 1-5:30 p. iii., concert orchestra, Hotel St. Francis; S. prograin. Merced Boys' hand, auspices of the American Legion Post 83; 10-1 a. m., dance music, Henry Halstead's KGW, Portland, Oregon, (Pacific, 492), 10 p. m., danco

KGW, Portland, Oregon. (Pacific, 492), 10 p. m., danco music, George Olsen's Metropolitan orchestra. KHJ, Los Angoles, Calif. (Pacific, 395), 12:30-1:15 p. m., concert; 2:30-3:30, mathica musicale; 6-6:30, Art. Hickman's concert orchestra, Edward Eltzpatrick, director; 6:30-7:30, children's hom, "American Fils-lory," Prof. Walter Sylvester Hertzog; silver-shoot-jnvenilos; bedthme story, Unclo John; 8-10, program, (Continued on page 14)

MAYOR OF BOSTON TO TALK AT WEEI; LIGHT OPERA AT WJZ SATURDAY

Where to Hear Concerts

Central Standard Time

THESE are the stations for music lovers to dial, and you can hear, proyiding you dial correctly and read the programs carefully, everything from 1222 to opera.

Priday: 6, WCX, WGN, WMAO 8:30, WEAF, WIS, WOAW; 8:45 WTAY: 7, CNRT, KVW, WISAY WDAR, WEBH, WHK, 7:15, WEAF 7:30, KDKA, KFNF, RVW, WBAI WHAY, WHO, WHO, 8, KFR, MGR WCAY: WOY, 6:30, WGN; 9, WBAI WCAY: WOW, WMAO, WHAW, 9:33

Wednesday, October 22

KFAE, KYW, WRAP, WOO: 9:45, WLS; 10, KFI; WBZ, WFRII, WIN 10:40, WLS; 11, KFI; 11:75, KFNS; 12, KFI, KFSG, WEBH; 12:30, KYW.

WHAP, WGN; 8:45, WTAY; 7
WHBR, WEBH, WHK, WLS, WRC
7:10, WHN; 7:16, WOR; 7:45
WHZ; 7:20, WHN; 7:30) CKAC
(KDKA), KIYNF, KSD, KYW, WKAF
WHAS; 7:40, WHBR; 8, KFKB
KYW, WHP, WMAQ, 8:15, WRZ
WSAI, 8:30, WFAI, WGN, WMC
8:55, WHN; 8, WMAQ, WOAW
WTAY; 9:16, WSAI; 8:30, KYW
8:45, WOR; 10, KGO, WEBH, WMH
11, WAAW; 12, WCAI, WEBH

Snndsy; 6:15, WGR; 6:30, KFNF; WGY; WLS; 7; KYW, WFBH, WLS; 7; 30, WHO: 9, WCHI), WHK, WAX; 6:15, WFAF; 6:30, WCAL; 6, KSD; WGA, WHAA, WGAW; 6:30, KFSG; WFAF; 12, KFSG; WFAF

8/45, KSD, 7, WOR, WTAM, 7:15, WHAP, WGR, 7:30, KDKA, WAAW, WHAP, WGN, WCBD, WDAF, WHAP, WHAP, WGN, WHAP, WHAP, WGN, WHAP, WHAP, WGN, WHAP, 10, KGW, 11:16, WHO, 11:45, WDAF, Tnesdey; 6, WEAF, WGN, WHAC, 6:15, WTAY, 7; WHAV, WGY, WJAX, WHY, 7; WHAV, WHAP, WWA, WGN, WGAY, WHAP, WHAP,

KDKA, E. P. Hithburgh, Pa. Leastern, 320), 12:15 p. m. Scillar's crithcuts, 2:10, Viciot Saude's KDKA, Little Symphony, archestra, 7:15, Uncto Ed will, Lahe, the Bandhony, archestra, 7:15, Uncto Ed will, Lahe, the Bandhony, archestra, 1:15, 10 (Concy Thinnel; 7:30, task Automobile) chish, S. form, program; 8:30, Vicios Saudek'a (KDKA), Little Symphony, archestra, Adel Egger, Vurnita, jointeratiol, Albert G, Castera, length

Frankhert Bens Jeillettes, Dr. Julph L. Powert 6345, 730, V. M. C. C. Lecture Bon Ton ordestra: J. Jüsse voed 180 february 150, 150 february 150 februar

FHF. Sheanndosh, In. (Central, 280), 1:30 p. m. tentral from Cleatennel, fathering Lond Chestennel, Churchy Lond Chestensel, W. Hickman.
(FDA, Basille, Wash, Pacine, 455), 8:30 p. m. Nestil

The interingence viverain.

FSO, Lea Angeler, Calli, (Pacific, 278), 3.28 (120 in the interior), in coran technic, custience, in format Bulmed, including the street with Muragard Kunnely, sorrain and Burnit Lingti, Frinci 7 300-013, and fine Jun and fee, extuncellation in surface interior custience, in the street min surface interior within concert, custically fine controls of the control of t

contribito.

RO9, Orkhand, Calif. (Paulie, 212). L5200 g. m., reserved inchestin, Itonja St., Praturie, S., triano intest. Guine Brundfelde, Mahad. Janier, Butterland, Souli, waterman, Sawda, W. Wentle, Schlicht, Ernert India, Manty, Schrechten, and The Thirtheology, 2.5. Fr. Hunter, German, Lander, Schrechten, Lander, Schrechten, Lander, Schrechten, Lander, Schrechten, Lander, Schrechten, Lander, Schrechten, Christian, Lander, Schrechten, Christian, Lander, Schrechten, Christian, Lander, Schrechten, Christian, Lander, Lander, Schrechten, Lander, Lande

XI. Les Angeles, Castlett. (Prefile, 393), 41:303-131;
XI. Les Angeles, Castlett, (Prefile, 393), 41:303-131;
You Co. Hattley and rethering courses, Palers of Books, Angeles and State of Castlett, Markott M

RoB. State College, N. M. (Meuntain, 360), † diek H. H., College diekt brebrishet Dr. Am Humbol, I kreussis appelalial, KPD. San Francisco, Calif. (Pacific, 423), 1; 7 H., u

P.D., Son Francisco, Gatti, Tracting, 4231, 17-34, m., illud. Schert's Fairmant intell orchesture, 4236-336-338, illud. Schert's Fairmant, final processor, 3236-328, illud. Schert's Gatta aprice, Ric Brodice of New 27-326, illud. Schert Gatta, 18-4, illud. Schert, Mun. Schert, 18-4, illud. Schert, Mun. Schert, 18-4, illud. Schert, Mun. Schert, 12-4, illud. Schert, Mun. Schert, 12-4, illud. Schert, Mun. Schert, 12-4, illud. Schert, Mun. Schert, 18-4, illud. Schert, Mun. Schert, 12-4, illud. Schert, Mun. Schert, 12-4, illud. Schert, Mun. Schert, 12-4, illud. Schert, Mun. Schert, 18-4, illud. Schert, Mun. Schert, 12-4, illud. Schert, Mun. Schert, 18-4, illud. Schert, Mun. Schert, 12-4, illud. Schert, Mun. Schert, 18-4, illud. Schert, 1

KYW, Chloras, H., Gentral, Sils, a Su s. p.; morthy everyteen, Y. M. (1971), hab, dalile lable, Wrs. hard telephone overteen, Y. C. (1971), hab, dalile lable, Wrs. hard telephone, a strain, and telephone over the lable of the label of t

WAAW, Omaha, Nebr., (Central, 286), 77 an 820 pt. m. schrollteind stoucent, Ity. 12. M. Incomp. 3. W. Artis. WBAP, Fint Weeth, Tex. (Central, 4764, 7200 S. R. M. Sonesti, 19. dis-10 Pt., Poerraio, Jethod 19. more the transportation of the state of the Contral of Contral of the Contral of Con

Jegiphilli, Johanni Park, M. E. Philetti, epicake, dered India, Vintk, M. Y. (Entrein, 2731, Diffi II in B. B., A. trio: Bern, reed) selections (B. II), like a control lection, S. M. Van Ribma; 9.3, vegal selections; 10, 10, 11, 18, N. 4, tio.

weel selections; 10.05, 1, 11, 8, 3, 16.

99Z, Selections; 10.05, 1, 11, 8, 3, 16.

99Z, Selection Selection Selection (Solid P. Selection From Bours, 2011). Professions: 10.1 Profession Selection Selection Selection From Profession Selection Sel



Elsie Herkenhoff, violinist with the Lazarus quartet, will play at WEAO.

Lennam, reador; 2015; doyce Blechw; violinist; 10 furully; Tarner Sruoj of insult; Lanari St.-dine; violinist; Mary; Steele, plaulst; Arthur H. Turmer, barlions WCAE; Phibburgh: Pa. (Eastern, 402); 4130 p. m. (Smaidhy Hirl; 6130, dhubr concert, William Pom bode) (733), (Incle Maybec; 71); herful feature; 3 (Incled I centure; 515), sperial feature; 3 (Incled Included I

M. Dist College chaird review; B. Reritee Amarious, merane; Audrey Armatinas, contratto; O. McCline M. Miller, ballione; Nell Khr., clerinelli, 10:30 p. m., Aradia hallow (Castrat, 266), 10:50 p. m., Aradia hallow (Castrat, Tune Thikers; Eulelle Pines, myzzo-supeauo, College, 10:50 p. m., mail chorus; College, 111; Central, 245, 8 p. m., mail chorus; College, 111; Central, 245, 8 p. m., mail chorus;

WCX. Detroit, Mich. (Ensiern, 517). 4-15 p. m., my aleal program; 4, dinnier proceed; 7, mished program (DAF, Kanaka City, Ma. (Contral, 411), 2:30-4:30 ft, m to Star's, atting: frie; 6-1, against oil of the alt, plantuming-in number on the 100 a-Vrl; travelogue, 550 a. Alea Alinto, readines, Miss (Critic turtou; the Tril Mea-Stary laby, music, Hintel Muchickach, "Triane Courming," 11:11-12 m; Nichthawk feelle, the "Merr OH (Chieft, and the Phuttation players.
WOAR, Philiadophia, Par (Eastein, 355), 11:42 n. m.

Old Chlett, and the Plantation Physics.
OAR, Philadolphia, Pa. (Estivia, 395), 11:45, n. p., ofally ulmanar; 12:22, p. nt., urgan, rectini, Sinnley the later, and the later, phaladist, and edition Prilad it savies of edit mitigal talks, browness they faculty of Pierce school reads and physics, and phys

FAD, Columbus, Ohlo (Eastern, 360), 9 a.m., russ-Marguerite Manley Stella School, at miste sheet; 14 maile, Sheldarattes; 1 a.b. ii. ii., mistele; Sheld inflate S. indiversily chilage; rejuncted songe, tabest Derrhage fearr; Julian sales, Antilla Billioni, tenor info. A 1: Uny 3:30, consett, Lavarusequarite, Agnes Schlaged Der, plane; Janea Lee Thanas, "eehli, Katheeli Zittler," dellu; Blate Herkenhoff, vlolla (FSRK, Philage, III. (Control, 200), 7.88 ii. m., fall

neleontr, United Samberan church conventiont, 9-04 bidgemate, lonest Ording motherlar, Ellizabeth Herr moranos; musleat, black, History, Ellizabeth Herr moranos; musleat, blate, History, Hardett Hoster, Ellizabeth Hoster, Ellizabeth History, History, Lister, Ellizabeth Hradit Olofferin theorem, Alter Borner, Date, burloure, Nike Borner, Dater Border, Litery, Dates, burloure, Nike Borner, Ellizabeth Hard, Holle Hate recent places of the Company of the C

9.33. mutetele, ampteer of the Wednesday Murilius Piroral rhip, 11-12. Dwicht Worm, oranital, Fl., Philadeiphia, Pa. (Eastern, 395). In mi, Meyer Dulle Reflexic Statillori concerl occleviorati/3, clocking officer, Philadeiphia, Ph. (Philadeiphia, Mohrer, Wildy programs, the haracter, Radia exchange, 6.39. Meyer Dack, Reflexic Stratford concerl orders, fragic, Samoy Jim, the Mohrley July S. (Voolthig University, Junathan & Rarrett, Jeff, 21, Builte play, Startfield, play fra.

Startigat, players.

Val. Chicago, H. Central, 3701, 1 lb p in Junctice (noticed, 304k) Surect, seasonthe, Idark stance strict (indicated, 304k) Started, strict (indicated, 304k) Started, 104k) Started, 104k, 105k, 1

GR, BUffale, N. Y. (Eastern, 319), 12:331-1 j. in theorem Albert Bundard, Sugarditi 2:38, Italia Dealer purcurant, C. Hulliura istillar marria, 2:30, 1:30 j. in; G. Y. Scheneckas, N. Y. (Eastern, 380), 1:30 j. in; Junuer, Miloute music, Tellovia, Illiute from Licky City, Issa

HAA, Inwa City, Ia. (Contral, 484). [22011 p. 10.]

Braglish Vallett of Toda, Street, H. U. Pline,
English Vallett of Toda, Street, H. U. Pline,
Infective probability of the Manager Line Folker,
International and Times collective Policy,
Inc., Courter-Journal and Times collective, 17:00-01,
Inc., Courter-Journal and Times collective, 17:10-01,
Inc., Courter-Journal and Times collective, 17:11-11-11,
Inc., Courter-Journal and Times of the Inc., 17:11-11,
Inc., Courter-Journal and Times of the Inc., 17:11-11,
Inc., Courter-Journal and Times of the Inc., 17:11-11,
Inc., Courter-Journal and Inc., 18:11-11,
Inc., Co



Divis Cummings, necomposities 9-10, unnee sweeps Radio orderica, expension, Ohio Easten, 283). 5-p. m., Ponce metertra, Rediger Haburd, director, Grinds and will see the surface of the composition of the

thok Schnerter, Budde glri, 2:30-3, Original Ho Jazz, Johall 3:3-45, 160 Militer unit Tra 16. Jonath 3:3-45, 160 Militer unit Tra 16. Jonath 3:3-45, 160 Militer unit Tra 16. Jonath 3:3-45, Original Schnerker Willschleider (1984) Schreiber Willschleider (1984) Schleiberg, Toldilats, Charles and, Jaindel, 21:5-6, Original Schnerker, Original School, Original Scho

leens, from Hr. Parette (10),
phin. Pa. (Entern, 1909), 1 pr. m., Glinhelphin. Pa. (Entern, 1909), 1 pr. m., Glinhelphin. Pa. (Entern, 1909), 1 pr. m., Glinhelphin. Pa. (Entern, 1906), Herman, Strike, Foldre

of Satamicolo; seen Jados, Therence O'Birtur,

Vlecilan Humsberger; 6.8th, pinsteal have

lou, C'harlee Natione, feninelige the Rich

; 1, Turle Why's hellines shurlee; Mary II,

ladethida Sarior; Fond meter; 3, "Hume

C School Chilbren," G Hertman Hegar;

leiphia Pallee hand, directhin, Licutenant

ry 3,14, (148), 10, T. C. Hendley, 11;15,

burger and his vaniettle ordusers,

and, Ohla (Eastern, 1994), 8 n. m. Vice
and, Ohla (Eastern, 1994), 8 n. m. Vice
and, Ohla (Eastern, 1994), 8 n. m. Vice-

Crevann, Onto (Laters, 202), A. E. H., Viterey, arganicity B. m.; Ted Buldinon, "Philine deno: Rev Baller, and Philip Berker; C. Frindin, leure; Rev Baller, and Rev Baller, and Rev Baller, lew York, N. Y. (Enter, 492), Laterphino Renne; Rev York, N. Y. (Enter, 492), Laterphino Renne; Rev York, N. J. Thue part governing many; 8:33-30 keptiline Renns; emicality 8:13-9, tatk, Han-Augustus Thomas, Provintile Xarlonal comribita, Al, Reiser's Club Priver; archestra; 10-3-31, Al, Reiser's Club Priver; archestra; 10-3-31, Control of the Control of the Control Fall of Old Sidne; 11 forning Grant; 10:15-Joint Casaldy, barlone.

5. Hew York, N. Y. (Eastern, 485). In 4 m thereties beaties menn, Mrs. (Mulm Utarlit, 1982) in the and deceasitors. Mrs. (Bohrete; 10,30). "Red in soft Thin." Varney Thompson, 1994; "Paddinas, 500 Thin. "Name Thompson, 1995, Isakida taila, Edeniment, 1995, Inc. (Scholler, 1995). In the State of the 1995, Inc. (Scholler, 1995). In the State of the State 1995, Inc. (Scholler, 1997). In the State of the State 1997, 1998, In the State of the State of the State 1997, 1998, In the State of the State of the State 1997, 1998, In the State of the State of the State of the State 1997, 1998,

unhous, Hutter School of Murity "Hon 34 A wholes lief Gambe und CF-45 dinne," M. J. Byunn 13-1-1, t. J. By

Arion trio, a regfeature of KGO, kland will play m Monday night: delicity of thicker 19, 1etture, of thicker 19, 1915, Wallen League program, Walc. Memchis, Tenn. (Central, 500); 12: doily program, Shrine, toof enic; 8.30, por rangel nut sunnaver, Mrs. Louise Bowen.

Kibel Pubrile, accommandat; 820, (tolla isolos, Table). Riteract. Kutt Kendle, arminoparity pinna solos Kiled Salauler 9., Avon dance suchestra. R. C. Pilore ultrator; 12. Peterock Inn midialatic fulls. m., every chile of the property of

colini, Maye E. Mart, 1202 p. nr., Wannishey (1906) in the roots of relieving Richard E. Golden, director (2016) in the roots reclaid, Mary E. Vast.
DR. Hewark, N. J. (Enstern, 465), 2300-215, p. nr. Rito I aminishery; nlenist; 2.152, Martie, Wannishery, missist; 2.152, Martie, Wannishery, missist; Rito, Leonaberry; 2.555, Martin, Martin, Wanner Willer, B. L. (2016), Martin, Dr. Cooper Country (1916) serbests, and a finished for the recent and the rece

Atlanda, Ge. (Cealral, 429); P. M.; non-rater latinum ti, 3.30, heiding starty, Tourie, Barahadi [8,5]
 Br. Charles A. Miribia, organi de Fred Hughes, Francisch Profit in the Partie, Marchael [8,5]
 Br. Charles A. Miribia, organi de Fred Hughes, Principal Profit in the Partie of Parties, P

J. Defroit, Mich. (Exiters, 517). Col. in "setting-inder or best" It. J. Hacton, 1539, both somen's willow, ruled (News, 17 m), indicate processing 37 by m, tred (News, 17 m), indicate processing 37 by m, the News indicated of News, indicated as a considerated as the News indicated of the News indicated as the News indicated

Friday, October 24

itent night fer: CKAG, RPD, WBBR, WFI, WMH, MOR, WRC, WBAI; KAG, Mentreal, Con. (Eastern, 425), 1137 [b. mi. Mount Bright Builderen romerit; 1:20, this resident MRT, Terent, Can. (Eastern, 400), 8 [b. m. 8]. 2d annel Values, Jenoty, Allect Bar, Koo, 8 [b. m. 8]. 2d annel Values, Jenoty, Allect Bar, Koo, 8 [b. m. 8]. 2d annel Values, Jenoty, Allect Bar, Koo, 10 [b. m. 8]. 2d annel Values, Jenoty, Allect Bar, Koo, 10 [b. m. 8]. 10 [b.

Jarly when dialing RGW, Portland.

Number: Poeters Determining the Type of Arch.

KF1, Stevens Determining in Figure 1, 280 et al., 281 et al., 281

nation and the state of the sta

FOA, Sestile, Wash. (Paisible, 455), 12:30-12:30 p. m., monulay lumbeon incorrant, members Connell of the Nextite Chamber of Commerce 1:30-3, Shorte's Telebury boys, Gerald Chour, Jesuer. (Nextite Chamber of Commerce 1:30-3, Shorte's Telebury boys, Gerald Chour, Jesuer. (Nextite Chamber of Chambe

George Skulleckl, Russlan basso. KGO: Ookland, Callf. (Pacific, 312), 4-5-30 p. m., conerri orchystra, Holel St. Francis.

KGW. Persiend. O'rs. (Paulic, 4921, 14:30 p. m. Mulinousia, field stroller, Dieglart Johanna, dierrio d., children's program, story by Aum Nell's, populicity, Children's program, story by Aum Nell's, populicity, Children's program, story by Aum Nell's, populicity, populicity, and the control of the contro

KPD, San Francism, Calli. (Partile, 323), (2013/b. m. rath., Commonwealth cital Inactions, 1.2. Rad) Select Fultment hard inchesia; 120-320, 10th Select Fultment land ordered. (2013-20), 10th Select Fultment land ordered. (Sol. S. Lati., Med. (Contral, 546), 3 p. m., address Sol. St. Lati., Med. (Contral, 546), 3 p. m., address

thair tharton K Wheeler.

Wheeler, W. Chicago, Illa (Gentral) 536(, 0.30) is in, morning exercity, V. M. C. A. 2 (1150), debtr talk, Mrs. A. J. Perekson, 1335-7 v., m., wildform britishe stars, Larler 1604 (3-4), and hibren's bertline stary, Tarler 1604 (3-4), and hibren's bertline stary, Tarler 1604 (3-4), and there's Murler Politishings, 7, 359-8, nongram; Duncan Steece Murle Politishings commonly 279-8825, december, antiblees of the American Form 1790-8825, december, and before and the National Story and Click Chin Montrees, Marine Market, Mrs. 1804 (1997), and the Market Market Mrs. 1804 (1997), and the M

So in , concest, Prespia quartet, P.31-10-15, Will kniter, organite, BAV, Collmbus, Ohlo (Eastern, 423), 12 m., 1la chiquet, theme, plantet, Nu m., hen Denuel, betting: Schneiher's 'celin quartai and the College of t

B4, Sagrandou, and Lealing, 337, 39, 30, autoconcert, Wettinghouse Hullianiumic Holy 720, currint hock review, Unit: Manare Book clore; 10, Denbay Hre, Margaret M. Herp: (supermy, Lury Hennett, Milliant; Kielyn Hathasan; mlantit; II; Westpitano, Vir., Elvaror Turner, LaZaszera, accompaniat; 1150, McKelly's digitar, mitteriar, II; M. McKelly's digitar, mitteriar, CAE, Pittiburgh, Pa. (Enderna, 4621, n.30, p. m., dinors, moreta, William Hong, high, 1, m., force, bay

(11) reduce thinds series, 82-35, but left, [101] But perfus and [101] But which is a like the perfus and [101] But which which is become at Science The Theory White Radion, Vis. (London, West Cardinal, 266), § 15, 6, 6, 6, 10, 11 Junear which Thertweet Helwithster, director, 10 Erfoll, Michael States, 317), [14], p. in a non-ligarity of the perfus of the perfusion of the perfus of the perfusion of

of Titled, and the Plantation photoes.

AR, Philadelphin, Pa. Healtern, 3951, 11,437 a lith, almanate 12,47 p., inc., orgen tredial, 264nh colory, Trevilla, and treated anticolory. Trevilla cade tracert, anticolory, Fey Sation treated, 7, Articolla rade, nonient sectionists, playly mobile to the military and tracery. Presing tracing the health property of the military and tracery. The property of the property o

Where to Hear Talks

Central Standard Time

TALKS, instructive, serious, humorous and even frivolous, are Radiocast daily and below are listed the stations:

Wednesday: 6, WDAF, WFI, WCV 8116, KDKA, 8330, KDKA, WIN WMAQ-6445, WEAP, WGY, 7, WHN WBBR, WDAR, WGC, WSAC: 7,45 WOR: 6, WRIIII, WLS, WAAC: 8:15 KDKA: 6:30, CNRM, KOB 6:45 KYW, 9, KEKB, KSD, WKS: 9:05 KYW, 9:15, KYW, 9:30, KFAE, WLS KFSG: 9:45, WMAQ, WMII, 10 KFKB: 11, KGW.

8:45, WOY! 7, KOW, WINE WRI WIL, WIP: 7:45, WIY 8, KYY WIAW, WEI, WIAQ; 8:30, WIN! 9, KFKB: WIY, WIAQ; 9:15, KY WIY: 9:30, KFSQ: 10, KFKII, WIA WOAW; 11, KFQ; Friday: 8, WDAF, WEAF; 0:0

Friday: 8, WDAF WEAF; 0:05, WHZ, 6:30, KDKA, WHZ, WEBL; 7, WDAF, WHZ, WEBL; 7:20, WOC; 8, KSD, WEBL, WDS, WEW.

30, KOH, WCAL, WMAQ, 9, KFKR 185-9(30, KFAR; 10, KFKR, KUW, SATURDAY; 6, WDAF; 8:30, WHZ, DAR, 6:45, WHC; 7, KDKA, WIP 0C, WOR, 7110, WHQ, 7:15, WIP 10, WRC; 8, WEAF, WERH, WFI, HB, WLS, 8:40, WMAQ; 9, KFKR, WERH, KFKR, 10, KFKR,

B. KURKII, WHIII. 9. KMEN. WP.AA. 7. CKV. KDIKA:

9:30, KFICH, WP.AI. 9. KMEN. WP.AA. 9.

MONDAY 6. WP.AI. 9:30, KHO.

MONDAY 6. WP.AI. 9.

KINA. 26:45, WE.C. 9:30, WD.AR. 7.

KINA. WGR. WHIR. WRC. 7:30,

WFII. 6:30, KOH. WFII. 9. KFKB:

9:30, KFIAL; 10, KFKB. KHO

THESE S.Y. 5. WDAF, WERL.

9:45, WHY: 6:15, WD.AR. 7. KDIKY.

WRC. 7:45, WSAI. 8. WHAF.

