©018625558

How to Give a Radio Party; Making "WLS Unlimited"; WMC, Down in Dixie; Helpful Articles for New Beginners; How to Make Cabinets and Consoles

# tall

Vol. X

Copyright 1924 By Radio Digest Publishing Co.

SATURDAY, SEPTEMBER 20, 1924

No. 11

# WHO WINS GOLD CUI

# CANDIDATES SPEAK TO THIRTY MILLION

DAVIS, LA FOLLETTE AND WHEELER USE RADIO

Open Campaigns by Using Most Modern Methods—Feat Considered Great Political Experiment

WASHINGTON .- "There's music in the air" was changed to "there's politics in the air" on Labor Day when a number of the principal broadcasting stations of the country were occupied in sending political speeches from early afternoon until long after the supper hour.

The barrage began at 1:30 Eastern time, with the Labor Day speech of John W. Davis, Democratic nominee, at Wheeling,

At 3:30 "Fighting Bob" La Follette, Progressive candidate for President, talked at the studio of the telephone company in Washington, Station WCAP. At ( o'clock in the evening, Burton K. Wheeler, Progressive candidate for vice

million persons listened in to at least a part of the speeches. It was undoubtedly the greatest political experiment of this generation.

The results of Radio campaigning will be watched closely and are awaited with



# TOLL STUDIO OPENS IN CLEVELAND SOON

WARREN R. COX, FORMERLY OF WHK, BEHIND PLAN

Radio Apparatus Company to Open WJAX Remote Control Station October 1-Promise Good Programs

CLEVELAND.-October 1 will see the establishment of a third class B broadcasting station here. It will be the sta-

tion of the Radio Apparatus company, wholesale distributers in northern Ohio for Radio Corporation of America and Western Electric products. Henry Hallock is president of the company and Warren R. Cox, for-merly of Station WHK, will be vicepresident and general manager.

The studio of the Radio Apparatus company station will be located in Carnegie Hall at 1120 Huron Road, for-merly the Creswell Garage. Call letters have not yet been



alloted by the government but it is known that the station will operate on a wave length of 390 meters and will have 500 watts in the antenna.

To Broadcast for Toll The policy of the Radio Apparatus company's station will be similar to that of (Continued on page 2)

# SAN FRANCISCO'S SHOW HAS CROWD

Radio Exhibition on Coast Just Closed Pulled Attendance of 55,000 People

SAN FRANCISCO.—With an attendance of approximately 55,000 persons, the Pacific Radio exposition closed its first annual Radio show at the Civic auditorium here recently.

Had it not been for other bookings in he great auditorium building for the following week end, the show would have been continued at least three more days.

# RADIOCAST OF FIGHT TAKES TRAINING, TOO

TEW YORK .- Few people realize the careful preparation necessary preceding the successful Radio description of a prize fight. J. Andrew White, Radio Corporation station WJZ's famous fight announcer, prior to the Wills-Firpo go last Saturday, visited both camps and took careful note of the two fighters and their methods of boxing.

# WDAF Piano Class Studies Black Keys

Group Taught by Maudellen Littlefield Makes Progress

KANSAS CITY.-In addition to the study of the grand staff, new sight reading and hand training, The Kansas City Star's Radio piano class is taking up the naming of the black keys and the study of dotted notes now.

Miss Maudellen Littlefield is preparing and presenting the lessons for

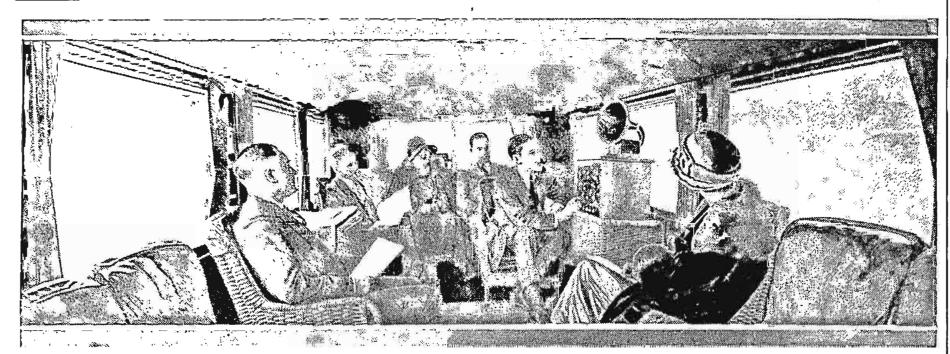
WDAF. One composer is studied by the Radio piano class each week. Lessons are each Tuesday and Thursday at 6 o'clock, Central time,

surpass her pop-

ularity with lis-

teners in.

# RADIO-EQUIPPED BUSSES ATTRACT PASSENGERS



Radio while you travel is the latest novelty in the Southwest. The Inter-State Stage Line has equipped its new fleet of luxurious busses with super-heterodyne Radio receiving sets, and has a Radio operator to entertain passengers in each of the busses. These busses run on regular schedule from Kansas City to neighboring towns, and the officials believe that Radio is helping to increase the popularity of their lines.

# PATRICK WELCOMES WORLD ENCIRCLERS

GENERAL GREETS FLYERS FROM STATION WCAP

Special Weather Warnings from Naval Radio Save Army Aviators from Forced Landings

WASHINGTON, D. C .- One of the unusual uses of Radio came into play here recently when General Mason M. Patrick, chief of the Air Service, U. S. A., welcomed back by Radio from Station WCAP, this city, the around the world air flyers.

The Radio speech of welcome by General Patrick was made upon the occasion of the American flyers reaching this continent on the evening of the day they arrived in Labrador. At the time the speech of welcome was made thousands of listeners in were on the air hearing the same thing that the Army flyers were listening to on their sets in Labrador. In his speech, General Patrick extolled the work of the flyers.

Weather Forecasts Lid World Fliers

A special warning sent by the weather bureau via Naval Radio to the cruiser Milwaukee off Greenland and relayed to the world flyers, may have saved them from forced landings and the dangers of the recent storm which swept up the northeastern coast of the United States toward their objective Indian Harbor, Labrador. Following the receipt of the warning, the flight was delayed until the storm had passed. Further reports will aid in guiding these intrepid aviators to Washington and their home station in

Besides the special forecasts covering the route of the flyers, cryptic messages are Radioed twice daily to the temporary army air service base at Indian Harbor for rebroadcast to the pilots. Recently Washington sent the following "Top notch run up," which, according to the weather bureau, gave the barometer pressure, temperature, indicated a west wind, clear weather and the mean temperature.

Pershing Farewell Dinner Broadcast Through WEAF

NEW YORK .- The dinner tendered to General John J. Pershing, Commander-in-Chief of the Armies, by the Government club, held at the Hotel Astor last Tuesday evening was broadcast through Station WEAF here. The dinner was in the nature of a farewell reception to mark General Pershing's official retirement from active service and was the General's last appearance in New York as General of the Armies of the United States. The elaborate program included music rendered alternately by the band from the United States Military Academy and the City Bank club orchestra.

3,700-Watt Station Aid to Joseph Smith's CKAC Band

MONTREAL.-Joseph C. Smith and his Mount Royal Dance orchestra is runnlng a close race with Vincent Lopez and other famous Radio orchestras. During the past three weeks, Joe and his orchestra have received a combined total of 4,266 letters from coast to coast.

This is attributed to the fact that CKAC, La Presse, has boosted its power gradually, operating at the present time on 3,700 watts. The total amount of BESURE OF YOUR WEEKLY COPY 7,500 watts will be in the air by the end of September.

# WHAZ Gives Second Anniversary Party

Troy Plant Features Domino Novelty Orchestra Again

TROY, N. Y.—Radiophone WHAZ at the Rensselaer Polytechnic Institute here which will celebrate the one hundredth celebrated its second anniversary recently anniversary of its founding October 2-4.

with a program by the Domino Novelty orchestra, the same group which presented the first program from the station September 11, 1922, and the first anniversary program September 10, 1923. Dr. Palmer C. Ricketts, President of the Institute, de-livered a brief address.

This is the Centennial Year of Rensselaer Polytechnic Institute, first school of science and engineering to be estabiished in any English-speaking country,

# CONTENTS

Radio Digest, Iliustrated. Volumo X, Number 11, published Chicago, Illinois, September 20, 1924. Published weekly by Radio Digest Publishing Company, 510 North Dearborn Street, Chicago, Illinois. Subscription rates, yearly, Five Doilars; 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"	13,
In the Heart of the Cotton Belt-Memphis: Pictures and Story of Station WMC	4
Aboard the Unlimited with Solemn Old Judge; Pictures and Story of Station WLS	5
An Evening at Home with the Listener In, a chart to show when to listen in for your favorite station	14
Advance Programs for the Week at the Larger Stations	18
Operating and Trouble Shooting, for the Owner of a Federal Four Tube Type 102 Receiver	
Editorial; Indi-Gest; Condensed by Dielectric	20
Helpful Hints to Get Most from Radio, Chapter I—What to Expect of Your Set, by Thomas W. Benson	
Thirty-Minute A-B-C Lessons for Radio Beginners, Chapter XXV—The Home Radio; New Things to Try, by P. E. Edelman	
Amplidyne Type Radio Frequency Amplifier, Part II—The Amplidyne Circuit, by Thomas W. Benson	25
Console and Cabinet Making for Receiving Sets, Chapter I—Construction of In- expensive Cabinets, by Charles F. Smisor	27
Combination That Saves A. F. Stages, Two Circuits in One Set, Different Circuits Use Two Stage Amplifier	
Questions and Answers	30
Radiophone Broadcasting Stations, Corrected Every Week-Part II	31

# Looking Ahead

Full Page Picture of the World's Greatest Announcer-winner of the Radio Diges solid, 14-carat gold cup—will be included in the next issue of Radio Digest. You'll want to save this portrait. Then too, there will be a smaller photograph of the winner of second place.

KGO. Wonderful Pacific Coast Station, Heard Far East, will be pictured in detail next week on the two pages to be devoted entirely to this purpose. Not alone will the excellent equipment be shown pictorially, but there will be a descriptive story of the sun-kissed state's Radiocaster.

World's Series Time Is Near and the "air reporters" soon will be busy again. Did you ever wonder what an air reporter thinks about as he describes football and baseball games, prize fights and races? Read next issue.

Putting Dramas in Sound Form-another article coming next issue. Henry D. Saddler, playwright and producer, director of the WLS Theater, tells interesting things about his work.

A Hundred Meter Receiver will be described in detail by Charles T. Kirk next week. Another set worth trying is the simple three tube set H. J. Marx will tell about. Panel layouts for the Amplidyne will also be provided next issue.

Helpful Hints by Thomas Benson next week takes up the aerial system. The aerial, though not usually visible, is quite important. Learn more about it.

### Newsstands Don't Always Have One Left

WHEN YOU WANT

YOU WANT IT!

BY SUBSCRIBING NOW

# SEND IN THE BLANK TODAY

510 N	Dearbo				
(Six.	Foreign)			for Five De Subscription	
Name	/II =4227	******************	******	****************	••••
Addre	55			······································	••••
Citv			State .		

# TOLL STUDIO OPENS IN CLEVELAND SOON

WARREN R. COX, FORMERLY OF WHK, BEHIND PLAN

Radio Apparatus Company to Open WJAX Remote Control Station October 1-Promise Good Programs

(Continued from page 1)

Station WEAF in New York and a number of other stations in this country, in that it will admit paid broadcasting. In other words, it will be what is known as a "commercial" or "toll" station, where broadcasting may be purchased if desired.

This, however, will not in the least in-

terfere with the degree of entertainment afforded by the programs from the new station, and in fact, this station plans to go farther than any station has yet gone in Cleveland to be of general service to the Radio public.

"For some time" says Mr. Warren R. Cox, vice-president and general manager of the Radio Apparatus company, "we have felt in Cleveland a demand for a type of broadcasting which has not as yet been done. This demand has taken two forms. First, a large number of organizations of a civic nature have desired announcements by Radio, and second, a number of firms such as department stores and various retailers and manufacturers have wanted to secure broadcasting programs for themselves. This new station will do its utmost to fill these two de-

mands. New Station's Program Format

"Our station, for instance, will give the city of Cleveland an opportunity to broadcast new traffic regulations, police and fire department bulletins, and the like. It will enable the chamber of commerce, The Automobile club, and similar organizations to release current bulletirs to listeners in. It will give the Museum of Art and the Cleveland Public Library still another means of letting the public know what is of interest in these particular institutions. Furthermore, it will provide an opportunity for all sorts of lodges, churches, clubs and organizations of every character to give Radio announcements of coming events which may be of interest to the

"In addition to items of this sort, the station itself will furnish many interesting Radio talks, among which will be included Babson's weekly release, which will be of particular interest to business men.

Will Tell of Current Amusements "A special feature which the public will, we hope, greet enthusiastically will be current announcements of what is at the theaters, the music halls and perhaps the picture shows, so that at supper time the family will know what amusement may be

had downtown and may make their choice. "Still another attraction," continued Mr. Cox, "will be current news items, particularly news of the sporting field, such as baseball scores, tennis results, and in the school season, football and basketball scores. In addition, the new station contemplates putting on excellent musical entertainers, orehestras, readers, and the like, giving programs which will compare favorably to those of any station in the country."

The new station will have noon-day programs and dinner hour programs every weekday and concerts on Friday evening. On Sunday church services will be broadcast both morning and evening and after the evening services there will be a Sunday evening concert.

Will Use WJAX Transmitter

The Radio Apparatus company will use the transmitter of the Union Trust company when not in use for WJAX programs, and programs given in the Radio Apparatus company studio will be relayed to the Union Trust transmitter by private telephone wires.

.The studio of the new station will be a double one, consisting of one large and one small broadcasting room, between which will be located the control panel, set within a glass partition. The operator, seated within this glass cage, can switch items on the program from the small studio to the large studio or back again in such a way that there will b. no intermissions in the broadcasting. The larger broadcasting room will accommodate orchestras and groups, while solo performers in the smaller studio can be made ready to go on the air the moment numbers in the large studio are completed.

The establishment of the new station will in no way alter the broadcasting or the hours of broadcasting of WJAX or

# Gayoso Orchestra Leader Killed in Auto Accident

MEMPHIS, TENN .- Prof. Gasper Pappalardo, leader of the Hotel Gayoso orchestra, heard regularly on Monday evenings from Station WMC, Commercial Appeal here, was killed recently in an automobile accident. Thousands of letters of sympathy have been received by the "Down in Dixie" station.

# GEORGE HAY WINNER OF GOLD CUP

# "SOLEMN OLD JUDGE" TAKES HIGHLY CONTESTED TROPHY

Will Be Presented with Prize September 27 at New York Show—Complete Standings to Be Announced Next Week

Over the finish line with the same speed and endurance he has shown every week throughout the sixteen weeks of the Radio Digest First Annual Gold Cup Award, George Dewey Hay, announcer for WLS, Sears-Roebuck Agricultural Foundation station in Chicago, won the coveted trophy, leading his nearest competitor by several score thousands of votes, and earning the title of world's most popular Radio announcer.

Newspaper reporter and feature writer previous to his Radio debut at WMC, Memphis, George Hay, "The Solemn Old Judge," will be awarded the solid, 14-carat gold cup on Saturday, September 27, at the Radio World's Fair, Madison Square Garden, New York, where the prize, insured for \$5,000, will be on exhibit at the Radio Digest booth.

Complete Standings Next Week Standings of the remaining 134 nominees, the next fifteen highest of whom will be presented with certificates of honorable mention, will be made public in the next issue of Radio Digest. Final tabulations are now being made by the Gold Cup Award Editor and a busy group of as-

The cup, made entirely of 14-carat gold, is in shape and size similar to the stand-ard broadcasting microphone, "mike" as it is popularly known. Standing on a pedestal with its gracefully spun handles entwining the disk, the golden "mike" is representative of the gateway to the waiting world and the best there is in Radio-

First to Announce Harding's Death

Mr. Hay was born in Attica, Indiana in 1895. His family moved to Chicago when he was ten years old and he finished his schooling in the public and high schools of Chicago. He served in the world war and after discharge took up newspaper work as a cub reporter with the Commercial Appeal, Memphis, Tenn. After "covering" all phases of newspaper work he originated his well-known column "Howdy Judge" which he conducted for two years.

It was then that the Commercial Appeal took up broadcasting and Mr. Hay became Radio editor and director-announcer of WMC. He was the first man to broadcast news of the late President Harding's death. He came to WLS in April, 1924

as chief announcer.

"The Solemn Old Judge" has announced world's series baseball games play-byplay, championship prize fights, big political events and many other original features. He is usually, but not always, accompanied by his whistle, first the "Hush-puckinny" and now the "WLS Unlimited."

# CHECKS TELL HIS WBZ ENTHUSIASM

Connecticut Radiophan Would Help Support Favorite Station, but Money Is Returned

SILVER LANE, CT.-With enthusiasm running as high as is conceivable and an appreciation for what Radio has done for the entertainment of the home, a resident of this small Connecticut town recently submitted a monetary contribution to the support of Westinghouse WBZ's concerts.

The letter in which the checks were enclosed was decidedly laconic, but between the lines could be read the justification for the enclosure. The evenings of pleasure which this fan was afforded in the comfort of the home by Radio programs could easily be evaluated in terms of dollars and cents.

Figuring that with whatever the amount of the contribution, he would be ahead of the game, a liberal allowance was made. Necdless to say that the spirit of the letter and the contributory sense of its writer were far more valuable to the station and the checks were

DUBLIN.—The Dail Radio broadcasting committee has recommended that a gov-

returned with thanks.

lished in the Irlsh Frce State.

# THIS SET CONNECTS UP VERSES OF SONG

ATLANTA, GA.—He was insteming to the Atlanta Journal, WSB, broadcasting, "Carry Me Back to Old Virginia." He decided to tune in another station. The last words he heard TLANTA, GA.—He was listening from Atlanta were "Carry Me Back." In a few minutes he tuned in Washington, D. C. He was amazed to hear a voice singing, "To Old Virginia." Both stations were broadcasting the same song, but Washington was behind WSB enough for the coincidence.

# WORLD'S BEST RADIO ANNOUNCER



George Dewey Hay, who by reason of his winning the Radio Digest Gold Cup Award is entitled to the distinction of being known as the world's most popular Radio announcer. Entries and ballots for the contest were received from Switzerland, England, France, Cuba, Mexico, Australia, New Zealand and Canada.

Atwell Photo

# SHERIFF EQUIPS CARS TO RUN DOWN CROOKS

Criminals

DETROIT.—The sheriff's department of Wayne county has just equipped all his cars with Radio receiving sets as an aid in detecting and running down criminals in a campaign inaugurated in connection with the Detroit police department to stamp out increasing crime.

Reports of stolen automobiles and escaped criminals are broadcast at frequent intervals during the day and night. "With our patrols scattered all over the county,' says Shcriff George Walters, "they are thus able to keep in touch with the latest reports at the Detroit police headquarters. I believe Radio is one of the greatest agencies in detecting and running down criminals that has ever been brought into use. We have proven it to be such even in the short time it has been used."

ernment broadcasting station be estab- to scientific, educational and manufacturing organizations.

# BELGIUM PASSES NEW DRASTIC RADIO LAWS Education from Broadcast

Sets Prove Aid in Catching Fleeing | Tax on Transmitters Based Upon Power Used

> BRUSSELS.—Belgium is now going through the transitory periods of readjustment in Radio legislation, in which of the thousands of homes into which you the Postal Ministry is wavering between imposing absurb taxes on transmission sets and not granting licenses for transmission at all. For such sets too, a peculiar formula for taxation has been portant than ours." worked out. It reads:

200 fr. + 100 fr. W over 100

This means that primarily there is a fixed tax of 200 francs on any authorized transmission set, plus 100 francs per 100 watts. As the hectowatt in Belgian electric meters is indivisible, it means that they must use kilowatts.

The recent Radio-on-train tests in England and Germany, which have had such

# ||WALES TUNES IN ON **GREETING FROM AIR**

PLANE ABOVE BERENGARIA GIVES PRINCE WELCOME

Rebroadcast Plane from WJZ and WGY -Repeat Stunt When World Flyers Arrive

NEW YORK .-- From the sky came the first news that the Prince of Wales had arrived in America aboard the Berengaria! As the prince sat in the salon of the ship, he, along with many American Radiophans in their homes ashore, heard a loud speaker shout out, "Greetings!" The voice came from an airplane circling overhead.

The welcome to the Prince of Wales was delivered by Major William Hensley, Jr., commandant at Mitchel Field, who flew out to meet the Berengaria as she passed Long Beach. The voice the Radio audience heard was that of Major Hensley. The plane was equipped with a transmitting set made for the United States Signal

A super-heterodyne receiver at Mitchel Field picked-up Major Hensley's signals which were then delivered by land wire to Station WJZ here. From WJZ the signals were carried by land wire to general Electric Station WGY.

Stunt Repeated for World Fliers

Practically the same set-up was planned to be used in connection with the welcome to the round-the-world fliers. Major Hensley planned to accompany the welcoming squadron of planes to Boston and return with the escort. It was expected that the signals of the plane would be picked up when the squadron was about 100 miles out. Major Hensley was to describe the approach to Mitchel Field, and by means of a microphone on the landing field, the listeners were to hear the roar of the motors as the planes taxied by.

The formal ceremonies of welcoming the fliers was also to be broadcast. This included a brief welcome by Governor Alfred E. Smith. A dance was planned for the evening in honor of the fliers and WGY and WJZ listeners were to hear the dance numbers and probably a few words of greeting from the pilots of the round-

the-world planes.

# SURVEY WSAI FOR HIGH POWER SET

Plans Call for Five Kilowatt Equipment on Air by December 1

CINCINNATI. - J. S. Ward, special Radio engineer of the Western Electric company, has completed the final survey upon which specifications for installing the new five-kilowatt transmitter at Station WSAI are being drawn.

The transmitter, according to Mr. Ward, is an improved model of the set in operation at WEAF, the American Telephone and Telegraph company station in New York, which is the original laboratory model, and said to have been heard in South Africa 30 minutes after it was opened up on five kilowatts.

Plans are being made for the completion of the WSAI installation by December 1, but it is probable that the new outfit will be in operation before that date.

# Station Equal to College

SCHENECTADY, N. Y .- The educational value of broadcasting is recognized by Frank E. Seavey of the department of English, Tufts College, who, in a recent letter to WGY here, wrote: "When I think are sending excellent music daily, homes in which, three years ago, no music above street songs was known, I feel that your work in education is vastly more im-

# Church Services on Once More from Radiocast WBZ

SPRINGFIELD.—After an absence of several months, the Sunday morning church services have been returned to the programs of Westinghouse WBZ here. Beginning last week, morning sermons, choir and organ music will be great successes in both countries, have broadcast every Sunday morning by the Poland has lifted the ban on Radio. resulted in the suggestion of placing loud Springfield station. During the hot Broadcasting licenses will soon be Issued speakers in the dining cars so that months and vacation period these popupassengers can enjoy concerts with their lar services were temporarily discontinued.

www.americanradiohistory.com

# In the Heart of the Cotton Belt-Memphis



# Aboard the Unlimited with Solemn Old Judge





IN THESE days when you have become familiar with the great achievements in the automobile and other industries, outstanding accomplishment in any new field is sure to prove of more than passing interest.

Although the radio industry is an infant in arms compared to all others, here is already an outstanding figure in its commercial development—Powel Crosley, Jr., President of The Crosley Radio Corporation.

His position in this new field of endeavor—radio—has been the result of a fixed policy to make the most efficient radio receivers at the lowest possible cost. This policy was actuated by a desire on the part of Mr. Crosley to make receiving sets so good that everyone would want one, and to make them so low in price that everyone could afford one. That he is succeeding is shown by the fact that during the past twelve months we believe The Crosley Radio Corporation has made and sold more sets than any other manufacturer in the world.

Mr. Crosley has now made it possible for everyone to own a radio receiver. You can start with the one tube Armstrong Regenerative Receiver at \$14.50, without accessories—\$22.25 with tube and headphones—the lowest priced regenerative set on the market, and equivalent in reception to many two tube receivers. Then as more volume is desired, you can add to it at a very low cost.

Or, you can purchase the three tube Crosley Trirdyn Regular which has come through the summer period of comparatively poor reception with colors flying—for only \$65. In special mahogany cabinet to house necessary accessories \$75.

The combination of one stage of tuned radio frequency, with regenerative detector and reflexed amplification, has proven beyond a doubt that the features of selectivity, volume and ease of operation can be obtained with three tubes better than heretofore has been possible with five tubes. We believe that no other set on the market combines these features so well incorporated in the Trirdyn.

In addition there is the Crosley 51, the 'two tube Armstrong Regenerative Receiver that became the biggest seller in the world in just 24 days, price \$18.50. This set will at all times bring in local stations on the loud speaker and distant stations under fair receiving conditions; distant stations can at all times be heard with ear phones. The three tube Armstrong Regenerative Receiver Crosley 52, brings in distant stations with loud speaker volume under practically all conditions, price \$30; and the Crosley 50 and 51 set in portable cabinets at \$18 and \$25.

These receivers, each in its own class, though assuring you as good or better reception than any other instrument of the same number of tubes, is by far the least expensive ever offered to the public.

# Before You Buy-Compare

# Your Choice Will Be a Crosley

FOR SALE BY GOOD DEALERS EVERYWHERE

Crosley Regenerative Receivers are licensed under Armstrong U. S. Patent No. 1,113,149.

Prices quoted do not include tubes, batteries or accessories

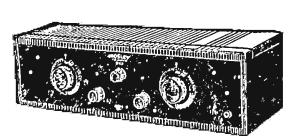
Write for Complete Catalog

# THE CROSLEY RADIO CORPORATION

POWEL CROSLEY, JR., President

Crosley Owns and Operates Broadcasting Station WLW

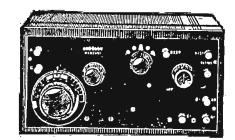
CINCINNATI, OHIO



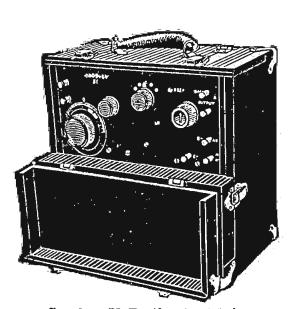
Crosley Trirdyn Regular, three tube Armstrong Regenerative with reflex.



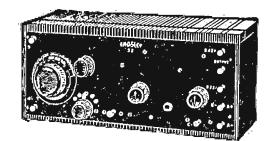
Crosley 50, one tube Armstrong Regenerative. \$14.50



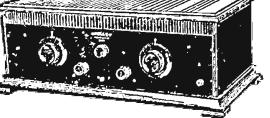
Crosley 51, two tube Armstrong Regenerative \$18.50



Crosley 51-P, the two tube 51-inch portable case. \$25.00



Crosley 52, three tube Armstrong Regenerative. \$30.00



9493 ALFRED STREET

Cresley Trirdyn Special, the three tube Trirdyn in a special case. \$75.00

# WLS MOVES TO FAIR GROUNDS FOR WEEK WWV and 6XBM Announce

SPECIAL WIRE WILL CARRY PROGRAM TO CHICAGO

All Regular Features, with Illinois State Fair Happenings, Put on from Special Studio

CHICAGO.-WLS, Sears-Roebuck Agricultural Foundation, will broadcast from the Illinois State Fair grounds at Springfield, Ill., this week by means of a special wire running a distance of 200 miles to the station in Chicago.

Almost continuous programs from noon until midnight every day of the fair, including the fair winnings, harness and running races, special programs by the State Fair Boys' school, Illinois Farmers' institute and other farmers' organizations will be broadcast on the farm programs. All the familiar sounds of the fair will be heard. The cry of the pop corn man, the peanut and pop vendor and street fakir will mingle with the sound of the horses' hoofs on the pavement and the cheering of the crowds.

All WLS Features from Grounds Band concerts, orchestral music, lullaby time and all the features of Station WLS on its Chicago programs will be sent through the air from the fair grounds.

The complete personnel of WLS has been transferred to Springfield for the week, according to Edgar L. Bill, director of the station. Many special features have been arranged, including addresses by outstanding men of the country.

County fiddlers tuned up industriously for the big Old Time Fiddlers' contest, which was held in connection with the national barn dance on September 13, the first day of the fair. The contest was state-wide. Three cash prizes were awarded the most popular fiddlers; the listeners in sitting as judges.

# **HOOVER ISSUES NEW** RADIO CONFAB CALL



Secretary of Commerce Hoover has called the third Radio conference to be held beginning September 30 at Washington. New regulations will be formulated. previous P. & A. Photo studio.

# New Standard Wave Signals Announced

Schedule for Fall

WASHINGTON .-- Amateurs and fans desiring to test their wavemeters and sets on standard wave lengths will have opportunity to do so when Station WWV at the bureau of standards and 6XBM at Palo Alto, Calif., go on the air September 22 and October 8 and 21.

A revised schedule for both Atlantic and Pacific coast standard wave transmissions, shows that both stations will transmit wave lengths from 1,000 down to 200 meters on September 22 and wave lengths between 222 and 93.7 in October. Instead of starting at 11 p. m. as in September, the Palo Alto station will commence sending at 10 p. m. Pacific time on October 8 and 21, and stop an hour earlier. The signals from both stations should carry between 500 and 1,000 miles inland, the bureau of standards

# WILDERNESS CAMP KEPT WELL POSTED

TWO RECEIVING SETS GET ALL AVAILABLE NEWS

Prairie Club of Chicago Maintains Radio Station in Province of Ontario, Canada

MICHIPICOTEN RIVER, ONT .- To the Prairie Club of Chicago goes the distinction of maintaining one of the most northerly Radio stations in the Province of Ontario, Canada. In this northern camp of the Prairie Club, located 150 miles due BELL-LIKE SIGNALS north of Sault Ste Marie Mich and in tario, Canada. In this northern camp of north of Sault Ste. Marie, Mich., and in the "wilds where the moose and red deer roam and nature is unspoiled," fifty members of the club are camping. The camp is practically out of touch with the outside world, except by Radio; and with two one bulb sets the members of the club are kept in close touch with the many powerful Radio stations in the United States and Canada.

more than a few hours and the aerial erected when WTAM was heard and within a few days WOC, WGY, and even far away WOS were heard very distinctly.

Receiver Aid to Camp's Success

C. A. Young, a resident of Chicago, one of the members in camp who is an ardent Radiophan, says that the programs received on the two sets have contributed considerably to the success of the northern camp, although the sets were not considered part of the camp equipment.

Dr. J. M. Nicholson, also of Chicago, is expected on the next boat. In a recent communication to the camp he announced his intention to bring along a five tube set. When this set is installed it is expected the camp will be in close with every big broadcaster on the North American continent. The programs ob-tained, it is thought, will give the campers, who select the wild places of the continent for their vacation, all the utilities and pleasures that is part of the life of the Radiophan in the big cities.

# STATION KFI HAS LINE TO THEATER

New Remote Control Studio at Metropolitan to Provide Excellent Program Features

LOS ANGELES.—The gala dedication and opening of another new remote control station to be under the direction of the Earle C. Anthony, Inc., Station KFI, occurred on a recent Sunday evening when the Metropolitan theater broadcast its first complete hour program from its own studio and theater.

Albert Kaufman, managing director of the theater, arranged a super-concert for the opening evening and many listeners in who tuned in remained during the hour in order not to miss the program.

The addition of the Metropolitan theater to the chain of pick-ups in the Anthony unit is a boon to Pacific coast Radio because of the high caliber of artists appearing at the Metropolitan and the excellence of the forty-five piece orchestra there.

continue as a regular broadcast feature each Sunday evening between 7 and 8 o'clock, Pacific time, and will be looked ture recitals presented several weeks

# WJAX UKULELE SONG ACT BIG HIT



The Metro Trio: Josephine Peterka (left), Bell Barrows (center), June McMahon (right). The first Radio appearance of these pretty girls on a recent Cleveland News program from WJAK caused the station's telephone system to break down under the strain of applause calls. Their singing, with ukulele accompaniment, will be heard whenever WJAK, Union Trust company station, can prevail on them to appear.

# CKAC'S, NOT MARS'

MONTREAL PLANT EXPERI-MENTS WITH PICK-UP

This year's camp had not been pitched Leonard Spencer, La Presse Technician, Merely Was Trying to Do Away with Microphone

> MONTREAL, P. Q .- There has been considerable controversy in Boston, Montreal and Ottawa, regarding the odd, bell-

like signals heard when Mars was flitting by old Earth, whilst amateurs, keen on the subject, were listening for a sort of "Howd'y" from some Martian Radiophan.

of pros and cons with reference to the matter; and all seem to be at a loss so far as identification of the funny notes is concerned.

It all appears, judging by the confirmation of time, that these notes, heard with an heretofore unheard of

intensity, were none but the result of novel experiment carried out by Leonard Spencer, technician of the big La Presse plant, CKAC, here.

Leonard Spencer

### How "Mars" Signals Originated

Mr. Spencer, who is probably the youngest technician in charge of a big broadcasting station, developed the idea that musical instruments using steel wire strings, such as piano, banjo, guitar etc., could be broadcast with ten times more clarity and purity if only the microphone could be eliminated. After a few days experimenting, Mr. Spencer tried his stunt. Immediately after signing off the Mount Royal hotel dance program, and making no comment whatsoever, he followed by sending out the intermittent notes.

This was done by merely placing magnetized steel wires in the earth's field and vibrating them, manually. natural period thusly can be transmitted without resorting to any pick-up system, such as microphones, batteries and other paraphernalia, which according to Spencer will soon be in the discard.

# The Metropolitan theater concerts will Foreign Mission News Is Latest Feature at WFBH

NEW YORK .- Radio has for the first forward to eagerly by ether listeners time been used to send out news of foreign who have enjoyed the few recent minia- missionaries. This information is now being regularly broadcast from Station previous to the opening of the theater- WFBH, New York, under the heading chestra every Monday, Wednesday and studio. "World Neighborhood Events." Friday throughout the winter.

# KDKA SENDS MUSIC; FRUITS ARE RETURN

DITTSBURGH. -- KDKA sends out Proncerts — fruit growers return fruit. Watermellons and peaches are keeping the Radio staff at the Westinghouse Station here in good humor. Radiophans in Aberdeen, N. C., Lovington, Va., and Alexandra, Ga., have recently shown their appreciation by sending in products for which their states are famous.

# Victor Saudek Tells About Instruments

KDKA Little Symphony Leader Plans Novel Series

E. PITTSBURGH .-- Victor Saudek, director of the KDKA Little Symphony Newspapers have orchestra, and musical director of West-devoted a great deal inghouse KDKA, is planning a series of featuring ments which comprise a symphony or-

> He will give a short lecture on the instrument, describing it and its manufacture, illustrating his talk with a solo played on the instrument.