A first to Anton-and the Partitioner," Action featuring 1, 1230-1138, organization, relial, Californic Program of the California Program of the Cali

y Ao, Columbus, Dale (Exatern, 2009), ? m. m., mutt, Marguerite Manie, Nichel (Nito) di mude telent; ll. mude, Nichel (Nito) di mude telent; ll. mude, Nichel attita; l. 32 m. m.; mutte; Mirele attita; l. 32 m. m.; mutte; Mirele attita; l. 32 m. m.; mutte; Mirele attita; l. 32 m. m.; Miren, Lander; J. 40, Likewater, Little de Wilde of their (Phila of their Child of their (Phila of their Child); Mirel (Phila of their Child);

Renick, historia: WEBI, Hest Ynik, N. Y. (Exitern, 273), 7 (7-10 fc. in Historia's rection (if, the new place in Architecter, 183 8 (5) [A. Alment, Money and the contest during \$2.5]

9. dance a rule, Eritera, 3069; 7 p. m.; ialk, Mayor, Purley, I. 19. Hig Bibliogram and 19. Market along 19. Market Mayor, Purley; 1 Pu. Hig Bibliogram and Pull-Hilbert Communities on Probe the Market and Pull-Holes and Pull-Holes and Market and All Holes and Market and Market All Honory, Broshot Mr. Grunt, and Hilbert and Market and Marke

6.5 m., studio program W.50-7, 8.5 m., diameter annie Parke Concert entemble, Halsteine ettim, 10th 8.50-9, Balleutina Harrin of Minter theore, Harne, lordiones, 10 11, Suck Pharman, Drake da mehestra WOR, Ouffalo, N. V. (Endern, M.9), 15 and 10 m. Gentre, Albert, Balleutin, alexander, 2 in, Heilin des

Cleaner After District at a country of the last country of the las

w GY, Schenetady, R. Y. (Earlin, 380), S. a. drawt. The 10th and the File. "MAY physics, Wy credestra," 19 39, college them to the constraint of the constraint of the constraint of the college that and physical college that the college that and physical college that the college

The Land of Nivardapier Wolks, Prof. W. & Marbin, M. S. Lauffellig, K.Y. (Carlard, 1904); T. S. II. (Aller, M. R. Lauffellig, K.Y. (Carlard, 1904); T. S. III. (Aller, M. R. Lauffellig, M. (Carlard, M. Thee, reflictable (2002); "concret, unephoc, Mr. Jake Whith Wirrell (1902); "concret, unephoc, Mr. Jake Whith Wirrell (1904); "concret, unephoc, Mr. Jake Whith Wirrell (1904); "concret, sweet and the first of the concrete that photomer, sweet under the first of the control of the first of the firs

eerisch (1940) (E. K.) (E. K.)

of the "Tellar of the Control of the

WIZ: Hes Yark, N. Y. (Exherm, 493); If a lease the classed serior in the Most Allies, Herita His year the classed the control of the Control

A.O. Chlerge, H. (Control., 447.5), 1110 m. m. handlin, m. ph. (1840ac.); Vir. J. Ellioti Jenkin, handlin, m. ph. (1840ac.); Vir. J. Ellioti Jenkin, h. p. ph. (1840ac.); Vir. J. Ellioti Jenkin, h. p. ph. (1840ac.); Vir. J. Lastin evidention, or an exact ph. (1840ac.); Vir. J. Lastin evidention, excellent of the ph. (1840ac.); Vir. J. Lastin evidention, excellent of the ph. (1840ac.); J. program, Philos. Philosophic, 1840ac.; J. program, Philosophic, 1840ac.; J. program, Philosophic, 1840ac.; J. program, Philosophic, 1840ac.; J. program, except of the ph. (1840ac.); J. program, except of the ph. (1840ac.)

[1008] S. Cirriou, Jona C. O. G. Conservations, J. C. C. Conservations, J. C. Charlest, J. M. Chandellay, T. S. C. Chandellay, T. C. C. Chandellay, T. C. C. Chandellay, T. C. C. Chandellay, T. C. C. Chandellay, J. C. Chandellay,

WDR, Mewath, W. J. (Eatler, 405), 2-0.2 (b. m., 1914 No. m., 1914 Normark, suprainty 3-15-17, 1100; Schafter, 1-15, 200; 1914 Normark, A. 15-13, 9, Vinyer, 110000, con nellet; 11:00-7; men in the mean duries, 1 7-15. Vincent from

WHO. Withhigher, D. C. (Evitern, Addit, S. et al., which afterlamments of the monotoni, impacts well at the first property of the property of the property of the property of the first property of

uttureetested Attachter Hilly Apakett, 19-15, Demek Kalbear, and Dower, in pain spatish, Kalbear, and Dower, in pain spatish, 19-15, pain and the Company of the Company for the Company of the Company of the Company Most, Internation, Hiller State of the Company (MM), Details, Miller, (Failain, 317), Vin 26, Gellfüreiten pyriler, 18, 3, 4, 16-16, 19, 6, 146-2, weightige design.

Saturday October 25

WEST WORK. WELL, WHO, WIY, WLW, WOD,

Montriet, Can. (Exstern, 22:1.1), n. hibbles, here is become and kentle, 2-m; [they Hattles and the Mann Boyal bided formered ordinering Navielous Lancienus, realles, 2-m; aced and Junterment, receipt and they have been continued by the second and Junter ment, and they are second and Junter ment, and they are second and they

10. appet fiction, denier J. Long, 2.11, West, I. (Inflow) Sol. by senied fectors, Percent J. Odmers, S. (Inflow) Sol. by senied fectors, Percent J. Odmers, S. (Inflow) Help (1984), S. (Inflow) Sol. appet fiction (P. Lee, Angales, Calli, (Paelle, 400), Apple 10. by the conduct of a finite particular and a finite part

der Mannanders, in (Cantal, 260), [C. 1].

We Mannanders, in (Cantal, 260), [C. 1].

This, The box of the model long, [D. 1], middle lo

Her Art wilden (Pacific, 112), i. E. i. (CO. Oakland Catt. (Pacific, 112), i. E. i. (Co. Catt. Cat. (Indet. at Line), a cited Merrey class to and, sinches of the American Catt. (In it is a line), in decre-mobile, items (Indet. Catt. C

The position of the control of the c

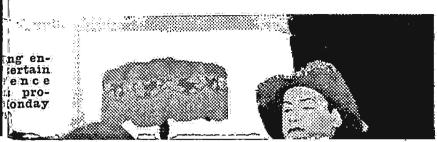
etale, Arthur Lausenthan, director; A Letoudal, or geniel.

Thursday, October 23

www.americantadiohistor

OPERA AT WJZ SATURDAY

www.americanradiohistory.com





Where to Hear Talks

Central Standard Time

TALKS, instructive, serious, named daily and below are listed the stations. ALKS, instructive, serious, humorous and even frivolous, are Radiocast



hat
J.
mn,"
lst;
tst;
20,
ple
ish;
ist;
erand
l.
ad-

m., lns;
ChiStra; 8,
Frances M.
Marx E. ObernOttawa.
12:30 p. m.,
8:30, program,
idnight frolic.
6 p. m., story
1; 6:30, Creston,

2 m., chimes; 7 llin; 7:20, "The Schools," Mrs. James Simpson., 11 a. m., orm., Wanamaker Golden, director; 30, A. Candelori Hotel Adelphia; om Fox theater; 10:30, Vincent chestra.
2:30-2:45 p. m., b Schafer; 3:15-cent Buono, cores; 7-7:15, Vin-

469), 3 p. m., women's wear; 20, "Beauty and ent topics, editor no recital; 3:50, ecital; 6, storics

p. m., J. P. M. 10:45, Georgia

6:45-7:45 p. m., c reader; Sandy

a. m., setting-up women's editor, n; 3 p. m., De-News orchestra;

er 25

WBAP, WCAY, WLW, WOO,

, WLW, WOO,

' p. m., kiddies'
Rex Battle and
hestra; Napoleon
lnstrumental conJ. A. Lariviere,
ston St. Jacques;
ount Royal hotel
ilinist.
126), 1:30 p. m.,
football game;
ard the Riddler;
f; 7:45. World's
in C. Johnson; 8,
y; 8:15, featuro;
J. Vastine.
)), 5:30-6 p. m.,
L. Power; 6:45-8,
hental frio; 9-10,
1, Packard Radio
it Grove orchestra,
f. 8-9 p. m., Abe
thorn; male aquarJubilee boys or-

10:30, midnight

278), 3:30-4:30 ig talented "fots" udiforium service, McPherson; aftar en Muller, Salva-

o, 1-5:30 p. m., icls: S, program, American Leglon Henry Halstead's

, 10 p. m., danco orchestra. 395), 12:30-1:15 nuscale; 6-6:30, dward Fitzpatrick, 'American His-rtzog; silver-sheet n; 8-10, program, ,e 14)

Saturday, October 25

(Continued from page 13)

conress, Newherry Electric company, arranged by J. Howard Johnson; 10-11, Art Hickman's dance orchestra, Earl Rurtnett, director.

KPO, San Francisco, Calif. (Pacific, 423), 3:30-5:30 p. m., tea dansant, E. Max Bradfield's Versatllo hand; 8-12, Art Weldner's dance orchestra.

8-12, Art Weldner's dance orchestra.

KSD. St. Louis, Mo. (Central, 546), 7 p. m., musle and specialties, Missouri theater.

KYW, Chicago, Ill. (Central, 536), 6:30 a. m., morning exercises, Y. M. C. A.; 11:35, table talk, Mrs. Anna J. Peterson; 6:35-7, children's bedtime story, Uncle 166: 7-7:30, Joska Deliabary's orchestra; Coon-Sanders Malion, Night bands, 825-72, musical programs Sanders

Original Night-hawks; 8-8:58, musical program, Salva-tion Army staff band; 9:05, Youth's Companion; 9:35-11:30, late show, Coon-Sanders Original Night-hawks. WAAW, Omaha, Nebr. (Central, 286), 11-1 a. m..

waaw, Omaha, Nebr. (Central, 286), 11-4 a.m., special midulght program, big prize program: Charles Lang. C. E. Brucchert, Morearty, Clara Schneider, L. Taylor, Rose Chapman; Concerntina orchestra; Joe Urbance, drummer; John Mahafek, violinist; Buglewicz, cornetist; J. Rubolnski, banjolst.

WBAP, Fort Worth, Tex. (Contral, 476), 7 p. m., review, Interdemonlantional Sunday school lesson, Mrs. W. E. Bargum

view, Interde... W. F. Barnum.

view, Interdemonluttlonal Sunday school lesson, Mrs. W. F. Barnum.

WBAV, Columbus, Ohio (Eastern, 423), 12 m., Ila Lorbach Owens, plantst.

WBBR, New York, N. Y. (Eastern, 273), 8 p. m., I. B. S. A. male quartet; 8:10, Instrumental selections; 8:20, questions and answers; 8:40, Instrumental selections; 8:50, I. B. S. A. male quartet.

WBZ, Springfield, Mass. (Eastern, 337), 6:30 p. m., Leo Heisunan and his Hotel Brunswick orchestra; 7:30, hedtime story for the klddics; 7:40, Hotel Klmball trlo, Jan Geerts, violinist; Arnold Janser, cellist, Lloyd Stoneman, plantst; 8:15, John Doherty, tenor; 9:15, Marlon Davidson Dufflo, soprano; Ituth Collingbourne, violinist; Ellzaheth Seldoff, accompanist.

WCAE, Pittsburgh, Pa. (Eastern, 462), 3 p. m., Pitt-Tech foothall games from Forbes Field; 6:30, dinner concert, William Penn hotel; 7:30, Uncle Kaybee; 7:15, popular songs, Lew Kennedy; Irene Setzler, pianist: 8:15, special feature; 8:30, muslcal program.

WCAL, Northfield, Minn. (Central, 360), 9:45 a. m., St. Olaf college chapel services; 12, unidnight musicale.

WCX, Oetroit, Mich. (Eastern, 517), 6 p. m., dinner concert.

concert.

WOAF, Kansas City, Mo. (Central, 411), 3:30-4:30
p. 10., the Star's Radlo orchestra; 6-7, school of the
alr, plano tuning-in number on the Duo-Art; speaker
from the editorial staff of the Star; the Tell-Me-aStory lady; music, Hotel Muchlehach Trianon ensemble;
11:15-1 a. m., Nighthawk frolic, "The Merry Oid
Chlef" and the Plantation players, Eddie Kuhn's K.
C. A. C. orchestra.

WDAP Philadalphia Page (Fastorn 395), 11:45-2 m.

WDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. u. duily almanae; 12:02 p. m., organ recital, Stanley theater; Areadla cafe concert orchestra, Feri Sarkozi, director; 2, Areadia cafe concert orchestra; 4:30, dance musle by Cotton Pickers orchestra; 7:30, Dream Dadwis bettime stories

musle by Cotton Pickers orchestra; (1.50), Arcanddy's bedtime storles.

WEAF, New York, N. Y. (Eastern, 492), 2-4 p. m.,
Princeton-Notre Dame football: 4-5, Clifford Lodge orchestra; 6-7, dinner music, Waldorf-Astoria hotel; 7-7:30, thrilling adventure stories for boys, Fred J. Turner; 7:30-7:45, Edna Fields, contralto; 7:45-8, Leon Carson, tenor; 8-8:30, May Singhi Breen and her syneopators; 8:30-8:45, Mary Wilderman, pianist; 8-45-9. Rose Becker, violinist; 9-9:30, "The Functions Executed Cellers: 11-12, 8:45-9, Rose Becker, violinist; 9-9:30, "The Functions of Congress," Congressman Emanuel Cellers: 11-12. Vincent Lopez and his Hotel Pennsylvania orchestra. WEAO, Columbus, Ohio (Eastern, 360), 9 a. m., musle

Marguerite Manley Siedel School of music talent; 11, music, Siedel artists; 2:30 p. m., play by play report, Ohio State-Chicago football game.

WEBH, Chicago, 111. (Central, 370), 7 p. m., Edgewater

Beach Oriole orchestra; Radio Sunday school lesson, Dr. Herbert W. Virgin; fifteen minute talk; John W. Harrison, Daritone; 9-10, Edgewater Beach Oriole orchestra; Yellow, Red and Orange tales, William H. Hunt; Langdon brothers, Hawaijan guitarists: Marie Kelly, reader; 11-12, Edgewater Beach Oriole orchestra; songs, Nick Lucas; Marie Kelly, reader; Edgewater Beach trio; Langdon brothers, Hawaijan guitarists.

guitarists.

WEEI, Boston, Mass. (Eastern, 306), 3:45-5:30 p. m., Sunday Men's conference, Y. M. C. A.; 7:20-10, Mark Strand theater, Moe Mark.

WFAA, Oallas, Tex. (Central, 476), 12:30-1 p. m., address, Dr. E. D. Shurter; 8:30-9:30, Hawaiian music, MacDowell sisters; 11-12, Adolphus hotel orchestra.

WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3, Loretta Kerk, pianist; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddics' pal; 8, "Diptherla and Its Prevention," auspices, Philadelphia County Medical society; 10, Sid Stratton and his South Philadelphia dance orchestra.

WGN, Chicago, III. (Central, 370), 1:40 p. m., luncheon

South Philadelphia dance orchestra.

WGN, Chicago, Ill. (Central, 370), 1:40 p. m., lunchcon concert, Drake concert ensemble, Blackstone string quintet; 5:30, Skeezix time; 6-6:30, studio program; 6:30-7:30, 8-8:30, dinner concert, Drake concert ensemble, Blackstone string quintet; 8:30-9, Helen Louise Shaffer, soprano; Indiana male quartet; 10-11, Lot College and the string programs and the string programs of the string programs.

Haller Shaher, Sofrano; Indiana mate quartet, 10-11, Jack Chapman dance orchestra.

WGR, Buffalo, N. Y. (Eastern, 319), 12:30-1 p. ui., George Albert Bouchard, organist; 2:30, Radio Dealers' program; 6, Hallpryd string quartet.

WGY, Schencetady, N. Y. (Eastern, 380), 2 p. m., football game, Princeton and Notre Dame; 9:30, Kenmore batel orchestra

hotel orchestra.

ball game, Princeton and Notre Daine; 9:30, Kenmore hotel orchestra.

WHAA, lowa City, la. (Central, 484), 2 p. m., Minnesota-lowa football game.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., Alamo licater orchestra; "lust Among Home Folks"; readings, selected Courier-lournal and Times editorials; 7:30-4, concert, ausplees, Mrs. Pleasant M. Brooks, WHS, Kansas City, Mo. (Central, 411), 2-3 p. m., ladies' hour program, Sweency Radio trio; 8-9:15, special services, First Church of Christian Science.

WHK, Cleveland, Ohio (Eastern, 283), 6 p. m., Ponce de Leon orchestra, Herbert Hayward, director, Grebe's Hanna restaurant; sports, current news; 8, Rainhow club entertalners; WHK-Bellhops' orchestra, Dean Smith, director; Betty Booth, Violet Owens, Alice Crandall, Lucille Phillips, Pilly Bugbec, Bobbie and licite Fitzpatrick, Juoe Farley, Jessie Semple, Ethel Rhode, John Paul, Scotty Middleton, Harry Bloom, John Peatlie, songs, musical specialties; 10, Ray Stil-well's orchestra.

well's orchestra.

WHN, New York, N. Y. (Eastern, 360), 2:15-2:30 p. m. Henricita Abigois, sopiano; 2:25-2:35, Carrie Cohen, pianlst; 2:35-2:45, Mildred Soff, sopiano; 2:45-3:45, Ben Kamher and his orchestra; 3:45-4:15, Ellen Montague Cross concert; 1:15-4:30, lesse Calkins, tenor; 4:30-1:15, Kiwnois club, boy's period, Wm. J. tenor; 4:39-1:15, Kiwnois club, boy's period, Wm. J. Stuart; 4:45-5, John Lynch, impersonations and songs; 5-6, Bert Reith's Southern barmonists; 6:37-7:39, Huston Ray's Alamac hotel ordiestra; 7:39-8, Hotel Carlton Terrace orchestra; 8-8:10, "Goodnight Children," Elizabeth Morrison Jones; 8:10-8:29, Jinmy Flynn, tenor; 8:29-8:30, Arthur Stone, blind planist; 8:30-8:45, Leonard Itussak, champion boy harmonica player; 8:15-9, Metropolis 1rlo; 9-9:15, "Barnyard Sketches," Pearl Smith; 9:15-9:30, Edna Frandini, sorrance Bertha Rogers, planist: 9:37-9:45, Victor Wilprano; Bertha Rogers, planist; 9:37-9:45, Victor Wilbur, barltone; 9:55-10:10, songs, Fenton sisters; 10:15-10:30, Vic. and Lock Procedure Victor Vic 10:30, Vic and Jack Lauria, ukcleles: 10:30-11, Clar-ence Williams Radio trio; 11-11:30, Ilmany Clarke and his entertainers; 11:30-12, Fletcher Henderson's Rose-land dance orchestra.

MIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Karl Bonawltz, organist; 2:30, play by play, University of Pennsylvania University of Virginia football game; 6:05, 110fcl St. James dinner orchestra; 7, Uncle Wip; 8, talk, Dr. d. Wesley IIII; 8:15, "The Bird," a comedy by students Philadelphia School of Expression and Dramatic Art; 9, Elizabeth Earle, sonrane; Lillian and Dramatic Articles and Dramatic Ar Leldy, contrallo; Frank Oglesby, tenor; Dr. Andrew bass; Helen Pulaskl tones, pianlst; 19:15,

Hotel St. James dance orchestra.

WMAQ. Chicago, III. (Central, 447.5), 6:30 p. m.,
Hotel LaSalle orchestra; 8, Highland Park-DecrileldShleld high school band; 8:10, travel lecture, "Rome."
Clara E. Laughlln; 9, weekly Balaban & Katz Chl-

maso theater review.

WJZ, New York, N. Y. (Eastern, 455), 1:15 p. m., Orlando's Hotel Roosevelt orchestra; 4, Notre Dame-frinceton game; 7, Waldorf-Astoria dance orchestra; 8, talk, auspices of Democratic National committee; 9, Twenty Years More of Life," John A. Kingsbury; 9:15, Paviowa Bailet music; 10:15, Radio Franks,

Wright and Bessinger; 10:30, Hotel Astor dance or-

chestra.

WMC, Memphis, Tenn. (Central, 500), 12:30 p. m., daily program, Shrine roof gurden; 8:30, operalle program, Hugh Sandidge.

WMH, Cincinnati, Ohio (Central, 309), 10 p. m., piano recital, Carrie and Laura Dotzauer; tenor solos, James Seevers, Thelma Copeland, accompanist; popular songs,

Angela Devoto; Eugene Perazzo, accompanist; 11, Doc

Angera Devoto; Eugene Ferazzo, accompanist; 11, Doc Howard's Cuvler Press enfertainers. WOAW, Omaha, Nebr. (Central, 526), 6 p. m., popular half-hour; 5:30, dluner program, Pat's Melody boys; 9, program arranged by Bessle B. Middleton, pianist; 11:15, Wowl frolic, Frank W. Hodek, Jr. and his

Omaha Nightingales.

WOC, Oavenport, Ia. (Central, 484), 12 m., chimes; 7 p. m., sandman's visit, Val McLaughiin; 9, Palmer School Radlo orchestra; Ralph W. Fuller, barltone.

School Raddo orchestra; Ralph W. Fuller, barltone.

WOO, Philadelphia, Pa. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogl; 12:02 p. m., Wanamaker cry al tea room orchestra, Robert E. Golden, director; 5:15, organ recital, Mary E. Vogt; John Wanamaker Commerclai Institute band.

WOR, Newark, N. J. (Eastern, 405), 2:30-3 p. m., Tom Banks Colonlai Inn orchestra; 3-3:15, Marjorie Fonts, soprano; 3:30-3:15, Marjorie Fonts, 6:15-7:30, Cinderelle wolverines; 8-8:15, "Inventions and Patents," Milton Wright; 8:15-8:45, program, Mme, Florence Wessell; 9:15-9:45, program, David Marguiles trlo; 10-10:30, Mme, Florence Wossell; 10:45-11:15, Perry and Russell—two man singling orchestra.

WRC, Washington, O. C. (Eastern, 469), 6 p. tu., children's hour, Peggy Albion; 7:45, Bible talk; 8, Allee Sharpe, soprano; 8:30, "Radlo Interference and What Can Be Done About It," Dr. J. H. Dellinger; 8:45, program; 10:30, Hotel Astor orchestra.

What Can Be Done About It," Dr. J. H. Dellinger; 8:45. program; 10:30, Hotel Astor orchestra.

WSAI, Cincinnati, Ohio (Central, 309), 8:15 p. m., tenor solo, Russell Dunham; piano solos, Frederick J. Hoffman; baritone solos, Richard Fluke; 9, weekly news review; 9:15, violin solos, William M. Knox; harltone solos, Howard Fuldner; soprano solos, La-Vergne Sims; piano solos, Anna Cockburn.

WSB. Atlanta, Ga. (Central, 429), 5:30 n. m., bedtimo story, Bonnie Barnhardt; 8-9, song echoes of yesterday, McConnell.

WTAM, Cleveland, Ohio (Eastern, 390), 9 p. m., WTAM

WTAM, Cleveland, Ohio (Eastern, 390), 9 p. m., WTAM dance orchestra, Ev. Jones, director.
WTAY, Oak Park, III. (Central, 283), 6:45-7:45 p. m., Frank Sortino, accordion1st; Carl Blum, violinist; Helen Fehner, planist; 9-9:45, 10:15-11:15, Polly Willis, soprano; Eilen Converse, soprano; Guyon's Puradise ballroom orchestra.
WWJ, Octroit, Mich. (Eastern, 517), 8 a. m., setting-up exercises, R. J. Horton; 9:30, talk, women's editor, Detroit News; 2:30 p. m., Michigan-Wisconsin football game.

Sunday, October 26

Silent night for: CKAC, KFOA, KGW, KOB, WCAY, WDAF, WFI, WHAS, WOR, WRC, WTAY, WWJ. CKAC, Montreal, Can. (Eastern, 425), 4:30 p. m., sacred concert.

sacred concert.
CKY, Winnipeg, Can. (Central, 450), 7 p. in., service, Fort Ronge Methodist church.
KOKA, E. Pittsburgh, Pa. (Eastern, 326), 11 a. m., Point Breeze Presbyterian church, Rev. Percival H. Barker, minister; 2:45 p. m., sacred concert; 4:45, vesper services, Shadyside Presbyterian church, Rev. Hugh Thomson Kerr, minister; 6:30, dinner concert, Pittsburgh Athletic association orchestra; 8, special Rogseyelt Nemorial services

Roosevelt Memorial services.

FI, Los Angeles, Calif. (Pacific, 469), 10-10:45 a. u.,
L. A. church federation service; 6:45-7 p. m., musical appreciation talk, Paul Reese; 7-8, Metropolitan theater program; 8-9, Ambassador hotel Cocoanut Grove orchestra; 9-10. Examiner studio concert; 10-11, Packard six orchestra. ard six orchestra

KFKB, Milford, Kans. (Central, 286), 8-10 p. m., rcligious talks, music.

KFNF, Shenandoah, Ia. (Central, 266), 3 p. m., religious services, Congregational church; 6:30, regular

sacred song service.

KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-12:30

p. m., morning service of worship and praise; temple revival chorus; triple male quartet; vocan soloists; Esther Fricke Green, organist; sermon, Aimee Semple Mci'herson: 2:30-4:30, afternoon message and deeper bible teaching, Aimee Semple McPherson; silver band; choir; Roy Reid Brignall, organist; Ruth Thomas, pianist; 7-9:30, musical hour, silver band; choir; male quartet assisting; Esther Fricke Green, organist; salvation sermon, Almee Semple McPherson; Altar call and after service; 10-11, Roy Reid Brignall, organ recital-benediction "eventide" with assisting vocal artists.

artists.

KGO, Oakland, Calif. (Pacific, 312), 11 a. m., church service; 3:30 p. m., KGO Little Symphony orchestra; 7:30, church service.

KGW, Portland, Ore. (Pacific, 492), 6 p. m., church services, Portland Council of churches.

services, Portland Council of churches.

KHJ, Los Angeles, Calif. (Pacific, 395), 10 a. nu., sermon from KHJ studio, Dr. Henry M. Radien, principal of the congregation Talmud Torah Hebrew school; 10:30-12:30 p. m.. organ recital and service, First M. E. church; Arthur Blakeley, organist; Rev. E. E. Helms, pastor; 6:30-7, Art Hickman's concert or chestra, Edward Fitzpatrick, director; 7-7:30, organ recital, First M. E. church, Arthur Blakeley, organist; 8-10 concert country.

ganist; 8-10, concert, courtesy, Martin Music company; arranged by J. Howard Johnson. KSD. St. Louis, Mo. (Central, 546), 4 p. m., Littau's orchestra; 9, music specialties, Grand Central theater. KYW, Chicago, III. (Central, 536), 11 a. m., Central church service, Dr. F. F. Shannon, pastor; 2:30 p. m., studio chapel service; 7, Chicago Sunday evening club.

WBAP, Fort Worth, Tex. (Central, 476), 11 a. m., services, First Methodist church, Rev. J. W. Bergin, pastor; 4 p. m., concert, Rlalto theater; 11-12, concert. WBAV, Columbus, Ohio (Eastern, 423), 2:30 p. m., religious service, Columbus Council of churches; choir

WCAL, Northfield, Minn. (Central. 360). 8:30 p. m. Lyla Pederson, contralto; male quartet, Howard Harrisville, 1st tenor; Waldo Furgason, 2nd tenor; Milton Soelberg, 1st bass; Ruchen Benson, 2nd bass. WCBD, Zion, Ill. (Central, 345), 8 p. m., inixed quartet; Celestial bells; soprano, contralto duct, Mrs. Thomas, Mrs. LaRose; soprano, tenor ducts, Mrs. Thomas,

Barton; Alexander DePew, flutist.

WCX, Detroit, Mich. (Eastern, 517), 4 p. m., organ recital, Prof. Guy Filkins, Central M. E. church; 7:15, services, Central M. E. church, Dr. Lynn Harold

Hough; Hudson (martet.

WDAF, Kansas City, Mo. (Central, 411), 4-5 p. m., program arranged and presented by Mrs. Aubrey Walter Cook; Sunday school icsson, Dr. Waiter A.

Wilson. WEAF, New York, N. Y. (Eastern, 492), 3-5 p. m., hymn singing and services; 7:15-9:15, Capitol theater; 9:15-10:15, Skinner organ recital. WEBH, Chicago, III. (Central, 370), 5-6 p. m., Edge-

waler Beach hotel twilight musicale; 7-9, arlists concert program.

WFAA, Dallas, Tex. (Central, 476), 6-7 p. m., Radio Bible class, Dr. William M. Anderson; 9-9:30, address, Dr. Harry Lee Virden; 9:30-11, popular musle recital, Dick Richardson's Lakewood Country club

WFI, Philadelphia, Pa. (Eastern, 395), 7:30 p. m., services, Arch Street Presbyterlan church.

services, Arch Street Presbyterlan church,
WGN, Chicago, III. (Central, 370), 11 a. m., Uncle
Walt's reading of comics; 11:15, Chicago theater Symphony orchestra and concert; 2:30 p. m., Tribune
Master Artists' concert, Gunu School of musle; 3:304:45, Chicago Muslcal college concert; 9:10, Drake
concert ensemble.
WGR, Buffalo, N. Y. (Eastern, 319), 3-4 p. m., vesper
service, Buffalo Council of churches, W. W. Shannon
and C. H. Wicand, speakers; 7:15, pre-service organ
registal Contral Presenterian church liter. Robert J.

and C. H. Wieand, speakers, 743, bre-kervice organ recital, Central Presbyterian church, Itev. Itobert J. MacAlpine, D. D., speaker, WGY, Schenectady, N. Y. (Eastern, 380), 10:30 a. m., services, Trinity M. E. church, Itev. H. H. Murdock; 3:45, WGY Symphony orchestra, Leo Kilwen, conductor; L. W. Grant, baritone; 7:30, Trinity M. E. church.

WHAA, Iowa City, Ia, (Central, 484), 9-9:30 p. m., whah, lowa City, Ia. (Central, 484), 9-3:39 p. in., familiar hymns, Lorna Schuppert, sourano.

WHAS, Louisville, Ky. (Central, 400), 9:57 a. m., organ muslc; 10, Calvary Episcopal church, Rev. Dr. Harris Mallinckrodt, rector; 4-5, concert, ausplees, Helen Elebenberger.

WHB, Kansas City, Mo. (Central, 411), 9:15-11 a. m., services, Linwood Boulevard Christian church, Dr.

representative church of Kausas City.
WHK, Cleveland, Ohio (Eastern, 283), 8 p. m., chapel services, auspices Cleveland Federated churches, Rev. E. R. Wright, conductor; current religious topics; sacred music; Invocation; 9, Mary E. Black, soprano; Helene Almondinger, contralto; O. A. Bryan, barilone, pianlst; Leonard Z Bryan, Jr., tenor, violinist; Gerlanski trio.

WHN, New York, N. Y. (Eastern, 360), 3-4 p. m.

WHO, Oes Moines, Ia. (Central, 526), 7:30-9 p. m., Bankers Life Radio artists: Hibbard Cleveland, bass; Helen Frankugham, planist; Myrtle Williams, soprano; Bankers Life Radio orchestra, W. L. Marsh, director. WIP, Philadolphia, Pa. (Eastern, 509), 7:30 p. m., Haly Trinity church; 9:30, Ben Stad and his WIP Symphony orchestra, assisted by Karl Bonawitz, organical

WIAX, Cleveland, Ohio (Eastern, 390), 9 p. m., concert program arranged by Radio Apparatus company, Warren R. Cox, vice president and general manager; R. A. C. concert orchestra, Max Schmitt, director; Ben Burt, pianlst; Ben Silverberg, violinist; Joseph Parlitzki, violinist.

WJY, New York, N. Y. (Eastern, 405), 8:15-9:15 p. m., Bernhard Levitow's Holel Commodore orchestra.
WLS, Chicago, III. (Central, 345), 6:30-7 p. m., Ralph Eulerson, organist; 7-8, program, Robert W. Stevons, director.

WLW, Cincinnati, Ohio (Central, 423), 9:30 a. m. WLW, Cincinnati, Ohio (Central, 423), 9:30 a. m., Sunday school; 11, sermon, Dr. Frank Stevenson, Church of the Covenant; 7:45 p. m., scrmon, Dr. Frederick N. McMillin, Walnut Hills First Presbyterian church; 8:45, Western & Southern orchestra. WOAW, Omaha, Nebr., (Central, 526), 9 a. m., Radlo chapel service conducted by Rev. R. Brown, minister of the World Radio congregation; 9 p. m., musical chapel service, Zlon Lutheran church, Rev. Ncis Lundgren, paster; Bernard Johnson, choir director, WOC, Davenport, Ia. (Central, 484), 9 a. m., sacred chimes; 1 p. m., the Palmer school Radio orchestra, Erwin Swindell, conductor; 8, church scrvice; 9:30, the Palmer School Radio orchestra. WOO, Philadelphia, Pa. (Eastern, 509), 10:30 a. m.,

WOO, Philadelphia, Pa. (Eastern, 509), 10:30 a.m., services, Bethany Temple; 2:30, Sunday school services, Bethany Temple; 6:03, organ recitol, Ciarence K.

Bethany Temple; 6:03, organ rectus, Glatenee Bawden.

WRBC, Valparaiso, Ind. (Central, 278), 7:30 p. m., church service, Rev. George Schutes, pastor.

WSAI, Cinoinnati, Ohio (Central, 309), 3 p. m., sormonette: 3:10, sacred chimes concert.

WSB, Atlanta, Ga. (Central, 429), 5-6 p. m., Emery university, Methodist church quartet.

WWJ, Octroit, Mich. (Eastern, 517), 11 a. m., services, St. Paul's Episcopal cathedral, Dean Warren L. Rogers; 2 p. m., Detroit News orchestra.

Monday, October 27

Silent night for: CKAC, KFNF, KHJ, KFSG, KYW, WEBH, WGN, WHAS, WIP, WJY, WLS, WMAQ, WTAY,

WEBH, WGN, WHAS, WIP, WJY, WLS, WMAQ, WTAY,
CKAC, Montreal, Can. (Eastern, 425), 1:45 p. m., Royal hotel luncheon concert; 4:30, 110 lessons.
KDKA, E. Pittsburgh, Pa. (Eastern, 326), 12:15 p. m., Scalzo's orchestra; 8:30, KDKA Little Symphony orchestra, Victor Saudek; 7:15, Radio rhymster; 7:30, talk, American Red Cross; 8, address, representative of the Republican National committee: 8:15, course, U. of Pittsburgh; 8:30, KDKA Littls Symphony orchestra, Victor Saudek, conductor.
KFAE, Pullman, Wash. (Pacific, 330), 7:30 p. m., Mrs. LaVerne Kimbrough, contralto; Mary Cameron, pianist; "Making the Water Supply Ready for Winter," A. B. Crane; health talk; "Causes of Fallure in Concrete Construction," L. J. Smith.
KFI, Los Angeles, Calif. (Pacific, 469), 5:30-6 p. m., Examiner news bulletins; 8-9, Evening Herald concert; 9-10, Examiner studio recital; 10-11, Ambassador hotel Cocoanut Grove orchestra.
KFKB, Milford, Kans. (Central, 286), 8-9 p. m., Abe Martin's band; 9-10, lecture, Dr. Osborn; male quartet; 10-11, lecture, Dr. Brinkley; Jubilee boys orchestra.
KGO, Oakland, Calif. (Pacific, 312), 3 p. m., studio musical program, Parent-Teacher association speaker; 4-5:30, Henry Halstead's orchestra; 5:30-6, Aunt Betty stories, KGO Kiddies' klub; 8, educational program; Arion trio; 10-1 a. m., dance music, Henry Halstead's orchestra.
KHJ, Los Angeles, Calif. (Pacific, 395), 12:30-1:15 p. m., vocal and instrumental selections.
KGW, Portland, Oregon. (Pacific, 492), 5 p. m., childer's Roosevelt program; story, Mrs. W. R. Scott; 8, Orcgonlan orchestra.
KOB, State College, N. M. (Mountain, 360), 7:30-8:30

Orcgonian orchestra.

KOB, State College, N. M. (Mountain, 360), 7:30-8:30
p. m., "Selection and Testing of Farm Seeds," Prof. p. m., "Selection and Testing of Farm Seeds," Prof. J. C. Overpeck.

KSO, St. Louis, Mo. (Central, 546), 6:45 p. m., Abergh's concert ensemble; Arne Arnesen, violinist; 9. Adele Koch, contralto; Marietta Schumacher, soprano; Elmer Lutz, tenor; Arthur Joseffry, baritone; address, Frank Sheets; 11, dance program.

WBAP, Fort Worth, Tex. (Central, 476), 7:30-8:30 p. m., moments from the Majestic theater; 9:30-10:45, Euterpean club.

WBAV, Columbus, Ohio (Eastern, 423), 12 m., Ila

Lorbach Owens, pianist. WCAY, Milwaukee, Wis. (Central, 266), 8 p. m., Holeproof Hosiery night: Arthur Busse, tenor; American Legion band.

WCBO, Zion, III. (Central, 345), 8 p. m., Zion or-chestra; Arthur Rendall, clarinctist; Esther and Evangelino Wiedman, soprano; Chester S. Bagg, bari-

WCX, Oetroit, Mich. (Eastern, 517), 4:15 p. m., musical program; 6, dinner concert; 8:30, musical program under direction of Jeanette Brunck.

WDAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., the Star's string trio; 5-5:30, weekly Boy Scout program; 6-7, school of the air, piano tuning-in number on the Duo-Art; personal message from Person number on the Duo-Art; personal message from Roger W. Babson, statistical expert; the Tell-Me-a-Story lady; music, Hotel Muchlebach Trianon ensemble; 8-9:15, program, Ivanhoe band, directed by Valter A. French; the Ivanhoe Glee club, directed by Edward H. Gill, Jr.; 11:45-1 a. m., Nighthawk frolic, the "Merry Old Chief" and the Plantation players.

Old Chief? and the Plantation players.

WOAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., daily almanae; 12:02 p. m., organ rectal, Stanley theater; Areadia cafe concert orchestra; Edna leinestone, pianist; selections from Stanley theater; 4:30, "Magazine Corner," Arnold Abbott; 7:30, Dream Daddy's bedtime stories; 7:50, moving picture review, lames A. Nassau; 8, Areadia cafe concert orchestra; 9:10, overture, Stanley theater; symphomy orchestra; Sydney Lowentoin, distinction of the story of the story symphomy orchestra; Sydney Lowentoin, distinction of the story of t theator symphony orchestra, Sydney Lowenstein, di rector; 10, Arcadia cafe dance orchestra.

WEAF, New York, N. Y. (Eastern, 492), 6-7 p. m., dinner music, Waldorf-Astoria hotel; 7:45-8, Hon. Curtis Dwight Wilbur, Secretary of navy; 8-8:15, Mears and company; 8:15-9, recital, Ada Androva, soprano, and Frederick Cromwell, pianist; 9-10, A. & P. Cymios

WEAO, Columbus, Ohio (Eastern, 360), 9 a. m., music, Marguerlic Manley Siedel School of musle talent; 11 music, Siedel artists; 1:30 p. m., music, Siedel

WFI. Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer Davis Bellevno Stratford concert orchestra; 3, closing prices Chicago grain market; Loretta Kerk, pianist; 7. Sunny Jim, the kiddies' pal; 8, talk, auspices of Loague of Women Voters; Century male quarlet; 8:39, "What to See in the Philadelphia Museum," Arthur Edmond Bye; 9:30, Ernest C. Carpenter, political

wGN, Chicago, III. (Central, 370), 1:10 p. m., luncheon concert. Drake ensemble, Blackstone quintet; 2:30, Lyon & Healy artist series; 3-4, rocking chair time;

Lyon & Healy artist series; 3-4, rocking chair time; 5:50, Skeezix time.

WGR, Buffalo, N, Y. (Eastern, 319), 12:50-1 p. in., George Albert Bouchard, organist; 2:30, Radio Dealers' program; 6:30, dinner music; 8-8:15, political address (Republican), Judgo 1, R. Wilsley; 8:15-9, Malic and Little, songsters; 9-11, program arranged especially for the limitates of the J. N. Admin Memorial health. hospital for tuberculosis and related discuses, Penya-burg, N. Y., direction of J. P. Quinn; 11, super-dance

musle, Vincent Lopez Hotel Statler dance orchestra, Haroid Gieser, director.

WGY, Schenectady, N. Y. (Eastern, 380), 2 p. m., "The Harvest"; 7:45, Stanley R. Williams and life Royal Flush orchestra; 8:40, "In the Intorests of Navy Day," Capt, R. H. Leigh.

Burris Jeuklus, pastora 8 9:15 p. m., evening services, WHAA, lowa City, la. (Central, 484), 12:30-1 p. m.,

talk, Dr. Walter Fleseler, WHAS, Louisville, Ky. (Central, 400), 4-5 p. in., Alamo Theater archestra; "Just Alumn Home Folks"; readings, selected Courier-Journal and Louisville editorials. WHAZ, Troy, N. Y. (Eastern, 380), 9 p. m., Rensselner Polytechnic institute night; Students' Symplony orchestra; address, Dr. William P. Mason,

WHB, Kansas City, Mo. (Central, 411), 2-3 p. m., ladies' hour program, Sweeney Radlo trio; 7-8, "Motor Tronbies," L. A. Scott; original poems, Walt Filkin; music, Sweeney Radio trio.

WHK, Cleveland, Ohio (Eastern, 283), 6 p. m., Marjoric

WHK, Cleveland, Ohio (Eastern, 283), 6 p. m., Marjoric Moore's Melodious Maids, Grebe's Rathskeller; sports, current news.
WHO, Oes Moines, Ia. (Central, 526), 7:30-8 p. m., Don Merchant, cornetist; Helen Birnlingham, accompanist; Adele Aldera, accordionist; 8-9, talent, Drake Conservatory of music, Dean Holmes Cowper, director; 11:15-12, Ia. Carlos Meier, organist;
WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Gimbel tea room orchestra; 3, Flora Ripka, pianist; 6:05, Hotel St. James orchestra; 7, Uncle Wip's beditine stories.

storics.
WJZ, New York, N. Y. (Eastern, 455), 10 a. in., housewives league menu, Mrs. Julian Healh; 10:20, Vogue's taik on etiquette; 10:30, "The Debut of an Irish Stew," John C. Cutting; 10:50, tashion talk. Eleanor Gunn; 1 p. m., Henry Vander Zaden's Hotel Ambassador trio; 2:30, lunchcon welcome to Cardinal Hayes; 7, Bernhard Levitow's Holel Commodore orchestra; 8:10, "Economics," Prof. Reid 1a. McClung; 8:30, Union Loague club meeting; 9:45, U. S. Navy night; 10:45, Jacques Green and his Club Deauville orchestra.

WLW, Cincinnati, Ohio (Central, 423), 8 p. m., Alvin Rohrer's orchestra; weekly theatrical review; evangellleal musical program, "Wonderful Peace," "Shadows,"

"The Great Judgment Morning," "Let the Lower
Lights Be Burning"; 8:45, Cooper orchestra and male
quartet; "The Mill"; 11:30, Lange-McKay orchestra.

WMAQ, Chicago, III. (Central, 447.5), 4:10 p. m.,
mothers in council, Mrs. Frances M. Ford; 4:30,

"English as She Is Spoke," Mrs. J. Elliott Jenkins;
6, Chleago theater organ recital; 6:30, Hotel Lasalle
orchestra.

orchestra, /MC, Memphis, Tenn. (Central, 500), 8:30 p. m.,

WMC, Memphis, Tenn. (Central, 500), 8:30 p. m., Biggers Georgia screnaders.

WMH, Cincinnati, Ohio (Central, 309), 8 p. m., WMH concert orchestra, Werner Bertram, director; 9, Original Bluegrass entertainers, Bill Schoulteis, director.

WOAW, Omaha, Nebr. (Central, 526), 6 p. m., dramatic hour; 6:30, dinner program, Randall's Royal orchestra; 9, program, by the Advertising Selling league, Dr. Stewart McDermid, president.

WOC, Oavenport, Ia. (Central, 484), 12 m., chimes; 7 p. m., sandman's visit; 8, program; 9, educational fecture; 10, musicaic.

WOO, Philadelphia Pa (Fastern, 509), 11 a. m., organ.

iecture; 10. muslcaic.
W00, Philadelphia, Pa. (Eastern, 509), 11 a. m., organ recltal, Mary E. Vogt; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 5:15, organ recital, Mary E. Vogt; 7:30, A. Candelori and his ensemble from Hotel Adelphia; 8:30, recital, Harriet G. Ripley, planist; 9:10, Erno Rapee and his Fox theater grand orchestra; 10:03, organ recital, Mary E. Vogt; 10:30, Vincent Rizzo and his Hotel Syivania dance orchestra. dance orchestra. /OR, Newark, N. J. (Eastern, 405), 2:30-3;30 p. m.,

lessons.

WRBC, Valparaiso, Ind. (Central, 278), 7:30 p. m.,
Calumet concert band.

WRC, Washington, O. C. (Eastern, 469), 3 p. m.,
fashion developments of the moment, women's wear;
3:10, songs; 3:25, current topics, editor of the Outlook;
3:35, piano recital; 4, songs; 4:10, book review,
auspices of the League of American Ponwomon; 6,
stories for children, Peggy Albion.

WSAI, Cincinnati, Ohio (Central, 309), 10 p. m., an
evening with Doc Howard's Cuvier Press entertainers.

WSB, Atlanta, Ga. (Central, 429), 5:30 p. u., bedtline
story, Bonnie Barnhardt; 8-9, Coumunity Chest concert; 10:45, Radiowl entertainment.

WTAM, Cleveland, Ohio (Eastern, 390), 8 p. m., concert arranged by professional department, J. O. Samuel's studio; WTAM Symphony orchestra.

WWJ, Oetroit, Mich. (Eastern, 517), 8 a. m., setting-up
exercises, R. J. Horton; 9:30, talk, women's editor,
Detroit News; 12 m., musical program; 3 p. m., Detroit News orchestra; 7, Detroit News orchestra; F.
Eugene Wilson, baritone. WRBC, Valparaiso, Ind. (Central, 278), 7:30 p. in.,

Tuesday, October 28

Silent night for: KFAE, KOB, WFI, WGR, WHO, WMH, WOC, WOO.
CKAC, Montreal, Can. (Eastern, 425), 7 p. m., kiddles' storics in French and English; 7:30, Rex Battle and his Mount Royal hotel concert; Rex Battle, pianist; 8:30, special; 10:30, loseph C. Sinlth and his Mount Royal hotel dance orchostra.

CKY, Winnipeg, Can. (Central, 450), 8:15 p. m., concert, "Toc H." KOKA, E. Pittsburgh, Pa. (Eastern, 326), 12:15 p. m., concert. Scalzo's orchestra; 6:30 ganist; 7:15, "The Lady from Mother Goose Village"; 8, "Your Personality," Dr. John Ray Ewers; 8:15, address. Democratic party; 8:30, concert; 11, popular concert, Pittsburgh Post studio,

KFI, Los Angeles, Calif. (Pacifio, 469), 5:30-6 p. m., Examiner news bullellns, Dr. Ralph L. Power; 6:45-8, Acolian organ recital; 8-9, Hotel Ambassador Cocoanut Grove orchestra; 9-10, Examiner studio concert; 10-11, popular ballad hour.

KFNF, Shenandoah, la. (Central, 266), 7:30 p. m., concert, KFSG, Los Angeles, Calif. (Pacific, 278), 3:30-4:30 p. m., organ recital, courtesy, Esther Fricke Green; vocal selections; 6:30-7:30, "Cousin Jim," in song, music and story, (Harry James Beardsley), assisted by Eugene Lamb, at the plane.

Kugene Lamb, at the plano.

KGO, Oakland, Calif. (Pacific, 312), 4-1:30 p. in., concert orchestra, Hotel St. Francis; 8, KGO Little Symphony orchestra; Mrs. J. E. Bowersmith, contratto; Edilberto G. Anderson, baritone; "The Unfinished Symphony," Arthur S. Garbett; Mrs. Herschell i. Hagen; 10-1 a. m., dance music, Henry Halstead's orchestra

KGW, Portland, Ore. (Pacific, 492), 5 p. m., children's program; story, Aunt Nell; 8, agricultural lecture, Oregon Agricultural college; 8:30, Portland Civic Music club artists.

club artists.

KHJ, Los Angeles, Calif. (Pacific, 395), 12:30-1:15
p. m., concert; 2:30-3:30, matinoc musicale; 6-6:30,
Art Hickman's concert orchestra, Edward Fitznatrick,
director; 6:30-7:30, children's program, "American
History," Prof. Walter Sylvester Herlzog; Queen Titania and the sandman; 8-10, program, courtesy, Globe
Ice (Team company, arranged by A. K. Berkland;
10-11, Art Hickman's dance orchestra, Earl Burtnett,
director director.

director.

KSD, St. Louis, Mo. (Central, 546), 9 p. m., address, E. W. A. Vesper.

WBAP, Fort Worth, Tex. (Central, 476), 7:30-8:30 p. m., old time fiddles music; 9:30-10:15, Butcher School of Hawalian music.

WBAV, Columbus, Ohio (Eastern, 423), 12 m., 11a Lorbach Owens, pianist; 8 p. m., WBAV orchestra, Frances Handilicau, director.

WCAL Northfield Minn. (Central, 360), 9:15 a. m.,

Frances Handilicau, director.

WCAL, Northfield, Minn. (Central, 360), 9:45 a. m., St. Olaf college chapel services.

WCAY, Milwaukee, Wis. (Central, 266), 9:15 p. m., Sundodgers: Mrs. F. Bremer, mezzo-soprano; Cullen sisters, violinist, planist.

WCX, Oetroit, Mich. (Eastern, 517), 4:15 p. m., musical program; 6, dinner concert; 10, Ited Apple club.

WDAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., the Star's string trio; 5-5:30, special Hallowo'en program. Mary E. Delgenardi, director: 6-7, school program, Mary E. DeBernardi, director; 5-7, school of the air, plane tuning-in number on the Duo-Art; second of a series of Radio piane lessons, Maudellen Littlefield; the Tell-Me-a-Story fady; music, Holei Muchlebach Trianon ensemble; 11:45-1 a. m., Nightbawk frelic, the "Merry Old Chief" and the Plantation players

WDAR, Philadelphia, Pa. (Eastern, 395), 11:45 a. m., dally almanac; 12:02 p. in., organ recital, Stanley theater; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; "Household Helps and Hints (forner"; 4:30, political talk, membors of Women's Republican club of Pennsylvania; 7:30, Dream Daddy's

--- (Continued - (m page 18)

www.americanradiohistory.com

Eight Tube Super-Heterodyne Receiver

Part III—The Panels and Shielding

By Harry J. Marx

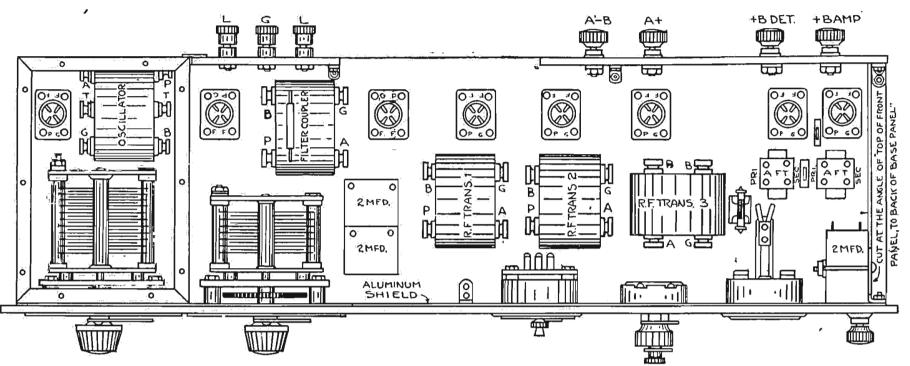


Figure 6

the set, the natural successive step is a historic warfare or Radio set design. peep at the rear of the front panel.