> Mr. Saudek has given lectures before high schools and various colleges, and during the war included them as a part of the bandmasters' course for the government.

> The concerts of music of foreign countries will also be placed on the broadcasting schedule at regular intervals, including music of all the countries, announcements being made in the language of the country.

# McEnelly's Orchestra Back on Air at WBZ

Excellent New England Band Returns for Winter

SPRINGFIELD, MASS. — McEnelly's Singing orchestra, dance exponents and one of the feature entertainers from the local studio of Westinghouse WBZ last winter, have returned to the audience of this station. A special concert of overture, semi-classical selections and dance numbers was broadcast on the evening of the return.

This musical organization, rated among the finest in New England, has been together for over fifteen years. A home has been built here for the orchestra, known as The Butterfly, a beautiful dance palace. WBZ has a special line running into this building and a microphone stands directly in front of the stage on which the orchestra plays. Arrangements have been completed to have dance concerts played by this or-

# Touching the high spots of life

THERE is a wonderland of sport and adventure for either the expert or the new user in a radio instrument which is both fool-proof and capable of fine work.

You sit in your own library—you reach out into space with a simple turn of the dials and soon you have contact with—Boston or Schenectady or Pittsburgh, or perhaps some more distant point.

The thrill you get is a real one—it means another stage of amplification of man's contact with man. It means more than that to you; it means that you are bringing more and more of the world about that important centre—yourself. It means again that you are learning a new art—an art that you can carry into the finest technique if you are technically inclined, or that you can gradually improve on by merely the practice which repeated operation will give you.

# Your pleasure increases with your skill

As you learn the habits of your instrument, you learn how to get satisfying results every time you try. You acquire a measure of skill in spite of yourself.

Almost any radio set can be made to work. There are several makes of good ones; and the one you should have is the

one best suited to your personal requirements; but remember that for general excellence, surety, and smoothness of results the De Forest D-12 stands pre-eminent.

The invention of the Audion tube by Dr. De Forest made the present high development of radio receiving apparatus possible. De Forest is the great name in radio. The De Forest Company has been the pioneer in simplifying the outfitting and use of radio. Our D-12 is a complete, self-contained unit, with batteries, wires, tubes and antenna all ready for use the minute the battery wires are connected and the loop placed in its place on top of the cabinet.

Without either outside antenna or ground wire it does its perfect work. Where the outside antenna and ground wire are installed it may extend its range somewhat.

# Its four tubes do the work of seven

It is built for convenience, and for exactness and economy of operation. Its four tubes do the work of seven, and do it better. It is easy on batteries, and above all, De Forest has won an outstanding reputation in the industry by years of notable performance. It is an instrument you will be proud to own and tell others that you own.

Every great industry has its great standardized product—known by the public for its efficiency, its reliability, and its honestly earned reputation. In the automobile field—the talking machine field—the piano field—there are such. You probably can name them. In the radio field its name is De Forest.

### Economical to use

It is not a "cheap" instrument, because such standardized performance as the De Forest D-12 will give you is not a cheap thing, and the instrument is worthy of the attractive housing which it has; but it is most economical to use, because once adjusted it works most satisfactorily, and takes the minimum of current for operation. Though it is not "cheap," it is very low-priced in comparison with any

other radio set that will give equal or approximately equal results.

This radio industry is beyond its "pin feather," or elementary experimental stage. The radio receiver was really invented when Dr. De Forest invented the audion tube—although the world didn't know it for several years.

Good receiving sets today are standardized. You will no more throw away your radio after a year or so than you will throw away your good piano.

There is much splendid broadcasting being done today—and it will be better tomorrow; but the so-called "latest word" in receiving sets does not differ in essential principles from that of several years ago—just as the automobile of today's purchase is in essentials the same as the car of the same name was several years ago. Don't be fooled on this. The De Forest Radiophone you buy now will be essentially up-to-date for years.

# It is as simple as eating to use De Forest D-12

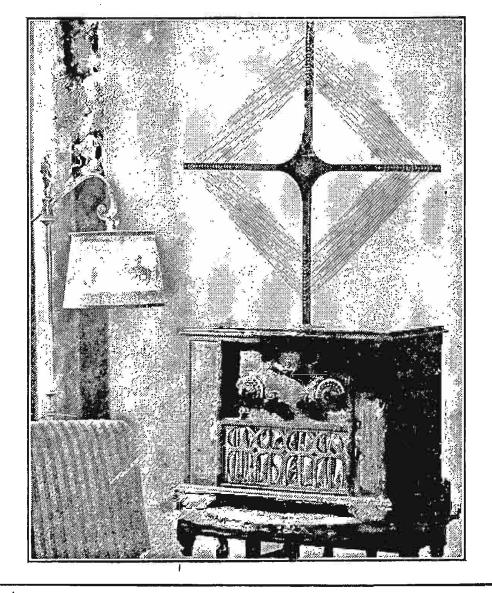
You learn how to catch the good things as you follow the broadcasting programs; that is fun. You learn how to get the reproduction clear and strong; that is fun. You learn the delicate art of picking up distant stations, and that is heaps of fun.

You learn what radio won't do in the summer and what it will do in the winter. You learn its whims and whimsies. You learn it is as interesting as a beautiful girl—as temperamental as an artist, and you learn to be a master of its whims and temperaments. You may do this with or without learning its mechanical and scientific principles. Suit yourself. It is fun either way.

Here are directions for using De Forest D-12—

Have your dealer deliver the instrument to you ready for use completely wired—put the loop into its place, turn the dials till you get your station (your dealer will show you how) and then your fun begins. Listen and change your stations to your heart's desire.

DE FOREST RADIO TEL. & TEL. CO. Jersey City, N. J.



# DE FOREST D-12 REFLEX RADIOPHONE

# Your Receiver Deserves De Forest Tubes

YOUR radio set is no better than its tubes. For volume and beauty of tone reproduction you must rely on them.

De Forest tubes satisfy the requirements of the most exacting set owner. They are the latest developments in the manufacture of tubes begun many years ago, when Dr. Lee De Forest invented the three-electrode vacuum tube which makes present-day radio possible.

For volume and beauty of tone DeForest tubes are unsurpassed. They are non-microphonic—do not ring or sing or howl. They use little current, and last long.

For dry batteries use the De Forest DV-3.
This tube is specially adapted for use on

camping trips, and for general use in locations where there is no electric power.

For storage batteries make sure you have the DV-2. With these tubes you can operate practically every circuit in use today.

The name De Forest on these tubes is a guarantee against defects in material, character and workmanship. All De Forest tubes are inspected thoroughly during and after production and are tested. They are packed in individual cartons containing instructions for proper operation and connection. Sold only by authorized De Forest agents. Look for the name De Forest on each tube.

# De Forest D-12 Reflex Radiophone

A four-tube, long distance indoor loop receiver, with self-contained batteries and loud speaker

1. COMPACTNESS—Completelyself-contained in beautifully designed case with two foot antenna. No bothersome aerial and ground wires, or outside batteries or loud speaker.

2. SIMPLICITY—Controls simple enough for the veriest amateur, critical enough for the expert. Calibrated tuning chart with each set. Raising the cover makes all parts accessible.

3. EFFICIENCY — Six stages of amplification and one stage detector gives high selectivity on this four tube circuit. Tuned radio. Volume controllable from faint whisper to the crashing of a brass band, with perfect fidelity of tonal quality. Great distance range.

4. ECONOMY—This four tube reflex circuit cuts cost of tube replacement and battery upkeep.

If more than five tubes are used the "B" batteries are used up at ruinous rate.

5. MOBILITY—The D-12 is so light and compact you can easily move it from room to room and Is so well built that this will not put it out of commission. Can easily be carried in the tonneau of your car. The leather covered set will not mar easily.

6. BEAUTY—This is the smartest and handsomest moderate priced set, in either its embossed two-toned leather or its plano finished two-toned mahogany case.

7. Remarkably low price. The De Forest D-12 Reflex Radiophone is several hundred dollars below any other set that compares with it in distance range, efficiency or beauty.

# **DECIPHERERS GIVEN** MARS FILM RECORD

WILL TRY TO SEE IF SIG-NALS ARE ON PHOTO

C. Frances Jenkins, Photographer of "Mars Talk," Thinks Not—Planet Makes Faces for Earth?

WASHINGTON .- The deciphering of the record of Radio signals taken on a thirty-foot strip of photographic film during a period of twenty-nine hours while Mars was closest to the earth, has deepened the mystery attending the peculiar dots and dashes reported heard over the same period of time by experienced Radio operators in widely seperated parts of the

The device which took the record, called a "Radio photo message continuous transmission machine," is the invention of C. Frances Jenkins, well known for his Radio still photo and motion picture transmitter.

Mr. Jenkins was induced by Dr. David Todd, professor emeritus of astronomy at Amherst and organizer of the international "listening in" for Mars signals, to use his machine to record what might be signals from the visiting planet.

Man's Face Appears on Film?

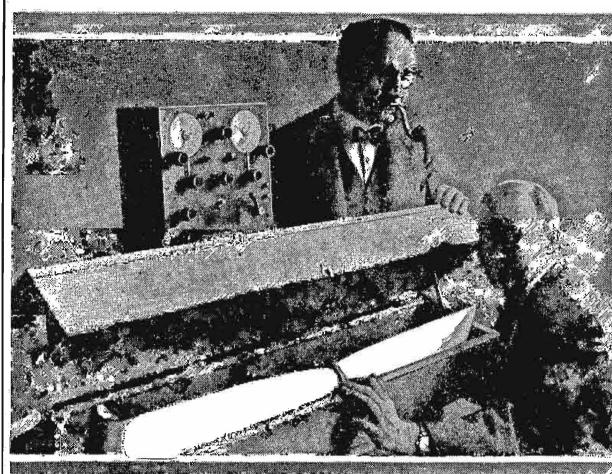
The film, thirty feet long and six inches wide, discloses in black on white a fairly regular arrangement of dots and dashes along one side, but on the other side at almost evenly spaced intervals are curiously jumbled groups each taking the

form of a crudely drawn face.
"I don't think the results have anything to do with Mars," said Mr. Jenkins. 'Quite likely the sounds recorded are the result of heterodyning or interference of Radio signals. The film shows a repetition, at intervals of about a half hour, of what appears to be a man's face. It's a freak which we can't explain."

The films have been sent to the cipher experts of the navy department. It will be their job to determine, if possible, whether any intelligence or code can be discovered in the mysterious symbols on the photographic film.

SAN FRANCISCO.—Norma Talmadge, one of the most popular motion picture stars, made her first broadcast at Station KPO, Hale Brothers, of this city and is now an ardent believer in the publicity value of broadcasting.

# DID DEVICE PICTURE MARS' TALK?



C. Francis Jenkins (right) explains to Prof. David Todd of Amherst the new photographic Radio receiving apparatus used in an attempt to record signals from Mars. The camera is fitted with a long roll of film capable of photographing one hundred hours continuously. The record made by the camera, while not believed to be significant, shows some peculiar markings and has been turned over to the cipher experts of the navy for study.

Henry Miller Photo the navy for study.

# **HEAR NIGHT FOOTBALL** FROM WSAI SEPT. 27

"ESM," Sport Announcer, to Talk from Lighted Field

CINCINNATI.-WSAI will introduce a Radiocast innovation on Saturday, September 27, when "ESM," the station's sport announcer, will call each individual play direct from the field in the first night football game between the Cincinnati university Bearcats and the Kentucky Wes-

The field and stadium will be flooded an Interlaken fan enjoys.

with light from a battery of high-power electric searchlights, which it is believed will enable all spectators as well as the players to follow every move of the game. A white ball will be used.

On the following Saturday WSAI will Radiocast, play by play the night game between the Bearcats and Georgetown university team.

Four Miles to Next Receiver INTERLAKEN, N. Y .-- How ideal is a

location for Radio on the west shore of Cayuga lake, nineteen miles north of Ithaca, N. Y., and no receiving set within four miles of you? Absolutely ideal is the answer. That is the rare pleasure which

# HIRED HAND'S HOME ON FALL SCHEDULE

WBAP RESUMES EVENING CONCERTS THIS WEEK

Dixie Baseball Series May Be Broadcast

—Cost \$15,556 to Operate Station Year

FORT WORTH, TEX. - WBAP, farfamed haven of the Hired Hand, mysterious announcer for the Star-Telegram, spent Monday evening of this week in a hilarious opening program for the fall and winter season.

Evening concerts were resumed following the Monday program, but the noon day frolics, broadcast throughout the summer, have proven so popular that they will be continued.

When the artists arrived at the studio for the reopening evening program they were surprised at the many changes made. The newly redecorated studio is arranged artistically enough to please the most temperamental artist.

Dixie Series; Cost of Operating
It was planned, at the time of writing, to broadcast the Dixie baseball series in case Fort Worth finished with the leaders. The series was to have begun Wednesday of this week. Southern baseball fans are greatly interested in the outcome of the

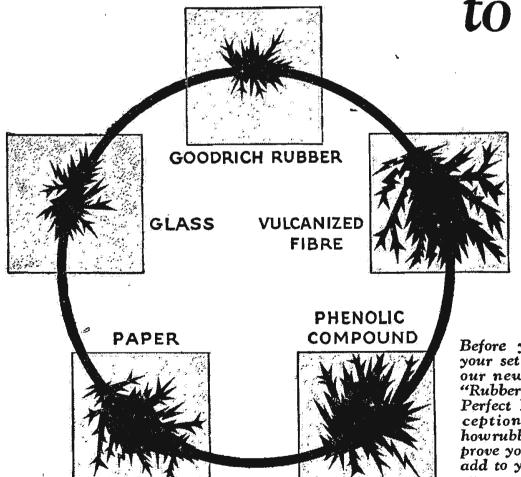
A recent report of the cost of maintenance for Station WBAP for the fiscal year gives this figure at \$15,556. The cost considering the number, character and scope of the Star-Telegram's audience, is believed to be a record of economy compared to the expenditures of many other

# Cincinnati Stations Give Songs of Britt and Finch

CINCINNATI.-Andy Britt and Dick Finch, popular song writers and Cameo record artists, who are making a tour of the country visiting a number of the larger broadcasting stations, were featured the first week of September on the programs of Stations WMH and WSAI here. They were heard every night of the week, singing their own compositions.

The new law which recently went into effect in Poland will undoubtedly stimulate the development of Radio there.

# Science says use Hard Rubber Panels to avoid Dielectric Losses



Before you build your set write for our new booklet, "Rubber for More Perfect Radio Reception." Learn howrubber can improve your set and add to your pleasDIELECTRIC losses reduce range and selectivity. Use hard rubber radio panels in building your set and minimize these losses. Hard Rubber—the chart shows—has the lowest dielectric losses.

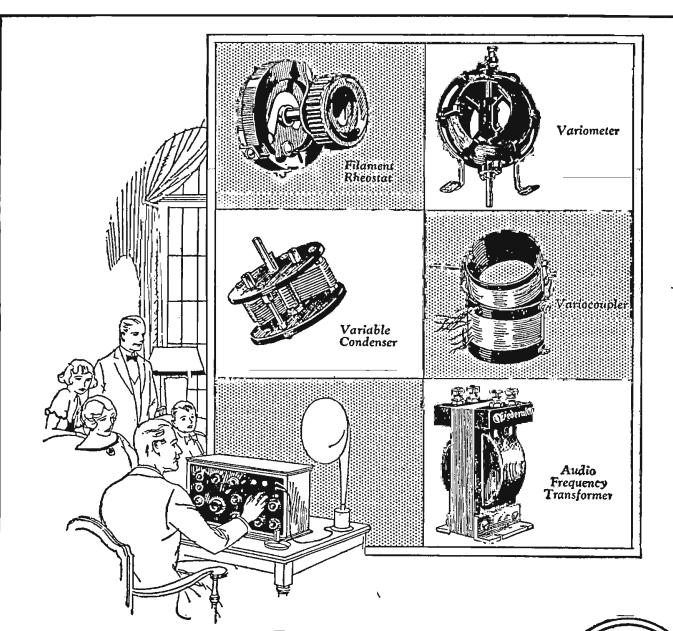
And more, it is easily worked with ordinary tools — more moisture-proof—and less expensive.

Goodrich Radio Panels give you all basic hard rubber advantages — and more!

- Won't warp from the heat of tubes because their softening point is 25° Fahr. higher than that of usual hard rubber.
- I Permanently retain their rich, glossy finish because of a much lower free sulphur content.
- Conserve all electrical properties because of lower moisture-absorption.

So ask for Goodrich! Two attractive colors—black and mahogany. All standard sizes — individually packed.

THE B. F. GOODRICH RUBBER COMPANY ESTABLISHED 1870 Akron, Ohio



ROM smallest screw or L' binding post to condensers, vario couplers and transformers, each of the 130 Federal Standard Radio Parts are made to give maximum service and are backed by the iron-clad Federal performance guarantee.

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

When assembling your set, insist that

each part be of Federal manufacture

For a quarter century Federal has specialized in tone qualities. Today the rare beauty of Federal Tone and also the simplicity of Federal operation are spoken of as ideals in the field of radio.

Federal sets may now be purchased on easy payments.

Ask your dealer.

uctal

Boston

New York

**Philadelphia** 

Pittsburgh

Chicago

San Francisco

Bridgeburg, Canada

 $ilde{ ilde{ id}}}}}}}}}}}}}} v} v}} v} y} y} y} y} y} y} y}$ 

Scientific Radio Apparatus That Is Distinctively Different and Superior in Efficiency and Appearance

Do you want to dance,

No matter where the music is?

Do you want to hear a lecture,

No matter where the speaker is?

Do you want to hear a song,

No matter where the singer is?

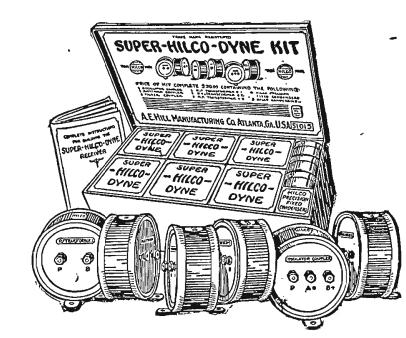
THEN-

Look for this sign

Go to your dealer, purchase a Super-Hilco-Dyne Kit and build this seven tube long distance receiving set that gets what you want

when you want it!

Coast to Coast Reception Only Two Tuning Dials Stations can be Logged Seven Tube Set, 7 x 28 inch Panel Receives 90 Meter Stations Too!



Each unit has been tested and is guaranteed for accuracy and quality.

- 1 Hilco Oscillator Coupler
- 1 Hilco Antenna Coupler
- 1 Hilco Filter Coupler
- 3 Hilco Intermediate Frequency Transformers
- 5 Hilco Precision Fixed Condensers
- 3 Hilco Handykans
- 1 Instruction booklet

Complete explanation, BLUE PRINTS and instructions for assembling a SEVEN TUBE SET

l Manufacturing Co.~Atlanta,

# LABOR DAY IS STUNT DAY FOR CINCINNATI

POLITICS, LION AND CIRCUS KEEP FRED SMITH BUSY

Crosley WLW Keeps Busy Business Men Busy on Holiday—Lion Outroars Politicians

By W. G. Welbourne

CINCINNATI.—Labor Day was "stunt air recently when the day" for WLW listeners. The stunts agreement terminated. ranged from political speeches to a lion's

roar and then in the evening Fred Smith took a big invisible audience with him to a circus.

Thousands of busy business men not busy that day beheard the speech of what a good president he believes he would make, and that of Robert M. La Follette, speaking in Washington.

No one heard a rooster crow when Mr. Davis had fin-

ished and the La Follette effort was followed by silence quite as depressing, but presently those who stayed tuned in heard a ferocious, terrifying roar of a wild beast. No sound just like this had ever gone out through a microphone.

Fred Smith

Lion Puts Politicians to Shame

Out at the Zoo Superintendent Stephan teased and bantered the biggest lion there until he bellowed, roared and snarled sonorous yelps into the portable microthone provided for the occasion and the roar. As a noise maker this lion put both Messrs. Davis and La Follette to shame, but modern politicians and candidates are not like those of the olden days. Years ago the lion more likely would have been the shamed one. Times have changed.

Just to prove that he is no shirker, even on Labor Day, when it is supposed a man don't have to work, and shouldn't if he wants to, Fred Smith kept on moving and turned up in due time on the circus grounds out Cumminsville way.

Takes "Mike" to Circus

Fred hadn't been to a circus since the war! nor did he attend any during that event. He knew there were a lot of other people in Cincinnati and elsewhere who hadn't seen one for a long time, some, perhaps, who never had experienced that glorious sensation, and some who never will, so he took along with him his microphone and his audience. Mr. Smith bought pink lemonade and peanuts outside, got by the doorkeeper at the side show by giving the "profesh" high sign, and after a tour of the menagerie, entered the "big top."

He told his listeners everytning ne heard and saw and let them hear some of the things he heard. He relayed the performances of the bare-back riders, the acrobats, wire walkers, jugglers and tumblers, and transmitted to the air the inharmonious tones of the typical circus

It was some Labor Day for Fred Smith

and his WLW audience. -

# THE "WLS UNLIMITED"

(Continued from page 5)

Lullaby hour is a bedtime feature for the kiddies broadcast every evening between 7 and 7:45, Central daylight saving time, with Ford Rush and Glenn Rowell playing "Sandman." It is an hour of stories, old and new nursery rhymes, barnyard jingles set to music that fits the themes.

"Static" Assistant Announcer

The story of WLS would not be complete, however, without a word about "Static"—a double yellow-headed Mexican parrot, the only parrot in the world to have taken up a Radio career as an announcer. "Static" was brought here from the southland by George Hay to assist him in calling out the stations of WLS Unlimited. In a short time it is planned that "Static" will do some real announc-

His vocabulary is increasing daily. During lullaby hour it is "Static's" job to assist "Smoky," the duck, entertain the 3,000 lullaby club members. The Radio parrot has the run of the studio. He may break into any program and have his say. His name gives him that privilege. If "Static" is bored by too long a speech it is his right to demand that the speaker "tune off," or "dry up," or "clear out," whichever phrase fits his vocabulary.

The train feature of broadcasting was the idea of George Hay, the popular announcer who came here from the Memphis

# Twin Cities May Have Big Station

Washburn-Crosby Company Would Install Five-Kilowatt Set and Pay Half Operation Cost

MINNEAPOLIS, MINN.—Broadcasting on a large scale will be renewed here soon, it is believed, due to the generous offer and co-operation of the Washburn-Crosby company, flour millers. It will be remembered that Station WLAG went off the air recently when the local co-operative

The Washburn-Crosby company has made an offer to purchase and erect a new five-kilowatt (5,000-watt) station and pay half the cost of its maintenance for three years. Minneapolis and St. Paul are to raise the balance of the maintenance cost.

The offer stipulates that the company will pay \$50,000 a year for three years cause Congress by providing the Twin Cities raise a like an act passed April fund of \$150,000. Local committees and 19, 1904, decreed business men's associations are actively they might rest, engaged in signing subscribers.

# John W. Davis, who told the people at Wheeling, W. Va., Is in Nature of Tryout

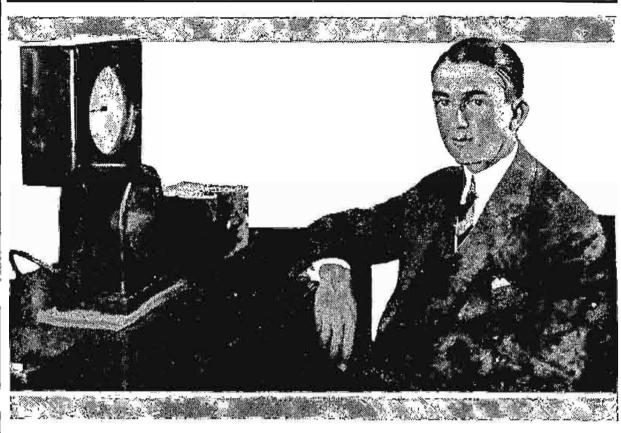
NEW YORK .-- Presenting the latest alliance between Radio and literature, Station WJZ, recently took one period each week to broadcast the two parts of a thrilling mystery story, "By the Breath of a Hair," written especially for Radio by Arthur B. Reeve, noted detective story author. The broadcasting of this story was an attempt to solve the question of Just what type of literature is most acceptable to the invisible audience.

The story, specially written by Mr. Reeve to suit the peculiar needs of Radio, was carefully prepared to be broadcast in a short period of time without losing any of its interesting or forceful features. An accurate check-up of the reaction of the unseen audience will be made, and if the response warrants it, this form of broadcast will undoubtedly become a regular weekly program feature.

Appeal station, where he attained popularity with his steamboat whistle and his "boat trips" to various parts of the country.

When he became the chief announcer for WLS he converted his steamboat whistle to a locomotive whistle and started the WLS Unlimited on its way. He is the conductor of the train, but he has two able assistants in this trans-

# **EPINARD EASY COMPARED TO MIKE**



A six furlong horse race is nothing in the life of Jockey Everett Haynes but he was very nervous in his first microphone experience at WGY, the Schenectady broadcasting station from which he told many interesting and intimate things about Epinard, the famous French thoroughbred which he rode during its recent invasion of the American tracks.

Glenn "makes the wheels go round," so that the Radiophans get all the thrills of the sound of the start of a fast train, its getting into high speed and slowing down at the end of the trip.

"Sound Dramas" Latest Addition

Sound experiments have been one of the interesting features of WLS, among which was the "Trip down the Mississippi," with all the crap shooting of the darkies and singing which typify the famous trips down the great water way. Another was "The Spirit of the Wars of American History," which was broadcast on July 4.

The latest feature in this unique broadcasting program is the inauguration of a permanent theatrical company organized for the production of "Sound Dramas." to be broadcast each Friday evening. Harry D. Saddler of Bloomington, Ill., playwright and producer, has been secured to head the company. Rebuilding plays to fit the ear is the task of this WLS theatrical company. Tragedy, pathos, humor-all emotions the drama portrays by color, lighting effects, settings and portation feature in Ford Rush and Glenn facial expressions, as well as the voice, Rowell. Ford acts as the engine bell, and must be sent by one agency-sound.

# ASSISTANT INSPECTOR

Second Office to Be Located at Savannah, Ga.

ATLANTA, GA.-A statement from Major Walter W. Van Nostrand, supervisor of Radio in the fourth district, with headquarters in the Federal building here, is to the effect that the department of commerce has authorized the appointment of an assistant Radio inspector in the fourth district.

The assistant inspector will be stationed at Savannah, Ga., with offices in the Custom House. This new office will care for the inspection of ship stations, at Savannah, Ga., Charleston, W. Va., and Jacksonville, Fla.

Atlanta is the headquarters of the fourth Radio district and the only one of the nine district headquarters located inland. With the opening of the Savannah office Georgia will be the only state in the Union with two Radio offices.

# What Are Inferior Parts Costing You?

Just as much as you'd pay for Bremer-Tully parts-the difference is in the results you get.

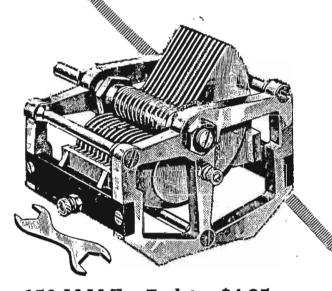
# The Bremer-Tully Low Loss Tuner

This is not a trick tuner, but a standardized electrical instrument now in its third successful year. The unsurpassed results obtained by thousands of users has demonstrated the unquestionable superiority of this product. The untuned adjustable primary, the skeleton frame, the "series bank" windings of the coils, are improvements of vital importance, insuring extremely low losses, greater

selectivity, distances and volume.

No switches or taps are required, the bearing is adjustable, rotor is pig-tailed. All windings terminate in binding posts clearly marked. Single hole, panel or base mounting can be used.

The short wave tuner brings in the low wave broadcasting which is becoming so popu-



150 M.M.F. 7 plates \$4.25 250 M.M.F. 11 plates 4.50 520 M.M.F. 23 plates 5.00 800 M.M.F. 35 plates 6.50

# The Bremer-Tully "Lifetime" Condenser

The Only Low Loss Straight Line Wave Length Condenser.

Light in Weight-Compact in Size.

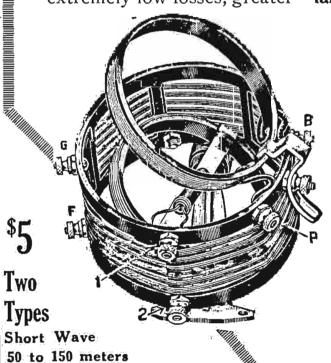
This product has all the essential features of condenser perfection—a two-step adjustable, thrust type, lubricated bearing—which has no equal in radio. It can be tightened without changing the plate alignment. We guarantee it to last a lifetime. A pigtailed

rotor, exclusive design of dic cast rotor and stator plates giving positive contact and minimum resistance. Specially designed cut away end plates reduces capacity. This condenser is rigidly constructed—it has our unqualified guarantee. Go to your dealer and see it today—"20 Point" folder gives you fuller details. Write for it.

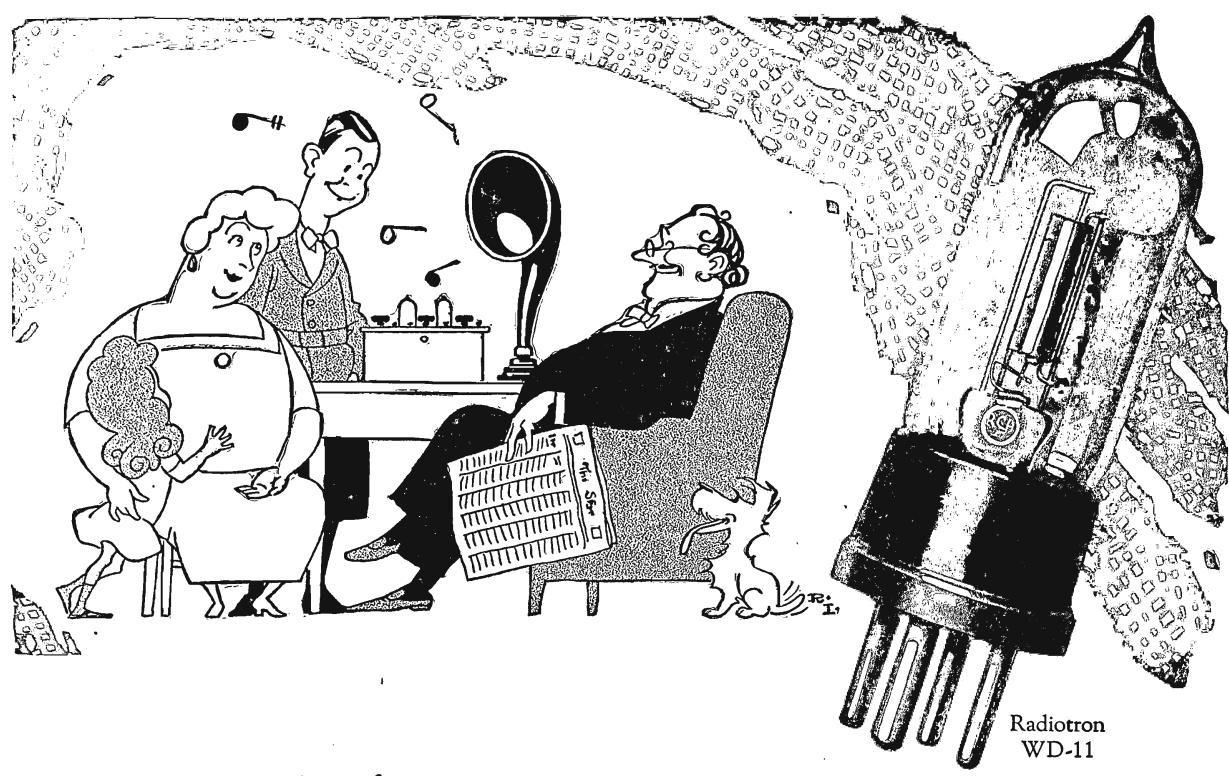
# BREMER-TULLY MFG. CO.

532 S. Canal St., Chicago

Have You Built the "Nameless" Circuit? Write Us for Folder.



Broadcasting 200 to 565 meters



# The Tube means Music or Noise

It isn't a genuine WD-11 unless it's a Radiotron.

It isn't a genuine WD-12 unless it's a Radiotron.

It isn't a genuine UV-199 unless it's a Radiotron.

It isn't a genuine UV-200 unless it's a Radiotron.

Itisn'ta genuine UV-201-a unless it's a Radiotron.



This symbol of quality is your protection.

Buying anything but the best in vacuum tubes is like trying to run a car on gas that is half water. In radio, everything, in the end, depends upon the Radiotrons. You can put perfectly good Radiotrons in a poorly made set—that's true. But the point is that the very finest receiver made can be no better than its tubes. This is

ment. Everyone knows it. And that's why, at the radio counter, you see each man pick up a Radiotron, and look at the base for the word "Radiotron" and at the glass for the "RCA" mark. For best reception—real music—nothing short of the best in tubes will do.

Radio Corporation of America

Sales Offices:

233 Broadway, New York

10 So. La. Salle St., Chicago

433 California St., San Francisco, Cal.

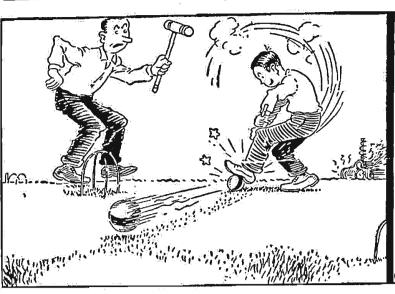
# Radiotron

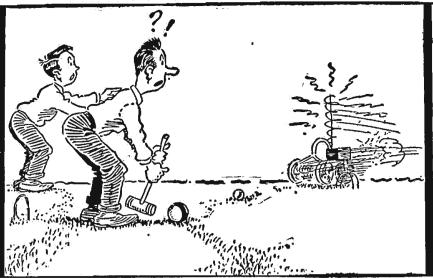
REG. . U. S. PAT. OFF.

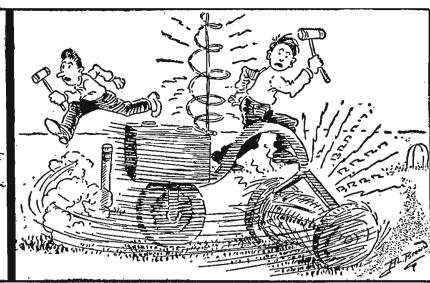
# THE ANTENNA BROTHERS

# Spir L. and Lew P.

# Sarah Scores a Wicket







# DRAMA OF 'PIT' PUT IN WGN QUOTATIONS

FANS HEAR CRIES OF TRAD-ERS AT CHICAGO BOARD

How Market Information Is Handled by Tribune Station, Formerly WDAP —Schedule Used

CHICAGO.—The drama of "the pit" in Chicago's Board of Trade is now on the

The Chicago Tribune Station, WGN, formerly WDAP, has installed a microphone suspended above the pit. For one full minute, as a colorful preface to it's half-hourly quotations, WGN has the pit on the air. Like the prologue in the theater, on comes the hubbub of the tradingthe calls, the cries, the signaling, the babel of barter in the pit.

Then the WGN announcer, in the studio on the Drake hotel, gives call letters and switched to the soundproof announcing for thousands of Radio listeners.

booth in the Board of Trade, from which the quotations are read.

Eight times a day "the pit" does it's noon,-12:30 p. m. and 1 Central daylight itself. This station opened on January

High, low and closing quotations at 1:25 p. m. are broadcast after the Board of and to attain a personal contact with its Trade is closed and the pit silent. Other market information breadcast includes butter and egg market report at 11:10 a. m., Chicago stock exchange closing quotations at 5:50 p. m. and the Board of Trade market summary at 6:00 p. m.

### DIXIELAND'S STATION

(Continued from page 4) of the River and Rail Terminal promotes co-operation between those two types of transportation. This city, too, is the home of Piggly Wiggly, Clarence Saunders and "Memphis Bill" Mallory, of foot-

In a short time the handsome and completely appointed Municipal Auditorium will be opened and will include a direct line into the studio of WMC, whereby broadcasting of such entertainments as Sousa's and Paul Whitman's bands, San announces the opening of the market bul- Carlo Opera company, Jeritza and other Immediately the listener is splendid programs, may be accomplished

The Launching of "Hushpuckinny" During the past two years, however, probably the greatest contribution to the turn; 9:35 a. m., 10,-10:30,-11,-11:30,-12 fame of Memphis has been through WMC 20, 1923, with its principal objective to supply the best possible entertainment unlimited audience by means of human, optimistic and well-controlled broadcast-

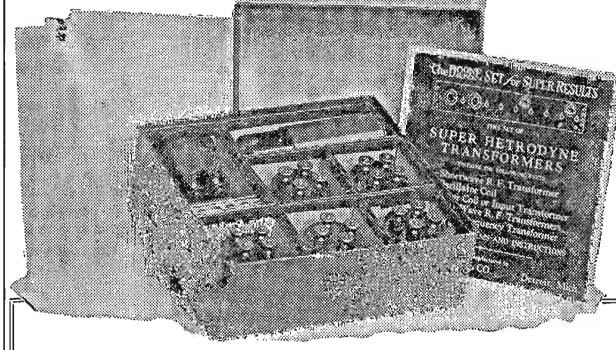
> A few months after this station stepped into the air, there came George D. Hay, the "Solemn Old Judge." He grasped the helm of the good ship "Hushpuckinny," whose whistle, along with the slogan "Down in Dixie" soon became synonomous with WMC. Cleverly he steered her forth on many a long and enjoyable trip through the clouds. The "Hushpuckinny" went into drydock in Chicago when George Hay became chief engineer of "WLS Unlimited." interested in Radio for a long while and Right now the old boat has just been

thoroughly overhauled; its barnacles are scraped off; its decks are holystoned, and a resplendent coat of white paint has been applied. Recently she slid down the ways once more, this time under the skillful hand of Captain Gerald L. Dearing, better known as "Jerry," who now carries the glad tidings of WMC through the length and breadth of the land.

Jerry Dearing's Announcing Appeals

Mr. Dearing, who hails from the state of New York, is one of the youngest announcers in the air today and bids fair to become one of the most popular. He has an individual manner of announcing which appeals to the majority of listeners. Before taking charge of WMC, for more than two years Mr. Dearing was on the editorial staff of the Commercial Appeal.

(Continued on page 14)



# **BALANCED**

-for Super Results The Boone Super Hetrodyne Transformer Kit gives you selectivity and sensitivity heretofore considered impossible

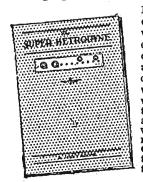
Unusual receiving range, remarkable selectivity, clarity of reception and ease of operation—these are distinguishing characteristics of radio sets made from the Boone Super Hetrodyne Transformer Kit. One user says "it is truly a remarkable achievement"—another, "results attained speak volumes for the sensitivity of your equipment."

The complete set contains 1 Short Wave R. F. Transformer, 1 Oscillator Coil, 1 Filter Coil or Input Transformer, which is carefully balanced with the three Long Wave R. F. Transformers, 1 Audio Frequency Transformer, Complete Wiring Diagrams and Instructions accompany each kit, and if carefully followed, satisfactory results are guaranteed. Price \$50.00 at your dealer's or direct. Send the coupon today for complete description.

### J. T. BOONE RADIO CORPORATION, DETROIT Canadian Distributors: WINDSOR RADIO, LTD., WINDSOR, ONT.

BOONE SUPER FOLDING LOOP AERIALS—2 and 3 ft. sizes, collapsible. Center tap. Brown mahogany finish. Range 200 to 600 meters. Price \$20.00, either size.

# YOU NEED THIS BOOK

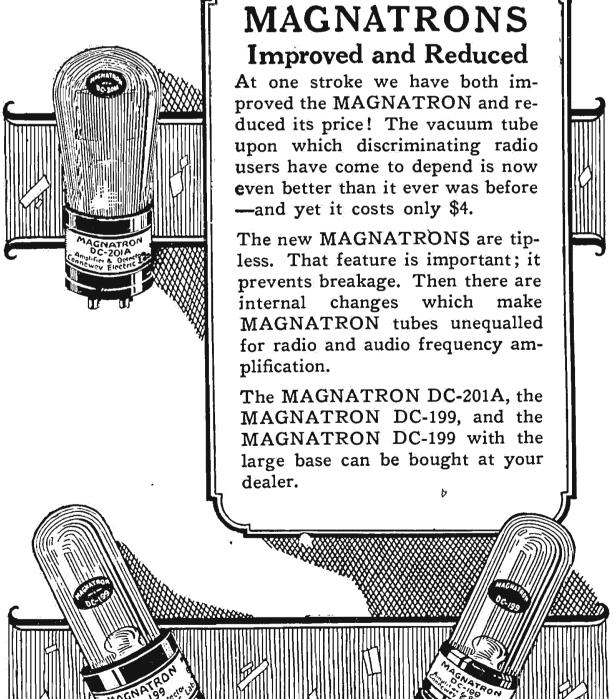


Not a catalog-but a thoroughly scientifie text book with a weaith of data on every phase of super hetrodyne equipment. This valuabie book gives you a series of over thirty super hetrodyne wiring diagrams and hook-ups wiring diagrams and nook-ups which would easily cost more than \$50.00 if purchased separately. Sixty-four pages of worth-while information, with more than fifty illustrations. Only \$1.00 postpaid. Get it today—at your dealer's or use the coupon at right.

BOONE SUPER PRECISION VA-RIABLE CONDENSERS - Metal frame. Brass rotor and stator plates. Low loss, low resistance, small and compact, beautifully finished. Prices—.00025 MF, \$6.00; .00035 MF, \$6.25; .0005 MF, \$6.50; .00075 MF, \$6.75; .001 MF, \$7.00.

# J. T. BOONE RADIO CORP., 3469 E. Jefferson, Detroit, Mich.

- Enciosed is \$1.00 for text book, "The Super Hetrodyne."
- Please send mo information on your Super Hetrodyne Transformer Kit Folding Loop Aorials—Low Loss Variable Condensers.
- Dealer proposition on Boono Super Radio



Connewey Electric Laboratories 309 Fifth Ave., New York City

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

(1)							<del></del>	<del></del>
Station and City	Met.	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
CFCN, Calgary, Alta	440	Silent	12:30- 1:30	Silent	Silent	Silent	11:00- 1:00	Silent
CHYC, Montreal, Que	341	Silent	Silent	6:30- 7:30		Silent	Silent	5:00- 6:00
CKAC, Montreal, Que	425	Silent	5:30-9:30	Silent	6:30-9:30	Silent	5:30- 9:30	2:30- 3:30
CKCD, Vancouver, B. C	410				10:30-11:30			Silent
CKY, Winnipeg, Man	450 435	Silent Silent	8:15-10:00 Silent	Silent 5:30-6:00		8:15-10:00 Silent	Silent 5:30-6:30	7:00-8:00 Silent
CNRO, Ottawa, Que CYB, Mexico City, Mex	370	Silent	8:30- 9:00		9:00-11:00		8:30- 9:00	
CYL Mexico City Mex	510	Silent	10:00-11:30		Silent	10:00-11:30	Silent	Silent
CYX, Mexico City, Mex	330	9:00-12:00		Silent	Silent	8:00- 9:30		Silent
KDKA, E. Pittsburgh, Pa.	326 286	5:30- 8:00 7:45- 9:00		5:30- 8:00 Silent	5:30-10:00 Silent	9:00-10:00	5:30- 8:00 Silent	6:30- 7:30 7:45- 9:00
KFGZ, Berrien Springs, Meli KFI, Los Augeles, Calif	469	8:45- 1:00		8:45- 2:00	8:45- 1:00	8:45- 2:00		8:45- 1:00
KFKX, Hastings, Nebr	341	9:30-11:00	Silent	Silent	9:30-11:00	Silent	Silent	Silent
KFNF, Shenandoah, Ia	266	Silent	7:30- 9:00	7:30- 9:00				
KFOA, Seattle, Wash KFPT, Salt Lake City, Utah	455 268	10:30-11:30 10:00-11:00		10:30:11:30 10:00-11:00		10:30-11:30 10:00-11:00	~	Silent Silent
KGO, Oakland, Calif	312		10:00-3:00				10:00- 3:00	
KGU, Honolulu, Hawaii	3.60	12:00- 1:30	12:00- 1:30	12:00- 1:30	12:00- 1:30	12:00- 1:30	12:00- 1:30	12:00- 1:30
KGW, Portland, Ore	492						12:00- 2:00	
KHJ, Los Angeles, Cnlif KLX, Oakland, Calif	395 509	10:00-12:00		10:00-12:00	Silent	10:00-12:00	10:00-12:00 Silent	Silent
KPO, San Francisco, Calif.	423				10:00- 1:00	Silent	Silent	10:30-12:00
KOV. Pittsburgh, Pa	270	7:00- 8:00		7:00: 8:00	Silent	7:00- 8:00		Silent
KSD, St. Louis, Mo	546 536	7:00-12:00	Silent 7:00-10:30	8:00- 9:00	Silent	8:00- 9:00		
KYW, Chicago, Ill NAA, Radio, Va	435	Silent 5:45- 7:20			7:00-10:30 5:45- 7:40	7:00-11:30 7:05- 7:40		Silent Silent
PWX. Havana, Cuba	400	Silent	Silent	7:30-10:00	Silent	Silent	7:30-10:00	Silent
WAAW, Omaha, Nebr	286	Silent	Silent	Silent	8:00- 3:00	Silent	Silent	Silent
WBAV, Columbus, O WBBR, Staten Island, N.Y.	423 273	Silent 6:00- 7:00	7:00- 9:00 Silent	Silent 6:00- 7:00	Silent 7:10- 8:30	7:00- 8:00 Silent	Silent 6:00- 7:00	Silent 7:10- 8:30
WBT, Charlotte, N. C	360	Silent	7:30- 8:30	Silent	7:30- 8:30	Silent	Silent	5:30- 6:30
WBZ, Springfield, Mass	337	5:00- 8:00	5:00- 8:00	5: <b>00</b> -10:00	5:00- 6:40	5:00- 9:00	5:10- 8:00	7:00-8:30
WCAE, Pittsburgh, Pa	462	7:30-10:00			7:30-10:00	7:30-8:30	7:30- 8:30	5:00- 6:00
WCAJ, Univ. Place, Neb WCAP, Washington, D. C	283 469	Silent 7:00- 8:00	7:00- 8:00 Silent	Silent 6:45- 8:45	Silent Silent	9:00-10:00 6:40- 7:00	Silent Silent	Silent 6:20- 9:00
WCBD, Zion, Ill	345	7:00- 9:15	Silent	Silent	7:00- 9:15	Silent	Silent	1:30- 5:00
WCX Detroit, Mich	517		7:30-11:00			7:30- 9:00	Silent	6:15- 7:15
WDAF, Kansas City, Mo WDAR, Philadelphia, Pa	411 395		11:45- 1:00 5:30- 6:30		11:45- 1:00 5:30- 6:30		11:45- 1:00 5:30- 6:30	4:00- 5:00 Silent
WEAF, New York, N. Y	492		6:00- 8:00	6:00- 8:00			6:00-10:00	Silent
WEBH, Chicago, Ill	370	6:30-11:30	6:30-11:30	6:30-11:30	6:30-11:30	6:30-21:30	6:30-11:30	6:00-8:00
WEAY, Houston, Texas	360			10:00-12:00		8:00-12:00	8:00-12:00	8:00-10:45
WFAA, Dallas, Tex WF1, Philadelphia, Pa	476 395	8:30- 9:30 Silent	8:30-12:00 6:00- 7:00	Silent Silent	8:30-12:00 6:00- 7:30	8:30- 9:30 Silent	8:30-12:00 Silent	6:00-11:00 5:30- 6:30
WGI, Medford, Mass	360	Silent	5:30- 8:00		5:30- 8:00	5:30- 8:00	5:30- 8:00	6:30- 8:00
WGN, Chicago, Ill	370	7:30-10:30	7:30-10:30	7:30-10:30	7:30-10:30	7:30-10:30	7:30-10:30	8:15- 9:00
WGR, Buffalo, N. Y	319	5:30-11:00			5:30- 6:30		5:30- 6:30	3:00- 4:00
WGY, Schenectady, N. Y WHA, Madison, Wis	380   360	6:45- 9:00 7:30- 8:30	6:45- 9:00 Silent	Silent 7:30- 8:30	6:45- 9:00 Silent	6:45-10:30 7:30- 8:30	8:30- 9:30 Silent	6:30: 7:30 Silent
WHAA. Iowa City	484	Silent	8:00- 9:30	Silent	Silent	Silent	Silent	9:00- 9:30
WHAS. Louisville, Ky	400	Silent	7:30- 9:00		7:30- 9:00	7:30 - 9:00	7:30- 9:00	4:00-5:00
WHAZ, Troy, N. Y WHB, Kansas City, Mo	380 411	8:00-10:00 7:00- 8:00	Silent 8:00-11:30	Silent 7:00- 8:00	Silent 8:00-11:30	Silent 7:00-8:00	Silent Silent	Silent 8:00-10:00
WHN, New York, N. Y	360	5:30-10:00	7:30-10:00		7:30-10:00		5:30-10:00	7:30-10:00
WHO. Des Moines, la	526	7:30- 9:00	Silent	7:30- 9:30	Silent	7:30- 9.00	Silent	7:30- 9:00
WIP, Philadelphia, Pa	509	Silent	Silent	Silent	Silent	Silent	Silent	8:30-11:00
WJAR, Providence, R. l WJAS, Pittshurgh, Pa	360 286	Silent 6:30- 9:00	6:00- 7:00 6:30- 9:00		Silent 6:30- 9:00	6:00- 9:00 6:30- 9:00	Silent Silent	Silent Silent
WJAX, Cleveland, O	390	Silent	6:30- 9:00	Silent	7:00- 9:30	Silent	Silent	Silent
WJY, New York, N. Y	405	Silent	5:45- 7:00	Silent	5:30- 8:30	5:30- 9:30	Silent	6:15- 6:45
WJZ, New York, N. Y WKAQ, San Juan, P. R	455 300	5:00- 9:30 Silent	5:00- 9:00 6:00- 8:00	5:00- 9:30 Silent	5:00- 9:30 Silent	5:00- 9:30 6:00- 8:00	5:00- 9:30 Silent	5:00- 9:30 Silent
WLS, Chicago, Ill	345	Silent	5:30-12:00	5:30-11:00	5:30-12:00	5:30-10:00	7:00-11:00	5:30- 7:00
WI.W. Cincinnati, O	423	7:00- 9:00		6:00- 9:00	9:00-11:00	Silent	Silent	6:30- 8:15
WMAQ, Chicago, Ill	448   500	Sileut 8:30- 9:30	5:00- 9:00 8:30-12:00	5:00- 9:00 Silent	5:00- 9:00	5:00- 9:00	5:00- 9:00	Silent Silent
WMC, Memphis, Tenn WMH, Cincinnati, O	309	Silent	Silent	6:00 8:00	8:30- 9:30 6:00 8:00	8:30-12:00 Silent	8:30- 9:30 8:00-10:00	Silent
WNAC, Boston, Mass	278	5:00- 9:00	7:00- 9:00	5:00- 9:00	7:00- 9:00	5:00- 9:00	8:00- 9:00	6:30-8:30
WOAL San Antonio, Texas.	385	Silent	9:30-10:30	Silent	7:30- 8:30	Silent	Silent	9:30-10:30
WOAW, Omaha, Neb WOC, Davenport, la	526 484	6:00-11:00 8:00-11:00	6:00-11:00 Silent	Silent 8:00- 9:00	6:00-11:00 9:00-10:00	6:00-11:00 8:00- 9:00	6:00-11:00 9:00-10:00	9:00-11:00 7:00-11:00
WOO. Philadelphia .Pa	509	5:30- 9:00	Silent	5:30- 9:00	Silent	5:30- 9:00	Silent	Silent
WOO. Kansas City, Mo	360	Silent	8:00- 9:30	Silent	8:00- 9:30	.Silent	8:00- 9:30	7:00- 7:45
WOR. Newark, N. J	405	4:15- 9:00	4:15- 5:30 Silent	4:15- 9:00 8:00- 9:30	4:15- 5:30	4:15- 5:30	5:15- 9:00 Silent	Silent 7:30- 8:30
WOS, Jefferson City, Mo WQJ, Chicago, III	441	8:00- 9:30 Silent	6:00- 1:00		Silent 6:00- 1:00	8:00- 9:30 6:00- 1:00	6:00- 1:00	7:30- 8:30
WRC Washington, D.C	469	Silent	4:15-10:00	Silent	4:15-10:00	Silent	4:15-10:00	Silent
WSAI, Cincinnati, O	309	9:00-11:00	6:00- 9:00	Silent	9:00-11:00	Silent	7:00- 9:00	2:00 -3:00
WSB, Atlanata, Ga	429 360	8:00-12:00 Silent	8:00-12:00 Silent	Silent Silent	8:00-12:00 Silent	8:00-12:00 Silent	8:00-12:00 Silent	7:30- 2:00 8:00- 9:00
WSY, Birmingham, Ala WTAM, Cleveland, O	390		5:00- 6:30		5:00- 6:30	5:00- 6:30	5:00-11:00	Silent
WTAS, Elgin, Ill	286	7:30-11:00	7:30-12:30	7:30-12:30	7:30-12:30	7:30-12:30	7:30-12:30	7:30-12:30
WTAY, Oak Park, Ill	283	Silent		5:45- 8:45		5:45- 8:45	5:45- 8:45	Silent
WWJ, Detroit, Mich	517	1.00- 6:00]	1.00-0:00		7:30-11:00		6:00- 7:30	0:30- 7:30

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

# STATIONS IN ORDER OF WAVE LENGTHS USED

Mete	ers Call	Met	ers Call	Mete	ers Call	Met	ers Call	Mete	rs Call	Met	ers Call
266	KFNF	319	WGR	360	WHN	395	WDAR	435	CNRO	484	WHAA
268	KFPT	326	KDKA	360	WJAR	395	WFI	435	NAA	484	WOC
270	KQV	330	CYX	360	WKAQ	400	PWX	440	CFCN	492	$\mathbf{K}\mathbf{G}\mathbf{W}$
273	WBBR	337	WBZ	360	WOQ	400	WHAS	441	wos	492	WEAF
278	WNAC	341	KFKX	360	WSY	405	WJY	448	$\mathbf{WQJ}$	500	WMC
283	WCAJ	341	CHYC	370	CYB	405	WOR	448	$\mathbf{W}\mathbf{M}\mathbf{A}\mathbf{Q}$	509	KLX
283	WTAY	345	WCBD	370	WEBH	410	CKCD	450	CKY	509	WIP
286	$\mathbf{KFGZ}$	345	WLS	370	wgn	411	WDAF	455	KFOA	509	ώõõ
286	WAAW	360	KGU	380	$\mathbf{WGY}$	411	WHB	455	$\mathbf{W}\mathbf{J}\mathbf{Z}$	510	CYL
286	WJAS	360	$\mathbf{w}$	380	WHAZ	423	KPO	462	WCAE	517 517	$\mathbf{w}\mathbf{c}\mathbf{x}$
286	WTAS	360	WCAJ	385	WOAI	423	WBAV	469	KFI	526	WHO
309	$\mathbf{WMH}$	360	WEAY	390	WJAX	423	$\mathbf{w}_{\mathbf{L}}\mathbf{w}_{\mathbf{L}}$	469	WCAP	526	WOAW
309	WSAI	360	WGI	390	WTAM	425	CKAC	469	WRC	536	KYW
312	KGO	360	WHA	395	KHJ	429	WSB	476	WFAA	546	$_{ m KSD}$

# DIXIELAND'S STATION

(Continued from page 13)

the perfectly modulated programs which WMC puts into the air are due to his expert technical knowledge of Radiocasting.

Joseph E. Kabakoff, a Mcmphis boy, is assistant to Mr. Root. Mr. Kabakoff also gives the market and weather reports, as well as the river news, during the day. He and Mr. Root are known throughout the country as the "Gold Dust Twins."

The writer blushes under the title of secretary. To her lot falls the genial task of answering hundreds of letters from critics and admirers of the station and a goodly part of the arrangement of she is known as "Miss Kitty."

"Chickasaw Ramblers" Big Feature

One of the outstanding features of Station WMC is the "Chickasaw Ramblers," an aggregation of fast and furlous jazz floor of the Commercial Publishing complayers. The orchestra has appeared on many of WMC's programs and its popuof telegrams and letters received at Memphis from all parts of the country.

While they style themselves jazz players, they are veritable "ramblers," for they ramble from the classics down to jazz, playing one equally as well as the other. When they don their feathers and give their true Indian yell, one might believe they had gone back to the days of Buffalo Bill.

The director, John B. Scruggs, Jr., is Memphis boy. He started playing the violin when but a chap and is now recognized as one of the leading violinists of the city. Each member is a soloist of ability and, taken as a whole, it is one of the best orchestras WMC has had.

WMC Has Small Personnel

WMC has the smallest studio personnel programs. To the many friends of WMC of any class B, 500-watt station in the country. Four persons outline the work, arrange all the programs, announce and operate the station.

The station is located on the fourth pany building, where is published the Commercial Appeal, known as the "South's larity has been proven by the hundreds Greatest Newspaper." There are three rooms. The studio proper has the conventional padded walls with perforated

and a Chickering grand piano. The other two rooms are devoted to the mechanical features, mainly the 500-watt broadcast-

With this equipment WMC has reached every state in the Union. It was heard

covering, containing well-chosen furniture one of the most popular stations in the United States.

WIP Off Air for Week

PHILADELPHIA -- Station WIP, Gimbel Brothers, is closed from Monday, September 15, through Saturday, Septemby the MacMillan expedition within eleven | ber 20, for repairs and extensive improvedegrees of the North Pole, on board a ments. The morning service will be broadship in the South Seas and proportionately cast as usual from the Holy Trinity as far east and west. It now stands as church, Sunday, September 21.



### A SOUNDER HEART INRADIO



# The Factory behind the BRENDONNE Jube

Never before such a tube—never before such a policy!

Your money back or tubes replaced by your dealer or ourselves immediately upon receipt of such tubes—without question.

Agents wanted.

ORANGE

NEW JERSEY Makers of the Brendonne Radiometer Precision Tube Certifier

# WLS FEATURES ILLINOIS STATE FAIR

# Wednesday, September 17

Silent night for: CKAC, KGO, WFAA, WFI, WGY, WIP, WMC, WOAW, WRC, WSAI.
CHYC, Montreal, Can. (Eastern, Daylight, 341), 9 p. m., Leo Ross and Party.
CKAC, Montreal, Can. (Eastern, Daylight, 425), 1:45 p. m., Mt. Royal Hotel luncheon concert.
KDKA, E. Pittsburgh, Pa. (Eastern, 326), 11:15 a. m., Daugherty's orchestra; 5:30 p. m., dinner concert, Pittsburgh Athletic association orchestra; 6:30, children's period, Wimble, the wanderer with his storycap is coming; 8, concert mixed quartet, Charlotte Brewer, soprano; Ella Herdman Dosch, contraito; Lemuel Windgard, tenor; Ashley Brocket, baritone; Metropolitan trio of mandolins and gultars.
KFAE, Pullman, Wash. (Pacific, 330), 7:30-9 p. m., Jaroslav Sotola, violinist; "Fairs, Not Fakers," Lincoln R. Lounsbury; "Development of the Practical in Higher Education," Pres. E. O. Holland; "Business of Belng a Good Citizen," Rev. Norman McKay.
KFI, Los Angeles, Calif. (Pacific, 469), 6:45-7:30 p. m., Nick B. Harris detective storics; vocal concert; 7:30-8, "Mammy" Simmons and Croby sisters; 8-9, Evening Herald, Kennedy broadcasters; 9-10, Examiner studio concert; 10-11, Hollywoodland community orchestra; 11-12, Ambassador Coccanut Grove orchestra.
KFKB, Milford, Kans. (Central, 286), 7:20 p. m., "College of the Air," music department; 7:30, "Relative Value of Coals Available in Kansas," J. P. Calderwood; 7:45, "The Farm Water Requirements," H. B. Walker; 8, KFKB orchestra; "The Functions of the Endocrines," Dr. J. B. Brinkley; 9, KFKB artists; 10-12, dance music.
KFNF, Shenandoah, Ia. (Central, 266), 7:30 p. m., band concert, Elks' band.
KFOA, Seattle, Wash. (Pacific, 455), 8:30 p. m., Heinie Brown, violinist: Gwendolyn Mines, pianist.
KFSG, Los Angeles, Calif. (Pacific, 278), 2:30-4:30 p. m., auditorium service, organ; congregational singing; prayer; music; "deeper bible teachings on divine healing," Aimee Semple McPherson; altar call; 6:30-7:30, Gray studio program presented by Mrs. Edward Hughes,

# Headliners of the Week

US WILL bring to those of you who cannot attend in person the chief events of the Illinois State Fair at Springfield. The races will be described as witnessed by George Hay. Tune in and get the voices of the fairground.

Wednesday the New England Rotary club will meet via Radio in connection with the New England business week. WBZ will broadcast the singing and speeches of the Community club.

A special program designed to reach all Spanish speaking countries will be given in Spanish and English Thursday night by KDKA. Something uniquely new in creative music will be broadcast by WRC this same evening when Louis B. Thompson directs the "Dramatized Song Cycle" of the lovely "Eliland." Many noted Washington artists will sing the

leading roles.
WBAV will carry you "way back when" Friday night. Dr. W. A. King has arranged a two hour program of old time sacred songs. If you desire something a bit more lively, the Hotel

Winton Station WHK, Cleveland, promises all kinds of fun and frolic in its carnival night program.

The Hired Help of WSB, Atlanta, is skylarking Saturday. These hands do so well on the programs that it is hard to believe that they are only the help around the station. C. Francis Jenkins, the famous inventor of the Radio-Movie will give a talk from WRC.

Sunday afternoon WJAR will Radiocast the opening exercises of the "Temple of Music" which is to be dedicated to the leading composers and artists of the past. A chorus of 350 voices and the United States Marine band will furnish the

Lovers of good music will enjoy the concert to be given from WFI Monday by the Curtis School of Music, a school well-known in musical circles.

WDAF will have tryouts all winter for child talent programs to be given twice-monthly. All winners must make a score of over 95. The first series of successful young folks will be heard this Tuesday.

the Star's string trio; 6-7, school of the alr, plano tuning in number on the Duo-Art; address, speaker from the Health Conservation association; address, apeaker from the Meat Council of Greater Kansas City; the Tell-Me-a-Story Lady; music, Fritz Hanlein's Trianon ensemble, Hotel Muehlebach; 8-9:15, program arranged and presented by Mrs. E. N. Brinkman, sopramo; Mrs. Ella Schutte Clark, pianist; Mrs. Leon C. Hinkle, soprano; and others; 11:45-1 a. m., night-hawk frolic, the "Merry Old Chief" and the Plantation players, Hotel Muehlebach.

WDAR, Philadelphia, Pa. (Eastern, Daylight, 395), 11:45-2, a. m., daily almanac; 12:02 p. m., Stanley theater organ recital; 12:30, services, auspices, Philadelphia Federation of churches; Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 4:30, Edna Finestone, planist; 7:30, Dream Daddy's bedtime stories; 10, Arcadia cafe dance orchestra.

WEAF, New York, N. Y. (Eastern, Daylight, 492), 11-11:15 a. m., Minnte Weil, pianist; 11-11:45, Young Mother's program; 4-4:15 p. m., Bernard A. Ahrens, barltone; 4:15-4:30, Richard B. Glibert, Tarapatch player; 4:45-5, Margaret McKnight, soprano; 6-7, dinner music, Waldorf-Astorla hotel; 7-7:15, United Synagogue of America; 7:30-7:45, Rose Becker, violinist; 7:45-8, American Agriculturist; 8-8:15, Mildred T. Mills, soprano; and Frank La Forge; 8:30-8:45, American Bond and Mortgage company; 9-10, Vic's dance orchestra.

WEAO, Columbus, Ohio (Eastern, 360), 1:30 p. m., educational talk, member Ohio State University faculty;

WEAO, Columbus, Ohio (Eastern, 360), 1:30 p. m., educational talk, member Ohio State University faculty; 4 p. m., farm talk, faculty member; music, university

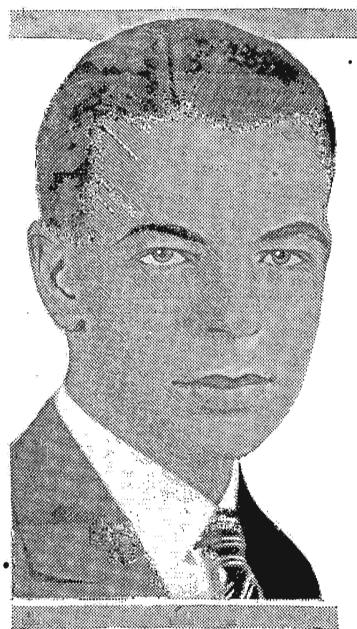
talent.

WEBH, Chicago, III. (Central, Daylight, 370), 7:308:30 p. m., Louise Navigato, soprano; everyday songs,
Robert Bonell; Edgewater Beach Oriole orchestra;
9:30-10:30, Langdon brothers, steel guitarists; Marle
Kelly, reader; Edgewater Beach Orlole orchestra;
11:30-12:30, songs, George Little, Larry Shay; trio,
Nlck, Ted, Frank; Orlole orchestra.

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

WFI, Philadelphia, Pa. (Eastern, Daylight, 395), 1
p. m., Meyer Davis Bellevue Stratford concert orchestra; 3, Loretta Kerk, pianist; 6:30, Meyer Davis Bellevue Stratford concert orchestra; Stafford concert orchestra; 7, Sunny Jim, the
kiddlea pal.

kiddlea' pal. WGAQ, Shreveport, La. (Central, 263), 8-9 p. m., vocal



Who would believe that this stern looking gentleman is the soft voiced bedtime story teller loved by all the children who tune in for WJAX, Cleveland. His name is Elmer G. Johnson. Charming Morrine Marselles will sing from WQJ, Friday, September 19.

Eagle Rock, assisted by her daughters Mary Elizabeth and Betty; Mrs. Rose, pianist.

KGO. Oakland, Calif. (Pacific, 312), 3 p. m., musical program and Cora L. Williams institute speaker; 4-5;30, concert orchestra of the Hotel St. Francis, Vinton

program and Cora L. Williams institute speaker; 4-5:30, concert orchestra of the Hotel St. Francis, Vinton La Ferrera, conductor.

KGW, Portland, Ore. (Pacific, 492), 3:30 p. m., talk, Jeanette P. Cramer; 8, concert, Western Union Telegraph company; 10, dance muslc, George Olsen's Metropolitan orchestra.

KHJ, Los Angeles, Calif. (Pacific, 395), 12:30-1:15 p. m., Oaks Tavern orchestra, courtesy, Oaks Tavern; Fred C. McNabb, from Aggeler and Musser Seed company, speaker; 6-6:30, Art Hickman's concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, children's hour, "American History," Prof. Walter Sylvester Hertzog; Jane Hall, age 11, pianist, pupil of Margaret Hobart; "Baby" Muriel MacCormae, screen juvenile; bedtime story, Uncle John; 8-10, concert; courtesy, Hellman Commercial Trust and Savings Bank, arranged by A. K. Berkland; lecture, Dr. Mars F. Baumgardt; 10-11, Art Hickman's dance orchestra.

KLX, Oakland, Calif. (Pacific, 509), 8-10:20 p. m., program, Commercial Trust and Savings band; Tonmy Tomlinson trlo, J. Brothers, violinist; Tommy Tomlinson, planist; L. S. Sutherland, saxophonist; Vine Lowry, planist; Scotch songs, Robert Robertson; "Deforestation and Conservation," S. E. Biddle; Metropolitan Four, Thelma Werli, soprano; Sylvia Haampa, contraito; Harold Spaulding, tenor; Phillip Pedgrift, barifonc; Vira Parker, accompanist; "Torging Ahead," Mrs. George A, Rigg; "A Little Bit O'Scotch," Robert Robertson; American theater; Horace Heldt's Claremont hotel orchestra; Mrs. E. Lindquist, vocalist.

KPO. San Francisco. Calif. (Pacific, 423), 1-2 p. m.

Robertson; American theater; Horace Heldt's Claremont hotel orchestra; Mrs. E. Lindquist, vocalist.

KPO, San Francisco, Calif. (Pacific, 423), 1-2 p. m., Rudy Selger's Fairmont hotel orchestra; 2:30-3:30, Garry Fisher's Amphians; 4:30-5:30, Rudy Selger's Fairmont hotel orchestra; 5:30-6:30, children's hour. Big Brother of KPO; 7-7:30, Rudy Selger's Fairmont hotel orchestra; 8-11, E. Max Bradfield'a Versatile hand; Baron Keyes, composer; "Thrift in Education for Your Boy and Mine," William T. Elzinga.