The plan view shown in Figure 6 shows very clearly the exact location of each piece of apparatus and just how the terminals face. This arrangement is recommended for its convenience in the proper wiring of the set. In this view, how-ever, the wiring has been omitted in order to more clearly indicate the proper arrangement of apparatus.

It will be noticed that the oscillator coupler is completely isolated by shielding. The filter coupler is well out of the field of the long wave transformers. In addition, the last R. F. transformer (Number 3) is turned so as not to be affected by any possible field of the two audio transformers.

A fixed condenser is shown in its relative position over the filter coupler. Another is shown between the last two sockets and also between the two audio frequency transformers.

Two of the two microfarad condensers are shown between the .0005 mfd. variable condenser and the first R. F. transformer, while the third is shown in the lower right corner.

Value of Shielding

After becoming thoroughly acquainted with the arrangement of the apparatus on the panel and sub-panel, the panel and and recognized. shielding details are more easily under-

An important detail of the panel layouts is the necessity of shielding and the super-heterodyne circuits this assumes

anywinere

BeiterTone

Less Sinite

on Orticoons

Creater

cuits, the list of apparatus and the is used because a shield has always been general appearance of the front of intended for this use, whether in pre-

In the development of the neutrodyne tance of the effects of even the minutest and layout of the set and its circuit. of capacity values. Capacity values of 5

FTER due examination of the cir- protection it offers. The word protection | even greater importance. When eight vacuum tubes are coupled together to form a receiving circuit the accumulative effects of stray coupling begin to assume serious importance and require principle, there is illustrated the impor- much more attention for proper design

The entire isolation of the oscillator circuit keeps the effect of this local generator in that part of the circuit where it is intended to operate. There is no possibility of coupling to any other part of the circuit. The oscillator condenser has no varying capacity effects, outside of its rotating to fixed plate values, to make trouble in tuning, regardless of ny other adjustments on the set.

The tuning condenser, likewise, cannot be effected by body capacity or the adjustment of the oscillator condenser.

Panel Layout and the Shield

The layout of the front panel is shown in Figure 7, while the shield is shown in Figure 9. The holes for the two meters and the jack must be enlarged so there will be no contact or short circuit to the shielding. The two binding post holes in lower right corner must also be enlarged on the shield as required by

The holes for the condenser assemblies may be somewhat confusing, but this will be detailed later.

Where the A tube circuit is used provision will have to be made for the ex-. tra rheostat and the potentiometer. The centerline of the two meters should be continued to the left, likewise the centerline just below it. A vertical centerline should be drawn 33-4 inches to the left Shielding undoubtedly creates surplus of the meter and battery switch line and

FRONT PANEL - CLAMP ALUMINUM SHIELD TO THIS PANEL FOR DRILLING BOTH AT SAME TIME

Figure 7

regeneration and to neutralize the cou- passes and as a rule cut down the vol- The top centerline locates the potentioquency stages.

This last reaction is of even more importance than is generally appreciated

The entire elimination of stray coupling effects has been found desirable in all forms of tuned Radio frequency. In

micromicrofarads are sufficient to control | capacities which in most cases act as by- | intersecting the two extended centerlines. pling from tube to tube in Radio fre- ume of reception. Where eight tubes are meter and the extra rheostat is placed at used this volume reduction becomes a sacrifice in exchange for selectivity, long range and clarity of reception. Efficient and properly designed audio frequency amplification can supply all the volume

the intersection below it.

Sub Panel and Shield

The view of the sub panel layout Figure 8 shows it from the lower side in order (Continued on page 20)

Effarsee Beats a Loop

FFARSEE Portable Antennae are so simple and easy to L use they remove all the resistance to radio sales due to

worry about aerials. They bring in stations 2,000 miles away in good weather. Reduce static, improve tone, increase selectivity.

Every set owner needs one for nights when static is bad. Used in series with an outside aerial, it stabilizes signals and improves the tone.

Effarsee costs little. Three sizes: \$1.00, \$1.50 and \$2.50. If your dealer can't supply you write

Dealers, Jobbers and Manufacturers Agents: Effarsee is selling in volume. It will be a big thing in radio. Write for our proposition.



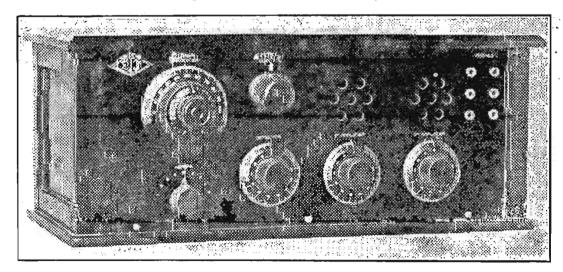
The Fishwick Radio Co. Edwards Bldg., Cincinnati, Ohio



The New 1925 Model

Elgin Super-Reinartz

(The Ford of Radio)



The same circuit which copied 2LO, London, at two different times and places last season, but with the following improvements:

EASIER ASSEMBLED—No soldering
EASIER TUNED—One dial; stations may be logged. Regeneration varied without change in tuning.
MORE SELECTIVE—May be made extremely selective by setting aerial switch to the left.
BETTER APPEARANCE—Beautiful solid managany cabinet, with all wires brought through the back to a sub-panel. Mahagany finished, engraved panel.
WIDER RANGE—Tunes all stations between 150 and 750 meters.
MORE COMPACT—Three tube set six by fifteen inches.
SHORT AERIAL—May be used on a loop or single wire as short as ten feet with astonishing results.
NO STORAGE BATTERY—Very efficient with all dry battery tubes.
UNUSUAL VOLUME—Louder with one tube than most regenerative sets are with two.

NO HAND CAPACITY CHEAPER IN PRICE

Discounts to recognized dealers only

Send a two cent stamp for a folder containing one, two and three bulb hook-ups and
the price list of parta necessary to assemble this beautiful and wonderfully efficient circuit.

ELGIN RADIO SUPPLY CO. 207 E. CHICAGO ST., ELGIN, ILL.

Radio Digest

Published by the Radio Digest Publishing Company, Inc. 510 North Dearborn Street
Telephone: State 4372, 4373, 4374, 4375 Chicago, Illinois

E. C. RAYNER, Publisher Evans E. Plummer......Managing Editor

Eastern Office, 611-12 Times Bldg., Times Sq., New York; Telephone Bryant 4909, 10462

Member of the Audit Bureau of Circulations

PUBLISHED WEEKLY

SUBSCRIPTION RATES

Yearly in U. S. and Possessions and Canada, \$5.00 Single copies, 10 cents. Foreign postage, \$1.00 additional.

Vol. XI. Chicago, Saturday, October 25, 1924

Ruralist Much Benefitted

Isolated Families Brought in Touch with World

THERE is no question but what if receiving sets L become in general use in farm houses that this will do more than any one thing to cure young people of restlessness and make them more content with life

Good roads and the automobile have done much in this direction. Town is no longer a matter of once a week. It is within a short distance of the most isolated. With the advent of Radio the ruralist may be connected with the great centers and it brings home to them music, education, information and amusement everywhere.

Interconnection of Radio Stations

Urged by the Secretary in His Speech

CECRETARY HOOVER in his address at the Opening session of the third national Radio conference urged the interconnection of Radio broad-casting as a daily routine. He further stated that local stations in all sections of the country should be able to handle every important event as a regular propo-

"The local station must be able to bring to its listeners the greatest music and entertainment of the nation, but far beyond this, it must be able to deliver important pronouncements of public men, it must bring instantly to our people a hundred and one matters of national interest.'

Profitable Adjustment to Music Trade Radio Sets Find a Suitable Place in Music Store

THE dominating feature of Radio is music. This Loutstanding fact has become firmly established and is highly significant both to the music trade and to the general public.

There can no longer be any doubt but what the great majority of people, regardless of how much they may like certain other features of broadcast programs, rely upon music for the major item of their Radio diet.

A recent survey of the music trade disclosed that already 56 per cent of the dealers handle Radio, and that 28 per cent contemplate handling it at an early

The sale of Radio products is becoming the major factor in the music trade in proportion to the extent to which sound merchandising methods are established and service and allied problems solved.

The music trade will find in Radio a permanent and profitable adjunct to its other lines as it really serves the public in enabling it to enjoy the new act. There is no reason why there should not be as many Radio sets in American homes as there are telephones, talking machines, or automobiles. Today there are probably less than one-third as many.

The music trade is the most logical channel through which Radio ean go to the people. With the right kind of eo-operation between it and the Radio manufacturers, Radio should become the major line in every reputable music store in the land.

Two Kinds of Bugs Now Comes a New Use for Radio

FRUIT growers have learned that with the use of Radio they can determine through the sense of hearing whether apples and other fruits are wormy. Through a series of experiments it has been found that bugs and worms can be detected by Radio. In the experiments a strong microphone was used in connection with the ordinary Radio transmitting set. Even the movement of the larvae of the apple worm could be detected. With the microphone and an apple placed in a box the worm could be distinctly heard nibbling the apple.

RADIO INDI-GEST

Radio—Explained!

A doodle-bug sat on a stand Listenin' to a Radio Band-"That's queer," he says, and looks at me, "What's queer"? says I, and looks to see,

"There ain't no horn, and ain't no drum-From where does all this music come"? "Danged if I know," I says to him And turned around and asked Old Jim.

"I will explain it all to you," Says Jim-"And it's all due To sound waves travelin' through the air From here or there or anywhere.'

"I see," says I, "but just which sound Sends all these waves that here abound? There's Puget Sound, and several more-" And I named over three or four.

"Them's the ones!" exclaims Old Jim-Which shows there's nothing wrong with him! The Doodle-Bug looked up in joy: "At last I now," he says, "O Boy"! GEO. A. WRIGHT.

"Call for Texas!"

Dear Indi: Whassa matter with the Hired Hand? Is ne getting feeble minded in his old age? He's pulled the same wise crack twice within a year.

Quick, Watson, the Needle!

Dear Indi: I have a three tube set that brings in programs so loud that it jarred the ether out of the bottle and put the family to sleep. RADIO RAY.

Hear! Hear!

Ten thousand employees of the Heinz company dined and heard speeches simultaneously in 62 cities and four countries on October 11 .- News Item.

The poets sing of King Arthur's ring, Attended by knights far and near, And tho the table was small When they spoke in the hall The knights on the end couldn't hear.

And they tell me it's so at all famous feasts; The guys on the end of the spread Holler, "Louder oh please, How can we sit at ease When we can't hear a half of what's said.

But not so the gang that makes pickles and beans-Ten thousand they number in strength; Yet they heard as they et From a loud speaking set Speeches ten hundred pages in length.

Not a word did they miss as they sat there Anniversing the bean company's birth, And they strained not their ears As did Arthur's peers

No, they heard to the ends of the earth. DR. PANGLOSS.

Mrs. Partington Speaks Out

Dear Indi: Miss Partington says she has done had some good Radioing enduring the past month, having heard a lot of politics talk as well as more refined is heard all over the world. On the air (all) nightly! programs such as the



BEHOLD! WHAT MODERN Fearpo and Wills rastling SURGERY HAS ACCOMPLISHED match and Gene Tooney a money for his Pa. She heard the Radio "Skycop" Secretary Hoover lecturing against the politics ownership of railroads and other utilities that would furnish a lot of good jobs to pass around to the boys when them happy days come. She also says she heard General Pershing's retirement farewells and Defense Day reports, and was wonderful surprised at the telephone service the General got, and says she wishes her tele-

phone would git that way. She heard WTAM's birthday party, and says it was sure some party. Bill Hays at KFKX was heard a broadcasting the

Radio Digest first straw vote, for the which she done mailed him a applause card right prompt and grateful, asking him to thank all the voters for her especial thanking the 8 who voted for Foster and the Red Flag because they was only but 8 of them.

SIGNING OFF.

Short Circuits at WFBH

The first amateur night at Station WFBH held recently was so successful that it is planned to hold another in the near future.

Major Andrew White, in an informal visit to the station, was asked to step to the microphone by Don Short. He described Short as the inventor of the 'Short Circuit.'

The famous colored team of McCarthy and O'Brien were a howling success. One fan said: "Don't give them the hook; please take 'em out and shoot them."

Damon Runyon, the famous sports writer, called up and said he and a party of distinguished guests were listening in at his home and greatly enjoyed the pro-

The program was brought to an unexpected finish at 1:45 by an amateur operator in the control room on the roof. An amateur started broadcasting a story about snakes that was a scream, and the operator trying to keep from laughing, shook with mirth so of the big transmitting tubes.

The Helping Hand



Condensed By DIELECTRIC

While floundering around seeking for something brand new the call WAHG eame in with the explanation that this stood for "wait and hear Grebe." If you have a station on a low wave with a good program, wait-you'll probably hear Grebe. One of their first treats was a talk from Dr. MacMillan. Musical programs from WAHG start well. Keep it up.

There is another station presenting orchestra music of an agreeable nature, WEBH, and you are never in doubt as to whom you are listening. They tell you, often. What is perplexing, however, is the trouble experienced in switching from studio to theater. The timing of this process seems a bit difficult for them to gauge properly. We'll keep an ear on them and note improvement in the future.

I respectfully commend to Station WNYC a studio location at a point to be selected by Captain Donald McMillan, in view of that scientist's observations in the Arctic circle. To deprive the mass of humanity from the educational advantage of discovering how to tune them out to get other near-metered stations would be the acme of selfishness. In the North one

Debates are beginning to figure again in the season's coaching Young Stripling of output of Radiocast material, and while there are Georgia how to get experi- sometimes dry "listening," the one WJZ put through ence for hisself and more mike was not; it was real wet. That captain of the Oxford team was a slick debater. He almost drove me to drink listening to his English modulation-and I was with the Columbia boys: DRY.

> There is one musical instrument seldom heard these days, yet it admirably mikes, and that is the zither. In the hands of Carl Wunderle you slide back on the chair and register contentment. WLW was wise in coaxing this artist back to the studio in Cineinnati.

> "A rousing time was had by all" at the World war convention banquet, which WBZ kindly gave to listeners in. The band sure did play like a military outfit, also the speeches were interesting to hear. Banquets always have a tang to them for the laughter of the banqueters makes you unlimber even at old Then, of eourse, there's always the chance to listen to prominent speakers at no cost to the R. I.

> When KYW runs their late concerts you hear a grand mixture of up-to-the-minute stuff, most always. It didn't require the admonition of the anouncer, "all right, Jack, run wild," to start a piano jazzing at full tilt, for the man at the ivories was about three stages ahead of the ordinary set of fingers all the time. There are no long pauses during these features, either.

> "Dug" Stanbury will be missed from the Sunday Capital programs. That fellow sang too well to stay out of grand opera forever, though we hope he will return to studio work when the opportunity affords. Roxie's gang fill a large place in the hearts of the war buddies, as also thousands of other listeners, and we want to keep them all.

Whenever WGY comes on the air with a Radario there is sure to be something worth tuning in. As good as any lately put on was the melodrama " ence." The voices of the aetors and actresses were entirely capable of putting over the stirring action, so that he switched some controls and blew out one much so that I wished the murder hadn't come to INDI HISSELF. | light. There were some real tense moments.

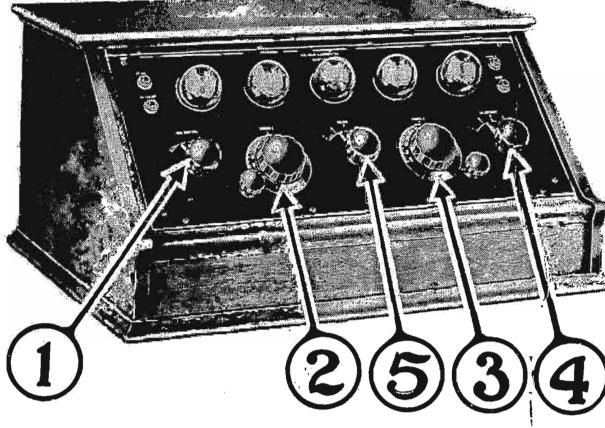
OPERATING AND TROUBLE SHOOTING

For the Owner of a Kennedy Model XV Receiver

"OPERATING and Trouble Shooting" is a Radio Digest feature whose purpose is to study the late models of various standard receiving sets and to show the newly initiated Radiocast listener, who has purchased such a' set, how he can operate it to get the best there is in it, and how he can overcome minor difficulties which may be causing some trouble. This week Kennedy "Model XV" Receiver is described. Radiophans with other sets will also find these worth while reading, particularly the notes on trouble finding.

ENNEDY engineers have long known that tuned Radio frequency amplification used in a Radio receiver would have two especially desirable advantages, namely, ability to pick up very weak signals and great selectivity. Many of the sets on the market today, embodying some variation of this system are, however, rather too complicated for the average person, as they require three principal controls for tuning-in stations. Long development and experimental work in the Kennedy factory finally produced in the Model XV a Radio receiver that anyone can operate regardless of whether he or she has ever operated a set of any kind

The controls necessary to tuning the Model XV have been reduced to a minimum and are so connected in the circuit that even though no previous instructions have been given or read anyone can tune that can be done with few other five tube tuned Radio frequency receivers. The Model XV Kennedy set is truly a twohanded set; and uses but two tuning controls. These are always set about the same for any given stations; therefore, it is only necessary to log the settings for one antennas are used.



trolled by one dial; the new Kennedy method of utilizing tuned Radio frequency enables the tubes to operate at maximum efficiency at all wave lengths and under all conditions. A jack is provided so that a loop antenna may be used; either antenna and ground or loop. A control is provided so that volume may coil in the second step of Radio frequency and uses no current as is the case in many sets where a potentiometer is used for volume control. This receiver cannot be made to howl or squeal regardless of the tubes used or how the controls are operated. Model XV functions equally well on either dry cell or storage battery than the insertion of adapters.

The set is constructed on a rugged aluminum frame minimizing the chance of anything getting out of alignment and in and receive different stations without causing trouble. It has the familiar one interfering with the other; something Kennedy sloping panel, that makes for easy tuning, of polished black formica and engraved. Controls are symmetrically placed and the unit is mounted in a solid mahogany cabinet with piano finish.

The controls of the Kennedy receiver are: (1) Tube control; this is a rheostat that regulates the current supply to the dial in order to accurately record a defi- filaments of all the tubes. (3) Anterna nite station. This setting will always re- tuning condenser; this tunes the secmain the same even though different ondary circuit when operating with antenna and ground and tunes the loop when There are six principal features on the the loop plug is inserted in loop jack. Model XV: the antenna is coupled to the (2) Radio frequency control, which tunes

first Radio frequency tube and this coup- two stages simultaneously. (4) Selec-ling is variable, giving extreme selectivity tivity control, which makes it possible when desired. Both stages of tuned to adjust the set to fit local conditions Radio frequency amplification are con- and the antenna with which it is to be used. (5) Volume control that enables the user to bring the volume up to tremendous strength yet cannot cause the set to oscillate or radiate.

Space is provided within the cabinet for two forty-five volt batteries or four this makes the set a combination for twenty-two volt units, and if dry cell tubes are used three additional 11/2 volt cells can be housed inside without crowdbe regulated; this control is a coupling ing. All binding posts are mounted on a Bakelite strip inside the cabinet and to the rear of the apparatus making them convenient to get at, yet out of sight. Connecting the Receiver

First connect the antenna and ground to their proper binding posts, connect the positive and negative leads of the A battery, then the negative B battery tubes, requiring no readjustment other lead, the 22½ volt positive B lead and

Good News

for Radiophans

mand for a high qual-

ity 3-volt radio tube

workmanship and ma-

terials that has brought

the recommendations

of radiophans every-

where are used in man-

ufacturing Type M. 199.

construction of "MECO"

Tubes renders greater volume without impairing the

clear, distinct receptive

Type M199 "Meco" tubes

are to be had in either

small or large base, thus

Your dealer has "MECO"

tubes or can get them for

you from recognized radio

Metropolitan Electric Co.

Des Moines, Iowa.

eliminating adaptors.

jobbers.

A radical change in the

with small base.

Answering the de-

The same quality of

Announcing

TYPE M-199;

3 Volt

"MECO"

Tube

the 90 volt positive B lead. Now insert the plug conected to the loud speaker in the jack marked stage 2 and insert the tubes in the sockets. The order of the tubes is as follows, looking at the set from the front: the first tube socket at the left is the detector, the next is the second Radio frequency, the third is the first audio amplifier, the fourth is the first Radio frequency amplifier and last is the second audio amplifier.

Operation of the Set

To operate the set first turn the knob 1 to the right about three-quarters of its possible rotation and, if connections have been rightly made, the filaments of the tubes will light. Now place the knobs 4 and 5 at 1 on their respective scales, the left hand on dial 2 and right hand on dial 3. Turn both over slowly keeping them at approximately the same numbers on the dials. The better way to tune is to use the verniers; they are the little knobs at the right and left of the tuning dials 2 and 3. Just push them in lightly and turn. By accustoming oneself to using them instead of the larger dials one will develop and get a more sensitive "feel" and will not pass over distant stations while tuning.

The first thing to do when using the Model XV is to get familiar with the controls and practice tuning out local stations. After carrier wave of a station has been picked up adjust the selectivity control by moving it to the right; as this control is moved, the station will get weaker so that dial 3 will have to be readjusted slightly either to the right or left. The selectivity control 4 has no effect on control 2 so it is not necessary to retune this control after it is once adjusted to its correct position.

The degree of selectivity attained by the operator of the set depends upon the adjusting of control 4; this should be made with great care, especially in the metropolitan districts where four or more powerful broadcasting stations may be operating at the same time. The Model XV will positively "go through" the locals and pick up distant stations, regardless of where the set may be.

Aerial Installation To obtain best operation of this or any (Continued on page 18)



When you listen in on a Crosley-no matter what the price-you wonder, as thousands of others have, that such exceptional results can be obtained and so reasonably.

The answer is simple—quality radio receivers built in quantity production. During the past twelve months, we believe Crosley made and sold more sets than any other manufacturer in the world. This is self-evident proof of Crosley Quality and Crosley Performance. Combined with Crosley excellence are such additional advantages as selectivity, ease of tuning, simplicity and beauty-all at the lowest radio cost.

BEFORE YOU BUY-COMPARE YOUR CHOICE WILL BE A CROSLEY For Sale by Good Dealers Everywhere

The Crosley Radio Corp. POWEL CROSLEY, JR., President

10494 Alfred St.

Cincinnati, O. Crosley Owns and Operates Broadcasting Station WLW

The combination of one stage of tuned radio frequency with regenerative detector and reflexed amplification assures unexcelled selectivity, volume and ease of operation.

Crosley Trirdyn Regular, \$65.00 With Tubes and Crosley Phones, \$80.75



Crosley Regenerative Receivers are licensed under Armstrong U.S. Patent No. 1,113,149.

Prices West of the Rockies: Add 10 Per Cent

Make Your Selection Carefully

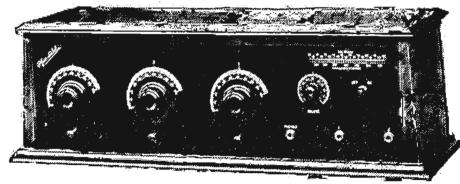
from among only a few of the better receivers. Consider among these the Pfanstiehl Model 7 receiver. You will always appreciate the suggestion.

- 1. Matchless reproduction
- 2. Extreme selectivity
- 3. Unusual simplicity
- 4. Simplest tuning

made possible by the Pfanstiehl Station Selector.

Your dealer will be pleased to demonstrate these features.





PFANSTIEHL RADIO CO.

Highland Park

Illinois

18

いるかはないのかべか

(Continued from page 14)

bedtime stories; 7:50, "Both Sides of the Footlights," Arnold Abbott.

WEAF, New York, N. Y. (Eastern, 492), 11-11:15 a. m., board of education; 11:30-12, organ recital, Capitol theater; 12-12:10 p. m., motion pleture forecast, Adele Woodard; 4-4:20, Josephine Whittell, soprano: 4:30-5:30, United Synagogue of America services; 6-7, dinner musle, Waldorf-Astoria hotel; 7-7:45, Robert Huntington, Terry, pianist; 8-8:20, "Folities," Barnard college; 8:30-9; Gold Dust corporation; 10-11, National Carbon company.

National Carbon company.

WEAO, Columbus, Ohio (Eastern, 360), 9 a. m., musle, Marguerite Manley Sledel School of music talent; 11, musle, Sledel artists; 1:30 p. m., music, Siedel

artists.

WEBJ, New York, N. Y. (Eastern, 273), 7-7:30 p. m.,
Blybrun's review of the new photo plays on Breadway;
7:30-8:15, Doc Kobrin and his Master of harmony;
8:15-9, Rivoil ensemble under Dr. Hugo Riesenfeld.

WFI, Philadelphia, Pa. (Eastern, 395), 1 p. m., Meyer
Darls Believue Stratford concert orchestra; 3; closing

prices, Chicago grain market; Caroline Hoffman, pianlst; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Ilm, the kiddles' pal.