KQV. Pittsburgh, Pa. (Eastern, Daylight, 270), 9-10 p. in., novelty quartet, Mrs. Maurice Goodman; Maurice Goodman, Stanley Goodman, Georgo Allebrand; Betty Stein, planist.

K8D, St. Louis, Mo. (Central, 546), 6:45 p. m., concert,



Abergh's concert ensemble; Arne Arnesen, violinist; 9, Mary J. Moore, soprano; Hedwig Niehoff, violinist; p. m., Irene Klincpeter, mczzo-soprano; 8:15, "The Mrs. J. H. Fulgham, planist; Byron Smith, baritone; Progression of the Divine Plan;" 8:45, Irene Klino-Mrs. Chas. Horner, reader.

KYW, Chicago, III. (Central, Daylight, 536), 11:35 a. m., table ialk, Mrs. Anna J. Peterson; 6:35-7 p. m., children's bedtime story, Uncle Bob; 7-7:30, dinner concert, Congress hotel; 7:30-8, program, Duncan Sisters Music Publishing company; 8-8:30, musical program; 8:30-8:45, "Around the Town with KYW in Chicago," stage revues; 8:45-9, music; 9:45-12:30, midnight revue. mldnight revue.

PWX, Havana, Cuba (Eastern, 400), 8:30 p. m., General staff band of the Cuban army, Lleut, Juan Igleslas, leader.

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

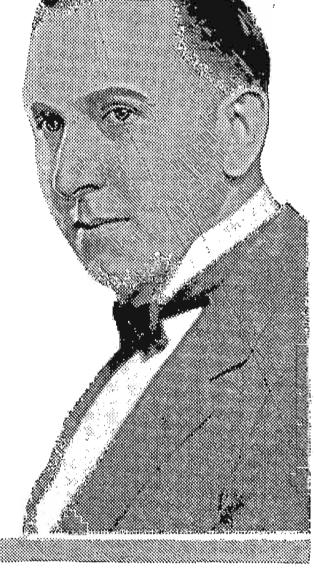
pcter.

WBZ, Springfiold, Mass. (Eastern, Daylight, 337), 6
p. m., dinnor concert, WBZ, trio; 7:10, "What the
Home Economics Extension Service Did for Me and
How It Can Help Other Women." Mrs. Gardner R.
Flles; 7:30, bedtline story; 7:40, WBZ trlo; Mrs. Carl
W. Rommel, planist; 8:30, McNelly'a orchestra;
9, New England Rotary club meeting; mualc, Community
club; 11:30, Leo Reisman and his Hotel Brunswick
orchestra; songs, Bill Coty, Jack Armstrong.

WCX, Detroit, Mich. (Eastern, 517), 4:15 p. m., musical
program; 6, dinner concort; 8:30, musical program;
Nicbols' Kling Wah Ho Cafo orchestra.

WDAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. m.,

WDAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. m.,



Ralph W. Fuller is the baritone soloist of the Palmer School Radio or-chestra at Station WOC, Davenport, Iowa. Tune in some Thursday or Saturday evening.

and instrumental program; 9-10, 11-12, dance music, Youree Roof garden, Louisiana Rambler Hotel Youree orchestra.

WGN, Chicago, III. (Central, Daylight, 270), 1:45 p. m., luncheon concert; 2:30, "Trib-Lets," women's easy chair hour; 5:30, Skeezix time; 6:30-7:30, dinner concert; 8:30-9:30, Victor H. Jacobs, tenor; Mamie Stillerman, planist; Jack Stillerman, baritone; 10:30-11:30, Burt Davls; Jack Stillerman, baritone; 10:30-11:30, Burt Davls; Jack Stillerman, baritone; 10:30-11:30, Burt Davls; Jack Chapman's dance orchestra.

WGR, Buffalo, N. Y. (Eastern, Daylight, 319), 12:30-1 p. m., George Albert Bouchard, organist; 6:30-7:30, dinner music; 8:50-9, address, "Motor Vehicle Operator'a License Law," Henry Seilheimer; 9-9:30, violin soloist, Karl Mahlsted; 9:30-10, A. J. Erisman, tenor; Amy Harris, pianist; 10-11, Gertrude Hutchinson, pianist; 11:30, supper dance music, Vincent Lopez, Hotel Statler dance orchestra, Harold Gleser, director.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., Alamo theater orchestra; readings, Courier-Journal and Louisville Times; 7:30-9, Kentucky Night Owls, Jake Scilgman, director.

theater orenestra; readings, Courier-Journal and Louisville Times; 7:30-9, Kentucky Night Owis, Jake Selfgman, director.

WHB, Kansas City, Mo. (Central, 411), 7-8 p. m., music. Sweeney Radio instrumental trio; readings, Walt Filkin, poems of his own composition.

WHN, New York, N. Y. (Eastern, Daylight, 360), 2:15-2:30 p. m., Gene Ackerman, planist; 2:30-2:45, Gene Austln, baritone; 2:45-3:15, Al. King's Original Louislana Five; 3:45-4, "Tho Modern Girl in Physical Education," Jeanne LaMar; 4-4:15, Victoria Markman, soprano; 4:15-4:30, Carl Hallgren, baritone; 4:30-4:45, Bella N. Zilberman, planist; 4:45-5:30, 12zy Meyer's California Syncopators; 6:30-7:30, Olectt Vail's trio and Paul Specht's Alamac orchestra. 7:30-9:15, dinner, Jewelry Crafts Assn.; 9:30-10, Gem Safety Razor orchestra; 10-11, Clover Gardens dance orchostra.

WHO, Des Moines, Ia. (Central, 526), 7:30-9 p. m., the Bankers Life Radio orchestra, W. L. Marsh and Stewart Dulaney, directors.

WJY, New Yerk, N. Y. (Eastern, Daylight, 405), 7:30-8 p. m., weekly French lesson; 9-10, Al Reisor's Club Ferrori orchestra.

p. m., weekly French lesson; 9-10, Al Reisor's Club Ferrori orchestra.

WIZ, New York, N. Y. (Eastern, Daylight, 455), 1010:10 a. m., daily menu; 10:20-10:30, "Visit the Sirloin, It'a a Noble Joint," Meat Council of Now York;
10:50-11, Eleanor Gunn's fashion talk; 7-8, Selzer's
Cafe Boulovard orchestra; 8-8:15, Wall Street Journal
review; 8:30-10, Sons of American Revolution program;
(Continued on page 16)

# KDKA IN SPANISH THURSDAY: C. H

# Where to Hear Concerts

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

from jazz to opera.

Wenedsday: 6, WBBR, WDAF, WEAF, WQJ, WWJ; 6:45, KSD, WBBR; 7, CHYC, KDKA, KQV, KYW, WGR, WHB, WJAX, WLS, WLW, WMAQ, WMH, WOR; 7:15, WTAS; 7:30, KFNF, KFKB, PWX, WCX, WGR. WHAS, WHO; 8, KFKB, KYW, WDAF, WGAQ, WGR, WLW, WLS, WOC, WTAY; 8:15, WMAQ, WOR; 8:30, KHJ; 8:45, KYW, WOS; 9, KFKB, KSD, WGAQ, WLS, WQJ; 9:15, WTAY; 9:30, KFAE, KFI, WBZ, WJAX; 10, KFI, KGW, KHJ, KLX; 10:30, KFOA; 10:45, WSB; 11, KFI, WGAQ; 11:45, WDAF; 1, KFI. Thursday; 6, WDAF, WEAF, WHK, WJZ, WQJ, WWJ; 6:45, WBZ, WLS; 7, CNRM, KDKA, WBBR, WCBD, WEAO, WGY, WJY; 7:15, WBZ, WTAS; 7:30, CNRM, KFNF, KYW, WCX, WHAS, WMAQ, WMH; 8, KFKB, WAAW, WBBR, WTAY; 8:30, KHJ, WFAA, WMC; 9, KFKB, KYW, WLS, WLW, WOAW, WOC, WQJ, WSAI, WWJ; 9:15, WTAY; 9:30, WLW; 10, KFI, KHJ, KPO, WLW; 10:30, WCAY, WLW; 10:45, WSB; 11, KFI, KPO, WFAA; 11:30, KHJ; 11:45, WDAF; 12, KFI, WLS. Friday; 6, CNRT, WDAF, WEAF, WHK, WHN, WQJ, WOR, WWJ; 6:15, WOA; 6:30, KYW, WJZ, WOAW; 6:45, WLS; 7, KDKA, KQV, WBAY, WGY, WHAS, WHO; 7:30, KFNF, WCX, WHAS, WHO; 7:35, WOAW; 6:45, WLS; 7, KDKA, KQV, WBAY, WGY, WHAS, WHO; 7:15, WOO, WOR, WJY, WTAS; 8, KFKB, KSD, KYW, WBZ, WCAY, WDAF, WDAR, WGAQ; WOC; 8:15, WMAQ, WSB; 8:30, KHJ, WBZ, WFAA, WHN, WMC, WOS; 8:45, KFI; 9, KFKB, WBZ, WGAQ, WHN, WLS, WOAW, WQJ; 9:30, KFAE, WGY; 9:45, KYW; 10, KFI, KGW, KHJ,

KLX; 10:30, KFOA; 10:45, WSB; 11, KFI, WGAQ, WMC; 11:45, WDAF; 12, KFI; 12:30, KGW; 1, KFI.

Saturday: 6, CKAC, WBBR, WDAF, WEAF, WFI, WHN, WWJ; 6:30, CKAC, WHN; 6:45, WBBR, WLS; 7, KDKA, KYW, WBZ, WHN, WJZ, WMAQ, WQJ, WRC, WSAI; 7:15, WTAS; 7:30, KFNF, PWX, WHAS, WHN; 8, KFKB, KSD, WHN, WMAQ, WSAI, WSB, WTAM, WTAY; 8:30, CKAC, KHJ, KFI, PWX, WFAA, WGY, WHN, WMC; 9, WHN, WMH, WOAW, WOC, WQJ; 9:15, WTAY; 9:30, WMH; 10, KFI, KHJ; 10:30, KPO; 10:45, WSB; 11, KFI, KHJ, WFAA; 11:45, WDAF; 12, KFKB; 1, KFI.

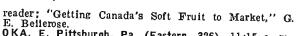
Sunday: 6:30, KFNF 7, WHK, WQJ; 7:15, WEAF, WJAR, WTAS; 7:30, WHO; 7:45, WLW; 8, KGO, WHK; 9. WFAA, WOC, 10, KPO; 11, KPO.

Monday: 6, WDAF, WEAF, WJAR.

9:30, WFAA, WOC, 10, KPO; 11, KPO.

Monday: 6, WDAF, WEAF, WJAR, WLS; 6:30, WOO; 6:45, WGY, WLW; 7, WCBD, WCX, WHB, WMH, WOO, WTAM; 7:15, WTAS; 7:30, WAAW, WHO, WOR, WWJ; 8, KFKB, WCAY, WEAF, WHN, WOC, WSB; 8:30, WMC, WOS; 9, KFKB, WCX, WOAW, WSAI; 9:30, KFAE; 10, KPO, KGW, WHN, WOC; 10:45, WSB; 11:45, WDAF.

Tuesday: 6, WDAF, WEAF, WQJ; 6:30, CKAC, WEAF, WJAX, WSAI; 6:45, WEAF, WGY; 7, WBAV, WEAF, WJAR, WRC, WSAI; 7:15, WTAS; 7:30, KFNF, WHAS, WSAI, WWJ; 8, KFKB, WHB, WSB; 8:15, WMAQ; 8:30, CKAC, WMC; 9, KFKB, WLW, WOAW, WQJ; 9:15, WCAY; 10, KGO, KGW, WLW; 10:30, WLW; 10:45, WSB; 11:45, WDAF,



reader; 'Getting Canada's Soil Fruit to Mainer, C. E. Bellerose, KOKA, E. Pittsburgh, Pa. (Eastern, 326), 11:15 a. m., Scalzo's orchestra; 5:30 p. m., dinner concert, KDKA Little Symphony orchestra; 6:30, children's period, Ronald MscDonald from the Highisnd; 6:45, address, representative of the Automobile club; 8, concert for reception in Spanish speaking countries; KDKA Little Symphony orchestra, Victor Saudek, conductor; Nszrin La Marcs, tenor.

reception in Spanish speaking countries; KDKA Little Symphony orchestra, Victor Saudek, conductor; Nazarin La Marcs, tenor.

KFI, Los Angeles, Calif. (Pacific, 469), 6:45-8 p. m., Y. M. C. A. lecture; L. A. junior quartet; 8-9, Ambassador Coccanut Grove orchestra; 9-10, Examiner studio concert; 10-11, Frederick North concert company.

KFKB, Milford, Kansas (Central, 286), 8 p. m., KFKB orchestra; 8:30, "Happiness and Health," Dr. J. R. Brinkley; 9, KFKB artists; 10-12, dance programs.

KFNF, Shenandoah, Ia. (Central, 266), 7:30 p. m., concert from Brownville, J. Z. Roberts, director.

KFSG, Los Angeles, Calif. (Pacific, 278), 3:30-4:30 p. m., organ recital and program, courtesy. B. Barnest Baliard; 7:30-9:15, auditorium service, organ; congregational singing; music; prayer; announcements; sermon, Ainee Semple McPherson; water baptismal service; 9:15-10, Gray studio program featuring the temple silver band, direction, G. N. Nichols; 10-11, organ recital and progrsm, courtesy. Esther Fricke Green, with sssisting artists.

KGO, Oakland, Calif. (Pacific, 312), 4-5:30 p. m., concert orchestra of the Hotel St. Francis; 8, drams, "The Better Understanding," KGO players; Towier trio; 10-1 a. m., dance music, Henry Halstead's orchestra.

KGW, Portland, Ore. (Pacific, 492), 3:30 p. m., chil-

dren's program; 10, dance music, George Olsen's Metropolitan orchestra. KHJ, Los Angeles, Calif. (Pacific, 395), 12:30-1:15 p.

KHJ, Los Angeles, Calif. (Pacific, 395), 12:30-1:15 p. m., concert, Jimmie Wcst and Westerners, courtesy, Greenwich Village; 6-6:30, Art Hickman's concert orchestra. Edward Fitzpatrick, director; 6:30-7:30, children's program, "American History," Prof. Walter Sylvester Hertzog; Dickie Brandon, screen juvenile; bedtime story, Uncle John; 8-9:30, concert, courtesy, Martin Music company, arranged by J. Howard Johnson; 9:30-10, concert, Filippino string orchestra, courtesy, Blue Bird cafeteria; 10-11, Art Hickman's dance orchestra, Earl Burtnett, director.

KPO, San Francisco, Calif. (Pacific, 423), 1-2 p. m., Rudy Seiger's Fairmont hotel orchestra; 2:30-3:30, Cap and Bells club, Mrs. Emmett Hayden, president; 5:30-6:30, children's hour, Big Brother: 7-7:30, Rudy Seiger's Fairmont hotel orchestra; 5:30-6:30, children's hour, Big Brother: 7-7:30, Rudy Seiger's Fairmont hotel orchestra; 5:30-6:30, children's hour, Big Brother: 10-11, E. Max Bradfield's Versatile band.

CYW. Chicago. Ill. (Central. Oavlight 536), 12:25

Bradfield's Versatile band.
(YW. Chicago, III. (Central, Oaylight, 536), 11:35
a. m., table talk, Mrs. Anna J. Peterson: 2:35-4 p. m.,
afternoon frolie: 6:35-7, children's bedtlime story, Unic Bob; 7-7:30. dinner concert, Congress hotel; 8-8:20, "Twenty Minutes of Good Reading," Rev. C. J. Pernin; 8:20-9. Richard Eliensohn, bass; Sallie Menkes, accompanist; Herbic Mintz, KYW's pianist; 9:15, "Safety First," Z. C. Elkin; 10-11:30, "At Home"

WAAW, Omaha, Nebr. (Central, 360), 8-9 p. m., educational program, talks, Rev. E. M. Brown, W. J. Ikriss.
WBAV, Columbus, Ohio (Eastern, 423), 12 m., religious

services, Columbus Council of Churches, Rev. Timothy Lehman, pastor, St. John's Evangelleal church, speaker; sacred music. WBBR, New York, N. Y. (Eastern, Oaylight, 273), 9:10 p. m., Dr. Hans Haag, violinist; 9:30, international Sunday School lesson, S. M. Van Sipma; 9:50, Dr.

WBZ, Springfield, Mass. (Eastern, Oaylight, 337), 6 p. m., Leo Relsman and his Hotel Brunswick orchestra; 6:30, songs, Bill Coty and Jack Armstrong; 6:40, Leo telsman and his Hotel Brunswick orchestra; 'At the Theaters," A. L. S. Wood; 7:30, bo "At the Theaters," A. L. S. Wood; 7:30, bedtime story for the klddies; 7:45, Charles R. Hector with his St. James theater orchestra; 8:15, Rallroad night;

WCBO, Zion, Ill. (Central, 345), 8 p. m., cornet quartet, celestial bells; J. D. Thomas, baritone; Mrs. Glen Il. Sparrow, contralto; cornet ducts, Newcomer, Mason; Esther Wiedman, soprano; ducts, Esther and Evangelino Wiedman; Pauline Penn Russell, planist; readings, Louise, Russell

Louise Burgess. WCX, Ootroit, Mich. (Eastern, 517), 4:15 p. m., musical program; 6, dinner concert; x:30, musical program; Ford Motor band.

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 Silent night for: KFAE, KLX, KSO, WDAR, WGR, WHN, WIP. WOO, WOR, WOS.
CNRM. Montreal, Can. (Eastern, Oaylight, 430), 9 p. ni., Mine. Blanche Archambault, soprano; S. L. Lortle, Callist, Armand Cauthier, Varience, Miller Page, WDAR, Philadelphia, Pa. (Eastern, Daviight, 295),

wGR, Buffalo, N. Y, (Eastern, Oaylight, 319), 12:30-1 p. m., George Albert Bouchard, organist; 6:30-7:30, dinner music.

dinner music.
WGY, Schenectady, N. Y. (Eastern, 380). 1 p. m., "The
New Fall Footwear;" 5:30, Stephen E. Boiselair, organist; 7:45, "A Few Moments with New Books," William F. Jacob; 8, WGY orchestra; Mrs. Carroll G.
Brown, planist.
WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., Alamo
theater orchestra; 7:30-9, Dix Bluegrass Serenaders,

Henry L. Dixon, director.

WHB, Kansas City, Mo. (Central, 411), 8-9:30 p. m.,
musical program, Frank R. Marks' orchestra and
soloists; 10:30-11:30, dance music, Frank R. Marks'

WHK, Cleveland, Ohio (Eastern, 283), 7 p. m., program arranged by the Cleveland Press; orchestra and popular entertainers. WJAX, Cleveland, Ohio (Eastern, 390), 8 p. m., Hotel

Cleveland orchestra, Ivan Francisci, director; Liddi-coat's Banjo club; 10:30, Vincent H. Percy, organist. VJZ, New York, N. Y. (Eastern, Daylight, 455), 10-10:10 a. m., daily menu; 10:20-10:30, "The Progress of the World," Review of Reviews; 10:35-10:50, of the World," Review of Reviews; 10:35-10:50, "Planting," Pcter Henderson company; 10:50-11, Eleanor Gunn's fashion talk; 1-2 p. m., Nathan Abas Totel Pennsylvania orchestra; 7:55-8, Collier's Weekly; 8-8:10, Wall Street Journal review; 8:10-8:30, Irene Jacques, soprano, Mrs. Anno Tindaie, accompanist; 8:30-9:30, Wanamaker organ concert, Chas. Conbourn, organist; 9:30-9:45, "Outline of Radio History," John V. L. Hogan; 10:30-11:30, Waldorf-Astoria dance

WLS, Chicago, III. (Central, Oaylight, 345), 1-2 p. m.,
"Farm Question Box," E. B. Heaton; 2-2:30, band concert; 3:45-5:30, running and harness races; 6:30-7,
Ralph Emerson, organist: 7-7:15, State Fair winninga; 7:20, Governor Len Small; 7:45-8, Iuliaby time; 10:15 11, Springfield College of music; Wallace Grieves, violinist; Clarence Mayer, planist; Diamond Vadakin, soprano; 12-1, echoes from Sleepy Hollow.

yLW, Cincinnati, Ohio (Central, Oaylight, 423), 10 p. m., message from United States civil service; 10:03. concert, Affinor trio; 10:30, Doherty Melody orchestra; 11, Milnor instrumental trio; 11:30, Doherty orchestra. WMAQ, Chicago, III. (Central, Oaylight, 447.5), 4:10 p. m., items of interest to women; 4:30, musical prop. III., Items of interest to woulen; 4:30, musical program; 6, Chicago theater organ recital; 6:30. Hotel LaSalle orchestra; 8, garden talk, James H. Burdett; 8:15, Boy Scout program; 8:30, Banjo James; 8:45, investment talk; 9, Aurora, III. Radio night.

WMC, Memphis, Tenn. (Central, 500), 8:30 p. m., Holei Chisca orchestra.

WMH, Cincinnati, Ohio (Central, Oaylight, 309), 7:30

p. m., fairy tales for kiddles, Nicholas Klein; 8, Cin-clinnati Zither quartet, Ruth Hoche, Charles Hoche, M. Roerich, Louis Wegort; 8:30, tenor solos, baritone solos, duets, James Secvers, tenor; George Egbers, baritone; Anna Mades, accompanist; plano solos; Clarence Reeves; 9, Avon dance orchestra, R. C. Fisher, di-

WOAW, Omaha, Ncbr. (Central, 526), 6 p. m., every child's story hour, conducted by Grace Sorenson; 6:30, dinner program, G. R.'s Radio orchestra; 9, Greenfield,

Nova.

WOC, Oavenport, Ia. (Central, 484), 12 m., chimes; 9 p. m., the Palmer School Radio orchestra; Ralph W. Fuller, barltone.

WOO, Philadelphia, Pa. (Eastern, Daylight, 509), 11 a. m., Mary E. Vogt, organist; 12:02 p. m., Wanamaker crystal tea room orchestra; Robert E. Golden, director; 4:45, Mary E. Vogt, organist.

WOR, Newark, N. J. (Eastern, Oaylight, 405), 2:30-2:45

p. ni., Max Jacob Hamer, tenor; 2:45-3, Dorothy Tompkins, planist; 3:30-3:45, Max Jacob Hamer, 3:45-4, Dorothy Tompkins; 6:15-6:30, "Radio for Layman," Albert E. Sonn; 6:30-7:20, Jimmy Lent and his orthestral 7:29-7:20, sport talk, Jeily Bill Steinke,

WQI, Chicago, III, (Central, Daylight, 448), 11-12 m.,
"The Ham What Am," Erna Bertrams; "Getting in
Trim for Fail Styles," Elesnor Chalmers; 3-4, talk on
millinery; Jane Heddon; 7-8, Ralph Williams and His
Rainbo Garden orhestra; Mrs. Lydia Lochner, contraito;
Marion Henry, accompanist; Manual Rodriguez, Spsnish
tenor; Kathryn Snyder, reader; 10-2, Ralph Willisms
and His Rainbo Garden orchestra; Axel Christensen,
planologues; Grace Wilson, contraito; Bernard and
Robinson, Dixic stars; Hill, Hirsch and Gorny, Hsrmony singers.

Robinson, Dixic stars; Hill, Hirsch and Gorny, Hsrmony singers.

WRC, Washington, O. C. (Eastern, 469), 6 p. m., children's hour, Peggy Albion; 8, motoring talk, auspices, American Automobilo association; 9, Eliland song cycle, Von Fielitz, Louis Thompson, director.

WSAI, Cincinnati, Ohio (Central, Oaylight, 309), 10 p. m., contraito solos, Sylvia Geisler; Elba Frances Davies, accompanist; Temple Brothers, male quartet; soprano solos, Marie Houston.

WSB, Atlanta, Ga. (Central, 429), 8 p. m., classic hour; 10:45. Warners Seven Aces: Dr. Charles A. Sheldon.

Warners Seven Aces; Dr. Charics A. Sheldon, organist.
WTAS, Elgin, III. (Central, 286), 7:15-12:30 midnight,

KF

W(

8;3 KP

10:

KG

6:3

w WI.

WC

WJ

9:3 12,

K WC

WE WJ 10,

12,

KH

WC) 7:3(

W IA WC:

WA

9:3( KF E KP

T: WOV 9, 12

KIK

WHI KPC

Ŋ

Arcada ballroom orchestra; songs, Charley Hughey, WTAY, Oak Park, III. (Central, 283), 6:45-7:45 p. m. WTAY, Oak Park, III. (Central, 283), 6:45-7:45 p. m., Nina Joslyn, soprano; Richard Joslyn, baritone; Alice Buresh, readcr; 9-9:45, George Clark, organist; 10:15-11:15, Guyon's Paradise orchestra.

WWJ, Oetroit, Mich. (Eastern, 517), 9:30 a. m., talk, women's editor, Detroit News; 12 m., Detroit Newa orchestra; 7 p. m., Detroit Nows orchestra; Carl Wezemaei, baritone; 10, Goldkette's orchestra.

# Friday, September 19

Silent night for: CKAC, KGO, KPO, WBBR, WFI, WIP, WLW, WMH, WOR, WRC, WSAI. CKAC, Montreal, Can. Eastern, Oaylight, 425), 1:45 p. m., Mount Royal Hotel luncheon concert. CNRT, Toronto, Can. (Eastern, 400), 8 p. m., Aeolian quartet; address, "Getting Canada's Soft Fruit to Market." G. E. Bellerose

quartet; address, 'Getting Canada's Soft Frult to Market,' G. E. Bellerose. KOKA, E. Pittsburgh, Pa. (Eastern, 326), 11:15 a. m.,

KOKA, É. Pittsburgh, Pa. (Eastern, 326), 11:15 a. m., concert, Daugherty's orchestra; 5:30, Paul E. Fleeger, organist; 6:30, children's period, a pitter patter rsindrop program; 8, Ingram Ladies' Choral society; Marie Bennett, soprano; Adolph MacLuckie, tenor.

KFAE, Pullman, Wash. (Pacific, 330), 7:30-9 p. m., Florence Carpenter, planist; Lusinn Barakian, soprano; 'What to Expect of Hogs This Year,' R. N. Miller; 'Care of the Eyes,' Public Health service; talk on new books, Alice L. Webb.

KFI, Los Angeles, Calif. (Pacific, 469), 6:45-8 p. m., Aeolian organ recital; 8-9, Evening Herald concert, Carl Edward Hatch; 9-10, Examiner studio program; 10-11, concert; 11-12, Ambassador Cocoanut Grove orchestra.

Carl Edward Hatch; 9-10, Examiner studio program; 10-11, concert; 11-12, Ambassador Cocoanut Grove orchestra.

KFKB, Milford, Kans. (Central, 286), 7:20 p. m., "College of the Air," Kansas State Agricultural college; 7:30, "Wbat Business English Is," H. W. Davis; 8, KFKB orchestra; 8:30, "Sight-seeing in the Valley of the Kings," Dr. J. R. Brinkley; 9, KFKB artists; 10-12, dance music.

KFNF, Shenandoah, Ia. (Central, 266), 7:30 p. m., concert by Coburg, Levi Drollinger, director.

KFOA, Seattle, Wash. (Pacific, 455), 8:30 p. m., trogram. Modern Woodmen of America, Elllott Bay Camp No. 5138, M. W. of A.: Mrs. W. H. Pittwood; soprane; Ben Bayer, mandolinist; "Woodcraft," Dr. W. H. Pittwood; Lawrence Tonipkins, bass; Join R. Wilson, baritone; "Oid Folks Songs," Elllott Bay male volces; popular songs, Curley Wilson; "Little Bit of Irish," Prof. Dudley; Violet Balley, violinist; address, Major Ben H. Fessenden.

KFSG, Los Angeles, Calif. (Pacific, 278), 3:30-4:30 p. m., organ recital presented by Roy Reld Brignall, with vocal selections by assisting artists; 7:30-9:15, auditorium service, organ; silver band, crusaders chorus; young people's testimonies; mualc; address, Judge Carlos S. Hardy: sermon. Aince Semple McPherson;

young people's testimonies; muaic; address, Judge Carlos S. Hardy; sermon, Aince Semple McPherson, alter call; 9:15-10, Gray studio program; 10-11, organ recital and program featuring B. Earnest Ballard, at the console with assisting artists in vocal selections. KGO. Oakland, Calif. (Pacine, 212), 9 p. m., studie



# Wednesday, September 17

(Continued from page, 15) 10:30-11:30, Billy Wynne's Greenwich Village Inn

10:30-11:30, Billy Wynnc's Greenwich Village Inn orchestra.

WLS, Chicago, Ill. (Central, Oaylight, 345), 1-2 p. m., "A Round of the State Fair," George C. Biggar; 2-2:30, band concert; 2:30-5:30, harness and running races from Judges stand, George Hay; 6:30-7, Ralph Emerson, organist; 7-7:45, State Fair features; 7:45-8, Inllaby time, Ford Rush, Glenn Rowell; 8-8:15, Lone Scout program; 8:15-9, program, veterans of Civil war, Spanish war, World war; 10-11, State Fair features.

WLW, Cincinnati, Ohio (Central, Daylight, 423), 8 p. m., Virginia entertainers; 9, concert, Tenth Infantry band.

WMAQ, Chicago, Ill. (Central, Daylight, 447.5), 4:10 p. m., Child Life story hour; 4:30, musicale; 6, Chicago theater organ recital; 6:30, stories for children, Georgene Faulkner, the story lady; 8, music; 8:30, "Play Night," William Ziegler Nourse, director; 9:15, Irish program, Kathleen Kcarney, Thomas J. Coughlin; 9:45, talk, one of the Chicago charities.

WMH, Cincinnati, Ohio (Central, Oaylight, 309), 8 p. m., plano solos, Eugene Perazzo; vocal solos, Angela Devolo, Eugene Perazzo accompanist; violin solos, Luke D. Ehrgott; tenor solos, Raymond Kuss, Elsle Kuss, accompanist; 9. "Bits of Cincinnati History," George W. Platt; 9:30, Chevlot junior orchestra.

WOC, Oavenport, Ia. (Central, 484), 12 m., chimes; 8 p. m., Mrs. Frank W. Elliott, organist; Charles R.

p. m., Mrs. Frank W. Elliott, organist; Charles R.

Hall, tenor.

WOO, Philadelphia, Pa. (Eastern, Oaylight, 509), 11
a. m., Mary E. Vogt, organist; 12:02 p. m., Wanamaker erystal tea room orchestra, Robert E. Holden,
director; 4:45. Mary E. Vogt, organist; 7:30. Hotel
Adelphia concert orchestra, A. Candelori, director;
8:15. Mary E. Vogt, organist; 9, WOO orchestra,
Robert E. Golden, director; 10, Hotel Adelphia Roof
Garden dance orchestra.

WOR, Newark, N. J. (Eastern, Oaylight, 405), 2:302:45 p. m., Mrs. De Luca, soprano; 2:45-3, Sonoma
Talley, planist; 3:30-3:45, Mrs. De Luca; 3:45-4,
Sonoma Talley, 6:15-6:55, Sammy Halpern and his
orchestra; 6:55-7, sport talk, Jolly Bill Steinke; 88:30, Gene Ingraham's Great Notch Inn orchestra;

x:30. Gene Ingraham's Great Notch Inn orchestra; x:45-9, talk on Constitution day, Harry T. Breuer; 9-9:15, Morris Goldberg, violinist; 10:15-10:30, Morris WOS. Jefferson City, Mo. (Central, 440.9), 8 p. m., ad-

WOS, Jefferson City, Mo. (Central, 440.9), 8 p. in., address, member of the Missourl College of agriculture; 8:20, barn dance program, Ernest R. Taft, director. WQJ, Chicago, III. (Central, Oaylight, 448), 11-12 m., talk, Helen Harrington Downing; "Tennis," T. Conway; "Pressure Cookers," H. F. West; 3-4 p. m., "Entertaining with Ease," Helen Harrington Downing; "Are You a Buyer—or Spender?" Martha Logan; 7-8, Raiph Williams and His Rainbo Garden orchestra; Lancaster Smith bass; Mrs. Lancaster Smith planist;

Lancaster Smith, bass; Mrs. Lancaster Smith, planist; Lilah Older Bell, reader; Dorothy Schubert, Jugo Slav soprano; 10-12. Ralph Williams and His Rainbo Garden orchestra; Melodians, Lauric Lineman, Eddie Mertz, Benny Glassman; Sandy Meek, Scotch tenor; Harmony singers, George A. Littic, Larry Shay; Frank Blasco, low tenor

WRC, Washington, D. C. (Eastern, 469), 3 p. m., fashion developments, Women's Wcar; 3:45, Eleanor Glynn, planist; 3:50, current topics, editor of The Outlook; 1, songs; 6, stories for colldren, Peggy Albion.
WSB, Atlanta, Ga. (Central, 429), 10:45 p. m., Radiowl

entertainment. WTAM, Clevoland, Ohio (Eastern, 390), 8 p. 10., prograin arranged by Cleveland Plain Dealer; artists from Wooster; Walter Jones' orchestra of Wooster, Ohlo;

Mrs. Frank Blough, controllo; Mrs. Ralph Miller, contralto; John Russell, barltone; George Studebaker, tenor; Leslic Jollis, tenor. Oak Park, III. (Central, 283), 6:45-7:45 p. m. W. B. Smith, bass; Jerry Fullum, soprano; Carl Lineer planist; Dr. W. P. Zimmer, tenor; 9-9:45, 10:15-11:15 Avel Christensen, planist; ten minute technical talk, member of "Radio Age;" Guyon's Paradise orchestra. WWJ, Oetroit, Mich. (Eastern, 517), 8 a. m., settling-up exercises, R. J. Horton; 9:30, talk, women's editor, Detroit News; 12 m., Detroit News orchestra; 7 p. m.,

# Thursday, September 18

# ANCIS JENKINS AT WRC SATURDAY



Clarence W. Allen (left) is the director of the Church Community chorus, the exclusive WJZ religio-musical the exclusive WJZ religio-musical organization which broadcasts every Sunday. Mrs. Dale Poole is the coloratura soprano who is providing such a popular feature of WDAF, Kansas City. Ethel Grant is a general handy man about WRC. Tune in Priday afternoon and hear her play the piano. WHO has added L. Carlos Meier (right) the organist of Carlos Meier (right) the organist of the Capitol theater, to its list of attractions. He will be a regular

> musical program, "The Health of Children," Dr. Agnes Fay Morgan; 4-5:30, concert orchestra of the Hotel St. Francis.
>
> KGW, Portland, Dre. (Pacific, 492), 8:15 p. ni., studio concert, George Olsen's Metropolitan orchestra; 10:30, Hoot Owls.