WGN, Chicago, Ill. (Central, 370), 6-6:30 p. m., studio program; 6:30-7, 8-8:30, dinner concert; 8:30-9, Kathryn Snyder, reader; Norman G. Harte, barltone; Dick Hawkins, accompanist; 10-11, Jack Chapman's dance orchestra.

dance orchestra.
WGR, Buffalo, N. Y. (Eastern, 319), 12:30-1 p. m.

George Albert Bouchard, organist; 2:30, Radio Deaicrs' program; 6, Hallpryd string quartet.

WGY, Schenettady, N. Y. (Eastern, 380), 2 p. m., "Do You Intend to Vote?" Irene B. Taylor; 6:30, dinner music, trio from Hotel Ten Eyek; 7:45, "Yolls That Win Games," Hugh Fullerton; WGY orchestra; 8, "Enter Madame," WGY players; 11:20, organ recital, Stephen E. Rolselar

Stephen E. Bolselalr.

WHAA, lowa City, la. (Central, 484), 12:30-1 p. m.,
"Sewage Disposai," Prof. Edward Bartow; 8, Mrs.
Preston Coast, pipo organist; William G. Edmundson,

tenor.
WHAS, Louisville, Ky. (Central, 400), 4-5 p. ni., selections, Alamo theater orchestra; "Just Among Home Folks"; 7:30-9, concert, Happy Hoosler Harmonists.
WHB, Kansas City, Mo. (Central, 411), 2-3 p. m., ladles' hour program, Sweeney Radio trio; 8-9, program, H. A. Parker, baritone; Alherta Davis, reader; Helen Stohn, soprano; Aubrey Logan, violinist; Irma Young, planist; Charles Gross, saxophonist, and Leona Robitseen Paristers 10, 10 Robinson, planist; 9-10, dance music, Sweeney Radio

WHK, Cleveland, Ohio (Eastern, 283), 6 p. m., Mar-jorie Moore's Melodious Maids, Grebe's Rathskeller,

sports, current news.

WIP, Philadelphia, Pa. (Eastern, 509), 1 p. m., Karl
Bonawstz, organist; 3, talk, member of Coolidge Women's club of America; 6:05, Ehrenzeller's concert orchestra, George Ehrenzeller, director; 10:30, Harvey

mcn's club of America; 6:05, Ehrenzeller's concert orchestra, George Ehrcnzeller, director; 10:30, Harvey Marburger and his Vaudeville orchestra.

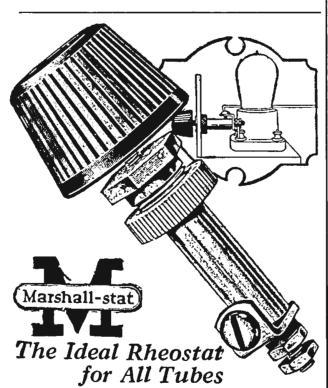
WJAX, Cleveland, Ohio (Eastern, 390), 7:30 p. m., program arranged by Cleveland News-Leader; E. G. Johnson, bedtime story; Don Palmer, Radio cartoon; 8, Tom Donohue's Bamboo Village orchestra; Isabel Boldon, soprano: Nora McNally, violinist; Joe Smith-Martha Lee club orchestra.

WJY, New York, N. Y. (Eastern, 405), 7:30-8 p. m., Orlando's Hotel Roosevelt orchestra; 8-10, "Enter Madame," WGY players direct from Schenectady.

WJZ, New York, N. Y. (Eastern, 455), 10 a. m., housewives league menu, Mrs. Julian Heath; 10:20, "Home Beautiful," Dorothy Ethel Walsh; 10:30, "Grace, Poisc and Charm," Litlian Hartigan; 10:40, book review, Grace Isabel Colbron; 10:50, Iashlon talk, Eleanor Gunn; 1 p. m., Nathan Abas Hotel Pennsylvania orchestra; 4, Samuel Shankman, planist; 4:30, Bernhard Levitow's Hotel Commodore orchestra; 7, "Dogs, West Highland White Terriers," Frank Dole; 7:15, Joseph Strissof's Hotel Vanderbilt orchestra; 8:10, "Economics," Prof. Reid L. McClung; 9, talk, auspices of the National Republican committee; 9, talk, auspices of the National Republican committee; 9:15. Estey organ recital; 10, "Light to Live With," C. W. Mills; 10:15, Piaza theater's concert orchestra, Eugene Conte, director; 11, Beaux Arts entertainers, WLW, Cincinnati, Ohio (Central, 423), 10 p. m., Ohio Rubber male quartet and instrumental trio; 11:30, Lange-McKay orchestra.

Lange-McKay orchestra.

WMAQ, Chicago, Ill. (Central, 447.5), 4:10 p. m., lecture, Red Cross; 4:30, program, pupils of Glenn Dillard Gunn School of music; 6, Chicago theater organ recital; 6:30, Hotel LaSalle orchestra; 8, Harry Hansen, literary editor; 8:20, travel talk, Clura E. Laughlin; 8:10, talk, Association of commerce; 8:50, clvil service commission talk; 9:15, program, Cosmopolitan School of music.



The Marshall-stat provides a means of obtaining any desired tube adjustment with absolute precision. The Marshall-stat varies the resistance, not step by step, but smoothly, continuously, and uninterruptedly from zero to maximum.

The Marshall-stat provides vernier precision throughout its entire range. Yet there is only one knob to manipulate—no double adjustment

Besides its precision and ease of operation, the Marshall-stat requires only one hole in the panel, has only two terminals, can be used with any tube or combination of tubes, and is so scientifically

constructed that breakage of the specially-treated Marshall discsis impossible. Compact—note full-size cut above. Can be fitted any. where. Price \$1.75. MARSHALL ELECTRIC COMPANY

3231 Locust Blvd., St. Louis, Mo.

Send for Old Man Ohm's descriptive folder on the Marshall-stat.

WMC, Memphis, Tenn. (Central, 500), 8:30 p. m.; Charles Vanhooser; 11, Late Chlekasaw ramblers.
WOAW, Ohama, Nebr. (Central, 526), 6 p. m., advleo to lovelorn perlod, conducted by Cynthia Grey; 6:25, dliner program, transmitted from WOAW's studio in the May Seed & Nursery company bldg.; 9, program by courtesy of the Buckingham School for fretted instruments; 10:30, Wowl frolic, Frank W. Hodek, Jr. and his Omaha Nightingaies.
WOO, Philadelphia, Ps. (Eastern, 509), 11 a. m., organ recital, Mary E. Vogt; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 5:15, organ recital, Mary E. Vogt.
WOR, Newark, N. J. (Eastern, 405), 2:30-3 p. u., Ifarry Olsen, banjoist; 3-3:15, Harry Olsen; 6:15-6:30, Cilfford Lodge orchestra; 6:30-7, man in the moon stories; 7-7:15, Cilfford Lodge orchestra; 7:15-7:30, sports talk. WMC, Memphis, Tenn. (Central, 500), 8:30 p. m.,

sports talk,

wRC, Washington, D. C. (Eastern, 469), 6 p. m., children's hour; Peggy Alblon; 8, Latin American night, auspices of the Pan American union.

WSAI, Cincinnati, Ohio (Central, 309), 7 p. m., Hotel

WSAI, Cincinnati, Ohio (Central, 309), 7 p. m., Hotel Glbsen orchestra, Robert Visconti, director; 7:30, chimes concert; 7:45, bedtline stories, Ethel Knapp Behrman; 8, Gibson orchestra; 9, talk, "Management Week"; 9:10, mezzo-soprano solos, Charlotto Metzner; plano solos, Eleanor Wenning.

WSB, Atlanta, Ga. (Central, 429), 12 m., noon entertainment; 5:30, bedtime story, Bonnie Barnhardt; 8-9 p. m., Haydn Gunter, violinist; I. M. Mayer, planist; John McCrindle, Scotch bass; 10:45, Radlowi froiic.

WTAY, Oak Park, III, (Central, 283), 6:45-7:45 p. m., Glenn Bruce, bedtime story; Sandy Meck, baritone; Raynor Dalheim & company orchestra.

WWJ, Detroit, Mith. (Eastern, 517), 8 a. m., setting-up exercises, R. J. Horton; 9:30, talk, women's editor, Detroit News; 9:45, Fred Shaw, planist and songster; 12 m., musical program; 3 p. m., Detroit News orchestra; 7, Detroit News orchestra; Kaiman Feke, tenor.

Additional Programs

(Received Too Late for Classification)

Wednesday, October 22

WQJ, Chicago, III. (Central, 448), 11-12 m., "Sieeping for Health," P. E. Graff, "Thrift 1s Not Miserliness," Mrs. Wilbur E. Fribley; 3-4 p., m., "Meat Substitute Dishes," Helen Harrington Downing; 7-8, dinner concert, Ralph Williams and his Rainbo Garden orchestra; Lllah Older Bell, reader; Marldene Borrison, barltone; Excelsior quartet; 10-2, Ralph Williams and his Rainbo Skylarks; Sandy Meek, Scotch tenor; The Melodians, Laurie, Eddie and Bennle; Clarence Theders, tenor; George A. Little, Larry Shay, Harmony singers; Rita McFswn, soprano; Gust Hadstrom, pisnist.

Thursday, October 23

MQJ, Chicago, III. (Central, 448), 11-12 m., "Selected Meats," Erna Bertrams; "Choosing Winter Evening Wear," Eleanor Chambers; 3-4 p. m., "Timbale Battles-Timbales-When to Scrve," Cora Beeman; "The Care of Canaries," L. J. Andruss; 7-8, dinner concert, Ralph Williams and his Rainbo Garden orchestra; Mrs. Lydia Lochner, contralto; Manual Rodriguez, Spanish tenor; Kathryn Snyder, reader; 10-2, Ralph Williams and his Rainbo Skylarks; Axel Christensen, pianologues; Grace Wilson, contralto; Hill, Kirsch, Gorny, Harmong singers; Edna Solomon, contralto; Rosemary Hughes, soprano; Will Rossiter.

Friday, October 24

WQJ, Chicago, III. (Central, 448), 11-12 m., Fred Mann and his Sunday dinner; 3-4 p. m., "Your Hallowe'en Party," Heien Harrington Downlng; "The Land of Evangeline," Mrs. Harry T. Sanger; 7-8, Ralph Williams and his Rainbo Garden orchestra; Dorothe Schubert, Jugo Slav soprano; Arthur W. Ward, tenor; Harry Geise, pianist; Fred Jacobson, monologues; 10-2, Ralph Williams and his Rainbo Garden Skyiarks;

The kind of Letters
Thordarson-gets No. 3

Read This From

DONALD H. MIX

of the M'MILLAN ARCTIC EXPEDITION!

New York City, Sept. 25, 1924. Thordarson Electric Mfg. Co.,

The transformers which you

supplied to equip the Radio on

the schooner Bowdoin stood

the extreme temperature of the Arctic without the slightest

mishap. These transformers

are in exactly the same condi-

tion today as they were the.

day they were installed, May,

Sincerely yours,

LIFYING TRANSFORMERS

Audio Frequency: 2-1, \$5; 3½-1, \$4; 6-1, \$4.50. Power Amplifying, pair \$13. Standard on the majority of quality sets

Write for some <u>real</u> bulletins!

500 W. Huron St.,

Chicago, Ill.

Gentlemen:

1923.

(Signed)

1 de l'americane de la figuration

Saturday, October 25

WQJ, Chlcago, III. (Central, 448), 11-12 in., "Pressure Cookors," H. F. West; "The Matter of Voting," Mrs. Thomas Oskar; 3-4 p. m., Koftee klatsch; 7-8, Otis Plke Jester, soprane; Mary House, pianist; William Molnaire, tenor; 10-2, Ralph Williams and his Rainbo Garden Skylarks; Jerry Sullivan; songs, George A. Little, Larry Shay; The Melodians, Laurie, Eddie, Bennie.

Sunday, October 26

WQJ, Chicago, til. (Central 448), 10:30 a. m., Peoples church, Dr. Preston Bradley, pastor; Cisrence Eddy, organist; 8-10, Ralph Williams Garden orchestra; Marion Morgans; Lancaster Smith, bass; Mrs. Lancastor Smith, accompanist; Pearl Heckel, planist,

Monday, October 27

WQJ, Chicago, III. (Central, 448), 11-12 m., "Winter Fashlons and Fabrics for the Hone Dressmaking," Marcia Meadows; "The Art of Hanging Pictures," George U. Gairlng; 3-4 p. m., "Varlous Ways of Serving Potatoes," Helen H. Downing; "The Care of the Hair," Madame Huntingford.

Tuesday, October 28

Tuesday, October 28

KYW, Chicago, III. (Central, 536), 6:30 a. m., morning exercisos, Y. M. C. A.; 11:35, table talk, Mrs. Anna J. Peterson; 2:35-4 p. m., afternoon frolie; 6:35-7, children's bedtime story, Uncle Bob; 7-7:30, dinner concert; 7:30-7:45, around the town with KYW in Chicago; 8-8:20, Chicago Musical college; 8:20-8:45, American Farm bureau: "The Monthly Analysis of Farm Markets," H. W. Moorhouse; "Trend of Live Stock Markets;" 8:45-9:30, Chicago Musicai college; 10-11:30, at home program.

WQJ, Chicago, III. (Central, 448), 11-12 m., "Skating—for Everybody," Charles Kruse; "A Talk on Meat," Grace V. Gray; 3-4 p. m., "A Word About Breakfasts," Cora Beeman; "The Romance of Aluminum," Peterson; talk, Col. Alexander Damon; 7-8, Ralph Williams and his Ralnbo Garden Skylarks; James Mitchell, baritone; Marrie Boyd Mitchell, soprano; Cari Linner, pianist; 10-2, Ralph Williams and his Ralnbo Garden Skylarks; Mary House, pianist; Otis Pike Jester, soprano; Paul Lougher, tenor; Nubs Allen, contralto; O'Flannigan and O'Hara, the Two Frenchman; Edna Solomon, contralto; Will Rossiter.

HOW TO OPERATE SET

(Continued from page 17)

receiver, an outdoor antenna suspended well above the ground should be used, its length not less than 50 feet nor more than 150 feet, if a single wire is used. Several wires supported by wooden crosspieces, may, of course, be substituted for a single wire antenna, in which case it may be somewhat shorter than the dimensions given. All wires must be carefully insulated at the points of support by means of the commonly available antenna insulators. The part of the antenna known as the lead-in, which runs from the antenna proper to the receiving set, should be no longer than is necessary. Where it passes through the walls of the house, use should be made of some form of insulating tube, and wherever supported along the sides of the building, insulating cleats are necessary. Where it is impractical to erect a good outdoor antenna,

Hansen "BIRD-CAGE" Radios

Langdon brothers; Paul Lougher, tonor; Nubs Allen, wires inside of the building can be subcontralto; Dorothe Rae "Around the Rainbo" company;
Manual Rodriguez, Spanish tenor.

Such indoor antennas may be built by Such indoor antennas may be built by the use of wires strung around the room in which the receiver is located or in any space available, such as attics or hallways. It is recommended that such an antenna be located as far as possible above the set. In general it will be found that the indoor antenna will sacrifice something in the distance of reception as compared to that of an outdoor autenna. If no other type of antenna can be installed, the lectric light or telephone wires may be found useful. In such cases, so-called socket antenna plugs are necessary.



Give our service a trial by placing an order in our hands. We maintain a complete source of supply of nationally advertised Radio Apparatus and are faithfullyservingmost of the prominent radio dealers in the country. We are exclusive Radio
Jobbers and DONOT

RETAIL. Send for catalog. Crosley & Howard Receivers Erla, Acme, Bremer-Tully and Shamrock Kits Reflex, Neutrodyne and Super Heterodyne Parts.

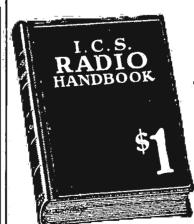
We Sell to Dealers ONLY! TAY SALES CO.

6 N. Franklin St., Chicago

Takes the **MYSTERY**

out of RADIO! Just one book answers every ques-

tion about this modern miracle



100,000 SOLD **514 PAGES**

Compiled by HARRY F. DART, E.E. Formerly with the Western Electric

Army Instructor of

Technically Edited by F. H. Doane

BE A RADIO expert—it's easy for the 100,000 who own this compact, complete Radio Handbook. Written in good, plain, understandable language. Crammed full of facts, every one useful and important. Explains how receivers and transmitters work, how to build and operate them. Whatever you or your friends want to know, it's here. Will save you many times its small cost.

TELLS ALL ABOUT: Electrical terms and circuits, antennas, batteries, generators and motors, electron (vacuum) tubes, every receiving hook-up, radio and audio frequency amplification, broadcast and commercial transmitters and receivers, super-regeneration, codes, license rules. Many other features.

Nothing else like it. Make this extraordinary book your radio library— Just this one little giant is all you need. Everything in one index, under one cover, in one book, for one dollar. The biggest dollar's worth in radio to-day. Combines the knowledge of many expensive works. Buy this and save the difference. Stop experimenting in the dark. Before you spend another cent on parts or even touch a dial, sign and mail the coupon below and get this unique guide to successful radio.

Send \$1 to-day and get this 514-page 1. C. S. Radio Handbook-the biggest value in radio to-day. Money back if not satisfied.

INTERNATIONAL CORRESPONDENCE SCHOOLS

Box 8275 P, Scranton, Penna. I enclose One Dollar, Piease send me—post-pald—the 514-page I. C. S. Radio Handbook. It is understood that if I am not entirely satisfied I may return this book within five days and you will refund my money,



\$57.50

6D Rum RECEIVERS 4 tuhe very selective

AMERICAN EAGLE. This ws believe to he the best high grade 6-tube loop set on the \$150.00

and profitable.

\$90.00

\$135.00

DISTRICT DISTRIBUTORS

Badger Radio Co........ (Phil Gross Hdw. Co... Goulding Mfg. Co....... Maxwell Elec. Co...... Milwaukee, Wis. Milwaukee, Wis. Milwaukee, Wis. Inland Ignition & Radio Co.......Spokane, Wash. Chas, B. Scott Co......Sersnton, Pa.
Peter J. Canstant & Co......New York ..Toledo. Ohio

Helpful Hints to Get the Most from Radio

Chapter VI—Crystal and Tube Detectors

By Thomas W. Benson

IN THIS series of articles set opera-tion will be told in so simple a manner that the uninitiated can follow instructions and get the most out of reception, whether or not he knows anything about electricity or its application to broadcasting and reception. The series consists of thirteen chapters, of which the six next will be:

Chapter VII-Sockets and Rheostats. Chapter VIII-Grid Leaks and Bias-

ing. Chapter IX—Jacks and Switches. Chapter X-Amplifying the Signals. Chapter XI-Care of Radio Bat-

Chapter XII-Telephone and Loud Speakers.

THE elimination of losses in tuners results in more marked improvement in operation when a crystal is used as a detector. In the crystal set the energy to actuate the phones must be picked up by the aerial for no local battery is used as in tube sets. For that reason it is vital that every particle of energy be saved that good results be assured. A crystal receiver should employ a tuned aerial circuit and the tuner be of the close coupled type. Many crystal receivers employ the single circuit tuner as shown in Figure 13 at A but this eircuit is not the best for the purpose A much better circuit that will give more selectivity and range is shown at B in the same illustration. Tuning Inductance

In the single circuit tuner the aerial is included as the capacity in the oscil-

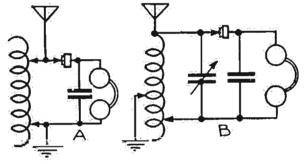


Figure 13-Two basic crystal detector circuits, one of the single circuit type, the other double circuit.

lating circuit. The best constructed aerial is a high loss condenser because of its resistance and the fact that various masses are located between the active plates. We saw how dielectrics increased losses in condensers in the last chapter and this fact enters into consideration tuned aerial circuit but a second circuit Radio currents at the broadcaster. exists consisting of a portion of the tuning inductance and a small variable condenser This circuit has lower losses and the current can increase to a maximum value and give improved operation. Old timers will recognize this as the double slide tuning coil.

Assuming that the suggestions pre-



Broadcasting Station Stamp Album?

Here's what every radio fan has wanted-a convenient, permanent and authentic means of recording all stations heard over your set. The Ekko Album contains spaces for a stamp from each of more than 650 stations. These stamps are verified and prove your reception of the station.

your reception of the station.

Proof of Reception cards are furnished with the album. Send the card to the station, together with ten cents, to cover cost of verification, give facts which prove you have heard their hroadcasting. In return they send you their verified stamp as evidence of actual reception. The stamps are beautifully engraved in different colors, an individual stamp for every station showing the call letters.

The album is 9½ x 11 inches, handsomely bound in a two color cover. It contains 96 pages, with spaces for stamps of all recognized stations arranged alphabetically by states and call letters. Also an alphabetical list of the official names and other interesting features of stations, as well as a con-

and other interesting features of stations, as well as a con-

shard other interesting features of stations, as well as a convenient log.

See your dealer today, get a copy of the Ekko Album and start a collection of these stanus. You will find that a new and fascinating method of verifying the stations you hear. If your dealer cannot supply you, sent direct on receipt of price, Money back if not satisfied.

Price \$1.75

THE EKKO COMPANY 111 West Monroe Street, Chicago property of converting the high frequency Radio currents into the lower frequency audio currents to operate the phones. Of these but a few remain in common all depends on the phones used. use, iron pyrites, galena and a synthetic crystal consisting of lead sulphide. Galena is a natural formation of lead sulphide. Of these galena is the most

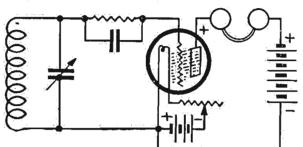


Figure 14-Elementary detector circuit to show action of tube detector.

sensitive but it must be a good piece and the contact used must be very light. A very low percentage of galena is suitable for use in Radio work and the majority of detector stands are not designed to use it properly and for that reason it does not show up in practice as good as iron pyrites which requires a heavier contact. When one is willing to fuss with the detector for DX reception galena is the best; where stadibity and ease of adjustment is most important the iron pyrites should be selected.

Fixed Crystal Detectors The so called fixed detectors are simply a crystal of iron pyrites with a catwhisker fixed on a sensitive spot. They are very satisfactory for reflex work but are not as senstive as the adjustable type of detector. A crystal detector should always be enclosed to protect it from moisture and dust. The catwhisker should be clean and it is well to snip off a piece of the wire occasionally to bring a fresh surface into use. The detector should preferably be mounted on a cushioned support to prevent slight jars from knocking it out of adjustment.

Another factor in the operation of crystal sets that is often overlooked is the condenser across the telephones. Any old condenser seems to give results but it is well worth the time and trouble taken in selecting the proper size condenser. The exact action of the crystal detector is still a matter of dispute but the fact remains that a modulated Radio frequency eurrent flowing through it gives rise to a current having the same wave shape here. In the second case, B, we have a as the voice currents impressed on the

This audio frequency current charges



Premier LO-LOSS" TUBE SOCKET 90 Cents All Types

Strengthen Your Speaker Volume

Conserve the current at full strength and strengthen your speaker volume with this radically different socket Has the lowest insulation leakage to radin frequency Has the lowest insulation leakage to radin frequency current. Bakelite between terminals is purposely thin and all metallic parts are placed so as to reduce capacity between them and the terminals in the very minimum. Contact springs in the "LO LOSS" are in one piece from binding post to tip of tube. The skeleton tube barret permits inspection of contact at prong tips while tube is in the socket. The contact springs automatically clean the tube prongs as the tube is inserted, insuring good contact always. The new tube lock with the camaction makes the proper insertion of the tube easy. A twist of the wrist does it. The terminals are curved and will stand musual deflection without setting. will stand unusual deflection without setting.

Write for Free Bulletin No. 94 showing complete line of Premier Quality Radio Parts. Ask your dealer if he has Premier free hook-ups. If not, send his name and receive a set free.

Premier Electric Company 3810 Ravenswood Ave., Chicago



device at this time. There are a number denser reduce this potential. Use only of different substances that have the mica dielectric condensers and experiment just the capacity of the phone cords, others with different size condensers, it

Vacuum Tube as a Detector

The operation of a tube detector is much more complicated and requires the adjustment of several factors for best results. Let us consider briefly just what occurs in a tube detector. In Figure 14 we have the elementary circuit of a detector tube with accessories. When the current from the A battery flows through the filament, heating it, the filament throws off electrons which are small charges of negative electricity. The amount of electrons thrown off increases as the filament temperature increases. The plate, being charged positive by the B battery attracts these electrons and a current flow in the plate circuit results. Thus we see there is a current flowing in the plate circuit of the tube all the time the filament is lighted.

The tuned input circuit is connected to the filament and to the grid through a small fixed condenser which has a grid leak connected across it. Let us assume that an incoming Radio wave induces an alternating current in the tuned circuit, Figure 15-Circuit for tube detector using ductance. At the instant the top of the coil is positive a positive charge will be placed on the grid. The grid being positive will also attract electrons which are transement would be to use an air dielecabsorbed When the current flow reverses the electrons are trapped on the grid because it is insulated from the rest of the circuit by the condenser diclectric. many fans have found it worth their The condenser can pass the high frequency currents freely but the negative capacity condensers. charges from the electrons cannot flow through the condenser but act to charge it. Thus each time the grid is made positive it attracts more electrons till it accumulates a comparatively large negative charge.

When the negative charge increases on the grid it acts to repel the negative electrons from the filament and keep them from reaching the plate, thus reducing the plate current. Were no leak across the grid condenser the grid charge would build up till the plate current would be shut off entirely and the tube would

Grid Leak Across Condenser

The grid leak across the condenser is made of such a value that the negative charges are drained off slowly so the

Vew! Metallic **Grid Leak**

ANOTHER important advance in radio—the development of a practical METALLIC high resistance for grid leak and resistance coupling! This is the invention of two professors in chemistry and electricity at a large eastern university.