WBZ;

voo;

8:30,

VGR;

KHJ,

2:30, NJY; MH;

9. /KB; 12,

KHJ.

YW; 7, 7:30. DAR. WHN, HN: VHN:

KFI.

30,

EAF, VGY

THN: MH;

GW;

6:30,

700; **1; 8,** Имн,

PO.

SAI:

KI'O

6:30. 'HN:

30,

າ:30, TCGO.

10.

Hoot Owls.

KHI, Los Angeles, Calif. (Pacific, 395), 12:30-1:15 p. m., concert; 6-6:30, Art Hickman's concert orchestra, Edward Fitzpatrick, director; 8-10, concert, courtesy Globe Ice Cream company, arranged by A. K. Berkland; 10-11, Art Hickman's dance orchestra, Earl Bertnett, director.

KLX, Dakland, Calif. (Pacific, 509), 8-10:20 p. m., Britton Hamilton, vocalist; Zelzena Gaul, pianist; "Work of the Red Cross," Dr. Thomas E. Green; KLX Hawaiians; Paul Benson, vocalist; American Theater orchestra; Clement Barker, organist.

KPO, San Francisco, Calif. (Pacific, 423), 1-2 p. m., Rudy Seiger's Fairmont hotel orchestra; 2:30-3:30, Theodore J. Irwin, organist; 4-4:30, Rudy Seiger's Fairmont hotel orchestra.

Fairmont hotel orhestra. KQV, Pittsburgh, Pa. (Eastern, Daylight, 270), 9-10 p. m., Mrs. Mather, soprano; Malcolm Corliss, baritone.

KSD, St. Louis, Mo. (Central, 546), 8 p. m., musicale.

KYW, Chicago, III. (Central, Daylight, 536), 11:35 a. m., table talk, Mrs. Anna J. Peterson; 6:35 p. m., children's bedtime story, Uncle Bob; 7-7:30, dinner concert, Congress hotel; 7:30-8, program. Duncan Sisters Music Publishing company; 8-8:45, speeches, auspices of the American Farm bureau; "Boys' and Girls' Club Work in the South," H. J. Schwietert; "What We Saw at the State Fair This Week," Arthur C. Page; 9-10:30, midnight revue; 10:30-10:45, "Around the Town with KYW in Chicago," stage revues; 10:45-19:20

12:30, midnight revue.

12:30, midnight revue.

WBAV, Columbus, Dhio (Eastern, 423), 12 m., Ila Lorbach Owens, planist; 8 p. m., old-time sacred songs, arranged by Dr. W. A. Klng, secretary, Columbus Council of Churches.

WBZ, Springfield, Mass. (Eastern, Daylight, 337), 6 p. m., dinner concert, WBZ trio; 7:10, current book review; 7:30, bedtime story for the kiddies; 10, Raymond J. Kelley, tenor; 10:30, Jean Livingstone Sherborn, soprano; Mertina Bancroft, pianist; 11, WBZ trio; Troy P. Gorum, baritone; James K. Smith, Jr., violinist; Mrs. Ruth Johnson Reid, accompanist.

WCX, Detroit, Mich. (Eastern, 517), 4:15 p. m., musical program; 6, dinner concert; 8:30, musical program; Cora Joan Haeussler, soprano; Huber Hacussler, baritone.

WDAF, 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; address, speaker from the Kansas City Children's bureau; the

piano tuning in number on the Duo-Art; address, speaker from the Kansas City Children's bureau; the Tell-Me-a-Story Lady; music, Frltz Hanlein's Trianon ensemble, Hotel Muchlebach; 8-9:30, the Star's Radlo orchestra with the WDAF minstrels; 11:45-1 a. m., nighthawk froilc, the "Merry Old Chicf" and Charies Dornberger's orchestra, K. C. A. C. roof garden; the Plantation players, Hotel Muchlebach.

WDAR, Philadelphia, Pa. (Eastern, Daylight, 395), 11:45 a. m., dally almanac; 12:02 p. m., Stanley theater organ recital; 12:30, Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 7:30, Dream Daddy's Bedtime stories; 8, book review, Arnold Abhott; 10, Arcadia cafe dance orchestra; special "Morning Glory Club" program; songs, Mackie Roth, WEAF, New York, N. Y. (Eastern, Daylight, 492), 11-11:15 a. m., health (alk, New York Health Speakers' service; 11:15-11:30, talk on dahlias, New York Bolanical gardens; 45, club program for women; 5-7, dinner music, Hotel Waldorf-Astoria; 7:30-7:15, Jordan M. Coham, pianist; 7:15-8, "The Happiness Boys;" 8-8:15, Wm. Cohsnyk, violinist; 9-10, B. Fischer's "Astor Coffee" dance orchestra.

WEAD, Columbus, Dhio (Eastern, 360), 1:30 p. m., educational talk, nicinber Ohlo State university faculty; 1, farm talk, faculty incuber; music, university inlent.

WEBH, Chicago, III. (Central, Daylight, 370), 7:30-

Malent, WEBH, Chicago, III. (Central, Daylight, 370), 7:30-8:30 n. m., Myron Mucuch, reader; Orlole orchestra; Merrick Foster, planist; 9:30-10:30, Trederick Agard, tenor; Orlole orchestra; Edgewater trlo, Ted, Nick, Frank; 11:30-12: 0, Sandy Meek, Scotch Anger; Whiter Garden four; Orlole orchestra; special so.us.

Nick Lucas.
WFAA, Dallas, Tex. (Central, 476), 12:30-1 p. ni., addipt. Dr. Robbit S. Hyer; 8:30-9:20, Southern Method

dist university alumni banquet; Jimmy Allen's or-

chestra.
WFI, Philadelphia, Pa. (Eastern, Oaylight, 395), 1 p. m.,
Meyer Davis Bellevue Stratford concert orchestra; 3,
Paui Volkman, tenor; Anro P. Mowitz, German
orator; "Influence of German Masters in Musical Art,"
Nicholas Douty; May Simmington Slaugh, soprano;
6:30, Meyer Davis Beilevue Stratford concert orchestra;
7, Sunny Jim, the klddies' pal.
WGN, Chicago, Ill. (Central, Daylight, 270), 8:30-9:30
p. m., classical concert; 10:30-11:30, Jack Chmpaan's
dance orchestra.

p. m., classical concert; 10:30-11:30, Jack Chmpaan's dance orchestra.

WGR, Buffalo, N. Y. (Eastern, Oaylight, 319), 12:30-1
p. m., George Albert Bouchard, organist; 6:30-7:30,
dlnner music; 9-11, popular musical program, W. T.
Grant company, direction of Howard Hartell; 11:30,
supper dance music, Vincent Lopez' Hotel Statler dance
orchestra, Harold Gleser, director.

WGY, Schenectady, N. Y. (Eastern, 380), 1 p. m., "Attractive Rooms at Low Cost;" 5:30, stories for children;
5:45, children's story in French, Frederic Duclert;
7:50, Blue Ribbon entertainers, Edwin A. Trautman,
director; 10:30, WGY orchestra; Leonard W. Grant,
barltone; Ollie G. Yettru, planist; vocal duet; Alice
Conrey Siade, Leonard W. Grant; Edward A. Rice,
violinist.

violinist.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., Alamo theater orchestra; 7:30-9, Jackson's Novelty orchestra, Charles Jackson, director.

WHB, Kansas City, Mo. (Central, 411), 7-8 p. m., music, Sweeney instrumental trio; weekly talk; representative of W. C. T. U.; children's stories, Mrs. V. R. Lewis. WHK, Cleveland, Dhio (Eastern, 283), 7 p. m., WHK-

Hotel Winton Carnival night program; June Farley, soprano; Billie Bugbee, soprano; Ethel Rohde, Bobbie and Dede Fitzpatrick, Lucille Phillips, Jessle Semple, Alice Crandall, Violet Owen, Harry Bloom, Scotty Middleton, John Peattie, Carl Paul, the Red Pepper

WHN, New York, N. Y. (Eastern, Oaylight, 360), 2:45-3 p. m., Ira Schuster and Bob Miller, songs; 3-3:15, Judith Roth and Al Wilson, songs; 3:45-3:50, Uncle Robert's Chat with children; 3:50-4, Mabel Livingston, poet; 4-4:30, Genevleve Williams, contralto; Charles Strickland, pianist; Sam Steinberg, violinist; Charles Strickland, planist; Sam Steinberg, Violinist; 4:45-5, Gustave L. Becker, planist; 5-5:30. Original Cambria Serenaders; 6:30-7:30, Paul Specht's Alamac orchestra; 9:30-10, Crystal Palace orchestra; 10-10:30, Gem Safety Razor orchestra; 10:30-11, Fletcher Hen-Gem Safety Razor orchestra; 10:30-11, Fletcher Henderson and his Roseland orchestra; 11-11:10, Wright and Bessinger, songs; 11:10-11:20, Arthus Stone, blind pisnlst; 11:20-11:30, Loew's Vaudeville artists; 11:30-12, Club Alabam orchestra.

WJY, New York, N. Y. (Eastern, Daylight, 405), 7:30-8:15 p. m., Leonard Nelson's Knickerhocker Grill orchestra; 8:15-8:30, Time Pop Question game.

WHO, Des Moines, la. (Central, 526), 7:30-9 p. m., musical program, Des Moines university talent, Dean Raymond N. Carr, director.

musical program, Des Moines university talent, Dean Raymond N. Carr, director.

WJZ, New York, N. Y. (Eastern, Daylight, 455), 10-10:10 a. m., daily menu; 10:20-10:30, arts and decoration talk; 10:50-11, Eleanor Gunn's fashion talk; 1-2 p. m., Hotel Ambassabor trio; 4:30-5:30, Hotel Astor organ recitai; 7-8, Lafayette hotel orchestra; 8-8:15, Wall Street Joturnal review; 8:15-8:30, Looseleaf Current topics, William H. Allen; 8:30-8:45, Warner Hawkins, pianist; 10:30-11:30, Harold Stern's Belieclair Towers orchestra.

WLS, Chicago, III. (Central, Oaylight, 345), 1-2 p. m., "At the State Fair with the Book Farmer." G. C. Biggar; program, Girls' State Fair schooi; 2-2:30, band concert; 2:30-5:30, harness and running races; 6:30-7, Rslph Emerson, organist; 7-7:45, voices of the Fair grounds; 7:45-8, lullaby time, Ford Rush, Glenn Rowell; 8-9, an hour with homemakers, faculty of the Illinois State Fair Schooi of Domestic science; 9-10, farm program; 10-11, program, Stratton-McLelland studio; R. V. Stratton, abritone; Laura Jones McLelland pianist; 11a McLelland pianist

studio; R. V. Stratton, abritone; Laura Jones McLelland, pianist; Ila McLelland, pianist; 11-12, program.
WMAQ, Chicago, Ill. (Central, Daylight, 447.5), 4:10
p. m., items of interest to women; 4:30, muslcale; 6, Chicago theater organ recital; 6:30, Hotel LaSalle orchestra; 8, weekly wide-awake club, Mrs. Frances M. Ford, director; 9:15, Pauline Sachs, soprano; Eleanor Kanley violinist

Kaplan, violinist.

Kaplan, violinist.

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

Britling's Cafeteria Novelty orchestra; 11, Steamer

wmc, memphis, Tenn. (Central, 500), 8:30 p. m.. Britling's Cafeteria Novelty orchestra; 11, Steamer Idlewild orchestra.

WDAW, Dmaha, Nebr. (Central, 526), 6 p. m., story hour, Doris Claire Secord; 6:30, dluncr program. Haruno-Jazz orchestra; 9, program arranged, Gilbert 1. Savage, auspices of Chicago, Burllngton & Quincy R. R. company.

WOC, Davenport, la. (Central, 484), 12 m., chimes; 7:15 p. m., "Gathering Seed Corn," Emil Kroeger; 8, program of old-time music. old-time fiddlers.

WOO, Philadelphia, Pa. (Eastern, Daylight, 509), 11 a. m., Mary E. Vogt, organist; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 4:45, Mary E. Vogt, organist; 7:30, A. Candelori's concert orchestra from Hotel Adelphia; 9:15, Mary E. Vogt, organist; 10, Hotel Adelphia Roof Garden dance orchestra.

WOR, Newark, N. J. (Eastern, Daylight, 405), 2:30-2:45 p. m., George Perry, tenor and Russell Blumstein, planist; 2:45-3, Mrs. Shellworth, cornellst: 3:30-3:45, Geo. Perry and Russell Blumstein; 3:45-4, Mrs. Shellworth; 6:70-7, Mrs. Shellworth; 1:35-4, Mrs. Shellworth; 2:36-7, Mrs. Shellworth; 1:35-4, Mrs. Shellworth; 2:36-7, Mrs. Shellworth; 2:36-7, Mrs. Shellworth; 3:45-4, Mrs. Shellworth; 3:45-

Mrs. Shellworth; 6:15-6:30; Frederick Tedesco, accordionist; Elie Elistrom, violinist; 6:30-7, Man in Moon stories for children; 7-7:15, Frederick Tedesco and Elie Elistrom; 7:20-7:30, sport talk, Jolly Bill

WOS, Jefferson City. Mo. (Central, 440.9), 8 p. m., egricultural address: 8:20, musial program.

# Where to Hear Talks

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

Wednesday: 6, WDAF; 6:15, WBBR; 6:30, WGR; 6:45, WGY, WOR; 7, WHB; 7:30, KFKB, KYW, WJZ; 8, KYW, WOS; 8:30, KFKB; 8:45, WMAQ; 9:30, KFAE; 10, KHJ.

Thursday: 6, WDAF; 6:30, WFI; 7, KYW, WEAO, WMAQ, WRC; 7:30, WBBR; 7:45, WMAQ; 8, WAAW; 8:15, KYW; 8:30, KFKB; 9:30, WBBR.

Friday: 5:30, KFAE; 6, WDAF;

7, WDAR; 7:15, WOC; 7:30, KFKB, KYW; 7:45, WMAQ; 8, CNRT, WOS; 8:30, KFKB; 9:30, KYW; 10:30, KFOA.

Saturday: 6, WDAF; 6:15, WBBR; 6:45, WRC; 8, KYW, WRC.

Monday 6, WDAF; 6:30, WDAR; 6:45, WOR; 7:30, KFKB; 8, WOS; 8:30, KFKB; 9:30, KFAE; 10, KGO.

Tuesday: 7, WMAQ; 7:30, KFKB; 8:30, KFKB.

WQJ, Chicago, III. (Central, Daylight, 448), 11-12 m., Fred Mann and his Sunday dInner menu; "Color Combinations for the Home Dressmaker," Marcie Meadows; 3-4 p. m., Sunday Night Suppers," Helen Harrington Downing; "Fruits from the Golden West," Mary Hale Martin; 7-8, dinner concert, Ralph Williams and his Rainbo Garden orchestra; Frederick W. Agard, tenor; Murlel Keneally, soprsno; 10-2, Rslph Williams and his Rainbo Garden orchestra; Paui Lougher, tenor; Langdon brothers, steel guitsrlsts; Morrine Marcelles, sporano; Lester Cook and Burns.

Burns.

WRC, Washington, D. C. (Eastern, 469), 3 p. m., fashion developments of the moment, Women's Wear; 3:10, Arthur McCormick, baritone; 3:20, "Beauty and Personality," Elsie Pierce; 3:25, current topics, editor The Review of Reviews; 3:35, Ethei Grant, pianist; 6, stories for children, Peggy Albiou.

WSB, Atlanta, Ga. (Central, 429), 8 p. m., Mary Luncefort, soprano; 10:45, Mr. and Mrs. Edwin McConnell, Georgia song makers.

WTAS, Elgin, Ill. (Central, 286), 7:15-12:30 midnight, Arcadia bsllroom orchestra; songs, Charley Hughey.

WTAY. Oak Park, Ill. (Central, 283), 6:45-7:45 p. m., Sandy Meek, baritone; Glenn Bruce, reader; Black Cat orchestra.

Cat orchestra.

WWJ, Detroit, Mich. (Eastern, 517), 8 a. m., settling up exercises, R. J. Horton; 9:30, talk, woman's editor Detroit News; 12 m., Detroit News orchestra; 7 p. m., Detroit News orchestra; Alice Graze, soprano.

# Saturday, September 20

Silent night for: KFAE, KLX, WCX, WOAR, WGR, WHB, WHO, WIP, WLW, WOD, WOS. CKAC, Montreal, Can. (Eastern, Daylight, 425), 7 p. m.,

CKAC, Montreal, Can. (Eastern, Daylight, 425), 7 p. m., kiddies' stories in French and English; 7:30, Rex Battle and his Mount Royal hotel concert orchestra; Napoleon Dansereau, cellist; 10:30, Joseph C. Smith and hls Mount Royal hotel garden dance orchestra; xylophone specialtles, Teddy Brown.

KOKA, E. Pittsburgh, Pa. (Eastern, 326), 5:30 p. m., dinner concert, Westinghouse band; 6:30, the children's period, the Gallant Taylor; 8, Westinghouse band; Max Kroen, baritone; Edwin Kroen, tenor.

KFI, Los Angeles, Calif. (Pacific, 469), 6:45-8 p. m., dance orchestra; 8-9, concert, courtesy Pasadena light opera company; 9-10, Examiner studio concert; 10-11, Packard popular program; 11-12, Ambassador Hotel Cocoanut Grove orchestra.

KFKB, Milford, Kans. (Central, 286), 8 p. m., KFKB orchestra; 12, "Early Bird," fun makers.

KFNF, Shenandoah, Ia. (Central, 266), 7:30 p. m., concert by the Big 4 from Decatur, Lewis M. Andrew, director.

KFSG, Los Angeles, Calif. (Pacific, 287), 3:30-4:30, corgan verife, contral parkers.

director.

KFSG, Los Angeles, Calif. (Pacific, 287), 3:30-4:30, organ recital, courtesy Roy Reid Brignall; 7-9:30, auditorium service, musical program and song service; choir and soloists; congregational singing; divine healing sermon, Aimee Semple McPherson; altar call.

KGD, Dakland, Calif. (Pacific, 312), 4-5:30 p. m., concert orchestra of the Hotel St. Francis; 8, musical sclections, Oliver Disson company; Obapesla program, Dons of Peralta, Zannette W. Potter, director; 10-1, Henry Haistead's orchestra.

KGW, Portland, Dre. (Pacific, 492), 3 p. m., children's musical program; 10, George Olsen's Metropolitan orchestra.

musical program; 10, december 10, chestra, chestra, Kill, Los Angelos, Calif. (Pacific, 395), 12:30-1:15, p. un., concert; 6-6:30, Art Hickman's concert orchestra, Edward Fitzpatrick, director; 6:30-7:30, children's hour, "American History," Prof. Walter Sylvester Herthor, "American History," screen juvenile: 8-9, concert, hour, "American History," Prof. Walter Sylvester Herzog; Helene Pirie, screen juvenile; 8-9, concert,
arranged through courtesy of Lola Perdue, soprano;
9-10, concert, the Piggly-Wlggly girls; 10-11, Art
Hickman's dance orchestra, Edward Fitzpatrick,

9-10, concert, the Piggly-Wiggly girls; 10-11, Art Hickman's dance orchestra, Edward Fitzpatrlck, director.

KPO, San Francisco, Calif. (Paific, 423), 1-2 p. m., Rudy Seiger's Fairmont hotei orchestra; 2:30-3:30, musical matinee; 3:30-5:30, E. Max Bradfield's Versatlle band; 8-12, Art Weidner and his popular artists. KSO, St. Louis, Mo. (Central, 546), 8 p. m., Missouri theater orchestra and specialties, Missouri theater. KYW, Chicago, III. (Central, Daylight, 536), 11:35 a. m., table talk, Mrs. Anna J. Peterson; 6:35 p. m., children's bedtime story, Uncle Bob; 7-7:30, dinner concert, Congress hotel; 8-8:58, musicsl program; 9:05, talk, Vivette Gorman; 9:10, Youth's Companion.

PWX, Havana, Cuba (Eastern, 400), 8:30 p. m., orchestra, Prof. Jose Vals, director.

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

WBBR, New York, N. Y. (Eastern, Daylight, 273), 8 p. m., Arthur Martens, mandolin recital; 8:15, Bible questions and answers; 8:45, Arthur Martens.

WBZ, Springfield, Mass. (Eastern, Daylight, 337), 6 p. m., Leo Reisman's Hotel Lenox ensemble; 6:30, Leo Reisman and his Hotel Brunswick orchestra; 7:30, bedtime story; 7:40, Hotel Kimball trio; 9, program, Leo Keisman and his Hotel Brunswick orchestra; 7:30, bedtime story; 7:40, Hotel Kimball trio; 9, program, Mrs. Pauline Hammond Clark, director.

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

WDAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. ml., the Star's Radlo orchestra; 6-7, school of the air, plano tuning in number on the Duo-Art; address, speaker from the galitorial staff of the Star's the Tell-

air, plano tuning in number on the Duo-Art; address, speaker from the editorial staft of the Star; the Tell-Me-a-Sotry Lady; music, Fritz Hanlein's Trianon ensemble, Hotel Muehlebach; 11:45-1 a. m., nightbawk frolic, the "Merry Old Chief" and the Plantation players, Hotei Muehlebach; Eddle Kuhn's orchestra, Kansas City club roof garden.

WDAR, Philadelphia, Pa. (Eastern, Daylight, 395), 11:45 a. m., daily almanac; 12:02 p. m., Stanley theater organ recital; 12:30, Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; Edna Finestone, planist; 2:30, Delphian players; 7:30, Dream baddy's bedtime stories.

WEAF, New York, N. Y. (Eastern, Daylight, 492), 4-5 p. m., Bruno Brothers dance orchestra; 6-7, dinner music, Hotel Waldorf-Astoria; 7-7:30, dance musle, Alpha Syncopators; S-8:15, Joseph Mathieum, tenor; 8:30-8:45, Jinmy Clark, planist; 8:45-9, Viola Silva, contraito; 10-11, Vincent Lopez and his Hotel Pennsylvania orchestra.

tenor; 8:30-8:49, Jimby Clark, prants, 8:40-8, 10:48
Silva, contralto: 10-11, Vincent Lopez and his Hotel Pennsylvania orchestra.

WEAD, Columbus, Dhio (Eastern, 360), 1:30 p. m., educational talk, member Ohio State university faculty.

WEBH, Chicago, III. (Central, Daylight, 370), 7:30-8:30 p. m., Oriolo orchestra; Radio Sunday school lesson, Dr. Herbert W. Virgin: request program, Banio James; 9:30-10:30, Gladys Andes, soprano; Langdon brothers; Yellow, Red and Orange tales, William H. Hunt; Marie Kelly, reader; Oriole orchestra; 11:30-12:30, Oliver Mellum, barltone; Oriole orchestra; special songs, Nick, Ted, Frank, WFAA, Dallas, Tex. (Contral, 476), 12:30-1 p. m., address, Judge Ed Sewell: 8:30-9:30, program, entertainers from Cleburne; 11-12, Adolphus hotel orchestra, WFI, Philadelphia, Pa. (Eastern, Daylight 395), 1 p. m., Meyer Dayle Bellevue Stratford concert orchestra;

3. Loretta Kerk, pianist; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddies' pal; 8, John Vandersloot, bass; Loretta Kerk, pianist. WGAQ, Shreveport, La. (Central, 263), 8-9 p. m., vocal and instruments! program; 9-10, 11-12, Youree Roof Garden, Louisiana Rambiers Hotel Youree orchestra. WGN, Chicago, Ill. (Central, Daylight, 270), 8:30-9:30 p. m., Grace Hegreth, soprano; 10:30-11:30, Jack Chapman's dance orchestra; 12:30-2, Jsck Cbapman and theatrical stars.

WGR, Buffalo, N. Y. (Eastern, Oaylight, 319), 12:30-1 p. m., George Albert Bouchard, orgsnist.

WGY, Schenectady, N. Y. (Eastern, 380), 9:30 p. m., dance music, Kenmore Hotel orchestra; popular songs, Frank Davis.

WHN, New York, N. Y. (Eastern Daylight, 360), 2:15-2:30 p. m., Cogert and Hirst, songs; 2:30-2:45, Victor Wilbur, barltone; 2:45-3:15, Tom Banks and his orchestra; 3:45-4:15, Ellen Montague Cross concert company; 4:15-4:30, Alex. Aranyossy, violinist; 4:30-4:45, Adeline Cross, soprano; 4:45-5, Chas. Horn, tenor; 5-5:30, Bert Rcith's Southern Harmonlsts; 6:30-7:30, Paul Specht's Alamac orchestra; 8-8:15, Jimmy Flynn, tenor; 8:15-8:30, Eleanor Rose, soprano; 8:30-8:45, Chas. Mansfeld, tenor; 8:45-9, Perfect Harmony Four male quartet; 9-9:15, Gertrude Sammis, pianist; 9:15-9:30, Chas. Degele, violinist; Segerer brothers; 9:30-9:45, "What Your Vote Means," National Security league; 9:45-10, Fitzpatrick brothers; 10:30, Palisades Park orchestra; 10:30-10:45, Lottie Grooper, French songs; 10:45-11, Vic and Jack Laurla, songs; 11-11:30, Jimmy Clarke and his entertainers; 11:30-12, Fletcher Henderson's Roseland orchestra. WIZ, New York, N. Y. (Eastern, Oaylight, 455), 1-2 p. m., Hotel Vanderbilt orchestra, Joseph Strlssof, director; 4-4:15, Everett Hirschfield, baritone; 7-8, Waldorf-Astoria dance orchestra; 9-9:15, May Singbi Breen, banjo; 10:30-11:30. Hotel Astor dance orchestra.

WHAS, Louisville, Ky. (Central, Oaylight, 455), 7:45-1 a. m., lullaby time, Glenn Rowell, Ford Rush; Isham Jones' College Imn orchestra; nat

a. M., lullaby time, Glenn Rowell, Ford Rush; Isham Jones' College Inn orchestra; national barn dance program.

WMAQ, Chicago, Ill. (Central, Oaylight, 447.5) 6:30 p. m., H. vel LaSalle orchestra; 8, program, Rudolph Bryant; 9, Chicago theater review.

WMC, Memphis, Tenn. (Central, 500), 8:30 p. m., music.

WMH, Cincinnati, Dhio (Central, Daylight, 309), 10 p. m., piano solos and duets, Carrle and Laura Dotzauer; baritone solos, Leslie Hughes, Margaret Hughes, accompanist; 10:30, violin solos and duets, Dorothy Vall, Escher Wall, Lucile Thien, accompanist; 11, Auburn dance orchestra, Lawrence Archolz, director.

WDAW, Omaha, Nebr. (Central, 526), 6 p. m., popular half-hour; 6:30, dinner program, Baxter's orchestra; 9, program, auspices of Omaha Printing company.

WDC, Davenport, la. (Central, 484), 12 m., chimes; 9 p. m., the Paimer School Radlo orcbestra; Ralph W. Fuller, baritone.

WOD, Philadelphia, Pa. (Eastern, Daylight, 509), 11 a. m., Mary E. Vogt, organist; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 4:45, Mary E. Vogt, organist; J. W. C. I. band.

maker crystal tea room orchestra, Robert E. Golden, director; 4:45, Mary E. Vogt, organist; J. W. C. I. band.

WDR, Newark, N. J. (Eastern, Daylight, 405), 2:30-2:45, p. ml., Tom Banks' Colonial Inn orchestra; 3:30-4. Tom Banks' Colonial Inn orchestra; :15-7:15, "Musik While You Dine," Ernie Krickett's Cinderella orchestra; 7:20-7:30, sport talk, Jolly Bill Steinke; 8-8:15, Arline Felker, soprano; 8:15-9, program under direction Mabelanna Cochy; 9-9:15, Arline Felker; 9:15-9:45, Mabelanna Cochy; 9-9:15, Arline Felker; 9:15-9:45, Mabelanna Cochy; Hannah Wessling; "A Lesson in Goif," Mrs. Lee Mida; 3-4 p. m., koffeo klatsch; 7-8, James Whalen, tenor; Grace Wilson, contralto; Harry Geise, pianist; 10-2, Ralph Williams and his Rainbo Garden orchestra; songs, Jerry Sullivan; The Melodisns, Laurie, Eddie, Benny; Bernard and Robinson, Dixie stars.

WRC, Washington, O. C. (Eastern, 469), 6 p. lil., children's hour, Peggy Albion; 7:45, Bible talk; 9, talk, C. Francis Jenkins.

WSAI, Cincinnati, Ohio (Central, Daylight, 309), 8 p. m., chlmes concert; 8:15, contralto solos, Marguerite Katenbrink; piano solos, Anna Cockburn; 9, weekly news review, Rutherford H. Cox; 9:20, Hawaiian quartet; soprano solos, Mrs. Edward S. Stuebbing; bass solos, John Dodd.

WSB, Atlanta, Ga. (Central, 429), 8 p. m., all-star revue; 10:45, Journal hired help skylark, Ernest Rogers, Bonnie Barnhardt, features.

WTAM, Cleveland, Dhio (Eastern, 390), 9 p. m., WTAM dance orchestra, Ev Jones, director; Louise Roach, soprano; John Gribbon, accordion soloist.

WTAS, Elgin, III. (Central, 286), 7:15-12:30 midnight, Arcadia baliroom orchestra; songs, Charley Hughey.

WTAY, Oak Park, III. (Central, 286), 7:15-11:15, Polly Willis, soprano Guyon's Paradise orchestra.

WHA, Cleveland, Dhio (Eastern, 517), 9:30 a. m., talk, women's editor, Detroit News; 12 m., Detroit News orchestra

# Sunday, September 21

Silent night for: CKAC, KFAE, KGW, WGR, WIP, WDC, WDO, WDR, WRC, WSAI, WTAY.
KGD, Dakland, Calif. (Pacific, 312), 11 a. m., service, Tenth Avenuc Baptist church; 3:30 p. m., KGO Little Symphony orchestra and All Souls' Episcopal church choir; 7:45, evening service, Tenth Avenuc Baptist church church, Church Portland, Dre. (Pacific, 492), 6 p. m., church

SHYC, Montreal, Can. (Eastern, Oaylight, 341), 7 p. m.,

St. James Methodist church.

St. James Methodist church.

KFI, Los Angeles, Calif. (Pacific, 469), 10-10:45 a. m.,
L. A. church federation service; 6:45-8 p. m., Metropoiitan theater program; 8-9, Ambassador hotel concert orchestra; 9-10. Examiner studio concert; 10-11,

Packard six orchestra.

KFKB, Milford, Kans. (Central, 286), 10-12 a, ni., religious services. First Congregational church. Dr. Slade, pastor; 8-10, International Bible Students association class. sociation class. KFNF, Shenandoah, la. (Central, 266), 3 p. m., religious services, Church of Curisc; 6:30, regular sacred song

services, Churen of Child, 1988, 10:30-12:30 service, KFSG, Los Angeles, Calif. (Pacific, 278), 10:30-12:30 noon, morning service, organ. Esther Fricke Green; congregational singing; prayer; choir; music, anthems; triple male quartet; announcements; vocal solo; sermon, Aimee Semplo McPherson; 2:30-4:30 p. m., after-(Continued on page 18)

www.americanradiohistory.com

# KDKA IN SPANISH THURSDAY: C. FRANCIS JENKINS AT WRC SATURDAY

# Where to Hear Concerts

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

KLX; 10:30, KFOA; 10:45, WSB; 11, KF1, WGAO; WMC; 11:45, WDAF; 12; KF1; 12:30, KGW; 1, KEI.

Saturday; 5, CKAC, WBBR, WDAF, WEAF, WEAF, WF1; WHN, WWJ; 8:30, CKAC, WHN; 8:45; WBBR, WLS; 7, KDKA, KYW, WIZ, WHA, WJZ, WHA, KYW, WHA, KYW, WHA, WHA, WGA, WGA, KYW, WHA, WHA, WSA, WFN; 8, KFR; KSD, WHN, WMAQ, WSA, WSB, WFAM, WTAY; 8:30, CKAC, KHJ, KF1; PWX, WFAA, WGY, WHN, WMC; 5, WHN, WMG, WGA, WGY, WM, WMC; 5, WHN, WMH, WOAW, WOC, WQJ; 9:15, WTAY; 9:30, WMH; 10, KF1, KHJ; 10:30, KF0; 10:45, WSB; 11, KF1, KHJ; WFAA; 11:45; WDAF; 12, KFKB; 1; KF1, Sanday; 5:30, KFNF 7, WHK, WOJ; 7:15, WEAF, WIAR, WTAS; 7:30, WHO; 7:45, WLW; 8, KGO, WHK; 9, WFAA, WHK, WOAW; 19:30, WFAA, WOC, 10; KF0, MONDAY; 8, WDAF, WIAR, WOAW; 19:30, WFAA, WOC, 10; KF0; MIRO, MONDAY; 8, WDAF, WEAF, WJAR, WGO, MONDAY; 8, WDAF, WEAF, WJAR, WGO, MONDAY; 8, WDAF, WEAF, WJAR, WGO, MONDAY; 8, WDAF, WEAF, WJAR, WJAR, WONDAY; 8, WDAF, WEAF, WJAR, WJAR, WONDAY; 8, WDAF, WEAF, WJAR, WGO, MONDAY; 8, WDAF, WEAF, WJAR, WJAR, WGO, MONDAY; 8, WDAF, WEAF, WJAR, WJAR,

### Wednesday, September 17

(Continued from page 15)

### Thursday, September 18

and night for: KFAE. KLX. KSD. WDAH. WOR, WHN, WIP: WOO. WOR. WOS. RM: Montreal Can. (Eastern, Daylight, 430t. U p. to.

tradet: "Getting Canada's Soil Fruit to Aeraci, "A Reliferor Hithbursh, Pa. (Essiens, 326), 1115.a.m., States, orthethers, 5:30 p. m., dinner concert, "KDKA Lillo Symphony orthethers, 5:30 p. m., dinner concert, "KDKA Lillo Symphony orthethers," 6:30, "hithbursh, period, Ronald MecDonald from the Rightland," 6:15. Address, representability of the Automobile, club. 8. concert for teception in Spenish speekins recontries; KDKA Little Symphony orthether, Mytore Shudek, conductor, Nazaria La Marce, tenor. Call. (Peefic, 459), 6:15-8 p. m., "A La Canada Line," i. A. Junior quartet; 8:9, "Ambartador Coccanut Otore orthethers, 9:10, Examinar Studio concert; 10:11, Frederick North colecter company, KFKB, Milfred, Kanasa (Central, 280), 8 p. m., KFKB urtilation, 13:20, "The Righters, and Realth," Br. J. R. Righter; 9, KFKB urtilat; 10:12, dance programs. KFNS, Banadash, Ia, (Central, 260), 7:30 p. m., con-



BSB, Clester, 484). F. m. mort, 13 (Central, 484). F. m. mort, 15 (Central, country, Chartes, L. Mry., January, Chartes, L. Mry., January, Chartes, L. Mry., January, Chartes, L. Mry., J. Mr., 15 (Vol., cranity, 1995). H. Jos. Angolo. Calit. (Pacif., 385). 12:30-115 b. large in Vol., control, control



### Friday, September 19

Sileat alght for: CKAC, KGO: KPO, WBBR, WFI, WIP WLW, WMH, WOR, WRC, WSAI.

CKAC, Montreal, Tan. Eastern, Dayliahi, 425, 1145

B. m., Amunt Royal Bivel tunchen concert.

CKAT, Teronto, Can. (Eastern, 400), 8 t. m., Acollant Charles, Can. (Eastern, 400), 8 t. m., Acollant Charles, C. C. Charles, C. C. Charles, S. C. Charles, C. Charles, C. Charles, C. C. Charles, C. C. Charles, C. Char

DANCING Central Time

Wednieday! 6 KYW1 4:30, WBZ; 7. WEAF, WOO: 7:30, WHX; 8. WHN, W00: 8:30 WHX, F00; B:30, WJZ, WMH; 9, KPO; B:30, WGR; 10, KFKB; 12, KPO, KGW, KHJ, KFI; 1, KFI.

Thursday: 5. KYW; 8:30, 8, WEAF, WMH; 8:30, WJZ; 9, KPO; 10, KFKB; 10:30 WHB 12 KGW, RCO, KHJ

Priday: 6,KYW 6:30, WOAM; 7, W E A F: 1:30, WHN; 8, WDAR, WOO: 8|30, WHN; 9:30, WGR, WHN; 12, KHJ; I, KFI

Saturday: 6. W Y W 8 WEAF WHN 030, WGY W JZ 910, WHN 10 KPO WMH 12, KGO KGW KHJ: 1 KFI

Monday: 8:30 WOAWIT, WOO: 7:30, WHN: 8 WDAR. WHH: WOO: 8 KPO WGA G. WSAI: 9:30, WIR: 10 KFKB: 12 Kin, KFO:

TREMAY: 6:30.
WO.W. 3. WHX:
9, KPO: 9:30
KFKN WIN 10.
KFKB 10:30,
WIB: 12, KGO

Clarence W. Allen (left) is the director of the Chirch Community chorus, the exclinive WIZ religio musical organization which broadcasts every Sunday. Mrs. Dale Poole is the coloratura soprano who is providing such a popular feature of WDAF, Kaneas City. Ethel Grant is a general handy man about WRC. Tune in Friday afternoon and hear her play the piano. WHO has added L. Carlos Meier (right) the organist of the Capitol theater, to its list of attractions. He will be a regular feature.

# Where to Hear Talks

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

Wednesday: 8, WDAF; 8:15, WBBR; 8:30, WGR; 6:45, WGY, WOR; 7, WHB; 7:30, KFKB; KYW, WJZ; 8, KYW, WOS; 8:30, KFKB; 8:45, WMAQ; 9:30, KFAE; 10, KHJ,

Thursday: 8, WDAF; 8:30, WFI; 7, KYW, WEAO, WMAQ, WRC; 7:30 WBBR; 7:45, WMAQ; 8, WAAW; 8:15, KYW; 8:30, KFKB; 9:30, WBBR,

Friday: 5:30, KFAE: 8, WDAF:

7, WDAR; 7:15, WOC; 7:30, KFKB, KYW; 7:45, WMAQ; 8, CNRT, WOS; 8:30, KFKB; 9:30, KYW; 10:30, KFKA.

Saturday 8, WDAF; 8:15, WBBR; 8:45, WRC; 8, KYW, WRC, Monday 8, WDAF; 8:30, WDAR; 8:45, WOR; 7:30, KFKB; 8, WOS; 8:30, KFKB; 9:30, KFAB; 10, KGO. Tuesday: 7, WMAQ; 7,30, KFKB;

### Saturday, September 20

;t

),

1;

;;

;;

### RICIC IPRIVIRIE AT MIDOCATIDDAY

ellevue iddies lanist. , vocal hestra. Jack

.

lapman 12:30-1

p. m., songs, 2:30-2:45, Victor
Banks and his
igue Cross concert
sy, violinist; 4:3045-5, Chas. Horn,
ithem Harmonists;
orchestra; 8-8:15,
anor Rose, soprano;
:45-9, Perfect HarGertrude Sammis,
violinist; Segerer
Vote Means, Naitzpatrick brothers;
10:30-10:45, Lottle
c and Jack Lauria,
i his entertainers;
eland orchestra.
laylight, 455), 1-2
Joseph Strissof,
id, baritone; 7-8.
9:15, May Singhi
Astor dance or-

4-5 p. m., Alamo Grand Champion

ght, 345), 7:45-1 Ford Rush; Isham il barn dance pro-

light, 447.5) 6:30 program, Rudolph

8:30 p. m., music. Paylight, 309), 10 e and Laura Dot-Margaret Hughes, accompanist; 11, rcholz, director.
6 p. m., popular
3axter's orchestra;
ting company. 12 m., chimes; 9 hestra; Ralph W.

o2 p. m., Wana-Robert E. Golden, hist; J. W. C. I.

it, 405), 2:30-2:45 orchestra; 3:30-4. :15-7:15, Music 's Cinderella or-Bill Steinke; 8-9, program under Arline Felker;

448), 11-12 m., Wessling; "A h Wessling; "A

"h Wessling; "A

3-4 p. m., koffec

"; Grace Wilson,

0-2, Ralph Wil
stra; songs, Jerry

die, Benny; Ber-

469), 6 p. pl., Bible talk; 9,

laylight, 309), 8 alto solos, Mar-hna Cockburn; 9, x: 9:20, Hawaiian d S. Stuebbing; p. m., all-star rk, Ernest Rogers,

9 p. m., WTAM Louise Roach, so-

5.12:30 midnight, harley Hughey, 6:45-7:45 p. m., Hansen, violinist; 0:15-11:15, Polly

chestra. 9:30 a. m., talk, n., Detroit News chestra.

er 21

W. WGR, WIP,

il a. m., service, m., KGO Little Episcopal church Tenth Avenue Baptist

.cific, 492), 6 p. m., church

SHYC, Montreal, Can. (Eastern, Daylight, 341), 7 p. m., St. James Methodist church.
KFI, Los Angeles, Calif. (Pacific, 469), 10-10:45 a. m., L. A. church federation service; 6:45-8 p. m., Motropolitan theater program: 8-9, Ambassador hotel concert orchestra; 9-10. Examiner studio concert; 10-11, Packard via prochastre.

Rectard six orchestra.

KFKB, Milford, Kans. (Central, 286), 10-12 a. m., religious services. First Congregational church, Dr. Slade, paster: 8-10. International Bible Students association class.

KFNF, Shenandoah, Ia. (Central, 266), 3 p. m., religious services, Church of Chrise; 6:30, regular sacred song KFSG, Los Angelos, Calif. (Pacific, 278), 10:30-12:30

noon, userning service, organ, Esther Fricke Green; congregational singing; prayer; choir; music, anthems; triple male quartet; aunouncements; vocal solo; sermon, Almeo Semple McPherson; 2:30-4:30 p. m., after-(Continued on page 18)

WEAF, New York, N. Y. (Eastern, Daylight, 492); 11-11:15 a. m., health falk, New York Health Speakers' service; 11:15-11:30, talk on dahlins, New York Botanical gardens; 1-5, club program for women; 6-7, dinner music, Hotel Waldorf-Astoria; 7:30-7:15, dordan M. Cohan, planist; 7:15-8, "The Happiness Boys;" 8-8:15, Wm. Cohangk, violinist; 9-10, B. Flscher's "Astor Coffee" dance ordiestra.
WEAO. Columbus, Ohio (Eastern, 360), 1:30 p. m., educational talk, member Ohio State university faculty; 1, farm talk, faculty member; music, university falent.

SAI; 10, KGO,

6:30, I'HN:

:30, ; 10,

0:30,

KGO.

Halont, WEBH, Chicago, III. (Central. Daylight, 370), 7:30-8:30 p. m., Myron Muench, reader; Oriole orchestra; Merrick Foster, planlat; 9:30-10:30, Frederick Agard, tenor; Orlole orchestra; Edgewater trio, Ted, Nick., Frank; 11:30-12:41, Sandy Meek, Scotch singer; Winter Garden four; Orlole orchestra; special sougs,

Nick Lucas. WFAA, Dallas, Tex. (Central, 476), 12:30-1 p. m., address, Dr. Republic N. Hyer; 8:30-9:20, Southern Mether

WOU, Davenport; 1a.— (Central, 484), 12 m., cnimes; 7:15 p. m., Gathering Seed Corn," Emil Kroeger; 8, program of old-time music, old-time fiddlers.
WOO, Philadelphia, Pa. (Eastern, Daylight, 509), 11 a. m., Mary E. Vogt, organist; 12:02 p. m., Wanamaker crystal tea room orchestra, Robert E. Golden, director; 4:15, Mary E. Vogt, organist; 7:30, A. Candelori's concert orchestra from Hotel Adelphia; 9:15, Mary E. Vogt, organist; 10, Hotel Adelphia Roof Garden dance orchestra.
WOR, Newark, N. J. (Eastern, Daylight, 405), 2:30-2:15 p. m., George Perry, tenor and Russell Blumstein, planist; 2:45-3, Mrs. Shellworth, cornetist; 3:30-3:45, Geo. Perry and Russell Blumstein; 3:45-4, Mrs. Shellworth; 6:15-6:30, Frederick Tedesco, accordionist; Elic Elistrom, violinist; 6:30-7, Man in Moon stories for children; 7-7:15, Frederick Tedosco and Elic Elistrom; 7:20-7:30, sport talk, Jolly Bill Steinke. and Ellir Ellistron; 7:20-7:30, sport talk, dolly Bill Steinke.

WOS, Jefferson City, Mo. (Central, 440.9), 8 p. m., surfaultural address; 8:20, mustal program;

4-5 p. m., Bruno Brothers dance orchestra; 6-7, differer music, Hotel Waldorf-Astoria; 7-7:30, dance music, Alpha Syncopators; 8-8:15, Joseph Malhieum, tenor; 8:30-8:45, Jimmy Clark, pianist; 8:45-9, Viola Silva, contralto; 10-11, Vincent Lopez and his Hotel Pennsylvania orchestra.

WEAO, Columbus, Ohio (Eastern, 360), 1:30 p. m., educational talk, member Ohio State university faculty.

WEBH, Chicago, III. (Central, Daylight, 370), 7:30-8:20 p. m., Orlole orchestra; Radio Sunday school lesson, Dr. Herbert W. Virgin; request program, Banjo James; 9:30-10:30, Gladys Audes, soprano; Langdon brothers; Yellow, Red and Orange tales, William H. Hunt; Marie Kelly, reader; Oriole orchestra; 11:30-12:30, Oliver Mellum, baritone; Oriole orchestra; special songs, Nick, Ted, Frank.

WFAA, Dallas, Tex. (Central, 476), 12:30-1, p. m., addross, Judge Ed Sewell; 8:30-9:30, program, entertalners from Cleburne; 11-12, Adolphus hotel orchestra.

WFI, Philadolphia, Pa. (Eastern, Daylight 395), I. p. m., Meyer Davis Bellevue Strafford gencert prohestra;

www.americanradiohistory.com

# Sunday, September 21

(Continued from page 17)

noon service, organ, Roy Reld Brignall; silver band; congregational hymns; invocation; music; reception to members; ennouncements; silver band; vocal solo; sermon, Aimee Semple McPherson; 7-10, special musical hour with congregationol singing; choir; silver band and special vocal and instrumental features; sermon, Almee Semple McPherson; alter call, nftor servico. 10-11, orgen recital. Roy Reid Brignali with vocel

10-11, orgen recital. Roy Reid Brignali with vocel selections by assisting artists.

KPO, San Francisco, Calif. (Pacific, 423), 11-12 m., church services, Dr. W. O. Fisher; Alick G. Sheriffs, soloist: Theodore J. Irwin, orgenist; 8:30-10, Rudy Seiger's Fairmont hotel orchestra.

WDAF, Kansas City, Mo. (Central, 411), 3:30-4:30 p. m., progrom, Newman theater.

WEAF, New York, N. Y. (Eastern, Daylight, 492), 4-5 p. m., church singing; 7:20-9:15, Capitol theater; 9:15-10:15, Skinner organ recital.

WEBH, Chicago, III. (Central, Oaylight, 370), 7-9 p. m., Elsie Schey, contraito; Marion O'Neill, violinist; Dean Remick pianist: songs, Nick Lucas; Oriole orchestro.

WFAA, Dallas, Tex. (Central, 476), 6-7 p. m., Radio Bible class, Dr. William M. Anderson; 9-9:30, sacred song recital, choristers from Cliff Templo Baptist church. Dr. Wallace Bassett, pastor; 9:30-11, Jack Gardner's orchestra.

orchestra.
WFI, Philadelphia, Pa. (Eastern, Daylight, 395), 7:30 p. m., services, Arch Strect Presbyterian church.
WGN, Chicago, III. (Central, Oaylight, 270), 11 a. m.,
Uncle Walt reading the couries; 5-6 p. m., Pershing

Uncle Walt reading the councis; 5-6 p. m., Pershing male quartet with solos.

WGR, Buffalo, N. Y. (Eastern, Daylight, 319), 3-4 p. m., vesper service.

WGY, Schenectady, N. Y. (Eastern, 380), 9:30 a. m., service, First Baptist church, Rev. Gordon H. Baker; 6:30, First Baptist church, Rev. Gordon H. Baker; 6:30, First Baptist church, Rev. Gordon H. Baker.

WHB, Kansas City, Mo. (Central, 411), 9:45-11 a. m., services, Linwood Boulevard Christian church, Dr. Burrls Jenkins, pastor; 8-9:30 p. m., services, representative Church of Kansas City.

WHK, Cleveland, Ohio (Eastern, 283), S p. nl., Interdenominational chapel service, ausplees Cleveland Federed churches, conducted by Rev. E. R. Wright; talk on current religious toples; 9, Osborn A. Bryan, Leonard Z. Bryan, Jr., Mrs. Mary E. Black, vocal and Instrumental music; 10, Erwin F. Goetsch string trio; Erwin F. Goetsch, cello-saxophonist, Rose Linggen, planist; Bob Wallace, violinist.

WIP, Philadelphia, Pa. (Eastern, Oaylight, 509), 10:45 a. m., services, Holy Trinity chapel, Rev. Floyd W. Tompkins, D. D.

WJAR, Providence, R. I. (Eastern, Daylight, 360), 3:30

Tompkins, D. D.
WJAR, Providence, R. I. (Eastern, Daylight, 360), 3:30
p. m., U. S. Marine band; program, Rogers Williams
park; 7:20-9:15, Capitol theater, New York; 9:1510:15, organ recital, Skinner organ company, New

York.

WLW, Cincinnati, Dhio (Central, Oaylight, 423), 9:30
a. m., Sunday school; 11, sernon, Dr. Frank Stevenson, Church of the Covenant; 7:45 p. m., sermon, Dr. Frederick McMillin, Walnut Hlils First Presbyterian church; 8:45, concert, Western & Southern orchestra, William Kopp, director.

WOAW, Omaha, Nebr. (Central, 526), 9 a. ni; Radio chapel service conducted by Rev. R. R. Brown; 9 p. m., musical chapel service, Hanscom Park Methodist Episcopal church, Rev. Arthur Atack, pastor; Walter B. Graham, choir director.

Graham, choir director.

WOC, Cavenport, la. (Central, 484), 9 a. m., sacred chimes; 1:30 p. m., the Palmer School Radio orchestra; 8, church service; 9:30, musical program, the Palmer School Radio orchestra.

School Radio orchestra.

WOD, Philadelphia, Pa. (Eastern, Daylight, 509), 10:30
a. m., services, Bethany Temple; 2:30 p. m., Sunday
school services, Bethany Temple; 3:15, organ recital.

WQJ, Chicago, III. (Central, Oaylight, 448), 8-10 p. m.,
Ralph Williams and His Rainbo Garden orchestra;
Langdon brothers, steel guitar duets; M. A. Borresen,
bethere Ferr Peniska geomegaist; Dorothy Schubert.

Langdon brothers, steel guitar duets; M. A. Borresen, baritone; Fern Denicke, accompanist; Dorothy Schubert, Jugo Slav soprano; Carl G. Linner, planist.

WSB, Atlanta, Ga. (Central, 429), 11 a. m., First Presbyterian cburch; 5 p. m., Sabbath twilight broadcast; 7:30, Wesley Memorial church.

WWJ, Detroit, Mich. (Eastern, 517), 5 p. m., Detroit News orchestra; 7:30, services St. Paul's Episcopal cathedral.

# Monday, September 22

Silent night for: CKAC, KFNF, KYW, WFI, WGN, WHAS, WLS, WMAQ, WQI, WRC, WTAY.
CKAC, Montreal, Can. (Eastern, Oaylight, 425), 1:45 p. m., Mount Royal Hotel luncheon concert.
KFAE, Pullman, Wash. (Pacific, 330), 7:30-9 p. m., Mary Cameron, pianist; Mrs. LaVerne Kimbrough, contralto; "The Practical in Higher Education," Dr. Holland; "Alfalfa In the Dry and Wet Sections," Leonard Hegnauer.
KGD, Oakland, Calif. (Pacific, 312), 3 p. m., studio musical program, Parent-Teacher association; 4-5:30, Henry Haistead's dance orchestra; 5:30-6, Aunt Betty storles, KGO Kiddies' klub: 8, educational program:

educational program;

storics, KGO Kiddies' klub; 8, educational program;
Arion trio; 10-1. Henry Halstead's orchestra.
KGW, Portland, Dre. (Pacific, 492), 3:30 p. m., literary
program, Portland Library association; 8, concert.
KQV, Pittsburgh, Pa. (Eastern, Oaylight, 270), 9-10 p.
m., regular artists' program.
WAAW, Omaha, Nebr. (Central, 360), 7:30-9 p. m.,
Happy Home orchestra; oldtime music.
WBAV, Columbus, Ohio (Eastern, 423), 12 m., Ila Lorhach Owens, pianlst.
WCBO, Zion, III. (Central, 345), 8 p. m., ladies' chorus
and string quartet; Martha Hollingshead, flutist; cornet
ducts, Wedekind and Taplin; soprano and baritone
ducts, Wrodekind and Taplin; soprano and baritone
ducts, Mrs. J. D. Thomas, J. D. Thomas; Katherine
Schmidt, contralio; Mrs. Lillie Leech, pianlst; readings,
Lois Wiedman.
WCX, Oetroit, Mich. (Eastern, 517), 4:15 p. m., musical program; 6, dinner concert; 7, musical program.

wGR, Getroit, Mich. (Eastern, 517), 4:15 p. m., musical program; 6, dinner concert; 7, musical program. WEAD, Columbus, Ohio (Eastern, 360), 1:30 p. m., educational talk, member Ohio State university faculty. WFI, Philadelphia, Pa. (Eastern, Oaylight, 395), 1 p. m., Meyer Davis Bellevue Stratford concert orchestra; 3, recital, Curtis school of Music; 6:30, Meyer Davis Bellevue Stratford concert orchestra; 7, Sunny Jim, the kiddies, pal

kiddiea' pal. WGAQ, Shreveport, La. (Central, 263), 9-12 midnight, Louislana Ramblers Hotel Yource orchestra.

WGR, Buffalo, N. Y. (Eastern, Daylight, 319), 12:30-1
p. m., George Albert Bouchard, organist; 6:30-7:30,
dinner music; 9-10, concert, Buffalo Trust company,
direction of Ceelle Kurtz; 11:30, supper dance music. Vincent Lopez' Hotel Statler dance orchestra, Harold

Vincent Lopez Hotel Statier dance orenestra, Harold Gleser, director.

WGY, Schenectady, N. Y. (Eastern, 380), 1 p. m., "Framing the Nursery Windows"; 7:45, Ruth Don, planist; "Movle Notions," Quin Martin; Elizabeth Reardon, harpist.

WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., Alamo theater orchestra; readings, Courler-Journal and Louis-

ville Times.
WHB, Kansas City. Mo. (Central, 411), 7-8 p. m. music, Sweeney Instrumental trlo; educational address.
WHN, New York, N. Y. (Eastern, Daylight, 360), 5-5:30
p. m., Baron Van Shlilagh and hla orchestra; 6:307:30, Paul Specht's Alamac orchestra; 8-8:30, Itosciand dance orchestra; 9:30-10, Crystal Palace orchestra;

10-11, Radio Shack; 12-2 a. m., Midnight Boliemia

show.

WHO, Oes Moines, Ia. (Central, 526), 7:30-9 p. m., Evelyn Teetor Khuber, soprano; John Davis Colfax; Myrtal Williams, soprano; Stewart Watson, baritone; Edith Usry, accompanist.

WIP, Philadelphia, Pa. (Eastern. Oaylight, 509), 1 p. u., Gimbel Brothers tea room orchestra; 6:05, Frieso Serenaders dance orchestra; 7, Uncle Wip's bed-

time stories.

WJAR, Providence, R. I. (Eastern, Daylight, 360), 10
a. n., housewives Radio exchange, Mrs. Wood; 10:45,
McCall telk, Marle C. Koester; 8:95 p. m., Woodlawn
Baptist violin concert orchestra, Albert W. Koechling,
WLW, Cincinnatl, Ohio (Central, Oaylight, 423), 8 p. n.,
Alvin Roehr'a Music Makers: 8:45-10, Cooper orchestra

and male quartet.

WMC, Memphis, Tenn. (Central, 500), 8:30 p. in.,
Hotel Gayoso orchestra.

WMH, Cincinnati, Ohio (Central, Oaylight, 309). 8
p. m., introductory concert, WMH concert orchestra,
Werner Bertram, director; 9, Murray Horton's Hotel

WOAW. Dmaha, Nebr. (Central, 526), 6 p. m., popular haif-hour; 6:30, dinner program, "The Columbians" of Columbus, Ncbr., program arranged, Mrs. A. S. Harrington of Counell Bluffs, lowa.

WOC. Davenport, la. (Central, 484), 12 m., chimes; 8 p. m., musical program; 10, program.

WOO, Philadelphia, Pa. (Eastern, Oaylight, 509), 11 a. m., Mary E. Vogt, orgenist; 12:02 p. m., Wanameker crystal toa room orchestra; 4:45, Mary E. Vogt, organist; 7:30, Hotel Adelphia "concert orchestra, A. Candolori, director; 8:30, Horriett G. Ridley, planist; 9:10, Fox theoter grand orchestra, Erno Rapco, director; 10, Hotel Adelphia roof gardon orchestra.

WDR, Newark, N. J. (Eastern, Oaylight, 405), 2:45-3 p. m., talk, Young Mcn's Christian association, New York City; 3:45-4, talk, Charm Magazine; 8-8:15, swimming tolk, Frank E. Dalton; 8:45-9, "1 See by the Papers," says "Hollywood" McCosker; 9:30-10, WOR Mondey nighters.

WOS, Jefferson City, Mo. (Central, 440,9), S p. m., address, Arthur T. Nelson; 8:20, music.

WQJ, Chicago, III. (Central, Oaylight, 448), 11-12 m., "The Avolanche," Rev. Fred Herrison; "Steel Furniture," P. E. Graff; 3-4 p. m., "Waffies and Griddle Cakes," Helen Harrington Downing.

WSAI, Cincinnati, Ohio (Central, Oaylight, 309), 10-12 p. m. popular music, Royal Garden orchestra.

WSB, Atlanta, Ga. (Central, 429), 8 p. m., Addio Britt, touring entertainer; 10:45, Radiowi entertainment.

WTAM, Cleveland, Dhio (Eastern, 390), 8 p. in., the Musical Magples in a frollesome program.

WTAS, Elgin, III. (Central, 286), 7:15 p. m., Chorley Hughey, organist; 7:20, WTAS orchestra; 7:45-8, songs, Mary Joyne; Albert Melotto, composer; songs, Lucky Wilbur; Egbert Van Alstyno, Clem Dacy; 8-8:30, WTAS orchestra; 8:30-8:45, popular trio, Hill, Hirsh, Gorny; 8:45-9, WTAS orchestra; 9-9:30, Hawailan numbers, Williom Anderson, Orpha Twingstrand; Walter Donovan, Carmi Romane, Zelgler sisters, Charles Harrison; 9:30-10, WTAS orchestra; 10-11, Charley Hughey, Hill, Hirsh and Gorny, Mary Jayne.

WJ, Oetroit, Mich. (Eastern, 517), 8 a

Hill, Hirsh and Gorny, Mary Jayne.

WWJ, Oetroit, Mich. (Eastern, 517), 8 a. m., setting-up exercises, R. J. Horton; 9:30, talk, women's editor, Detroit News; 12 m., Detroit News orchestra; 8:30 p. m., Detroit News orchestra; T. Stanley Perry, tenor.

# Tuesday, September 23

Silent night for: KFAE, WOAR, WFI, WGR, WHO, WOC, WOR, WDS, WTAY.
CKAC, Montreal, Can. (Eastern, Oaylight, 425), 7 p. m., klddies' stories in French and English; 7:30, Rex Battle and his Mount Royal hotel concert orchestra; Rex Battle, planist; 8:30, concert party, White Star | WDAR, Philadelphia, Pa. (Eastern, Daylight, 395), 11:45

Dominion S. S. Doric; 10:30, Joseph C. Smith and his roof garden orchestra; George Fishburg, pianist.

KFKB, Milford, Kans. (Central, 286), 7:20 p. m., "Coliege of the Alr"; 7:30, "Treatment of Seed Wheatfor Disease Prevention," L. E. Melchrers; 7:45, "Choosing Pullets for the Laying Hen," H. H. Steup; 8. KFKB orchestra; 8:30, "Chinese Customs," Dr. J. R. Brinkley; 9, KFKB artists; 10-12, danco program.

KFNF, Shenandoah, Ia. (Central, 266), 7:30 p. m., concert from Bedford, J. P. Street, director.

KFSG, Los Angeles, Calif. (Pacific, 278), 3:30-4:30 p. m., organ recital, courtesy, Esther Fricke Green, orgenist; Sorali Karcher, violinist and nssisting artists; 6:30-7:30, Gray studio children's program presented by Horry James Beardsley (Cousin Jim) and associates; Eugene Lanb, plenist and accompanist.

KGO, Oakland, Calif. (Pacific, 312), 4-5:30 p. m., concert orchestra of the Hotel St. Francis; 8, program, Y. W. C. A.; Girls' Gleo club; "The Service to Young Womanhood," Alice M. Brookmen; Chinese club; "Attileties for Girls," Alice B. Goodmen; Ruth Hall Crondall, contralto; Y. M. C. A. program; Frank Denke, planist; Hi-Y club; Antone Dorigo, violinist; "A Young Mon's Opportunity," William Gillander; Charles Lloyd, bass; Ritual of the Pioneer club; "The Boy and His Dad," Bob Koli; Notches chorus; 10-1, dance music, Henry Halstead's orchestra.

KGW, Portland, Dre. (Pacific, 492), 3:30 p. m., children's program; 8, concert.

KPO, San Francisco, Calif. (Pacific, 423), 1-2 p. m., Rudy Selger's Fairmont hotel orchestra; 5:30-6:30, cluldren's hour stories, Big Brother; 7-7:30, Rudy Selger's Fairmont hotel orchestra; 8-10, program, Jack Thomas, manager; 10-11, E. Mex Bradffold's Versatile bend.

KYM, Chleago, Ill. (Central, 0aylight, 536), 11:35 a. m., table talk, Mrs. Anna J. Peterson; 6:35-7 p. m., children's bedtime story, Uncle Bob; 7-7:30, dinner concert, Congress hotel; 8-8:20, artists' program; 8:20-8:45, American Farm Bureau federation: "Monthly Analysis of Farm Markets," H. W. Moorhouse; "Agriculture in the H

i. m., daily almanac; 12:02 p. m., Stanley theater organ; 12:30, Arcadia cafe concert orchestra; 2, Arcadia cafe concert orchestra; 4:30, Edna Finestone; 7:30, Dream Daddy's bedtime stories.

WEAF, New York, N. Y. (Eastern, Oaylight, 492), 11-

11:10 a. m., Board of Education; 11:33-11:45, motion picture forecost, Adele Woodard; 4:40-5 p. m., children's storics; 6-7, dinner music, Hotel Waldorf-Astoria; 7:30-8, Bob Fridkin Clifford Lodge orchestra; 8-8:20, Columbia university; 8:30-8:45, John F. Hill; 8:45-9, Gold Dust Twins; 9-10, National Cerhon company. WEAO, Columbus, Dhio (Eastern, 360), 1:30 p. m., educational lecture, member Ohio Steto university faculty

p. m., Meyer Davis Bellevue Stratford concert orchestra;
3, Caroline Hoffman, planist; short chats on recent novels, Ethol B. Kooker; 6:30, Meyer Davis Bollevue Stratford concert orchestra;
3, Taroline Hoffman, planist; short chats on recent novels, Ethol B. Kooker; 6:30, Meyer Davis Bollevue Stratford concert orchestra; 7, Sunny Jim, the kiddles'

WGN, Chicago, III. (Central, Daylight, 270), 8:30-9:30 p. m., La Pousa College of music; 10:30-11:30, Jack Chapman's dance orchestra.
WGR, Buffalo, N. Y. (Eastern, Oaylight, 319), 12:30-1

p. m., George Albert Bouchard, organist; 6:30-7:30, dinner music. dinner music.
WGY, Schenectady, N. Y. (Eastern, 380), 1 p. m.,
"Eugene Field—American Poct and Humorist"; 7:45,
Domino Novelty orchestra; "Autumn," T. R. Hutton.
WHAS, Louisville, Ky. (Central, 400), 4-5 p. m., Alamo
theater orchestra, Harry S. Currie; readings, CourierJournel and Louisville Times; 7:30-9, Happy Hoosier
harmonicts

harmonists.

WHB, Kansas City, Mo. (Central, 411), 8-9:30 p. m., vocal solos by favorito WHB artists; 10:30-11:30, dance music, Frank R. Marks' orchestra.

WHN, New York, N. Y. (Eastern, Oaylight, 360), 2:15-3:15 p. m., Loew's State theater overture and vaude-ville; 5-5:30, Original St. Louis Rythm Kings' orchestra; 10-10:45, Paiisades Park orchestra; 11:30-12, Club Alabam orchestra.

WIP, Philadelphia, Pa. (Eastern, Daylight, 509), 1 p. m., Gimbel Brothers tea room orchestra; 6:05, Harry Ehrenzeller's concert orchestra; 7, Uncle Wip's bedtime stories.

stories.

WJAR, Providence, R. I. (Eastern, Daylight, 360), 1:05
p. m., Providence Biltmore hotel orchestra; 8:05,
musicale.

WJAX, Cleveland, Dhio (Eastern, 390), 7:30 p. m.,
program arranged by Cleveland News-Leader; E. G.
Johnson, bedtime story; Radlo talk cartoon, Don
Palmer; Gladys Beddoe, soprano; Gertrude Lenz,
pianist; Thimble theater Guild of Martha Lee club,
playlet; Ed Day's Bedford Glen dance orchestra.

WWJ, Detroit, Mich. (Eastern, 517), 9:30 a. m., talk,
women's editor, Detroit News; 9:45, Fred Shaw, planist
and songster; 12 m., Detroit News orchestra; 8:30,
Detroit News orchestra; Arthur White, tenor.

From \$2200 a Week Clerk to \$8500 Radio Expert

How a young man discovered his opportunity in a fascinating new field, and quickly prepared himself in his spare time for the position he wanted. related by himself.

"I was interested in radio from the very beginning. I bought a little onetube set when radio first became popular and I experimented with it, bringing in snatches of song from the air and trying to get distant stations. But my set was very much of a mystery to me. Like most people, I knew how to use it, how to tune in on local stations, but I did not understand how it worked. I often wondered.

"At that time I was working as a clerk in a large mail order house. I took the position because I thought it would be a stepping-stone and that I would quickly advance to something bigger. But years went by-and I was still a clerk. Somehow I had fallen into a rut, and there I remained. I used to get terribly discouraged at times, and I wondered what my future would be. Would I never be anything more than just a clerk?

"I drifted on, and nothing ever happened. I got an occasional increase in salary, but that was all. I was becoming resigned, was losing whatever shred of ambition I had left. My salary reached \$22.00 a week, and there it remained. I knew I could never earn more in that kind of work. But what could I do? For what was I suited?

"Then came the big radio boom, and everybody began talking about the wonderful new industry. Half the people in our town bought receiving sets. On the trains I heard nothing but radio gossip, and the newspapers were crowded with news on radio development. I had a sudden idea—an inspira-

"Here was an industry that was still an infant compared to other industries. It was young and fast growing, and evidently would some day be one of the greatest industries in the world. Surely in so new and important an industry there must be big opportunities for beginners—a rare chance for quick success and rich rewards. I would get into the field at once, start at the bottom and grow up with it! I would get out of the rut into which I had fallen, into a new field ripe in opportunities l

"But how? I had to depend too much upon my \$22.00 a week to give it up. If only I could study radio at home in my spare time, and prepare myself for a radio job without giving up my regular work. I decided to make inquiries, and discovered that just such a course was offered by the National Radio Institute in Washington, which was established away back in 1914 and is the biggest and best school of its kind in the world today. I enrolled, keeping it a secret from cveryone at home.

"For several months I studied at home, in the evenings and whenever I could spare a half-hour or so. The time passed quickly because it was all so fascinating. In a few months I had mastered what I had believed "the mysteries" of radio, and was qualified to take a position in charge of a radio department in a large wholesale house.