The new DURHAM Metallic Resistance Unit is a rare metal deposited on glass by means of a complicated process developed after months of scientific



Accurate-Permanent-Noiseless

Tested and guaranteed accurate, every DURHAM unit is noiseless and noninductive. You can depend upon them absolutely. They are the biggest little things in radio.

DURHAM Fixed or Variable Resistance Units (grid leaks) fit standard holders. But you will find the new style base more convenient. Three styles take care of plain mounting, grid leak and condenser mounting and double base for resistance amplifiers.

PRICES:-Fixed, 28 sizes 50c - 75c Variable 75c Mounts 30c-40c

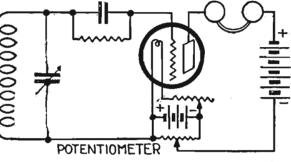
GET THIS RESISTANCE AMPLIFIER BOOKLET

Complete details for construction of the most perfecttype of amplification. Coupling resistances and grid leaks for detector and two stages cost less than one good transformer. Send 250 for this use. ful booklet about the "biggest little thing in radio"

DURHAM&CO..Inc.

1930 Market St., Philadelphia Canadian Distributors, DeForest Radio Corp., Ltd.

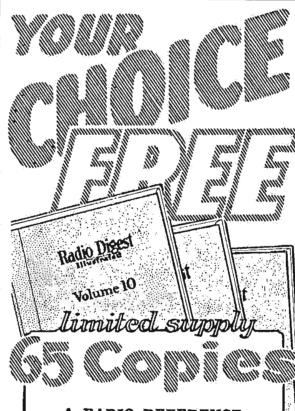
viously given have been followed in the the phone condenser and the potential grid never becomes highly negative but selection of the tuning elements we need across it varies with changes in the wave the negative charge on the grid will vary only concern ourselves with the detecting shape. Therefore any losses in the con- with the amplitude of the Radio frequency waves as controlled by the voice frequencies at the transmitter. Thus the for capacity. Some sets work best with grid potential varies in step with the voice waves and thus changes the plate current to reproduce the voice current wave. Since a slight change in grid potential gives a very much greater change in plate current an amplification effect is obtained accounting for louder signals being obtained from a tube than from a crystal detector. Since it is grid potentials or voltage that actuate the tube we must be careful to obtain as high a potential as possible at the grid. Low loss tuners function to this end but in addition the lead to the grid must be made as short as possible and run in the air. The grid condenser should have



rapidly reversing the polarity of the in- potention eter to give accurate control of plate voltage.

tric condenser at this point. The standard practice seems to be the use of a .00025 mfd. condenser as a grid condenser but while to experiment a little with lower

When it is possible to obtain a really good variable grid leak such experimenting is not really necessary because the proper operation of the tube demands only a relation between the leak and condenser which permits of the highest grid voltages being obtained with an accurate (Continued on page 20)



A RADIO REFERENCE LIBRARY

You receive 52 issues with your subscription and 13 issues in each bound volume. Bound volumes 5, 8, 9 and 10 ready for shipment. Volumes No. 1, 2, 3, 4, 6, and 7 are out of print. This offer good only in the United States and Canada. This offer good only for subscriptions coming to us direct with full amount of remittance. Not good through dealers or subscription agencies.

Great collection of Radio information. Lessons for the beginner. Instruction on how to build and operato the standard reliable sets. Valuable Question and Answer depart-

TODAY IS YOUR RADIO DAY In addition to these features the current issues give you all the live news in Radio. Advance Broadcasting Station programs. Cornet and authoritative list of all Broadcasting stations. The first and last word in Radio.

	के <u>पास्त्र प्रवास तामा तामा नामा नामा नामा नामा तामा तामा</u>
	RADIO DIGEST,
	510 N. Dearborn St., Chicago.
	One year's subscription and choice of one volume. Send Vol. No
m:m:m:m	Name
	Address
	CityState
	મ સ્થિત પ્રાપ્ત સામક તામાં સામક સામક લાગા માત્રક ઉત્પાદ પ્રાપ્ત સામક સામક કરોડા સામક છે. ફિ

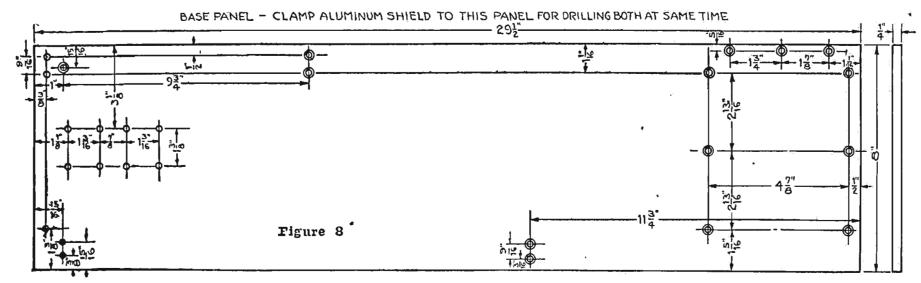
SUPER-HETERODYNE

(Continued from page 15) The ninc holes on the right side are of holes wherever necessary.

tration Figure 6 is shown a brace for mounting the sub panel and its shield Figure 12 is shown the details of two to the front panel and shield. This has sets of 2 each, brass strips which are used been detailed in Figure 11. The dotted for fastening the top plate of the box for to properly indicate the counter-sinking lines indicate where to bend the flanges closing up the metallic shield. after the piece has been cut.

In the lower right hand corner of this GET MOST FROM RADIO

The lower detail with the ends turned

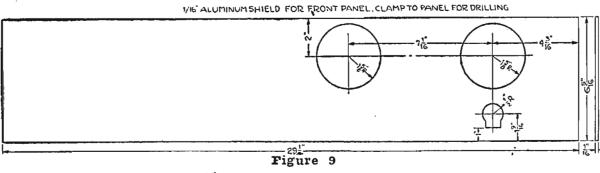


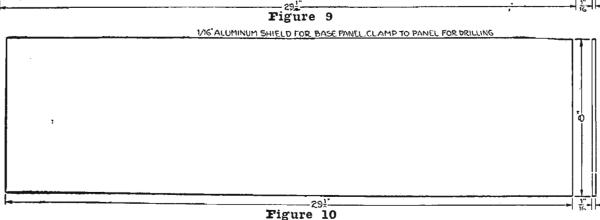
for the oscillator shield box shown on the left side of the plan view of Figure 6.

The eight holes on the left are for the on the front and sub panels. audio transformer mountings. The loca-

bent, must be in alignment with the holes

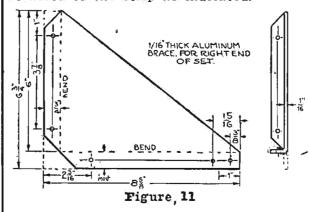
The two sets of holcs at the rear end tion or arrangements of the remaining ap- of the bottom flange take care of a small





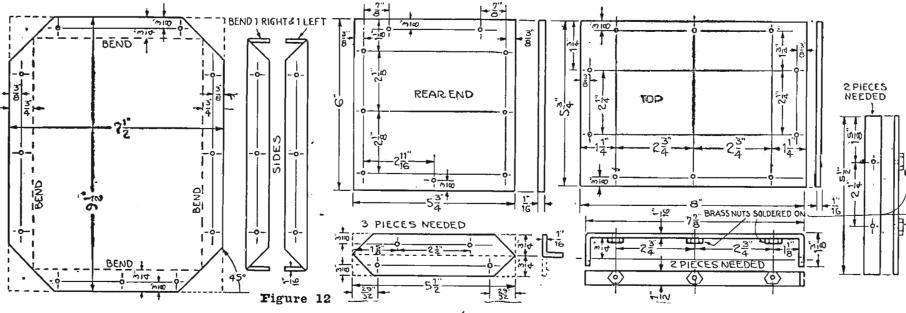
paratus is indicated in Figure 6, but no langle bracket which is used to support dimensions can be given due to the va- the right hand binding post strip shown riations of the apparatus in the various in Figure 6.

The drilled holes, when the flanges are down are slipped on the under side of the top flanges of the side pieces. A hole is drilled in each turned down end so when placed on the under side of the flange both are held in place by the top screws at the front and rear flange of these side pieces, Brass nuts (6-32) are soldered to the strip as indicated.



The other-strips do not have the ends turned down but simply slide into place under the front and rear angle strips but resting on the side brass strips.

When the top is placed in position, round head machine screws (6-32) coming through the holes in the top and the flanges of the front rear and sides, luggage the nuts soldered to the brass strips and permit securing the top firmly in place with good electrical contact and positive closed shielding effects.



kits available. Any parts used must be placed and marking made for them.

The dimensions of the aluminum shield which is on the upper side of the sub panel are shown in Figure 10. This piece should be clamped to the sub panel and all holes drilled through both simultaneously.

On the right side of the plan view illus-

Oscillator Shield The metal box which encloses the oscillator circuit has been detailed in Fig-

The two sides, right and left hand, are first indicated. Then the rear end and the top are indicated. Three small right angle strips are required.

(In the final article on the super-heterodyne, Mr. Marx will tell the best way to operate the set, wiring connections for the parts and other valuable information

Erla precision parts get the best out of Erla

SUPEREFI

circuits; most powerful, tube for tube. Ask for Bulletin 24.

Electrical Research Laboratories, Chicago



13.36.19

Etillis kirin saarin kalika kalika ka for those owning a similar set.-Editor's



had good results with the STAR-ITE CRYSTAL used as a detector with non-regenerative tube sets, we have had a great many letters from radio folks who seem to be of the Impression that this is the—as yet unperfected—OSCIL-LATING CRYSTAL, of which so much has been said in the radio press.

We have secured oscillation with crystals in a laboratory fashion, but would not attempt to sell the STAR-ITE to take the place of amplifying tubes.

We do say that the STAR-ITE is tho absolute pinnacle of perfection as a crystal to be used in a REFLEX*Set, or a CRYS-TAL Set, and as a detector in many non-generative tube sets, and are glad to support our belief by making it extremely easy to try one for yourself.

As this crystal is a new one put out by an add firm in the crystal business your dealer

As this crystal is a new one put out by an fid firm in the crystal business your dealer may not have it, but try to get him to order one for you, on our money back guarantee. If he does not wish to do so send us bis name with a \$1.00 bill at our risk, and we will send you one with the understanding that you may return it, and we will refund you the \$1.00 at any time within 30 days.

Gold Cat Whisker in Each Package

DETROIT - MICHIGAN

(Continued from page 19)

leak adjustment that just keeps the tube below the point of loading or blocking.

Many sets use a hard tube as a detector. Such tubes are not critical as to filament adjustment and usually give somewhat louder signals than the soft detector tubes. But one must not confuse loud signals with sensitivity. The soft tube is unquestionably the most sensitive detector but it requires more careful adjustment to obtain the best results. A soft tube does not require as high a plate voltage to obtain a given plate current, hence small changes in plate voltage cause a noticable change in the electron emission in the tube. For that reason an accurate control of plate voltage increases the efficiency of the detector. An excellent method of controlling plate voltage is to use a potentiometer across the A battery as shown in Figure 15.

A soft tube is likewise critical as to filament adjustment and methods of controlling the filament temperatures will be discussed later in the series. The small tubes using dry batteries for filament current are all hard tubes and not very critical as to plate voltage or filament brilliancy, Here some sacrifice is made to obtain simplicity of control and stability of operation. The grid return of a detector tube goes to the A battery.

(When using a tube for a detector it is necessary to have a socket and a rheostat for controlling the current. A description of these devices will be given in the next issue .- Editor's Note.)



FREE with each purchase of a WORLD "A" Storage Battery. The WORLD Battery is famous for its guaranteed quality and service. Backed by years of Successful Manufacture and Thousands of Satisfied Users. You save 50%.]

Prices That Save and Satisfy **Auto Batteries** Radio Batteries

6-Volt, 11 Plate \$12.25 6-Volt, 13 Plate 14.25

6-Voit, 100 Amps. 12.50 6-Voit, 120 Amps. 14.50 6-Voit, 140 Amps. 16.00 12-Volt. 7 Plate 17.00 Shipment Express C. O. D. subject to examination, 5 per cent discount for cash in full with order.

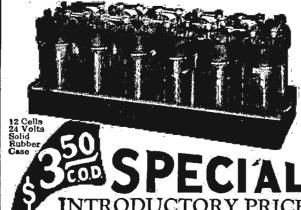
2-Yr. Guarantee Bond in Writing With Each World Storage Battery

proves satisfactory World performance. Mell this ad with your name and addreas—we will ship battery day order is re-ceived; and give you your choice of 'B'' Storage Battery or a handsome nickle finiah Auto Spotlite, FREE. Write TODAY. WORLD BATTERY COMPANY
60 E. Roosevelt Road Dept. L, CHICAGO, ILL.

This FREE "B" Storage Battery takes the place of dry celf "B" batteries. Can be recharged and will last indefinitely. To be sold retail for \$6.00. It is the only battery of its kind equipped with solid rubber case—and insurance against acid and leakage. Toke advantage of this remarkable introdoctory offer NOW. (To those who prefer it, we will send FREE a handsome nickel finish Auto Spotlite, instead of the "B" Battery, Be aure to specify which is wanted.)

EREE To introduce





For a limited time only, and to introduce this new and superior Storage "B" Radio Battery to the Public, we are selling it for \$3.50. Regular Retail Price is \$5.50. You save \$2.00 by ordering NOW. A finer battery cannot be built than the

World Storage "B" Battery

To ten million homea with Radio Sets—and to countless milliona of prospective buyers—this WORLD Storage "It" Battery brings a new cor ception of battery economy and performance. Here is a battery that pays for itself in a few weeks—will last for years and can be recharged at a negligible cost. And you save \$2.00 by ordering now.

A Superior Battery Solid Rubber Case Has heavy duty 21-S in. x I in. x 1-4 in, plates and plenty of acid circulation. Extra heavy glass jars allow ready observation of charge and prevent leakage and seepage of current. It holds its charge, while idle, at constant voltage, You will find this battery a hoon to long distance reception. It does away with a great many noisea ao often blamed on "atatic" Mail your order today.

SEND NO MONEY

Just state number of batteries wanted and we will ship day order is received. EXTRA OFFER: 4 batteries in series (96 volts), \$13.00. Pay Expressman after examining batteries, 5 per cent oiscount for cash in full with order. Send your order NOW and save \$2.00.

WORLD BATTERY COMPANY
Makers of the famous World Radio "A" Storage Battery
1219 S. Wabash Ave., Dept. 76 Chicago, Ill.

SAVE \$2.00 BY ORDERING NOW!

New Regenerative Receiver Hook-Up

Gives Excellent Volume and Clarity on Speaker

As a regular reader of the Radio Digest for more than a year, and a tinkerer with the Miloplex and other circuits described in your columns; it gives me

WORKSHOP KINKS EARN A DOLLAR—

HERE 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

pleasure to submit you a hook-up that seems to involve possibilities in the regenerative field that the Armstrong patent does not cover.

My understanding of the Armstrong patent is that it has to do with inductive feedback regeneration, while it is quite possible that capacity feedback regeneration might be a strong feature.

I am using the following hook-up very satisfactorily, though I cannot recommend it for distance as yet. It works exceedingly well for clarity and volume, stator part as well. This can be easily and is without erratic tendencies.-E. N. Baldwin, Donora, Pa.

Don't use more than one standard block plate battery (22.5 volts) on the plate of a UV-200 detector tube.

Radio Batteries -they last longer

Conspicuous for vitality and endurance —the right batteries by test and proof for every radio use.

NATIONAL CARBON CO., INC. Headquarters for Radio Battery Information San Francisco New York

CANADIAN NATIONAL CARBON Co., LIMITED Factory and Offices: Toronto, Ontario

. Use the **DUCON**

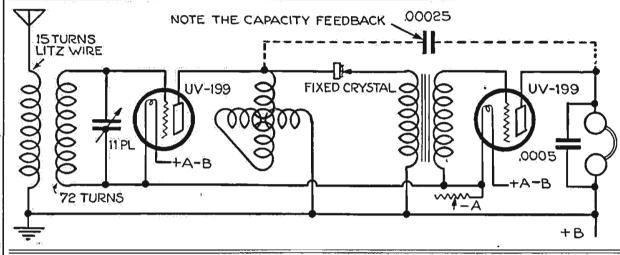
No antenna—just screw the Ducon into your electric light socket and tune in. A great saving in expense and labor-and great results with your set.

PRICE \$1.50

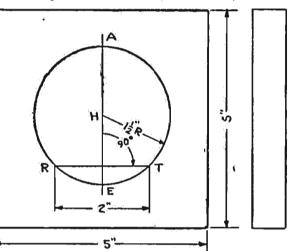
Sold on a 5 day trial basis by all reliable dealers



HOOK-UP FOR DX RECEIVING

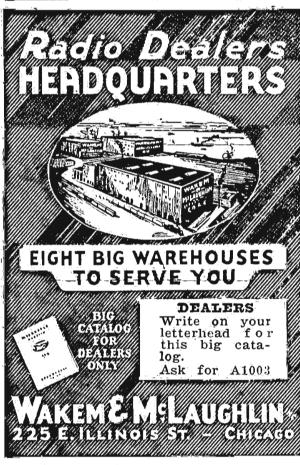


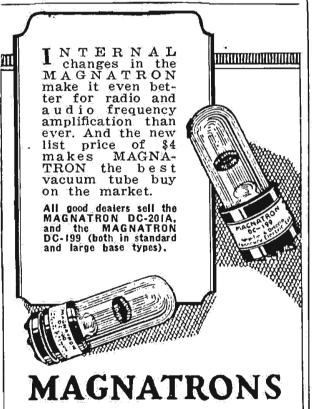
Centering Instrument Shafts It is usually a puzzle for the amateur to find the center of variometer and variocoupler balls for the shafts, or the



block of wood 5 inches square and ½ inch thick and locate the center. Take the board's center H and a radius HE equal to about 1/2 inch and describe a circle with a pair of compasses. Draw the cord

done in the following manner: Procure a





<u>HANGKARA DE DOMENIA KANAMIA DE DE DE DA DE DE MERCHANDA DA KANAMI KETER BEKANA KANAMIA DE DE DE DE DE DE DE D</u> CONNEWEY ELECTRIC LABS. 309 Fifth Ave, New York City

RT equal to about 2 inches, then construct a perpendicular bisector of this cord AE, which will pass through the center H. Where the cord RT cuts the circumference of the circle drive in two phonograph needles. To find the place where the rod should pass through a coil, place it against the needles and the line AE will indicate where the rod is to pass through. To a student of geometry the principle is evident.—A. C. Piepkorn, Milwaukee, Wis.

Battery Connections

Weak batteries should not be connected together with strong batteries in any combinations. Either in the series or the parallel arrangement the weak ones will be a drain upon the strong ones. In the series arrangement the strong batteries must force their current through the high resistance of the weak ones in the chain, and in the parallel arrangement the strong ones are apt to discharge their current through the weak ones.

Blow Torch

Good Soldering-Good Reception!

You know how essential good soldering is to the working of your set. A "Jiffy" Blow Torch will give you a real professional job. Self-blowingabsolutely safe! "Jiffy" complete outfit, Copper Soldering Iron, String Solder, "Jiffy" Non-corrosive Flux and "Jiffy" Blow Torch with accessories, \$2.50. At your dealer's or direct

Apex Stamping Company

Dealers! Write for proposition

Build a FADA 5 tube Neutrodyne Receiver

You can assemble one in a few hours. For distance, selectivity and loud speaker volume there's nothing better. The FADA 5-tube Neutrodyne outfit No. 167-A contains everything needed-the finest Neutrodyne parts that can be purchased. The FADA "How to Build It" book makes everything as simple as A, B, C. Buy the original FADA No. 167-A in the sealed package, \$65.60.

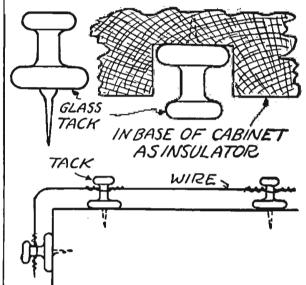
F. A. D. ANDREA, INC. 1581 Jeronie Ave.



LD THE PANE

Glass Head Push Pins Make Good Insulators

Glass head thumb tacks or push pins make good insulators for the cabinet base of a Radio set. When used in this manner a hole % inch in diameter is drilled in the wood about ¼ inch deep and the



pin pushed in so that about 1/2 inch of the head remains below the surface of the base. The push pins can be obtained at any stationary store.-Richard Freeman. Great Falls, Montana.

Loose connections or badly soldered joints are the greatest causes of the exasperating noise you get in your phones.

All of the fill of

"This makes the cheapest set I know of for working a found speaker within 15 or 20 miles of a good broadcasting station," says H. M. Neely in "Rad o in the Home." And many fens are doing the same at 25 miles. With head-phones Keicoli brings in ALL DX stations — LOUDER and CLEARER. Works in any 8-circuit hook-up. Most good desiers have the Keicoli. If yours hasn't, we'll send you a Kelcoli C. O. D. parcel post. Mention desier's name.

Users Tell Ust "Pacific Coast any night."
"Have tun-d in 63 stations." "Far exceeded my expectations." "Best of its kind on market." Write for Hook-Ups. Send 10c to cover mailing cost for new hook-ups and wiring diagram. Dealers-Distributors-Write today for attractive proposition on this quick-seiling coil.





The new FAHNESTOCK Display Case Will stimulate your seles of Fahnestock Redio Products. 14 of the most populer styles and sizes are included. Shows the purcheser instantly the correct plece for his set. A constent invitation to buy Fehnestock Products, Deciers ere offered 200% profit on each case, en unusuel offer on standard

Price to Dealer......\$17.50 money order or check accompanies order. Contents Retail for \$51.50

Refills will be supplied at the regniar 100 lot prices, shown in cetalogue, which comes with case, less discount shown on enclosed sheet. Send check or money order, today.

FAHNESTOCK ELEC. CO. LONG ISLAND CITY NEW YORK

Ouestions and Answers

Selectivity

(08112) MJG, Sabetha, Kans.

I would like to ask a question in regard to question (05517) in issue of March 8th. You say there are many efficient circuits that will entirely eliminate interference of this nature. Will you please name some of the circuits that will do this? I have had three different Radio sets the past year. I have been trying to get one that would eliminate interference, but have not got one yet that will get it all

A.—We are advising in your inquiry that a large measure of selectivity of circuits with inherent attributes is sacrificed by unskillful operation, and it may be admitted as truism that "no circuit or receiver is better than its operator." The statement is not made with any personal reference but merely to illustrate the embarrassment of giving assurance that any particular type will do this or that. We can do no more nor less than to say that

Radio Applause Cards Free. For quantity write Lettow & Co., 208 Hanover St., Baltimore, Md.

PATENT ATTORNEYS

PATENTS. Booklet free. Highest references. Best results. WATSON E. COLEMAN, Patent Lawyer, 644 G Street, Washington, D. C'

Cash in on Radio! Build and sell sets for us. No trouble to earn \$5 an hour in spare time at home. Auburn Radio Co., Dept. H, Cincinnati, Ohio.

BIG money selling new household cleaner. Washes and dries windows. Sweeps, scrubs, mops. Complete outfit less than brooms. Over 100% profit. Harper Brush Works, 200 3rd St., Fairfield, Iowa.

Going Into the Radio Business? You Must Buy Right If You Hope To Make Money

Send for our new illustrated catalog, with bargain prices.

WHOLESALE ONLY MANHATTAN RADIO CO. 112 Trinity Place New York City

SUPERTRON

A GOOD TUBE

ALL TYPES-\$4.00 The Best Dealers Sell Superirons

VICTOR RADIO MFG. CO., New York City 32 Union Square

Boys Are Making Money by Joining THE ANTENNA HUNTERS

A bully game that can be played after school by any boy. Lots of fun. Huntors make sure money. while you learn. The master huntsman will receive.

A RADIO SET FREE

This is a special reward offer. Start in business for yourself. Gives you training, fun and profit. For full details and co-operation, write today. Action counts. Boys' Dept., RADIO DIGEST, 510 N. Dearborn St., Chicago, III.

CARTER

"IMP" Battery Switch



Simple to mount. Compact in size.
Complete with
Knob, Pointer
and "On-Off"
Name plate.

65c

Any dealer can supply

In Canada Carter Radio Co., Limited, Toronto



FRESH!

S. & H. "B" BATTERIES They're not two days old when sont to you.



Are Noiseless Increase volume and range. 22½ V. Varlable. Large M'd'ui Small \$1.80 \$1.60 \$1.00 45 V. Variable. flarge Medium Small \$3.60 \$2.75

Sold With a Money-Back Guaran-We Pay Postage tee-Money Orders or C. O. D. We Pay Postage S. & H. BATTERY SUPPLY CO. 41 Nevins St., Dept. (D) Brooklyn, N. Y.

Whether or not that will be realized in- | wire and used indoors. variably is another matter.

The neutrodync receiver is notable for its general effectiveness, its quiet operation and quality and range of reception. In favorable construction and operation there is undoubtedly a minimum of manmade interference.

Only One Station

(8407) WK, Hopkins, Mich. Why is it that when several local sta-

tions are broadcasting together the only one I get clearly and without howling and whistling noises is WEAF? The set I use is a three-tube regenerative with

A Super Antenna. Great volume. Easily and cheaply made. Less wire. Directions 50 cents. Eugene A. Rhea, Garden City, Kans.

DETECTIVES needed everywhere. Large salaries. Free particulars; write National Headquarters, 188 E. 79th St., New York.

Our New 40-Page Catalogue

For Dealers and Set-builders. Standard Items at Extreme Discounts Write for it today.

Thé Roversit (b. 17 SO. FIFTH ST. MINNEAPOLIS .. DEPT.