"How surprised everyone was when I announced calmly—and I'll admit a little proudly!—that I had graduated from the National Radio Institute and that I had my certificate as a Certified Radiotrician. Radiotrician. They were even more surprised when I told them that the Institute had found a position for me right in my own town at \$50.00 a week! They all wanted to know how I did it—and some of the fellows were mighty

"Advancement came quickly, and now I am a radio engineer earning \$85.00 a week. Very often I earn extra money in my spare time helping people put up their sets. I expect another promotion soon and it will not be long before I am earning \$100.00 a week. Radio

am earning \$100.00 a week. Radio is constantly progressing, there are new improvements all the time, and those who are in the field naturally develop as radio develops. I am glad I got in early.

"I am glad to write this story for publication because the National Radio Institute alone has made my success posstitute alone has made my success possible. It offers the only absolutely complete course now being given which qualifies you for a Government First-Class License and for the big-pay jobs in Radio. I would advise anyone who is interested in radio as a profession to use this coupon and send at once for the valuable information that is offered free. Don't hesitate to use it—there is no obligation. I, too, sent off for the free information before enrolling. Why don't

you do it—now? Special Offer

"A special reduced rate is being offered to those who mail the caupon AT ONCE. Get in on the ground floor and save money. Just address the National Radia Institute, Oept. 55JA, Washington, D. C."

NATIONAL RADIO INSTITUTE,

Dept. 55JA, Washington, O. C. 1 am interested in radio as a profession. You may send me, free and without obligation, your interesting little book "Rich Rewards in Radio" telling about the future of Radio, and all information about your sparetime, home-study plan and your free employment service.

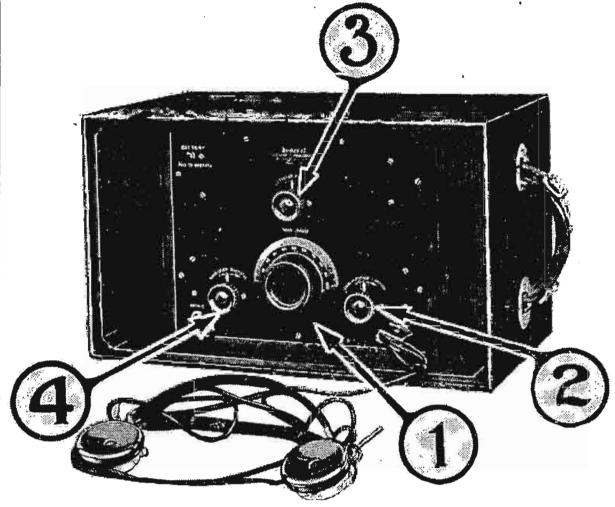
Address

# OPERATING AND TROUBLE SHOOTING

For the Owner of a Federal Four Tube Type 102 Receiver

"PERATING 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. On page 19, 21 and 24 this week the Federal Four-Tube Type 102 Receiver is described. Radiophans with other sets will also find these worth while reading, particularly the notes on trouble

N THE Federal Type 102 receiver the number of controls has been reduced to four. Two of these controls are adjusted very infrequently, while the amperes and 3.0 volts at the tube filament other two which are the real tuning controls are operated simultaneously. This to give loud speaker operation from high knob 2 is used to give maximum volume about 0.25 amperes at 5.0 volts at the filaand clear signals on each setting of dial 1. | ment terminals, may be used with this set, These are the two which should be oper- but are not recommended for the maxiated together. Knobs 3 and 4 enable one mum economy of operation. to vary the current to the filaments of the vacuum tubes and need be set only on re- type are the best kind of vacuum tubes charging of the battery and when about to be used with the Type 102 receiver. A half run down—or, if dry cells are used, socket adapter must be used with the UV-when they have been in use some time. 199 and C-299 type tubes. The highest



The Tubes to Use

The type 102 receiver is designed partion tubes which are rated at about .060 and poor insulation. terminals. The type 102 set will be found

Tubes of the C-299, UV-199 and DV-3

grade adapters should be used for this purpose since cheap adapters will cause a ticularly for the economical low consump- great amount of trouble from bad contacts

Where it is practicable to use a storage battery, the use of the UV-200 or C-300 type of detector tube in the detector tube is the practice of good operators and, powered stations at a distance of 500 to where followed, gives most satisfactory 1000 miles under good conditions. Higher when the C-299, UV-199 and DV-3 tubes results. Dial 1 is the station selector and consumption tubes which are rated at are used as detectors. Because of the high current consumption of the filament of the UV-200 and C-300 type tubes, it is impracticable to attempt to operate them from a dry cell A battery.

Use of Dry Cells

The A battery supplies the energy to heat the filaments of the vacuum tubes. Low consumption filaments such as those used in the UV-199, DV-3 and C-299 may

be economically heated from a dry cell A battery. The current consumption of these tubes is .060 amperes, at a filament terminal potential of 3.0 volts. The detector tube rheostat and the rheostat for the amplifier tubes serve to reduce the voltage of the A battery before it is impressed across the filament terminals of the vacuum tubes.

Use three dry cell batteries. These may be the ordinary dry cells for ignition and door bell work, but are preferably those which are especially designed for Radio. Dry cells especially designed for Radio use will give about double the life of those designed for other purposes. When the closed circuit voltage of the A battery is below the voltage which will operate the tubes, it is no longer useful for Radio, but it can still be used for ignition and bell service.

In wiring A batteries, heavy, insulated wires must be used to connect the cells together in order that there will be no voltage loss in these wires.

Space is provided within the cabinet for four dry cells. If three volt tubes are used, only three cells will be used. If WD-12 or similar tubes are used four dry cells will be required. The WD-12 type tube has a current consumption of 0.25 amperes at a voltage of 1.1 at the filament terminals. If desired, the dry cells may be placed outside of the set.

### Tuning the Type 102

If the instructions which are furnished in the packing of each vacuum tube have been preserved, the proper degree of heat required in the filament of the vacuum tubes will be found described therein. Should such information not be available, the best procedure is:

Turn the detector rheostat from the 'off" position slightly in a clockwise direction. Then turn the amplifier rheostat to a slightly greater distance in a clockwise direction. The proper adjustment of the rheostats will be indicated to the operator when the headset which he is wearing becomes somewhat noisy because of slight irregularities of vacuum tubes and batteries from the ideal condition of perfect quiet when not receiving signals.

The "wave length" dial number 1 should be adjusted in connection with the "R.F.

(Continued on page 21)

**NEW MODELS** 

# **Bristol** Radio Receivers

Incorporating the Patented Grimes Inverse Duplex System

Watch for further announcements in all leading radio publications.

Improved Bristol Audiophone Loud Speakers—gives greater volume, is more sensitive and still maintains its round, full tone and its distinctive freedom from distortion.

Ask for Bulletin No. AY-3017

Manufactured by

THE BRISTOL COMPANY

Waterbury, Connecticut

GRIMES SYSTEM INSURES NATURAL TONE QUALITY



Senior Audiophone 15-inch Bell



Junior Audiophone 11-inch Bell



Baby Audiophone With Fibre Horn Price......\$30.00 Price.....\$12.50

Demann TIVE million dollars' worth of Freed-Eisemann receivers are in daily use by proud owners. It is the judgment of this vast clientele that has given Freed-Eisemann its supremacy. Make it your business to see these new receivers. FREED-EISEMANN RADIO

Sperry Bidg., BROOKLYN, N. Y. The New Models are here

CORPORATION

# Radio Digesi

Published by the Radio Digest Publishing Company, Inc. 510 North Dearborn Street Telephone: State 4372, 4373, 4374, 4375 Chicago, Illinois

E. C. RAYNER, Publisher Charles F. Smisor Editor
Harry J. Mark Technical Editor

Eastern Office, 611-12 Times Bldg., Times Sq., New York; Telephone Bryant 4909, 10462

Member of the Audit Bureau of Circulations 241

PUBLISHED WEEKLY

SUBSCRIPTION RATES

Yearly in U. S. and Possessions and Canada, \$5.00 Single copies, 10 cents. Foreign postago, \$1.00 additional.

Vol. X. Chicago, Saturday, September 20, 1924 No. 11

# Brevity Will Bring Votes

### Short Speeches Over Radio Will Be Best

**D**RESIDENTIAL candidates will be given license to say their say into the microphone, and for many of their speeches, relay systems will be employed to reach the widest possible audience. Presidential candidates will be listened to, even at length, it is believed—at least in the earlier stages of the campaign.

But if the army of secondary spellbinders, which will follow in the trail of the three national tickets, thinks it is to have full sway and swing over the ether waves it is indulging in an elusion. Radiocasters have reached conclusion, and probably put their conclusion into effect, that brevity is the soul of Radio, and that the lesser lights must be kept strictly within time limits. Fifteen minutes, it is suggested, will be long enough in most cases and may be too long in many.

The Radiocasters are only anticipating a decision which the listeners in would reach, we think, before the campaign had proceeded far. Gentlemen of long winded eloquence, who have been anticipating addressing millions of invisible hearers for an hour at a time, will do well to revise their notion of the sort of thing which will go in the new method of campaigning. It may prove less embarrassing to have an audience tune out than to have it walk out, but it will be no less umprofitable.

Pith. point and punch are the three essentials to the effective political speech anywhere. They are absolutely indispensable for Radio speaking. "Make it snappy and cut it short," should be inscribed over the microphone.

### Radio May Aid World Peace

### Possibilities for Affecting Human Society

P ADIO is remaking modern life so rapidly and in so many directions that the extent and character of its ultimate development cannot be safely predicted. While the efforts of the new art of communication upon certain aspects of life like public entertainment, education and politics are becoming fairly evident, its permanent results upon complex modern civilization as a whole cannot be forecast at this stage of its development.

In one direction its possibilities for affecting human society have not as yet been generally realized, that is, promoting world peace.

Whatever form of machinery may be eventually developed for maintaining peace, Radio undoubtedly will play a prominent part in creating a spirit of international good will necessary to make it function successfully.

One objection which is always raised to an international organization to promote peace is that it is an organization of governments, and not of peoples.

Whatever views one may hold as to a League of Nations, there will be a general agreement with the proposition that to make any league or association effective, there must be back of it a desire for peace in the hearts of the people in every nation composing the organization. It is in creating this state of mind that Radio has one of its greatest opportunities for scrvice to modern society.

Dreams of enthusiasts for world-wide broadcasting from a single station may not be realized, but already Radio has spanned oceans and connected continents. Developments in broadcasting and receiving in one country are eagerly watched in another.

There is no doubt that in various sections of the United States thousands of persons would be interested in hearing programs broadcast in French, Spanish, Italian and other languages. Such programs would appeal not only to foreign born citizens who speak these languages, but to American born adults and to thousands of students who are studying languages.

When the homes of the nations are in touch with the trends of thought and progress throughout the peace will have been taken.

## RADIO INDI-GEST

### Thought for the Day

Maude Muller, on a night in June. Her one-tube Copp set tried to tune.

Beneath her bobbed hair glowed a wealth Of paint and powder and drug store health.

Tuning, she sang, and her interlude Frightened the static from out the tubc.

The Judge came walking across the lot To see Maude's brother, who had a stock

Of pre-war stuff and synthetic gin, But the brother was out. So he stopped to chin With Maude, who was glad the Judge dropped in.

They talked of tuners and batteries, Inductance coils and capacities.

Till Maude forgot her one-tube sct And fancied she had a super het.

The Judge stayed on, for he needed a shot, But Maudie's brother—he cometh not.

Till the Judge finally made his getaway, Saying he'd drop in another day.

Maude watched him until he crossed the street, And murmured: "That guy is hard to beat!"

"Oh, that I were his'n and he were mine! I'd sure have a super-heterodyne."

The Judge looked back as he crossed the walk, And said: "Maude's there with the Radio talk."

"But I wish she had come across with the key, And slipped me a shot of her brother's tea." PAPRIKA.

### News Bulletins from Milwaukee Furnished in Co-operation with the Milwaukee Daily Beverage

Mrs. Sauermilch, 18 Amendment street, likes the local proadcasting. She says it makes the Chicago stations sound so good.

A suspicious foreigner, giving the name of Erksine MacAdams, was picked up by Constable Schultz today. In his bag was found a complete set of burglar tools, a number of WEAF programs and one gross of copyright song hits.

Edison Einstein's new circuit was tried out last night but on hooking in the B batt. 6 tubes blew out. The circuit is NAMELESS as this column don't print that kind of language.

THE THIRD TROMBONE PLAYER.

# Mrs. Partington Speaks Out



Dear Indi: Mizz Partington says some fellers over to London think maybe they heard a Radio message from Mars, last night, but they couldn't read it because the Mars people forgot to mail them a copy of their code book in advance.

The London scientifics said they wasn't sure they and VOTE!! couldn't identify the signals as coming from anywheres else. She says if that is all they go by she has had most of the planets in her loud speaker lots of times, and as for Mars, that station wasn't no harder to get last night than lots of U.S. stations she knows of.

She fears the professors is wasting their time, anyhow, a trying to beat the one-tube amateurs to it, as they are most awful likely to do it first so they can print it in "Calls heard."

Probably what the London sports heard was the West Virginia regiment pulling off their sham battle down to camp Knox.

Kaiser Bill heard 'em in a real battle six years ago and he hain't got over it yet. SIGNING OFF.

### Break and I'm Broke

A nice little ditty, sing softly and brokenly:

Break, break, break, On the nice wood floor, vt! And it's good that my tongue don't utter

That you break with a pop of disdain. Oh, well, for the dealer who owns it, But hard for me who is payin'.

You busted for good reason, Lost your empty vac'um fill; But, oh! for the touch of a vanished five, And the sound of a tube that is still.

At my feet on the floor, vt! And the rustling grace of a bill that is spent Will never come back to me.

world by means of Radio, an important step toward talking politics. What did you do that time to stop diversified lecture course, leaving the entertaining your parrot cussing?



# Condensed By DIELECTRIC

Some scientists insist that the planet Mars be peopled although they admit that atmospheric conditions existing there would necessitate a form of humanity differing from ours. Not only should Mars be inhabited but Radio is presumed to be employed. On its near approach to the earth these men of science hoped to substantially prove their contentions. Some wierd sounds were received in a "strange code." Maybe Martian static.

The "pioneer broadcasting station of the world" has done a creditable piece of Radio work with its short wave antenna system which is used to transmit messages under a hundred meters. From Pittsburgh to Buenos Aires is no mean distance to cover at night with all conditions favorable but to accomplish it at noonday is something to note. With this system not only have messages been received in the South American country, but also in England, and with consistency. Carry on, KDKA.

Labor Day offered variety in political speech making. You were able to choose between two party leaders, if either appealed to you; to get the first Radio message from Senator LaFollette opening his campaign for votes, or listen to the views on labor as expressed by Mr. Davis. It is probable that several million people in the United States were listening in to these speeches, and certain that uninformed voters will this year be fewer than ever before. Listen in

Perfecting the new Radiocasting apparatus used in the army planes over Mitchel Field has resulted, so Lieutenant Connell states, in weighing down the plane until he can "hardly get it off the ground any more." At the same time such improvements as have recently been made showed a greater range for reception and provide the basis for the assertion that within a short time "the army will be able from a height of 4,000 feet or more to Radiocast for a thousand miles to receiving sets on land." During the first test of the device enabling Radiocasting direct from the plane the words of the pilot were distinctly heard by a listener in Atlantic City, N. J.

The trip of the steamship Arctic to Greenland will be watched with unusual interest by Radio men who look for developments of much importance. The vessel is equipped for transmitting on a wave length of 120 meters with call letters "VDM." Two special receivers are on board, one to be delivered to the Bowdoin when Captain McMillan's ship is reached. KDKA will send special signals every Monday night with the expectation of their being picked up by the Arctic. These, of course, are on the low wave length found so effectual for covering great distances.

We are now at the busy season when the educational institutions all over the country open their doors for another school period. Prior to the installation of the first Radiocasting plant in any college, I had persistently advocated the use of Radio by universities as a practical means of extending education. Since schools of higher learning have one after another fallen in with my suggestion results have shown how cagerly listeners accepted the offering. It is not only of benefit to the country at large (tending toward a better educated citizenry), but must influence many to pursue their studies further, a decision of direct value to the institutions. I am in hopes this winter Dear Indi: My loud speaker here of late has got to will find programs devoting greater time to a more IN. S. ULATION. | feature to non-educational Radiocast stations.

The thoughts that boil up in me.

Oh, well, for the Radio store

Break, break, break,

# We Choked It!

# Helpful Hints to Get Most From Radio

Chapter I—What to Expect of Your Radio Set

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 II-The Aerial System.

Chapter III-Radio Inductances and Tuning, Part 1.

Chapter IV-Radio Inductances and Tuning, Part 2.

Chapter V-Variable Condensers.

Chapter VI-Crystal and Tube Detectors.

Chapter VII-Sockets and Rheostats.

ADIOING has become America's K greatest sport, not only indoors but in the open as well. Simplification and compact design has made all its pleasures available at the seashore, in camp, on ship board and while touring. It will continue to remain our greatest sport for years to come, for in no other pastime, mastered. Just what constitutes the best if you wish to call it such, will be found such genuine entertainment, educational advantages, up-to-the-minute information to buy apparatus that is backed by the with the elements of skill and chance intermingled.

What to Expect from a Set

Just what you can expect of any Radio set depends upon so many factors, some within and more beyond the control of the operator that the practice of rating sets one stops to consider that the range of its characteristics at a glance just as a set depends upon the nature of the all electrical apparatus is labeled in the operator; the difficulty of rating any par- placement. ticular set as to its range is impractical.

day and night, and this figure rarely exceeds 10 per cent of the distance that can be covered under favorable conditions.

There are, of course, other elements enis the matter of power at the broadcaster, aerial circuit. Then one could specify

a set that will receive a 1,000-watt sta- a receiving set to meet requirements just | the range will be increased. tion 500 miles away will not receive a as one now specifies a motor for a given 500-watter as loud over the same distance service. under the same conditions. Furthermore, the range of a set is about doubled at night and is greater over water than over actual ranges for any given type of reland. In addition we have the problem of selectivity. The range of a set that is best advice is to buy or build the very not selective is naturally decreased by reason of local broadcast stations drowning out the weaker signals from distant within a few miles, select a set that is stations.

Since the majority of the above range factors are beyond the control of the set owners it is advisable to spend a little selectivity is not so important and can be time in improving every detail that will give increased efficiency and the greatest reduction in the number of tubes. Where satisfaction to the Radiophan. The purpose of the following articles is to point out methods and means for getting the highest efficiency from the receiver and help in the selection of the proper apparatus most suited to the particular needs of the purchaser.

Reliable Apparatus Necessary

Experience has taught many that good results are possible only when good reliable apparatus is used, properly installed and cared for and a little patience until the knack of handling the apparatus is apparatus is often a problem to many and it can best be answered by advising one old established manufacturers. Unless one is qualified to judge of quality of material and workmanship it is best to rely on a concern that has gained a reputation by its long existence in a given field.

The day will come, and it should not be far distant, when every Radio instrument in miles range is rapidly dying out. When will be so labeled that one can determine ground in the vicinity of the set; adjacent commercial field. Thus condensers would buildings, trees and other obstacles; the have plainly marked their maximum and justed to a sensitive condition the signals time and kind of day; the condition of minimum capacities, resistance at some the apparatus itself and the skill of the standard Radio frequency and phase dis-

Inductances their inductance in milli-The true rating of a set is its consistent | henries and their resistance at certain range, that is, the distance it will receive Radio frequencies. Likewise a Radio set day in and day out, winter and summer, could be rated as to the damping in its tuning circuits to give an idea of its selectivity and some means devised for rating the change of current in the output or phone circuit when a standard Radio tering into the question of range. There impulse is impressed upon the input or

Impossible to Give Actual Ranges It would be impossible now to give ceiver that would mean anything, so the best set one can afford. Where one lives in a large city, with broadcast stations designed for selectivity, otherwise it will be practically useless for DX work. When a receiver is desired for local work only sacrificed for simplicity in control and the set is to be installed ten miles or more from a broadcast station it need not be

As a general rule the selectivity and volume of a set vary in inverse proportion to each other. That is, in order to get selectivity some volume must be sacrificed and vice versa, by decreasing the selectivity greater volume is possible provided no locals are located within ten miles or so to cause excessive interference.

Later on in the series it will be shown how proper installation of the apparatus will aid selectivity, how proper handling will increase the range, how properly cared for apparatus gives good volume, the combination of the three giving that satisfaction and pleasure that comes from getting the best out of the set.

(In the next of the series by Mr. Benson the various aerials will be considered, deextremely selective with the result that scribed and results given -Editor's Note.)

# **OPERATION TROUBLES**

(Continued from page 19)

Amp." control knob number 2, and it will be found possible under good conditions during the night-time to receive broadcasting stations at many different settings of the wave length dial.

The dial settings of the wave length dial may be recorded for each station and those stations may be tuned in again any time they may be operating, by simply readjusting the dial to the setting previously recorded. This will not be true should the aerial or ground connections be changed after recording the dial setting data.

'R. F. Amp." control is important. A good operator will always operate this control simultaneously with the operation of the wave length dial. The sensitivity of the Radio frequency amplifier tube is entirely dependent upon the adjustment of this control. If this vacuum tube is not adpassed by it to the detector tube must, of necessity, be weak, and accordingly, the Audio frequency amplifier system has little energy upon which to work. It will be evident then that the care in the manipulation of this adjustment determines the success of the reception

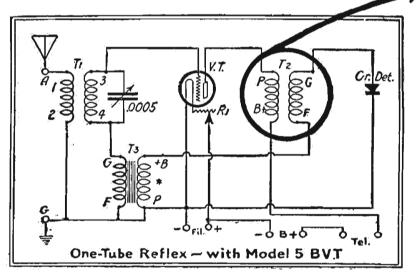
This "R. F. AMP." control knob 2, will normally be set in such a position that the signals as heard in the headset are of maximum strength and clarity. condition will be obtained when the control has been turned in the clockwise direction sufficiently far enough to obtain the maximum amplification in the Radio frequency amplifier tube. Rotation further in this direction will cause a dull "thud" or "click" in the headset and the voice or music will disappear, but will be replaced by a musical whistle

The set now will not produce intelligible signals on any but the very strongest stations, nothing but whistles will be heard when the "Waye length" dial is rotated. This condition is found extremely useful in locating the broadcasting stations. Without it the operator must adjust the "Wave length" dial number 1 to the voice or speech of the broadcasting station. However, if the "R. F. Amp." control knob 2 is set just past the point where the "thud" or "click" is heard so that loud whistles can be heard as the wave length dial is rotated, it will be found very convenient to pick out the loudest whistle and to carefully adjust the "Wave length" dial until this whistle

(Continued on page 24)

# RADIO FREQUENCY AMPLIFICATION with the BALLANTINE VARIOTRANSFORMER

This variable transformer gives better reflex action





Transformer only \$Q60 for panel or base At dealers or postpaid



A BOONTON Guaranteed Product

www american radiohistory com

\* If unstable, reverse P and B +

Complete radio frequency

amplifier unit with \$15

O YOU favor the economical reflex system? Then, by all means, try the Ballantine Vario-TRANSFORMER for the radio frequency side. With it you can accurately tune each stage. Continuously variable windings make this possible from 220 to 600 meters.

The diagram shows how a BALLANTINE is used to improve the now famous One-Tube "Knock-Out" Reflex. Not only is there a marked improvement in reflex action, but also the complete shielding of Ballantines greatly improves tone quality.

Use BALLANTINES in any standard radio frequency hook-up -with a full sense of protection. As a Boonton product, it is guaranteed to give satisfaction as you interpret satisfaction yourself.

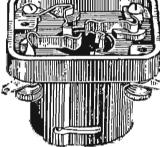
Send for this booklet

"Radio Frequency Amplification with the Ballantine Variotransformer" is 25 pages of practical helps and diagrams. Yours for the asking.

BOONTON RADIO CORPORATION 824 Fanny Road, Boonton, N. J.

RADIO FREQUENCY AMPLIFICATION with the BALLANTINE VARIOTRANSFORMER

# The New All-American Tube Socket



Type R-25 Tube Socket (Standard Base) Each \$0.75 From Every Angle— The Perfect Socket Top and bottom-inside and outside-the new

All-American Tube Socket is ALL A SOCKET It's husky. Moulded in one piece, of genuine

point liable to breakage. Look at this bottom view of the Type R-25 it shows the most workmanlike construction, the

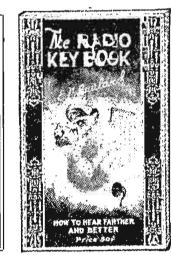
Bakelite, it is thoroughly reinforced at every

simplest and most efficient design of any socket on the market. Positive contact is assured with each of the four tube prongs, on the SIDES of the prongs. This means 100% RELIABLE CONTACT, with NO UPWARD PRESSURE. From every angle this new All-American is everything a perfect socket should be.

# This Unique Radio Book Is Now Being Mailed

Containing the latest sensational discoverles of All-American radio engineers, the Radio Key Book is now being mailed to the thousands who are eagerly awaiting it. Publication was purposely held up to enable us to announce the very newest information on radio frequency amplification made public for the first time in this unique volume. It is the most valuable radio book you can own-full of helps for the beginner and the expert.

If you have not written for your copy send 10 cents today, coin or stamps, and secure at once advance information on the newest triumphs in Radio. No announcement elsewhere until October and November.



RAULAND MFG. CO., 2640 Coyne St., Chicago



Largest Selling Transformers in the World



Approved by magazines and newspapers the world over, and everywhere else wherever subjected to tests.

— and recognized as the World's Greatest Headset Value

# EVERY SET TESTED and APPROVED by LICENSED RADIO OPERATORS

Every set sold with our money-back guarantee; lightest of all in weight, higher resistance, with elimination of distortion. Powerful magnets.

Longer cord (full five feet).

TOWER'S Scientific headsets are guaranteed to be made of the best materials money can buy, highest-test enamel, insulated magnet wire, best grade five-foot tinsel cord, unbreakable caps, polished aluminum cases, using the famous scientific headband constructed for maximum comfort.

Now on sale by more than 1,000 dealers in New York city alone, any one of which will be pleased to give a demonstration without obligation.

TOWERS CIENTIFICATION OF THE PROPERTY OF THE P

If your dealer cannot supply you, order direct by postcard, and we will ship immediately, parcel post, C. O. D.

Plus a few Cents Postage

THE TOWER MFG. CORP. 98 Brookline Ave., Boston, Mass.

ASINE CASINE Scientific WANG THAT

# 30 Minute A-B-C Lessons for Radio Beginners

Chapter XXV—The Home Radio; New Things to Try

By P. E. Edelman

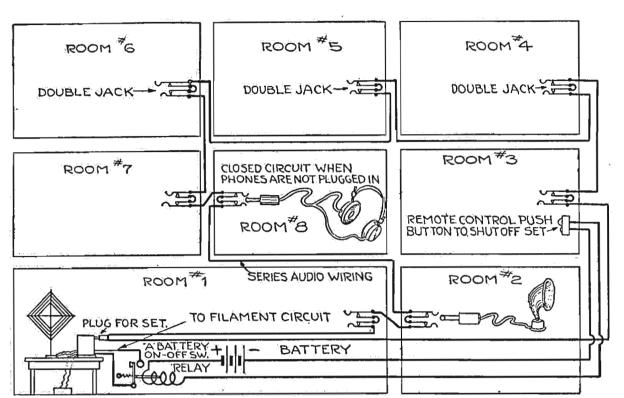


Figure 212

THE entertainment value of a receiv- party is an ordinary party livened up by of its principal functions, and can be enhanced by certain novel uses.

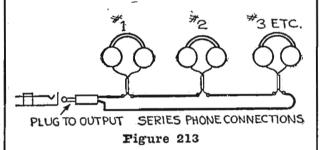
apartment. By using double jacks, all phones or speakers used will run in series connection. Remote control to stop or start the set by turning filaments on or off is also possible as shown.

The new listener getting a special program of interest to a neighbor will often invite others in to hear. Figure 213 shows how several sets of phones can be connected in series when a loud speaker is not available or the signals are too weak to operate such a speaker.

Giving a Radio Party

esting uses will be considered. A Radio ticular party by request.

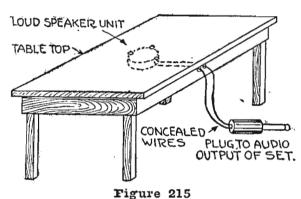
ing apparatus is recognized as one use of Radio interest. The invitations can be "Come on over, and bring your loud speaker along." Favors based on Figure 212 shows how audio output wir- Radio interest may be used. Games feaing can be arranged to distribute the pro- turing the same interest can be devised. gram to any or all parts of a house or Refreshments can be designated as "Vac-



uum tube ice," etc. Perhaps a local Radio-Instead of talking further about tech- caster will have a dance program and nical features of a Radio set, a few inter- grant a few special numbers for your par-

ROOM"1 ROOM 2 TRANSMITTER RADIO SET LOCAL TRANSMITTER. 1STAUDIO TRANS. OF RADIO SET TELEPHONE 1 M.F.D. TEL. INDUCTANCE COIL CONDENSER. FIRST STAGE AUDIO TRANS INPUT TRANSFORMERS OF SET ORDINARY PLATE POST MICROPHONE +B POST Figure 214

Interest is likely to turn to the Radio | Also it is desirable to have a suppledance at such a party, so be sure to have plenty of loud speaker output to give good



clear volume. It is well to have someone uses much small talk between numbers.

mentary source of music, such as phonograph, player piano, or small orchestra, for variety between numbers, according to the size of the entertainment. If you have a program dance, suitable numbers can be termed "Radio Glide," "Wave Length Fox Trot," etc.

Much humor can be placed in a stunt party by connecting a local transmitter to operate through the loud speaker as shown by figure 214, if one of the party is talented in that direction.

Radio Guessing Contest

Another stunt is to have an operator go fishing for long distance stations which will come through on the loud speaker O. K. and the guests are asked to guess ahead of the announcer, what station is Radiocasting and to estimate at the tuner to omit undesired announcer the air line distance. A prize can be advertisements, etc., if the station heard given for the best list of answers. The (Continued on page 26)



"It is only when the cold season comes that we know the pine and cypress to be ever-

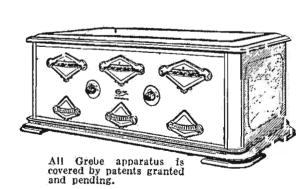
In the coming cold season be not surpassed by thy neigh-bor—set the pace with your Grebe Synchrophase.

Doctor Mu



(Trade Mark)

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



Ask your quality dealer for a demonstration of the Grebe Synchrophase or write us for literature.

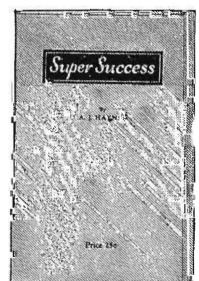
A. H. GREBE & CO., Inc.

Van Wyck Blvd.

Richmond Hill, N. Y.

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

# Solving the Mystery



# of the Super-Heterodyne

A. J. Haynes' New Booklet Tells the Whole Story

Here is a book which tears away the veil of mystery which has surrounded the Super-Heterodyne. "Super Success" presents the "Rolls Royce of Radio Receivers" to average experimenters in a manner they can understand.

It contains complete information on the Super-Heterodyne, from the theory of the circuit to detailed instructions for construction and operation.

"Super Success" has been written by A. J. Haynes, Assoc., Institute Radio Engineers, an authority on the Super-Heterodyne. In the booklet, Mr. Haynes gives you the results of his 12 months' experimentation with 20 different "Supers."

The book tells you how to use the "Super" to receive the new low wave length broadcasts from KDKA and WGY, how to make use of an English custom, the necessity for matched transformers, how to match your own transformers, and many other tips which Mr. Haynes has discovered.

Whether you are thinking of building a "Super" or not, you owe it to yourself to read "Super Success." It is the best all-around book on the Super-Heterodyne. The price is 25 cents, and the first edition is going fast. Send for your copy now.

> Mail the Coupon to Our Nearest Store

Haynes-Griffin Radio

Haynes-Griffin Radio Service, Inc.

W. 43rd St., New York S. Clark St., Chicago

of the Super-Heterodyne, Enclosed find 25 cents for a copy of A. J. Haynes' new book "Super Success."

Service, Inc. 41 W. 43rd St. **NEW YORK** 

111 S. Clark St. **CHICAGO** 

## **OPERATION TROUBLES**

(Continued from page 21)

is centered upon. If the "R. F. Amp." control knob 2 is now turned in a counterclockwise direction until this very lowpitched whistling condition just disap- 5. pears it will be found that a very slight change in the "Wave length" dial setting number 1 in one direction or another will bring in audible music or speech.

It may be that the "R. F. Amp," control knob 2 should be moved in some slight degree one way or another in order to secure the maximum volume or the maximum clarity of signal. It is not considered good practice to obtain loud signals at the expense of clarity. It must be borne in mind that the limitations in volume and clarity do not exist in the Federal set itself. The wonderful amplifying system with which this receiver is equipped has been developed through a long period of painstaking research and is without equal.

The two jacks located in the lower right and in the lower left corners of the panel 6. serve to connect the loud speaker or headset to the receiver. The Federal plug which is provided with this set should be connected to the headset or loud speaker employed and when properly inserted in the jack will provide a secure electrical connection. The right-hand jack provides signals of maximum intensity, since it provides the output from all four tubes in the receiver.

### Troubles and Their Causes

- 1. Failure of receiver to operate. (a) Discharged filament or plate batteries.
  - (b) Burnt out or defective vacuum tubes.
  - (c) Open circuit in headset or loud
  - speaker. (d) Antenna lightning arrester im-
  - properly connected. Open circuit in antenna or ground system.
  - (f) Antenna grounded.
  - (g) Batteries wrongly connected.
- 2. Poor or weak signals. (a) Any of above causes.
  - (b) No detector "B" battery connection, or excessive or insufficient detector "B" battery voltage.
- "Blocking' or continuous "howling" or "grunting."
  - (a) Worn out "B" batteries. (b) "Open" in grid circuit.
  - (c) Insufficient brilliancy of tube filaments.
- Defective vacuum tube.
- Failure of tubes to light.
  - (a) Discharged filament battery.
  - (b) Burnt out tube.

- prongs.
- Bent socket contact spring. (e) Broken wire in filament circuit.
- Noisy reception.
  - (a) Induction from nearby power, telephone, trolley or telegraph lines or nearby electrical machinery.
  - Static. (c) Worn out "B" batteries.
  - (d) Noisy grid leak. (e) Loose connections in plate, fila-
  - ment or grid circuits. Poor contact between tube and
  - spring contacts on tube sockets. (g) Noisy detector vacuum tube.
  - (h) Excessive generator hum broadcasting station.
  - Radiation from neighboring receiving sets.
  - Commercial and amateur telegraph
  - stations. Local noises in broadcasting stu-
- dio or auditorium. Distortion of tone.
- Interference of neighboring re-
- ceiving sets. Excessive amplification of local
- stations. Two broadcasting stations on same
- wave length. (d) Leads to loud speaker reversed.
- Defective amplifier tube.
- Excessive amplifier "B" battery
- Overloading loud speaker or head-
- (h) Damaged headset, or loud speaker, diaphram.