REPAIR WE

All Types of Radio Tubes \$2.50 Postage Prepaid

Agents and Dealers Special Discount

H. & H. RADIO CO., P. O. Box 22A Clinton Hill Sta., Newark, N. J.

LATEST WHOLESALE Simply send name

TODAI 10. 48 - page catalog of latest radio goods at Wholesale.

Live dealers and agents wanted. STANDARD RADIO CO., 106 East 13th, Kansas City, Mo.

SEND NO MONEY

Thank You : Excellent program Very

Your Own Name and Address Printed Free on Thank You Cards. Hear what you like. Stations are glad to put on

Stations are glad to put on numbers at your request. We print Special Cards that get Attention. All file Rage. Cards (Printing Free) 100—011/2, 175. Postpaid. Order Today. MONEY REFUNDED if not satisfied. Good quality cards—High grade printing. You will be delighted. Send no money—just pay postman when you get cards. Order NDW! RADIO PRINTERS, 47A, Main St., MENDOTA, ILL.



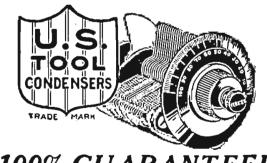
Wholesale Distributers of Nationally Known

RADIO SUPPLIES

Since 1921

DEALERS send for price list and discount sheet

> 554 Seventh Ave., New York City



100% GUARANTEED Point Number One ONE PIECE STATOR

Eliminates broken contacts and soldered joints. Positive results; no leakage. Found in new types -Numbers 3 and 4, celeron end plates; 5 and 6, low loss—metal end plates.

ASK YDUR DEALER

U. S. TOOL CO.

NEWARK, N. J. 122 Mechanic St.

and the other stations cause whistles ability of circuit. Finding one's way in howls, squawks and distortion? I have the ether is not merely a matter of turnhad several experts inspect my set and ing knobs and requires considerable they pronounced it O. K. as to proper set up and construction.

A.—It would be impossible to determine from insufficient details offered if any factor in your receiver is responsible for limitations encountered.

The One Best Circuit

199 **TUBES** \$1.00

FOR Super Selective-DX-Great Volume 2 Controls-Simple to operate-Easy to build. Operates on iong, medium or short acriai. Results of 2 years work—Plck of 1,000 circuits. The best circuit properly balanced for 199 tubes. Complete Blueprints and details for 1-2-3 tube sets.

ADVANCE CIRCUIT CO., Lab. RD-1 1038 W. Chicago Ave. Chicago, Illinois

COMPLETE WHOLESALE RADIO ONLY NADAPTERS LOSTOCK SEND FOR DISCOUNT CATALOG A 2 A 2 4 1 1 1 1 (0. (1.10)

LABORATORIES ILLINOIS QUINCY

Est. Dealers: Write for No11A CATALOG Discounts

Large Radio Wall Map

FREE The very latest up-to-date radio wall map 28 by 34 inches. Shows call letters, locations, wave lengths, and kilocycles of all radio broadcasting stations, U. S., Canada, and Mexico, relay divisions and radio districts. Also a scale for measuring distance. This wonderful map postage paid. ABSOLUTELY FREE. Merely send us a list of stores in your city which handle radio apparatus. Be sure and give the street address, and if you know the manager's name, give it also. DO IT TODAY before this offer is withdrawn.

OZARKA INCORPORATED 808 Washington Blvd. Chicago

DEALERS!

Write for Discounts on

COLUMBIA **DAVEN** ERLA

FROST PREMIER SHAMROCK BARRET & PADEN

BREMER-TULLY and Other Standard Lines

PRAIRIE STATE RADIO CO.

39 West Adams St. Chicago, Ill.

KRY KKKKKKKK

Pages 10 and 11

of the Shamrock Booklet tell you how to build the

Ideal D X

Mail coupon today for the Shamrock booklet telling you how to build this inexpensive set and nine others. Full directions simply told.

SHAMRDCK MANUFACTURING CO. Dept. 24B Market St., Newark, N. J.

I enclose 16 cents (U. S. stamps or coln) for copy of "Shamrock Radio Builders' Guide Book," containing diagrams and complete instructions for building 10 inexpensive sets.

Address.

a certain circuit has "inherent" selectivity. | an aerial 100 feet long made of spring | However, we are of the opinion that improper tuning and unfamiliarity with If my set is not correctly constructed characteristics of operation are acting as why does WEAF come in clean as a bell a deterrent to realization of inherent patience and observation before it is accomplished with ease.

A few tips from some one who is familiar with the underlying principles by practical demonstration will be helpful and desirable.

Men to build radio sets for me in spare time. Leon Lambert, 501-H Kaufman Bldg., Wichita, Kansas.

YOUR CRYSTAL SET

will work 400 to 1,000 miles if made by my plans. No tubes or batteries. Copyrighted plans \$1.00. Satisfied customters everywhere. Particulars free.

LEON LAMBERT 501 Kaufman Bldg. Wichita, Kansas

Make \$100 Weekly-sell RADIO

Demonstrate once—results mean sure sale. Coast to Coast, lowest prices, attractive four tube instrument \$39.50. Big commission to you. Exclusive territory to proven salesman. Territory going fast. Write today for large illustrated book No. 100. Don't fail to give name of your county.



BUY NOW!

Send for our special offer to dealers

COMPLETE STOCK OF NATIONALLY KNOWN BRANDS

MAILED ABSOLUTELY **GUARANTEED *-**



D-201 A, D-200, D-199, D-12 in standard sizes to fit any socket. The internationally famous

DUTCH RADIO VALVE

will be malled, fully guaranteed to you for \$2.25 plus Three DUTCH RADIO VALVES (any type) will be sent for \$6.50 plus post-D. R. V. IMPORTING CO. 511 Orange St., Newark, N.J.

Six Tools in One \$1.25

A radio socket wrench that fits every round and hexagon radio

How it works

Sockets ranging from 1/4" to 1/2"

Place socket of required size on end of shaft with slots not in line with lugs on shaft.

Buy it from your dealer or direct from us

THE PERRY-FAY COMPANY · Elytia, Ohio Screw Machine Products

Radiophone Broadcasting Stations

Corrected Every Week-Part II

FIND MISTAKES AND YOU'LL GET DOLLAR

NE DOLLAR will be paid to the Radiophan reader of Radio Digest submitting the most errors in any one station's listing in the Directory of Radiophone Stations, which appears in five parts, serially continuously on page 23. Letters must reach Radio Digest's office not later than one week from date of issue corrected. Readers are not limited to correcting one station, but such corrections must be verified by the stations themselves, and NOT, by comparison to other socalled accurate Radio directories or lists. Turn in corrections for as many stations as you can find—if you can find errors! Use separate sheet of paper for each station submitted and place name and address on each sheet. In case of tie, duplicate awards will be made.

(Note-The second part of the schedule list appear below. The first appeared last week.

KFNL, Paso Robies, Calif. 240 meters. 10 watts. Radio Broadcast Assn. Announcer, Early W. Moore. Slogan, "The Home of the Nut." Mon, 8-10 pm, Slogan, 'The music. Pacific. KFNV, Santa Rosa, Calif. 234 meters. 5 watts. L. A

KFNY, Helena, Mont. 261 meters. 5 watts. Montano Phonograph Co. Slogan, "Helena, Heart of the Rockles." Daily, 7:15-7:45 pm, concert and bedtime

Rockles. Daily, 7:10-7:40 pm, contest and sections story. Mountain.

KFNZ, Burlingame, Calif. 231 meters. 10 watts. Royal Radio Co. Daily ex Sun, 4-5:30 pm, concert; 7-7:30, news, weather. Wed, 8-10 pm, classical music. Sat., 8-12 pm, dance music. Pacific.

KFOA, Seattle, Wash. 455 meters. 500 watts. Rhodes Dept. Store. Tues, Wed, Fri, 12:30 pm, daily ex Sat, Sun, 8:30 pm, concert. Pacific.

KFOC, Whittier, Calif. 236 meters. 100 watts. First Christian Church.

Christian Church.

KF00, Vallace, Idaho. 224 meters. 10 watts, The Radio Shop. Announcer, A. Malone. Slogan: "The Valley of Mines." Irregular schedule

KF0F, Marshfield, Ore. 240 meters. 10 watts. Rohrer

Elec Co.
KFOJ, Moberly, Mo. 246 meters. 5 watts. Moberly
High School Radio Club.
KFON, Long Beach, Calif. 234 meters. 100 watts.
Echophone Radio Shop. Slogan, "Where Your Shlp
Comes In." Cheese and Crackers club. Daily ex Sun,
11:30 am and 12:30 pm, 8-9. Pacific.
KFOO, Salt Lake City, Utah. 261 meters. 10 watts.
Latter Day Saints University. Announcer, Don C.
McRae.
KFOO, Gaiveston, Texas. 240 meters. 50 watts. Ora

Gaiveston, Texas. 240 meters. 50 watts. Ora William Chancellor, Announcer, Mrs. Lora Chancellor. Special program.

KFOR, David City, Neb. 226 meters. 20 watts. David City Tire & Elec. Co. Slogan, "The Voice of David City City".

KFOT, Wichita, Kansas. 231 meters. 50 watts. College Hill Methodist Church-College Hill Radio Club. Sun. 11-12:30 pm; 7:30-9, church services. Central. KFOU, Richmond, Calif. 254 meters. 100 watts.

Honmel Mfg. Co.

KFOX. Omaha, Neb. 248 meters. 100 watts. Board of Education, Technical High. Announcer, H. E. Bennett. Fri, 7:30-9 pm. music. Central.

KFOY, St. Paul, Minn. 226 meters. 50 watts. Beacon Radio Service. Slogan, "St. Paul—The Beacon of Progress."

KFOZ, Fort Smith, Ark. 233 meters. 20 watts. Leon Hudson Real Estate Co. Mon, Fri, Sun, evening program. Central. KFPB, Seattle, Wash. 224 meters. 15 watts. Edwln

KFPG, Los Angeles, Calif. 238 meters. 100 watts. Garretson and Dennis. KFPH, Salt Lake City, Utah. 242 meters. 50 watts.

KFPH, Salt Lake City, Utah. 242 meters. 50 watts. Harold Charles Mailander.
KFPL, Dublin, Tex. 242 meters. 20 watts. C. C. Baxter, announcer. Mon, Thurs, 8 pm. Sun, 7-8 am. 3:30 pm. Central.
KFPM, Greenville, Tex. 242 meters. 10 watts. The New Furniture Co. Announcer, Dave Ablowich, Jr. Slogan, "The New Furniture Co., the Home of Good Furniture," located at Greenville, Texas, where you lind "The Blackest Land, the Whitest People." Daily ex Sun. 2 pm. misic. Tues, Wed, Thurs, Fri, 7:45 pm. Sun, 11 am, services.

pm. Sun, 11 am, services.
('entral.
KFPN, Jefferson City, Mo, 242 meters. 100 watts.
Missonri National Guard. Announcer. Lieut. Roy M.
Slogan, "Voice of the National Guard."

Schnell. Slogan, "Voice of the National Guard."
Tucs, 10-11:30 pm, news, music, Sat, 10-11 pm, talks, music. Central.

KFPO, Denver, Colo. 231 meters. 500 watts. Colo. National Guard.

KFPP, Olympia, Wash. 236 meters. 20 watts. G. & G. Radio and Elec. Shop. Daily 6:30-7:30 pm. Wed, 8-11 pm. Pacific.

KFPQ, Denlson, Tex. 231 meters. 20 watts. Clifford W. Esler. Daily ex Sun, 12-12:30 pm, music, markets, Wed, 9-9:30 pm, music. Sat, 9:30-10 pm. Central.

KFPR, Los Angeles, Callf. 231 meters. 500 watts. Los Angeles Co. Forestry Dept. 1rregular schedule.

KFPT, Salt Lake City, Utah. 268 meters. 500 watts. Radio Service Corp. of Utah. Announcer Cbarles H. Hays. Mon. Wed, Fri, 9 pm. Mountain.

KFPV, San Franclsco, Calif. 236 meters. 50 watts. Heintz & Kohlmoos, Inc. Announcer, Ralph H. Helntz. Slogan, "Ain't We Got Fun." Sun, 7-8:30 pm. Pacific.

KFPW, Carterville, Mo. 268 meters. 20 watts. St. John M. E. Church, S. Slogan, "Keeping Pace with Christ Means Progress." Wed, Fri, 8-10 pm, popular program. Sun, 1-3 pm, chapel service. Central.

KFPX, Pline Bluff, Ark. 242 meters. 100 watts. First Presbyterlan Church. Announcer, Howeli L. Westbrook. Sun, 11 am, 12 m, 7:30-8:30 pm, church services. Central.

KFPY, Spokane, Wash. 283 meters. 100 watts. Symons investment Co. Announcer, E. B. Craney. Daily ex

brook. Sun, 11 am, 12 m, 7:30-8:30 pm, church services. Central.

KFPY, Spokane, Wash. 283 meters. 100 watts. Symons investment Co. Announcer, E. B. Craney. Daily ex Sun, 12:01-12:30 pm, time, music; 6:15-7, news, weather, music. Mon, 8:30-9:30 pm, lectures, music. Fril, 9:30-11:30 pm, lectures, music. Pacific.

KFQA, St. Louls, Mo. 261 meters. 50 watts. The Principla.

KFQB, Fort Worth, Tex. 254 meters. 100 watts. The Searchlight Pub. Co. Announcer, Leslio G. White. Sun, 11 am, 7:15 pm, church services. Tues, Wed, Thurs, Fril, 8:30 pm, music. Central.

KFQC, Taft, Callf. 227 meters. 100 watts. Kidd Bros. Radio Shop.

KFQC, Taft, Callf. 227 meters. 100 watts. Chovin Supply Co.

KFQC, Colorado Springs, Coio. 224 meters. 5 watts. Dickinson-Henry Radio Laboratories.

KFQF, Minneapolis, Minn. 224 meters. 10 watts. Minneapolis Radio Repair Shop. Slogan, "In the Land of Ten Thousand Lakes." Tues, Thurs, 9:15 pm. Central.

KFQG, Los Angeles, Callf. 226 meters. 100 watts. Southern Calif. Radlo Assn. KFGH, Burllngame, Callf. 231 meters. 50 watts. Albert

Sberman.
KFQ1, Culver City, Calif. 234 meters. 100 watts.
Thomas H. Ince Corp.
KFQ1, Oklahoma City, Okla. 236 meters. 150 watts.

Harbour Longmire So. Temporarily off the air. KFQK, Fayette, Mo. 236 meters. 10 watts. Democrat

KFQK, Fayette, Mo. 236 meters. 10 watts. Democrat Leader.

KFQL, Muskogee, Okla. 252 meters. 20 watts. Oklahoma Free State Fair Assn. Announcer, Burle R. Jones. Slogan, "Our Gates Stand Open." Mon, Wed, Fri, 8-9 pm, music. Central.

KFQM, Austln. Tex. 268 meters. 50 watts. Texas Highway Bulletln. Announcer, George M. Baker. Daily, ex Sun, 7 pm, 9. Central.

KFQN, Portland, Ore. 283 meters. 5 watts. Third Baptist church. Wed, Frl, 8-9 pm. Sun, 9:45-10:30 am; 9-10 pm. Pacific.

KFQO. Russell, Kansas. 261 meters. 15 watts. Meler Radio Shop. Announcer, A. R. Meier. Mon, 8:30-9:45 pm, music. Wed, concert. Thurs, 8:30-10 pm. Sat, 10:30-11:45 pm. Central.

KFQP, Iowa City, Iowa. 224 meters. 10 watts. George S. Carson, Jr. Wed, Fri, 8-9 pm. Sat, special programs, Central.

KFQR, Oklahoma City, Okla. 250 meters. 10 watts. Watts. Walter La Fayette Ellis.

Walter La Fayette Ellis.

KFQS, Manitou, Colo. 246 meters. 60 watts. Dickinson-Henry Radio Laboratories. Announcer, F. M. Henry. Daily ex Sun, 12-1 pm, music. Mon, Tues, Thurs, Fri, 9-11:30 pm, dance music. Wed, Sat, 8:45-12 midnight, dance music. Sun, 8:30-10 pm, classical music. Mountain

12 midnight, dance music. Sun, 8:30-10 pm, classical music. Mountain.

KFQT, Dennison, Tex. 252 meters. 10 watts. Texas National Guard.

KFQU, Holy City, Calif. 234 meters. 100 watts. W. Riker. Announcer, Arthur J. Landstrom.

KFQV, Omaha, Neb. 231 meters. 100 watts. Omaha Grain Exchange.

KFQW, North Bend, Wash. 248 meters. 50 watts. The Photo Radio and Elec. Shop. Mon. Wed, Fri, 8-9:15 Pacific. KFQX, Seattle, Wash. 233 meters. 250 watts. Alfred

M. Hubbard. KFQY, Belden, Neb. 273 meters. 10 watts. Farmers State Bank. Announcer, A. H. Abts.

KFQZ. Hollywood, Calif. 240 meters. 250 watts. Taft Radio company. KFRC, San Francisco, Calif. 280 meters. 5 watts. Radiocast studio. KFRF, Alexandria, La. 242 meters. 10 watts. W. R.

Brown.
KFRG, St. Louls, Mo. 236 meters. 20 watts. Cleveland
High school.

KFRA, Carver, Minn. 240 meters. 100 watts. Marvin S. Olson. KFRB, Beeville, Texas. 248 meters. 250 watts. Hall

KFRI, Denver, Colo. 224 meters. 5 watts. The Reynolds Radio Co., Inc. (Portable). KFRI, Conway, Ark. 250 meters. 10 watts. Guy Sim-

KFRI, Denver, Colo. 224 meters, 5 watts. The Reynolds Radio Co., Inc. (Portable).
KFRJ, Conway, Ark. 250 meters. 10 watts. Guy Simmons, Jr.
KFSG, Los Angeles, Callf. 278 meters. 500 watts. Angelus Temple, Tues, Thurs, Fri. Sat, 3:30-4:30 pm. Tues, 6:30-7:30 pm. Wed, 2:30-4:30 pm; 6:30-7:30, Thurs, Fri. Sat, 7:30-11 pm. Sun, 10:30-12:30 pm. 2:30-4:30, 7-9:30. Mon silent. Pacific.
KFSY, Heiena, Mont. 261 meters. 10 watts. The Van Blaricom company. Wed, Sun, 7:30 pm, music, talks. Mountain.
KGB, Tacoma, Wash. 252 meters. 50 watts. Tacoma Daily Ledger. Announcer, Alvin Stenso. Slogan, "This is KGB in Tacoma, Washington, the Lumber Capital of America and the Gateway to Mount Tacoma." Mon, Wed, Fri., 7-9 pm. Paclfic.
KGO, Oakland, Callf. 312 meters. 1,000 watts. Gen. Elec. Co. Announcer, Howard I. Milholland. Dally ex Sat, Sun, 1:30 pm; Sat, 12:30, markets, weather; Mon, Wed, Fri., 3 pm, music. Mon, 4-5:30 pm, orchestra. Daily ex Sun, 4-5:30 pm, orchestra. Daily ex Sun, 4-5:30 pm, orchestra. Daily ex Sun, 4-5:30 pm, orchestra. Daily ex Sat, Sun, 6:45 pm, reports, news. Mon, Tues, Thurs, Sat, 8 pm, lectures, music. Mon, Tues, Thurs, Sat, 10-1 am, dance music. Mon, 5:30-6 pm, children's half hour. Sun, 11-12 m, 7:45-9 pm, church services; 3:30-5 pm, concert. Paclfic.
KGU, Honolulu, Hawail. 360 meters. 500 watts. Marion A. Mulrony, The Honolulu Advertiser. Daily, 7:30-9 pm. Tues, Thurs, Sat, special program. 150tb merldian. 2½ hours later than Paclfic.)
KGW, Portland, Ore. 492 meters. 500 watts. Portland Morning Oregonian. Announcer, Richard V. Haller. Slogan, "KGW, Keep Growing Wiser."
Daily ex Sat and Sun, 11:30 am, weather: 12:30 pm, concert: 3:30. 7:15, police reports; 7:30, markets. Mon, Tues, Wed, 8 pm, concert. Fri, 8:15 pm, 10:30, Hoot Owls. Wed, Thurs, Sat, 10 pm, orchestra. Sat, 11:30 am, weather: 3 pm, children's hour. Sun, 6 pm, church services. Paclfic.
KGY, Lacey, Wash. 258 meters. 10 watts. St. Martins College. Announcer, Sebastian Ruth. Slogan, "Out Where the Cedars Meet the Sea." Tues, Fri, Sun, 8:30-9:

Wasmer.

KIAF, Sihtipoc, Minn. 421 meters. 500 watts. Steele

KIAF, Sihtipoc, Minn. 421 meters. 500 watts. Steele Co. Program Irregular.

KJQ. Stockton, Calif. 273 meters. 5 watts. Gould, The Light Man. Daily ex Sun, 5-6 pm, concert. Wed, Sat, 9-11 pm, dance music. Mon, 9-10 pm. Sun, 10-11 am, church. Paclfic.

KJR, Seattle, Wash. 283 meters. 100 watts. Northwest Radio Service Co. Announcer, Vincent I. Kraft. Daily ex Sun, 5:30-6:30 pm, dinner hour program. Paclfic.

Paclfic.

KJS. Los Angeles. Calif. 360 meters. 750 watts.

Pacific.

KIS, Los Angeles, Calif. 360 meters. 750 watts. Bible Inst. of Los Angeles. Announcer, M. E. Carrier. Slogan, "King Jesus Saves." Tues, Thurs, 8-9 pm, sacred music, lectures, etc. Sun, 10:45-12:30 pm, 6-6:45, 8-9:30, church services. Pacific.

KLS, Oakland, Calif. 360 meters. 250 watts. Warner Bros. Radio Supplies. Daily 11:30-1 pm. Sun, 10-11 am. Pacific.

KLX, Oakland, Calif. 509 meters. 500 watts. Oakland Tribune. Announcer, Seth T. Bailey. Slogan, "Where Rail and Water meet." Daily ex Sun, 3-5 pm, baseball scores; 7, news: 7:30, weather. Mon, Wed, Fri, 8-10 pm, talks; entertainment. Pacific.

KLZ, Denver Colo. 283 meters. 250 watts. Reymolds Radio Co. Announcer, Mrs. William D. Reynolds. Daily ex Sun, 8:30 am, 10:15, 12:15. Daily ex Sun, Wed, 7:30-8 pm, news, markets. Thursday, 8:15-9:30 pm. Mon, Sun, 9-10:30 pm. Mountain.

KMJ, Fresno, Callf. 248 meters. 50 watts. Sar Joaquin Lt. Pr. Corp. Announcer, R. C. Denny, Slogan, "Voice of the San Joaquin." Irregular sched-

KMO, Tacoma, Wash. 360 meters. 10 watts. Association Station. (Love Electric Co.) Mon, Wed, Fri, 6-7 pm, popular program; 9-10, artist's program. acific. T, Kukak Bay, Alaska. 263 roeters. 100 watts.

Pacific.

KNT, Kukak Bay, Alaska. 263 noeters. 100 watts.

Walter Hemrich.

KOB, State College, N. M. 360 meters. 500 watts. N. M.
College of Agrl. & Mech. Arts. Announcer, R. W.
Goddard. Slogan, "The Sunshine State of America."

Dally 11:15-12 m. 9:55-10 pm, time, reports. Mon,
Wed, Frl, 7:30-8:30 pm, concert. Mountain.

KOP, Detroit, Mich. 286 meters. 500 watts. Detroit
Police Dept. Slogan, "Safety First." Daily ex Sun,
1 pm, 6:30, reports.

1 pm, 6:30; reports, police information, emergency. Safety talks. Eastern. Safety talks. Eastern.

KPO, San Francisco, Callf. 423 meters. 500 watts. Halc Bros., Inc. Announcer, Clair E. Morrison. Slogan, "The City by the Golden Gate." Daily ex. Sun, 12 m, reading. Dally ex Sat, Sun, 1-2 pm. 4:30-5:30 pm, music. Daily ex Sun, 2:30-3:30 pm, studio program. Fri, 12:45-1:30 pm, talks. Sat, 1-2 pm, 3:30-5:30 pm, music. Mon, Tues, Wed, Thurs, 5:30 pm, children's hour; 7-7:30, dinner music; 8-11, concert, lectures. Sat, 8-12 midnight, music. Sun, 11-12:15 pm, church services, 8:30-10, music. Pacific.

City Radio Club. Announcer, H. B. Reas. Slogan,

"The Home of the Hood River Apple." Fri, 6:30 pm, music. Wed, 9 pm, special. Pacific. KQV. Pittsburgh, Pa. 270 meters. 500 watts. Doubleday-Hill Elec. Co. Dally ex Sun, 11-11:30 am; 1-1:30 pm. Mon, Tues, Wed, Thurs, Fri, 3:15-3:45 pm, 4:30-5, music, twilight tales. Mon, Wed, Fri. 9-10, concert. Eastern.

KOW San Jose Calif. 360 meters. 50 watts. Chas D. Kow San Jose Calif. 360 meters. 50 watts. Chas D. Wed, Thurs, Fri, 3:15-3:45 worth Star-Telegram. Announcer, "The Hired Hand" Club, "Radio Truth League." Dally ex Sun, 10, 11, 12 m, 1 pm, 2, market reports, weather; 6-6:15, "Port of 9-10, concert. Eastern.

KQW, San Jose, Calif. 360 meters. 50 watts. Chas. D.
Herrold. Daily ex Sun, 1-1:30 pm. Wed, 8-9 pm,
concert. Pacific.

Herrold. Daily ex Sun, 1-1:30 pm. Wed, 8-9 pm, concert. Pacific.

KRE, Berkeley, Callf. 275 meters. 50 watts. Daily Gazette. Announcer, J. E. Wiggin. Mon, Wed, 8-10 pm, concert. Pacific.

KSD, St. Louis, Mo. 546 meters. 500 watts. St. Louis Post Dispatch. Announcer, V. A. L. Jones. Daily ex Sun, 9:40 am, 10:40, 11:40, 12:40 pm, 1:40, 2:40, 4. Mon, 7 pm, 8:30. Wed, Fri, Sat, 8 pm. Tues, Thurs, silent nigbts. Sun, 9 pm. Central. KTW, Seattle, Wash. 360 meters. 750 watts. First Presbyterian Church. Announcer, J G. Priestly. Sun, 11-12:30 pm, 3-4:30, 7-9:30, church service. Pacific. KUO, San Francisco, Calif. 360 meters. 150 watts. San Franclsco Examiner. Slogan, "The Voice of the West." Daily ex Sat, Sun, 9:05-9:20 am, weather, news; 11-11:30, markets; 3, financial bulletln; 6-6:15, financial report; 6:40, weather. Sat, 9:05 am, weather; 6-6:15 pm, financial report; 6:40, weather. Sat, 9:05 am, weather; 6-6:15 pm, financial report; 6:40, weather. Sat, 9:05 am, weather; 6-6:15 pm, financial report; 6:40, weather. Sat, 9:05 am, Pacific. KUY, El Monte, Calif. 256 meters. 50 watts. Coast Radio Co. Wed, 4-4:30 pm. Sat, 3-4 pm. Pacific. KWG, Stockton, Calif. 360 meters. 50 watts. Portable Wireless Telephone Co. Announcer, E. R. Garrow. Daily ex Sun, 4-5 pm, news, concert, markets. Tues and Fri, 8-9 pm, concert. Sun, 2-3 pm, concert. Pacific.

and Fr Pacific.

and Fri, 8-9 pm, concert. Sun, 2-3 pm, concert. Pacific.

KYQ, Honolulu, H. T. 270 meters. 100 watts. Elec. Shop, Levres & Joaquin Co., Ltd.

KYW, Chicago, 111. 536 meters. 1000 watts. Westinghouse Elc. & Mfg. Co. Announcer, Edward Borroff. Daily ex Sun, Sat, aft, 9:30 am, 10. 10:30, 11, markets; 10:55, time; 11:05, weather; 11:30, news; 11:35, table talk; 12 m, 12:30 pm, 1, 1:20, 2:15, 2:30, markets; 3, 3:30, 4, news; 4:15, markets; 4:30, 5, news; 6:30, markets. Daily ex Sun, Mon, 6:35-7 pm, bedtime story; 7-7:30 pm, dlnner concert; 8, concert, 9, special. Tues, Thurs, 2:30-4 pm, musical frolic. Wcd, Fri, 3:30. Tues, Thurs, 10-11:30 pm, "at home" program. Central church; 2:30 pm, chapel; 7, Chicago Sunday Evening club. World Crier every half hour. Central. KZM, Oakland, Calif. 360 meters. 100 watts. Western Radio Institute (Hotel Oakland). Announcer, Roswell S. Smith. Daily ex Sun, 6:30-7 pm, entertainment. Pacific.

NAA, Radlo, Va. 435 meters. United States Navy Dept.

Pacific.

NAA, Radlo, Va. 435 meters. United States Navy Dept.
Daily ex Sun, 9:45-10:40 am, 12:25-12:40 pm, 1:452:20, markets, weather; 2:45-3 (Tues only), Dept. 1nterior; 3:25-4:40, 5:05-5:20, markets, weather 10:0510:20, weather. Wed, 7:25-7:40 pm, Civ. Ser. Dally
ex Sat. Sun, 7:45-8 pm, dept. programs. Mon, 8:258:40 pm, Dept. of Interior. Eastern.

OA, Ottawa, Ont., Can. Dept. of Marine & Fisheries.
Discontinued temporarily.
PWX, Havana, Cuba. 400 meters. 500 watts. International Tel. & Teleg. Corp. Announcer, R. P. Falcon.
Wed, Sat, 8:30-11 pm, music. Eastern.

WAAB, New Orleans, La. 268 meters. 100 watts.
Valdemar Jensen.

Wed, Sat, 8:30-11 pm, music. Eastern.

WAAB, New Orleans, La. 268 meters. 100 watts. Valdemar Jensen.

WAAC, New Orleans, La. 360 meters. 400 watts. Tulane Univ. Announcer, D. Elliott. Fri, 7:15-7:30 pm, reports; 3-9:30, educational and entertainment program. Central.

WAAO, Cincinnati, O. 360 meters. 25 watts. Ohio Mechanics Inst. No regular schedule.

WAAF, Chicago, Ill. 286 meters. 200 watts. Chicago Daily Drovers Journal. Announcer, Carl Uhrich. Daily ex Sun, 8:40 pm, 10:30, 10:45, 12:30 pm. Dally ex Sun, Sat, 12:45, 3, 4:30, live stock and weather reports. Central.

WAAM, Newark, N. J. 263 meters. 250 watts. I. R. Nelson Co. Announcer, R. H. Horning. Slogan, "Electrical Repairing and Manufacturing." Daily ex Sun, 11-12 m, music, talks, markets. Mon, Tues, Wed, Fri, 8-11 pm. Eastern.

WAAN, Columbia, Mo. 254 meters. 80 watts. Univ. of Mo. Announcer, Otto S. McDaniel.

WAAW, Omaha, Neb. 286 meters. 500 watts. Omaha Grain Exchange. Announcer, H. B. Hosford Slogan, "Where Agriculture Accumulates Wealth." Daily ex Sun, 8:45 am, 9:45, 10:45, 11:45, 12:15-1 pm, 8, market reports. Mon, Thurs, 7:30-9 pm, talks. Central.

WABA, Lake Forest, 111. 266 meters. 100 watts. Lake

Central.

WABA, Lake Forest, 111. 266 meters. 100 watts. Lake
Forest University. Announcer, T. T. Haviland. Wed,
8-9 pm, music, talks. Central.

WABB, Harrisburg, Pa. 266 meters. 10 watts. Harrisburg Sporting Goods Co. Announcer, John L. Strock.
Tues, Fri, 8 pm, sports, music. Sun, 9 pm, church
services. Eastern.

WABO, Dayton, O. 283 meters. 5 watts. Parker High

School. Frl, 7-8 pm. Central.

WABE, Washington, D. C. 283 meters. 100 watts.

Y. M. C. A. Temporarily discontinued.

WABH, Sandusky, O. 240 meters. 20 watts. Lake

WABH, Sandusky, O. 240 meters. 20 watts. Lake Shore Tire Co.
WABI, Bangor, Me. 240 meters. 100 watts. Bangor Ry. & Elec. Co. Announcer, P. L. Sprague. Slogan, "The Pine Tree Wave." No regular schedule.
WABL, Storrs, Conn. 283 meters. 200 watts. Connecticut Agri. College. Announcer, Danial E. Noble. Mon, Wed, Fri, 7-9 pm. Eastern.
WABM, Saginaw, Mich. 254 meters, 100 watts. F. E. Doherty Automotive & Radio Equip. Co. Announcer, W. A. Borke. Daily ex Sun. 10:15 am. news. markets.

W. A. Rorke. Daily ex Sun, 10:15 am, news, markets, weather, stocks; 6, news, stocks, sports, music. Eastern. WABN, La Crosse, Wis. 244 meters. 300 watts. Ott Radio Inc. Announcer, W. C. Grover. Slogan, "The City Beautiful on the Old Mississippi." Club, Thirsty

City Beautiful on the Old Mississippi." Club, Thirsty Knlghts. Daily ex Sun, 10:15 am, news, markets; 11:30, talk, weather; 2:30 pm, weather, woman's hour; 6, markets, weather. Mon, 8-10 pm, dance music. Wed, 9:15-11:30 pm, dance program. Thurs, Fri, 8-9:30 pm, entertainment. Sat, 10-12 midnight, dance program. Tues, silent. Central.

WABO, Rochester, N. Y. 283 meters. 10 watts. Lake Avenue Baptist Church.

WABO, Haverford, Pa. 261 meters. 50 watts. Haverford College Radio Club. Announcer, Dr. James McF. Carpenter. Tues, 3-9 pm, educational program. Thurs, 9-11 pm, music. Sat, 4-5 pm, sports. Eastern.

WABR, Toledo, O. 270 meters. 50 watts. Scott High School. Daily ex Sat, Sun, 9:20 am, garden talk. Fri, 7:30-8:30 pm, dance music. Eastern.

WABU, Camden, N. J. 226 meters. 50 watts. Victor Talking Machine Co.

Talking Machine Co.
WABW, Wooster, O. 234 meters, 100 watts. The College of Wooster, Dept. of Physics. Announcer, Victor

WABX, Mt. Clemens, Mich. 270 meters. 150 watts. Henry B. Joy. MABY, Philadelphia, Pa. 242 meters. 50 watts. John Magaldi, Jr. Slogan, 'Quaker City Sleep Dodgers' Club. "The American Broadcasting Club." Sun, 9 pm, music; 10:30, "Sleep Dodgers' Session." Eastern.

WABZ, New Orleans, La. 263 meters. 100 watts. The Coliseum Place Baptist church. Announcer, V. W. Bradbury. Slogan, 'The Station with a Message." Bradbury. Slogan, "The Station with a Message." Wed, 9-10 pm, talks, music; Sun, 11 am, 12:15 pm, Central. WAHG, Richmond Hill, N. Y. 316 meters. 500 watts. A. H. Grebe & Co.

WAR, Sisht, Wis. 406 meters, 500 watts. Kopp Radio Co. Indefinite schedule.

WBAA, W. Lafayette, Ind. 283 meters. 250 watts. Purdue University. Announcer, J. W. Stafford. Daily ex Sun, 9:50 am, stocks, markets. Mon, Fri, 7:15 pm, special programs. Central.

WBAK, Harrisburg, Pa. 400 meters. 500 watts. Pennsylvania State Police. Announcer, Frank P. Gaucher. Daily ex Sun, 10 am, 1:30 pm, 5:45, police reports, fire protection, markets; 12 midnight, police reports, Mon. Tues, Wed, 7:30 pm, special. Eastern.

WBAN, Paterson, N. J. 244 meters. 100 watts. Wireless Phone Corp. Slogan, "The Silk City of America." Daily ex Sun, 9-11:30 am, 12:30-5:30 pm. Sat morn only. Sun, 10-12 am, 2-5 pm, 7:30-10:30. Eastern, daylight saving.

Millikin Univ. Offiversity according to the Millikin Univ. Offiversity according to the Mandy Schedule.

WBAP, Fort Worth, Tex. 476 meters. 750 watts. Fort Worth Star-Telegram. Announcer, "The Hired Hand" Club, "Radio Truth League." Dally ex Sun, 10, 11, 12 m, 1 pm, 2, market reports, weather; 6-6:15, "Port of Missing Men." 6:30, sports. Mon., Tues, Wed, Thurs. Fri, 7:30-8:30 pm, 9:30-10:45, concert. Sat, 7 pm, Bible lesson. Sun, 11 am, church; 4 pm, concert. Central

Mrssing Men. 5.30, Sports. Mon., Tues, Wed, Thurs. Fri, 7:30-8:30 pm, 9:30-10:45, concert. Sat, 7 pm, Bible lesson. Sun, 11 am, church; 4 pm, concert. Central.

WBAV, Columbus, O. 423 meters. 500 watts. The Erner and Hopkins Co. Announcer, H. E. Day. Slogan, "We Broadcast a Variety." Daily ex Sun, 12-1 pm. Tues, Fri, 8-10 pm. Eastern.

WBAX, Wilkes-Barre, Pa. 254 meters. 20 watts. John H. Stenger, Jr. Wed, 8 pm-12 midnight. Eastern.

WBAY, New York, N. Y. 492 meters. 500 watts. A. T. & T. Co. Experimental purposes only.

WBBA, Newark, Ohio. 240 meters. 20 watts. Plymouth Congregational church.

WBBD, Reading, Pa. 234 meters. 50 watts. Barbey Battery Service. Wed, 10-11:30 pm. Sat, 10-11:30 pm. Eastern.

WBBF, Atlanta, Ga. 270 meters 500 watts. Georgia School of Technology. Announcer, Thomas W. Fitzgerald. Slogan, "The Southern Technical Institution with a National Reputation."

WBBG, Mattapoisett, Mass. 248 meters. 500 watts. Irving Vermilya. Announcer, Albert N. Labouef. Mon, Wed, Fri, 8-10 pm, music. Sun, 10:45-12 m, church service. Eastern.

WBBJ, West Palm Beach, Fla. 258 meters. 50 watts. Neel Elec. Co. Announcer, R. C. Bender. Slogan, "Where Summer Spends the Winter." Tues, Thurs, Fri, 8-10 pm, band. Sun, 11-12 m, 7:30-9 pm, church services. Eastern.

WBBP, Petoskey, Mich. 246 meters. 5 watts. Grace Covenant Presbyterian church. Announcer, Herbert C. Taylor. Tues, 8 pm. Sun, 11 am, 8 pm. Eastern. WBBP, Petoskey, Mich. 246 meters. 10 watts. Petoskey High School.

High School.

WBBR, Staten Island, N. Y. City, N. Y. 273 meters. 500 watts. International Bible Students' Association. Mon, Wed, Sat, 8-9 pm, lectures, muslc. Sun, Thurs, 9:10-10:30 pm. Eastern. WBBT, Philadelphia, Pa. 234 meters. 5 watts. Lloyd

Brothers.

Brothers.

Brothers.

WBBU, Monmouth, Ill. 224 meters. 10 watts. Jenks
Motor Sales Co.

WBBV, Johnstown, Pa. 248 meters. 5 watts. Johnstown,

WBBV, Johnstown, Pa. 248 meters. 5 watts. Johnstown, Radio Co.
WBBW, Norfolk, Va. 222 meters. 50 watts. Ruffner Junior High School. Announcer, Lee W. Kllnefelter. Wed, 4 pm, muslc. Fri, 10 pm. Eastern.
WBBY, Charleston, S. C. 268 meters. 20 watts. Washington Light Infantry. Announcer, Hugh Easterly. Wed, 8-10:30 pm, talks, music. Sun, 6:30-9:30 pm, orchestra. Eastern.
WBBZ, Indianapolis, Ind. 227 meters. 50 watts. Noble B. Watson. Mon, 8-9:30 pm. Central.
WBL, Anthony, Kansas. 254 meters. 100 watts. T. and H. Radio Co.
WBR, Butler, Pa. 1599 meters. 250 watts. Pa. State Police. Announcer, H. Nifong. Daily ex Sun, 9:30-10 am, 10:30, 1-1:30, 2, 5:15-5:45, 6:15-11:30, 12. Eastern.

MBS, Newark, N. J. 360 meters. 100 watts. D. W. May, Inc. Announcer, M. C. Delaney. Daily, 11-12 m, music; 1-2:15 pm, reports, music. Tues, Thurs, Fri, 7:30-9:30 pm, program. Sun, 12:30-3 pm.

wBT, Charlotte, N. C. 360 meters. 250 watts. Southern Radio Corp. Slogan, "Queen City of the South." Daily ex Sun, 11 am, weather; 12:30-1:30, 7, music; 7:15, markets. Tues, Thurs, 9 pm, music. Mon, Wed, Sat, 10:45 pm, music. Sun, 11 am, church services. Eastern. Eastern.

Eastern.

WBZ, Springfield, Mass. 337 meters 1000 watts. Westinghouse Elec. & Mfg. Co. Announcer, A. E. Bach. Daily ex Sun, 6-7 pm, dinner concert; 7-7:40, market reports, talks, bedtlme stories; 9:55-710:05, time, weather; 10:05-11, music. Daily ex Sun, Fri, 7:40-9:35 pm, muslc. Mon, Wed, 11:30-12:30 am, dance music. Fri, 10:30-12 midnight, music. Sun, 10:45 am, services; 7-10 pm, concert. Eastern.

WCAO, Canton, N. Y. 280 meters. 250 watts. St. Lawrence Univ. Announcer, Ward C. Priest. Slogan, "The Voice of the North Country." Daily, 11 am, weather, reports, time. Wed, 8:30 pm, program. Eastern.

weather, reports, this.
Eastern.

WCAE, Pittsburgh, Pa. 462 meters. 500 watts. Kaufman & Baer Co.. Pittsburgh Press. Announcer,
Joseph Sartory. Daily ex Sun, 12:30 pm, news; 3:30,
news, music; 4:30, reports; 6:30, music; 7:30, Uncle
Kaybee; 8:30, music. Mon, Tues, Thurs, 11-12 midnight concert. Sun, 3 pm, sermon; 6:30, music.

Kaybee; 8:30, music. Mon, Tues, Thurs, 11-12 midnight concert. Sun, 3 pm, sermon; 6:30, music. Eastern.

WCAG, New Orleans, La. 268 meters. 100 watts. Clyde R. Randall. Daily, 7:45-8 pm, children's concerts. Mon, Thurs, 8-9 pm, concert. Central.

WCAH, Columbus, O. 286 meters. 200 watts. Entrekin Elec. Co. Announcer, C. A. Entrekin. Slogan, "The Heart of Ohio." Daily ex Sun, 11:30-12:30 am, music, news. Tues, 8-10:30 pm. Sun, 10-12:30 pm, 7:30-9, church services; 4, vespers. Eastern.

WCAJ, Univ. Place, Ncbr. 280 meters. 500 watts. Nebr. Wesleyan Univ. Announcer, J. C. Jensen. Daily 10:30 am, weather. Tues, 7 pm, children's hour. Fri, 9 pm, music, lectures. Central.

WCAK, Houston, Tex, 263 meters. 10 watts. Alfred P. Daniel. Announcer, Alfred P. Daniel. Slogan, "Where Eighteen Railroads Meet the Sea."

WCAL, Northfield, Minn. 360 meters. 500 watts. Dept. of Physics, St. Olaf College. Slogan, "The College on the Hill." Dally ex Sun, Mon, 9:45 am, chapel. Thurs, 9 pm, music. Fri, 8:30 pm, talk. Sat, 12 midnight, music. Central.

WCAO, Baltimore, Md. 360 meters. 50 watts. Sanders & Stayman Co. Announcer, R. E. Brunner. Daily ex Sun, 12-1 pm. Mon, 8-9 pm. Eastern.

WCAP, Washington, D. C. 469 meters. 500 watts. Chesapeake & Potomac Tel. Co. Announcer, Paul Gascoigne. Mon, 7:30-10 pm. Wed. 7:45-10 pm. Fri, 7:30-12 midnight. Sun, 11 am, 4 pm, 7:20-10 pm, jointly with WEAF. Eastern.

WCAP, San Antonio, Tex. 360 meters. 200 watts. Southern Radio Corp. of Texas. Announcer, L. Tatom. Club, "Royal Order of Prevaricators." Mon, Thurs, Sat, 8:30-9:30 pm, concert. Wed, Sat, 11 pm. Central.

tral.

WCAT, Rapid City, S. D. 240 meters. 100 watts. S. D. State School of Mines. Announcer, J. O. Kammerman. Daily ex Sun, 9:30 am, 12:30 pm, weather, reports. Thurs, 7:30 pm, concert. Mountain.

WCAU, Philadelphia, Pa. 286 meters. 250 watts. Durham & Co. Dally, 5:45 pm, markets. Sun, 10:55 am, service; 3 pm, talk; 3:15, talk; 4:10, Blble readings; 6-8, concert. Eastern daylight saving.

WCAV. Little Rock Ark. 360 meters 20 watts. L. C.

6-8, concert. Eastern daylight saving.

WCAV, Little Rock, Ark. 360 meters 20 watts. J. C.

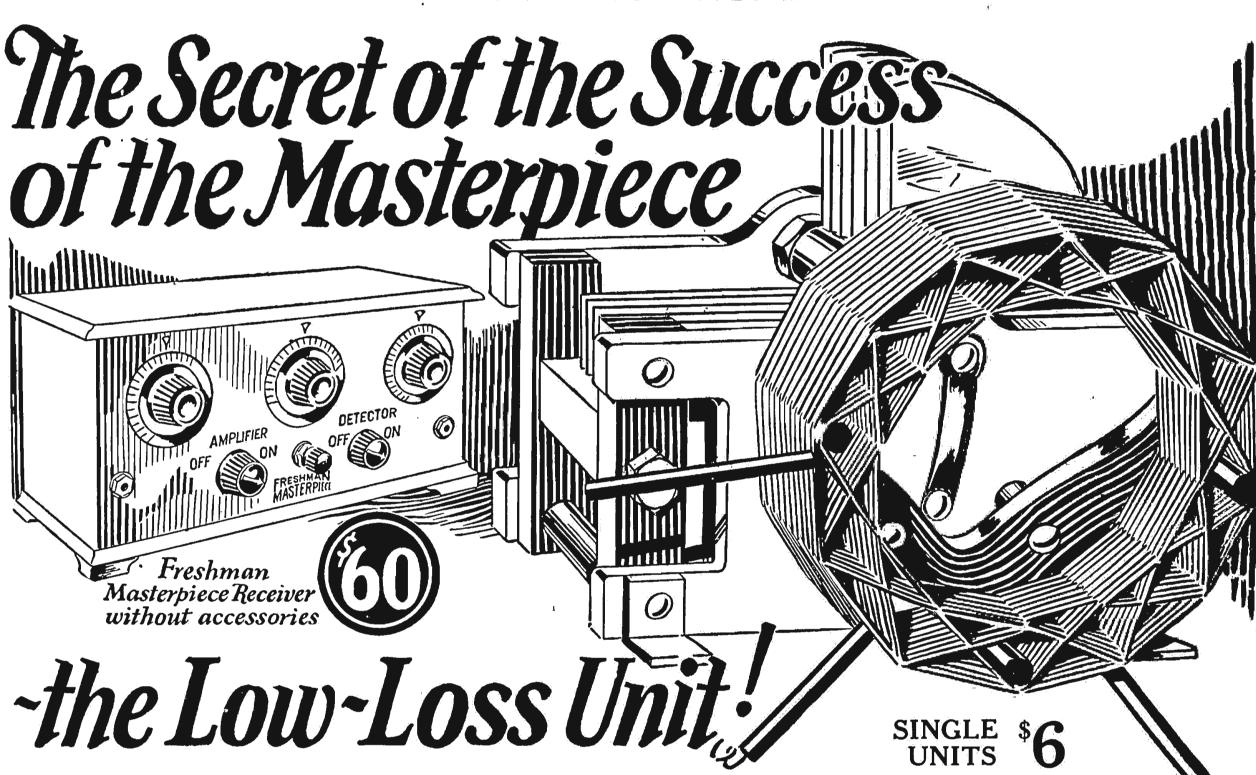
Dice Elec. Co. Wed, Fri, 8:30 pm, lecture, music. WCAV, Little Rock, Ark. 360 meters 20 watts. J. C. Dice Elec. Co. Wcd, Fri, 8:30 pm, lecture, music. Sun; 9-10:30 pm, special musical concert. Central. WCAY, Milwaukee, Wis. 266 meters. 250 watts. Milwaukee Civic Broadcasting Station. Announcer, D. W. Gellerup. Mon, Fri, 8-9 pm. Tues, 9:10-10:30 pm. Wed, 6:30-7:30 pm. Thurs, 10:30 pm. Central. WCBA, Allentown, Pa. 280 meters. 10 watts. Chas. W. Heimbach. Wed, 8:15-11 pm, Fri, 6:45-7:15 pm. Sun, 8-11 pm. Eastern.

WCBC, Ann Arbor, Mich. 280 meters. 200 watts. U. of Mich.

WCBO, Zion' III. 345 meters. 500 watts. Wilbur Gleun Voliva. Announcer, J. H. DePew. Slogan, 'Where God Rules, Man Prospers.'' Mon, Thurs. 8-10:15 pm. concert. Thurs, 2:30-3:45 pm, service. Sun, 9-10:45 am, Bible School; 2:30-6, church services. Central.

WCBE, New Orleans, La. 263 meters. 5 watts. Unait Brothers Radlo Co. Announcer, J. H. Uhalt. Slogan, "Second Port U. S. A." Mon, Thurs, 9-10 pm, concert. Sun, 12:30-1:30 pm, dinner concert. Central. (The third part of the directory of station achedules will appear next week.)





It's Easy to Build

A Five Tube Radio Frequency Receiver
When You Use the FRESHMAN
MASTERPIECE KIT

No Neutralizing or Balancing Condensers Required

When you build with the Masterpiece Kit which produces a tuned Radio Frequency Receiver that will bring in even the most distant stations with the volume and clarity of locals. So selective that stations can be brought in day after day at the same dial settings. A set that will be the equal, if not the superior, of any 5 tube receiver on the market, and what's more, it's the easiest set in the world to operate.

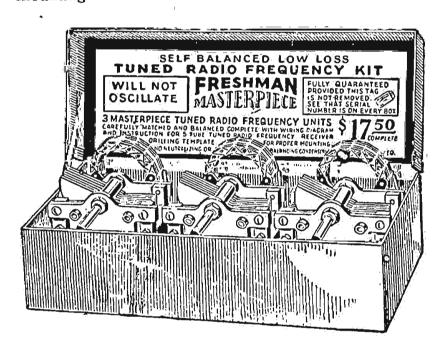
Each and every Freshman Masterpiece Coil bears a serial number and trade mark—our guarantee of electrical and mechanical perfection. Every genuine Freshman Coil is made of specially insulated wire to prevent short-circuiting, so often caused by inferior coils. For your protection demand only the genuine.

For Reflex and Other Circuits

Masterpiece Tuned Radio Frequency Kit Complete

with 3 MASTERPIECE UNITS carefully matched and balanced. Complete with wiring diagrams and instructions for building any 5 tube Tuned Radio Frequency Receiver and drilling template for proper mounting.

\$17⁵⁰



At your dealer's, otherwise send purchase price and you will be supplied without further charge.

has. Freshman Co.Inc.

Radio & Condenser Products

106 Seventh Ave. New York, U.S.A.