### Tuned R. F. Transformer

Following is the direction for the making of a tuned Radio frequency transformer at a very slight cost, which has given excellent results:

Using number 24 dcc. magnet wire, wind three spider web coils on a form 11/2 inches in diameter with thirteen or fifteen 1/8inch studs. Connect the coils in series with the turns all running in the same direction. This forms the secondary.

A piece of fibre or bakelite tubing 11/4 inches long and of a diameter that will just slip over the coils is required. Drill six 1/16-inch holes 5/16 inch from each end of the tube, spacing them equally around the circumference.

Slip the secondary coils inside the tube and, beginning over the starting point of the first secondary coil and winding in the same direction, wind twenty turns of

primary.

Fasten both windings in place by passing a strong thread through one of the (f) Corroded filament battery termin- holes in the tube, around the secondary coils, through another hole and over the instead of using binding posts. primary, repeating the procedure until the starting point is reached, where the ing wave length by shunting the secondary

The outer or finish lead of the secondary Floyd C. Welsh, Laclede, Mo.

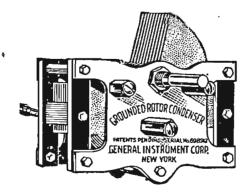
(c) Dirty contact surface on tube basc | number 24 dcc. wire on the tube for the is the grid lead, while the primary lead at the same end of the transformer should be connected to the plate. It is best to leave the leads long enough to make direct connections to the other parts of the set,

The transformer is tuned to Radiocastends of the thread should be tied together. with a .0005 mfd. variable condenser .-



# better results

A little thought will show you how to get better results from your receiving set. Avoid losses! By conserving all the energy you naturally build up power. This scientifically perfect low loss condenser is guaranteed to cut down your losses.



# THE LOW LOSS

GROUNDED ROTOR CONDENSER Maximum Minimum

Type 46X 11 Plate 5 MMFD. .00025 MFD. .....\$4.50 Type 46A 13 Plate 6 MMFD. .0003 MFD. ................. 4.50 Type 46D 21 Plate 9 MMFD. .0005 MFD. ...... 5.00 Type 46P 43 Plate 15 MMFD. .001 MFD. ...... 5.50

AT YOUR DEALER

Otherwise send purchase price direct to us and you will be supplied.

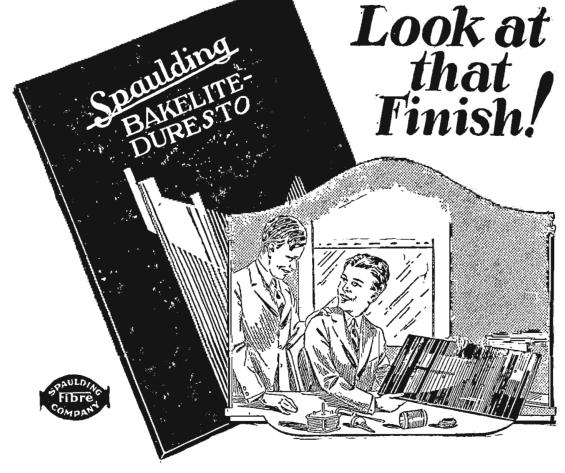
# GENERAL INSTRUMENT CORP.



å.

423 Broome Street **NEW YORK CITY** 





# And the High Gloss Is Everlasting

Factory: Tonawanda, N. Y. Sales Offices: Warehouses

- 484 Broome Street
- New York City. 659 W. Lake Street, Chicago.
- 210 E. Fourth Street,
  Los Angeles.
  141 N. Fourth Street.
  Philadelphia.
- 15 Elkins Street, Boston. 171 Second Street,
- San Francisco. 509 First Nat'l Bank Bldg. Milwaukee.

A beautiful black, high gloss finish is but one of the superior features Spaulding Bakelite-Duresto panels can offer you.

Bakelite-Duresto panels drill and engrave easily without chipping. Positively will not warp, shrink or split. Highest in dielectric properties and tensile strength. The best that money can buy.

Insist on Bakelite-Duresto. Your dealer can furnish standard sizes, special sizes to order.

Write nearest office for descriptive circular.

SPAULDING FIBRE COMPANY, Inc. Tonawanda, N. Y.



# Amplidyne Type Radio Frequency Amplifier

Part II—The Amplidyne Circuit

By Thomas W. Benson

HE first article described the various systems of controlling the feedback tending to produce oscillations in a tuned Radio frequency amplifier. It also covered the description of the ampliformer which is simply a tapped honeycomb coil so connected that it functions as an autotransformer to couple the tubes in a Radio frequency amplifier.

There are several advantages in this construction, the most important being the fact that this arrangement more nearly approaches the point of unity coupling between the plate circuit of one tube and the grid of the next thus allowing the greatest transfer of energy. This may be a disadvantage at times in that selectivity is lost but this is readily overcome by a slight change of connections to be shown later. Furthermore a step up is obtained in a ratio of nearly three to one and the close linking of the circuit gives practically two circuits, plate and grid, simultanecusly tuned by the same condenser.

Circuit Employing Five Tubes From the circuit given last week it is

easy to develop a circuit employing five tubes as shown in the attached illustration Figure 5. It would appear that the complete circuit is rather complicated but on close analysis it will be found that it is actually very simple and easily followed when wiring the set. This work is facilitated by a knowledge of the operation of the various parts of the circuit.

The ampliformers in the circuit are indicated at R. F. 1, 2 and 3. It will be seen that the variable condensers of the three tuned circuits are shunted across terminals A and C, the windings between which points form the tuned circuits. In the grid of the first tube has been included a double circuit jack to permit a loop aerial to be plugged in when it is desirable to use this form of aerial. Normally the ground lead is connected to terminal C while the aerial is connected to terminal D. This gives the highest selectivity, the fifteen turns between C and D acting as an aperiodic aerial circuit.

Where interference is not so troublesome as in sparsely settled districts distant from broadcasting stations, the aerial can be connected to point B. This results in closer coupling and with a low resistance aerial increases the signal strength. The exact connection of the aerial will vary with the location of the set, but tne connection shown is best for all around purposes. The aerial circuit being untuned permits the use of the receiver on any type or size of aerial with but a small variation in the setting of the first dial for any given wave-length.

Connections in Plate Circuit

EASIER ASSEMBLED-No soldering

NO HAND CAPACITY

to a sub-panel. Mahogany finished, engraved panel. WIDER RANGE-Tunes all stations between 150 and 750 meters.

MORE COMPACT-Three tube set six by fifteen inches.

HAVE YOU SEEN IT?

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 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

SHORT AERIAL-May be used on a loop or single wire as short as ten feet with astonishing results.

Discounts to recognized dealers only

Send a two cent stamp for a folder containing one, two and three bulb hook-ups and the price ilst of parts necessary to assemble this beautiful and wonderfully efficient circuit.

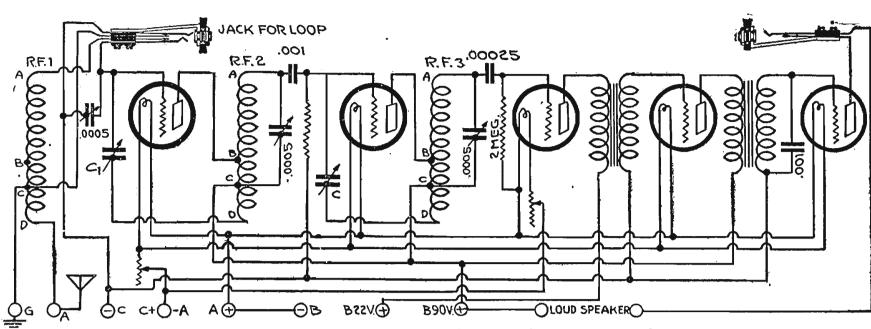


Figure 5.—Amplidyne circuits complete with Stabilizing condensers shown at C.

the tuned grid circuit. This gives an autotransformer effect obtaining good transfer of energy and also a step up in voltage. In order to prevent the tube from oscillating the lower terminal of the ampliformer is coupled to the grid through a small variable condenser.

Just how this condenser functions to prevent oscillations in the tube may be casily understood from Figure 6, which shows the parts of the circuit entering into this operation. We have in the plate circuit fifteen turns of the inductance while a similar number of turns is connected to the stabilizing condenser C1.

When a current at Radio frequency flows in the plate circuit it will induce currents in the stabilizing windings of practically equal strength or voltage but the potentials at the ends of the inductances will be of opposite polarities; therefore any currents in the plate winding tending to feedback to the grid through the capacity of the tube shown at C will be counterbalanced and neutralized by an equal but opposing feedback through the stabilizing condenser. This method of talancing the feedback has proven very effective and reliable.

The stabilizing condensers are shown as being variable. This is not absolutely necessary but offers an advantage that makes their inclusion in the circuit worth the trouble and expense. densers are mounted on the panel and are known as midget condensers having a ca-The plate circuit of the first tube is pacity of approximately .00004 mfd. Af-

another ampliformer. The plate current usual with these circuits the point of balof this tube flows between terminals B ance is marked on the panel and the cf oscillation without spilling over into and C of R. F. 2 which also forms part of stabilizing condensers normally carried at that point while tuning.

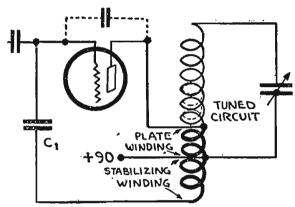


Figure 6.—Detail of ampliformer coils showing how two sections of winding feed back to grid to neutralize each other.

When the signals are picked up, a slight adjustment of these condensers will often double the signal strength. The reason

coupled to the second tube by means of | ter the circuit has been balanced as is | for this is found in the fact that the more nearly a tube can be carried to the point oscillations the greater will be the amplification. Hence a slight adjustment on these condensers loosens up the check on the tubes and permits louder signals without the tube oscillating. It would not be practical to adjust the circuit at this point because it would be too critical and tend to oscillate with variations in filament brilliancy and other variable factors. When tuning, the circuit is perfectly balanced and then slightly unbalanced to obtain louder signals after the station has

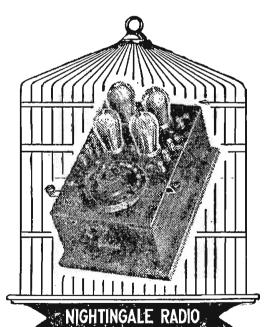
The Radio frequency currents induced in the tuned circuit of the second ampliformer are impressed upon the grid of the second tube through a small fixed condenser serving to keep the plate voltage ilar to the coupling in the usual tuned plate Radio frequency amplifier, the condenser serving to keep the plate voltage off the grid of the second tube. A grid leak is also connected to the grid to pre-

(Continued on page 28)

Hansen"BIRD-CAGE" Radios



4 Tube Radio Set \$ Without Accessories



A simplified, loud speaking, long range set at a price within the reach of all.

Hansen BOBOLINK. \$25.00 Hansen CARDINAL. \$50.00 Hansen BLUE BIRD. \$57.50 4 Tube Radio Frequency....... AMERICAN EAGLE. This we believe to be the hest high grade 6-tube loop set on the \$150.00 \$150.00 market today....

Write for New Catalogue Dealers and Jobbers—Our line is interesting and profitable.



DISTRICT DISTRIBUTORS 

# Low Loss Grounded Rotor CONDENSER

Now used by many manufacturers of America's finest Radio sets. The 23-plate model is now ready for delivery—to Fan as well as to manufacturer. Construction is rugged and electrical characteristics as near perfection as possible. Several radical improvements as to position of dialectric incorporated into this condenser. Conical, adjustable bearings. Pigtail rotor connection. Grounded rotor and end plates. Complete dic-cast job. At your dealer's or order direct if ho cannot supply Price \$4.50

# Manufacturers Write!

Before you decide what condenser you will use in your sct, get all the facts and specifications of the Lincoln. Investigate this condenser now. Write at once for further information and prices.

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

Lincoln Collapsible Loops-The Lincoln Kit

MANUFACTURERS OF The "Long 45" Tuner-The Lincoln Oscillascopo-

ELGIN RADIO SUPPLY CO.

STORAGE BATTERY-Very efficient with all dry battery tubes.

UNUSUAL VOLUME-Louder with one tube than most regenerative sets are with two.

207 E. CHICAGO ST., ELGIN, ILL.

CHEAPER IN PRICE

www.americanradiohistory.com

# THIRTY MINUTE A-B-C

(Continued from page 23)

thing about this is to have a wide variety and keep changing stunts so that interest does not lag.

LOOP 71

RADIO SET

PROGRAM "1

 $\mathsf{L} \mathsf{W} \mathsf{W} \mathsf{J}$ 

loud speaker near an ordinary telephone ing attachment, you can use your loud line transmitter and send the Radiocast speaker to record certain portions of an program over ordinary telephone line to incoming Radio program. Doing this any friend you wish to call up for this commercially would infringe copyrights

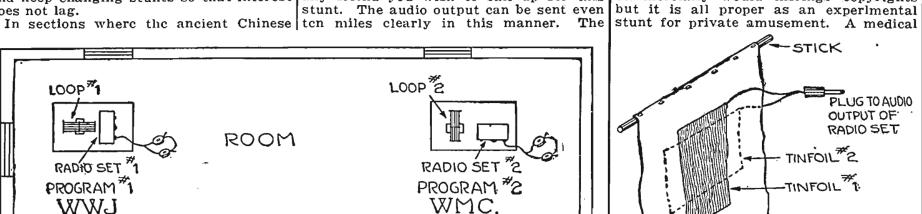


Figure 216

Radio novelty can be tried once by using view or back of a ventilating grating, etc. "Radio fishing" in place of dice, to determine positions of players, or suits to neath a table to make a talking table, follow. Probably you will not want to as indicated by Figure 215. try this more than once, as the interest Getting Two Programs Separately in One depends on the novelty. You can make Room up your own schedule for this.

time killer game draws much attention, a loud speaker may also be concealed from

can be used in the same room to get two

separate independent programs simul-

taneously without interference between

them. If a loud speaker is used, music

from one station can be softened down

to be an accompaniment for a dramatic

reader from another station. Also two

loop sets permit different members of

the family to use earphones to hear pro-

grams they want while others hear differ-

HORDARSO

2 to 1 Ratio

(audio frequency)

TRANSFORMER

MUSICAL

Produces unusual richness of tone

Especially adapted for use in sets

quality with extremely small sacrifice

having a large detector out-put such

as tuned and untuned radio frequency

Functions exceptionally well with

dry battery tubes as it prevents dis-

tortion caused by overloading tubes.

Price \$5.00

Best Manufactured Sets

REPRODUCTION

**PERFECT** 

Figure 216 indicates how two loop sets

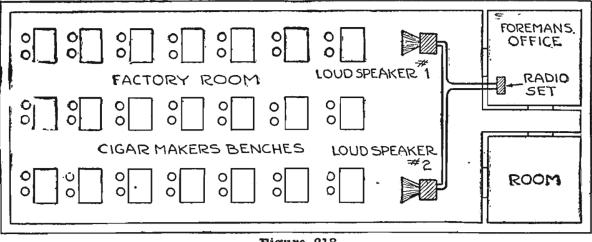


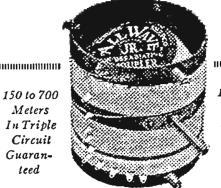
Figure 218

ent programs.

### Running a Home Radiocast. "Station I. C. U."

A transmitter can be arranged in one room per Figure 214, to fake a fun Radiocast through the loud speaker of the set, and possibly some of the guests can be induced to entertain with specialties on "ukes," etc., under guise of Radiocasting. Just enough of stunts to be interesting without prolonging to boredom, is the life of a Radio party. A good amateur humorist can put on a children's story with good spirited reference to guests that can make much laughter.

Guessing games can be based on giving only correct titles to numbers on a program, with the regular announcer cut out by the receiving set operator. When a set of phones is used with a loud speaker the set operator can cut off the speaker during the Radiocast announcing. For real novelty, make up your own list of stunts along this line, and keep them "snappy."



ammonomorg 150to1000 Meters In Single Circuit Guaranteed

# 'SHEPCO' All Wave Jr.

Non-Radiating

### DX COUPLER

Trade Mark-Patents Granted and Pending

# For Distance, Volume and Selectivity

The only tuning unit that can be used in both single and triple circuit hook-ups. Exclusive "Shepco" bankwound and tapped primary and tapped secondary assure

### Peak Performance ON ANY WAVE LENGTH

Eliminates all variometers, variocouplers and loading coils. Permits building one tube receiver with distance, volume and selectivity you never believed possible. They're all local stations with an "All Wave" Coupler.

6 efficient hook-ups in every box or sent for ten cents to cover mailing

At radio dealers or sent prepaid on receipt of \$6.00

Made and Fully Guaranteed by

Earmannagay galasida da a karanda da a karanda

SHEPARD-POTTER CO., Inc. Dept. D. 35 So. River St. Plattsburgh, N. Y.

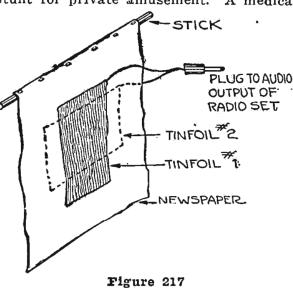
You Will Find Thordarson Transformers in More than a Score of the

**FOR** 

in volume.

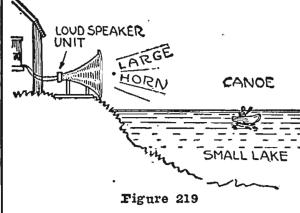
and reflex sets.

STICK



doctor might have part of a program of certain special interest recorded in this manner. Or as a stunt if your means are not limited, you can record part of a program and use it for various private purposes. Thus if a lecturer on the art of speaking is giving good vocal illustrations of pronunciations, a record might be made for some local school.

Figure 217 indicates how a talking newspaper can be made for use in place



of a loud speaker. It comprises a condenser with loose plates from tin foil. Ordinary phones can be shunted across this "condenser" so that plate current will get to the tube in the receiving set as usual.

Distributing Audio Output

Figure 218 shows how the audio output can be distributed to various rooms

# The "Goode" Two-o-One





**QUARTER AMPERE** 

**GUARANTEED SATISFACTORY** 

All "GOODE" Tubes Sold Direct to the Consumer-No Dealer Profits ONE-"Goode" Detector-Amplifier.....\$2.39 THREE—"Goode" Detector-Amplifiers......

(All postage prepaid)
The "Goodo" Two-o-One A Tube amplifies or detects. It is a quarter ampere, five volts, standard base slivered tube.
Send express or postal money order or New York draft to—

The Goode Tube Corporation Incorporated OWENSBORO - KENTUCKY

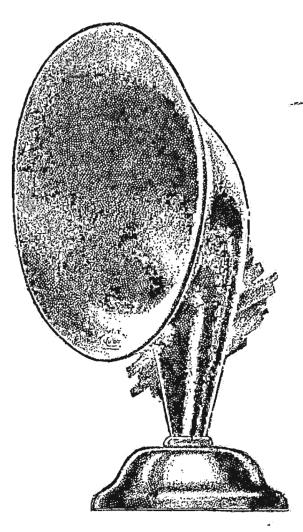
You can put your phone receiver or If you have a phonograph with record- in a hospital, or to a large room occupied by cigarmakers or other manual workers. There are various useful applications along this line. Usually one stage power amplification will be necessary to obtain sufficient volume for use in a larger room, and seldom will more than two extra stages of power amplification of the audio output be required.

Figure 219 indicates how a loud speaker can be used to reflect programs over a small lake for canoeists, etc.

For summer use, one can take a portable set along with other camp equipment. A loop receiving coil or a flexible aerial is a desirable choice. The flexible aerial can be thrown over any convenient tree or pole, but no pole carrying power currents, should be approached for this. A variety of uses for a carry-along set, which can be taken in the rear scat of

the car, are obvious. THE END.

# Loud Speaker



# All the Name *Implies*

full rounded volume that is sharp, clean, easily understood.

-mellowness that is smooth and delightful to the ear.

The Fultone horn and base are constructed in one piece from a non-metallic composition that cannot ring, yet does not deaden. Its unusually wide throat lets the speech and music pass unchoked.

The equal of any on the market at a price within the reach of everyone.

\$<u>9.50</u>

All Good Dealers or Sent Postpaid on Receipt of Price

### HALL & WELLS

508 South Dearborn Street CHICAGO, ILL.





# Console and Cabinet Making for Receiving Sets

# Chapter I—Construction of Inexpensive Cabinets

By Charles F. Smisor

cuits have held the attention of most all beginners. Little thought was given to the appearance of a set, just so that it worked, was the result desired. Every to the hook-up and it made little difference as to how the wires run-the signals were what he wanted.

Now as the circuits have become somewhat stabilized thought has turned toward how the finished hook-up appeared. Most of us are beginning to take pride in the way the wiring is done and to use the fancy bus wire, and to turn neat corners and to have smooth soldered joints.

The housing of the set has been a thing

N THE development of Radio new cir-|finishing of the cabinets will be given in another chapter.

The material required for a 7 by 7-inch panel set is as follows: Two ends 6 inches long and 7 inches wide; cover 7 inches experimenter gave all of his spare time long and 5 inches wide; one top piece 7 inches long and 2 inches wide; one back piece 6 inches long and 6 inches wide: one baseboard 6 inches long and 61/4 inches wide; one pair of 1 by 1 inch brass hinges; ¼ pound of ¾-inch finishing nails and four rubber head tacks for the bottom. Dimensions given are for ½ inch thick material.

To make a neat cabinet it is necessary to have all pieces perfectly square. If some of the softer woods are used the that was farthest from the mind of the nail heads holding the pieces together fan and any old box or no box at all would can be concealed as shown in the small

Panel Size	A.	В	Baseboard
7 by 7 inches 7 by 10½ inches 7 by 14 inches 7 by 18 inches 7 by 21 inches 7 by 24 inches 7 by 26 inches	7 inches 10½ inches 14 inches 18 inches 21 inches 24 inches 26 inches	6 inches 9 ½ inches 13 inches 17 inches 20 inches 23 inches 25 inches	6 by 6¼ inches 9½ by 6¼ inches 13 by 6¼ inches 17 by 6¼ inches 20 by 6¼ inches 23 by 6¼ inches 25 by 6¼ inches

taken in wiring comes the same desire to have the outside covering at its best.

was far from the present day car. The is now a curiosity, the same will be for the designing of the housing for the Radio set. In this series constructional data will be given for sets, beginning with the simpler ones and advance into more complicated cabinets that will require more tools and better skill in workman-

Naturally the beginner usually starts with a crystal set. The illustration given is for a cabinet suitable to admit a small set of this character. Most any kind of wood may be used, but it is necessary to have it thoroughly dry-kiln dried if pos-

If wood is purchased from a mill or lumber yard the sizes for thickness will not be the same as shown in the drawings. A 1/2-inch board would measure about % inch for thickness. A %-inch board would measure about % inch in thickness, therefore in selecting boards be sure that you get the thickness the

Naturally for a fine finish the wood must be surfaced. When bought from a yard or mill surfaced you will need to go over it again with a hand plane, then with very smooth sandpaper or glass paper-a worn sheet is best to use, then there will be no scratches from the sharp sand left to show up in the finished surface. A rub down with pumice will aid greatly in securing a fine gloss or dull finish. The

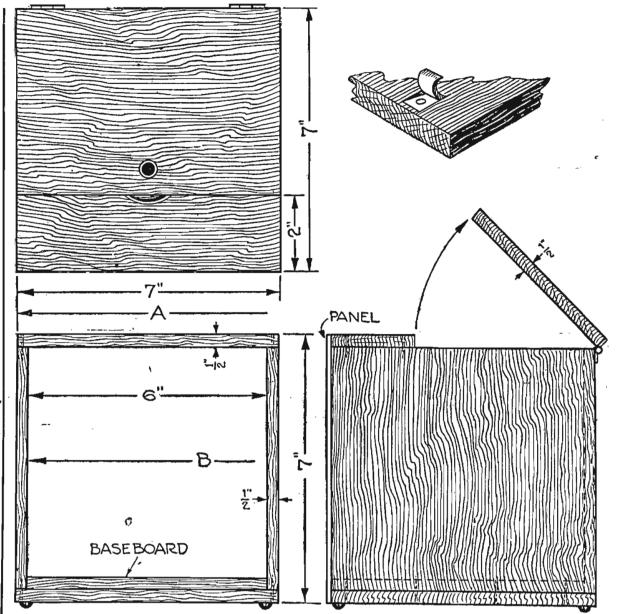




suffice. However, with the new pride insert illustration. A sharp chisel is run under the wood at the location for driving the nail and a small piece of the wood The appearance of the first automobile is turned up. The nail is driven in and the wood turned back to cover the nail difference is so great that the old timer head. It is necessary, however, to place some glue under the wood to hold it in place when the wood is returned to its former place. After the glue has set and the cabinet is put together the final sanding is given to the surface of the wood and these coverings over the nail heads cannot be seen if they are properly made.

The panel on this cabinet is fastened with screws directly to the edge of the wood that forms the cabinet. The baseboard is also attached to the panel that the set may be removed from the cabinet when it is necessary to do so without breaking connections.

In all sizes of cabinets the ends are



baseboard pieces. The length of the top, appearance one must lay out the exact cover and bottom is the dimension A and the back piece takes the dimension B, the baseboard is clearly shown. The ends are 7 by 7 inches in all cabinets.

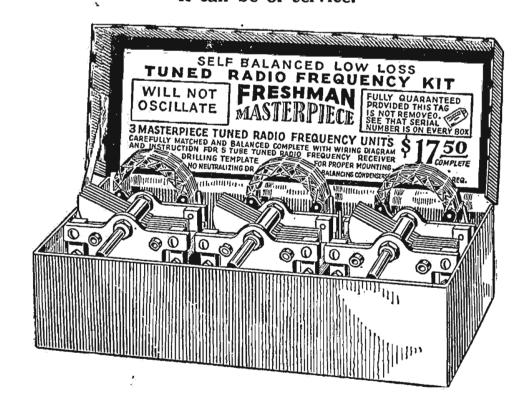
In putting these cabinets together all joints may be glued as well as nailed, or screws may be used instead of the alike. To make longer cabinets it is only nails. Brass screws with flat heads and necessary to follow the table to find the countersunk present a neat appearance lengths for the top, back, bottom and in the finished cabinet, but to have this

locations for the screws to have them uniformly spaced from the edge as well as between the screws. The four rubber head tacks in the bottom prevents scratch-

(Continued on page 28)

# It's Results that Count!

When you build a 5 tube tuned radio frequency receiver you want a set that does not oscillate and does not require laboratory testing before it can be of service.

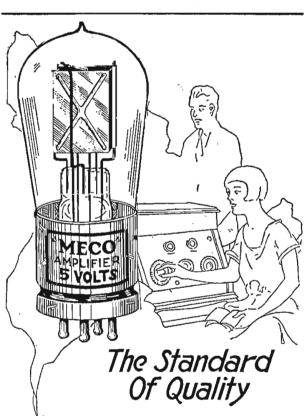


# No Neutralizing or Balancing Condensers Required

With these marvelous units you can easily build a five tube tuned Radio Frequency Receiver that will be highly selective as well as a remarkable distance getter, bringing in all stations with pleasing clarity and volume.

Kit consists of 3 Masterpiece Tuned Radio Frequency Units carefully matched and balanced. Complete with wiring diagram and instructions for building any 5 tube tuned radio frequency receiver and also drilling template for proper mounting .....

CHAS. FRESHMAN CO. INC., 106 Seventh Ave., New York



Meco Radio Tubes have become a standard for quality, for maximum volume without sacrificing exceeding clearness of tone, and for long service among thousands of radio owners.

A radical improvement in the construction of Meco Tubes and the maintenance of rigid quality of materials has placed these tubes as the standard upon which to judge all others.

Sold by dealers everywhere at standard prices and distributed exclusively through recognized jobbers and set manufacturers. Some territory now open for distributors.

Metropolitan Electric Co. Des Moines, Iowa



## CABINET MAKING

(Continued from page 27) ing table tops where the set may be

placed for use. shown. One is a cut-out in the top piece to admit the fingers and the other is a

back piece and to the edge of the cover. It is also necessary to have the hinges spaced evenly from the ends. In the giving all details of its construction. larger sizes three or more hinges may be used. To make a better job use a piano hinge the exact length of the cabinet or the dimension A.

The wood should be cut so that the grain runs with the length as given in the dimensions.

(The next article will tell how to make a series of cabinets in a similar manner, but the joint construction will be different. The corners in these cabinets will be so made that the panel sets in flush and the appearance all around will be of the best kind.—Editor's Note.)

# R. F. AMPLIFICATION

(Continued from page 25) vent loading, the leak being connected to the bias battery as shown.

Coupling Between Tubes The coupling between the second and third tubes is similar to the above except that a smaller grid condenser is employed and the leak goes direct to the positive of the filament. From there on the circuit is simply a two stage audio frequency amplifier using transformer coupling. The only unique feature of the amplifier is connections to the phone jack which is in series with the posts for the loud speaker. This simplifies the wiring somewhat and the speaker is left in the circuit with the phones plugged in so one can readily determine if the volume is great enough for the speaker without removing phones and plugging in the speaker. There will also be noted a .001 mfd. condenser across the secondary of the second transformer. This takes out all the hissing and

voices will have a deep hollow sound. There are but two rheostats to control all the tubes, one taking care of the amplifler tubes, the other for the detector. As shown a C or bias battery terminal is in-

Radio Batteries

Conspicuous for vi-

tality and endurance

-the right batteries

by test and proof for

NATIONAL CARBON CO., INC.

Headquarters for Radio Battery Information

CANADIAN NATIONAL CARBON Co., LIMITED Factory and Offices: Toronto, Ontario

every radio use.

-they last longer

San Francisco

scratching in the amplifier, but if the

capacity is made too high the music and

cluded that permits the use of a biasing better. With filament switches you can voltage enabling the owner to adjust the set till maximum results are obtained.

Several receivers have been built using this hook-up and from the short tests given Two methods for lifting the cover are them proven entirely satisfactory. On one occasion Los Angeles has been picked up clear and loud in Philadelphia when hole bored in the cover for a finger. It is not necessary to have both. The one that enced operators. They have proven susuits the builder may be used. The hinges are fastened directly to the been compared with and are easier and cheaper to build. Of these sets, the latest will be described in the articles to follow

> (The layout of the panels and the assembling of the parts on the base will be the subject of the next articles in this series.—Editors note).

### Filament Switches

Filament switches on each amplifier tube are well worth while. Using the loud speaker, you will want both tubes. If you seek DX with the phones, two tubes are too noisy, so that one step is

# Nine out of ten sets use **MICADONS**

Set builders choose Micadons-standard fixed radio condensers—for many reasons.

They know that the Micadon is a Dubilier product. Supreme in quality and efficiency. They can be obtained in accurately matched and permanent capacities. They can be installed easily—equipped as they are with extension tabs for soldering and evelets for set screw assembly. Furthermore they are made in types to meet every possible requirement.

# Alaminated Phenolic Condensation Product SHEETS TUBES RODS

### RADIO PANELS AND TUBING POLISHED BLACK FINISH

CUT PERFECTLY SQUARE TO ANY SIZE

1/8 THICK 11/2 \$ PER SQUARE INCH 3/16"THICK 2¢ PER SQUARE INCH REMIT BY POSTAL OR EXPRESS MONEY ORDER

ORDERS SHIPPED SAME DAY RECEIVED

WE CARRY IN STOCK A LARGE ASSORTMENT OF PANELS, TUBES, RODS AND SHEETS-157 SIZES AND KINDS.

SEND FOR COMPLETE PRICE LIST

STARRETT MFG. CO. 519 SOUTH GREEN ST. CHICAGO

# We repair the following RADIO TUBES

# and Guarantee Them

WD-11\$2.50	DV-6	\$2.50	C-301A \$2.50
WD-12 2.50	DV-1	2.50	Marconi 2.50
UV-200 2.50 UV-201 2.50	DV-2	2.50	Moorhead 2.50
117/201	DV-6A	2.50	UV-202 Trans-
UV-201 2.50	UV-199	2.50	mitter 4.00
C-300 2.50	C-299	2.50	C-302 Trans-
C-301 2.50	UV-201A	2.50	mitter 4.00

Mail Orders solicited and promptly attended to. Dealers and Agents write for Special Discount. Postage Paid.

# H. & H. RADIO

Clinton Hill Sta.

NEWARK, N. J.

turn off the last tube while hunting DX, and if you get a station you want, the second tube is ready, at proper rheostat sctting, at the pull of a knob.

# 化转移 经农业的公司



# Saves you 60 per cent in battery cost

tube set does this. Send 10 Shamrock - Harkness twocents for booklet.

SHAMROCK MANUFACTURING CO. Dept. 30-A, Market St. Newark, N. J.





For a limited time only, and to introduce this new and superior Storage "B" Radio Battery to the Public, we are selling it for \$4.00. Regular Retail Price is \$6.00. You save \$2.00 by ordering NOW. A finer battery cannot be built than the

World Storage "B" Battery

(12 CELLS-24 VOLTS)

To ten million homes with Radio Sets-and to countless millions of prospective buyers—this WORLD Storage "B" Battery brings a new col.ception of battery economy and performance. Here is a battery thet pays for itself in a few weeks—will isst 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 beavy duty 21-8 ln. x 1 ln. x 1-4 ln. plates and plenty of acid circulation. Extra heavy glass jars allow ready observation of charge and prevent leakags and seepags of current. It bolds its charge, while idle, at conatant voltage. You will find this battery a boon to long distance reception. It does away with a great many noises so often blamed on "static." Mall 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 (98 volts), \$15.00. Psy Expressman after examining batteries. 6 per cent discount 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!

To Each Purchaser

A 24-Volt "B" Storage Batterypositively given 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, 100 Amps. 12.50 6-Volt, 120 Amps. 14.50 6-Volt, 140 Amps. 16.00 6-Volt, 13 Plate 14.25 12-Volt. 7 Plate 17.00 Shipment Express C. O. D. subject to examination. 5 per cent discount for each in full with order.

2-Yr. Guarantee Bond in Writing With Each World Storage Battery proves catisfactory World performance. Mail this ad with your name and address—we will ship battery day order is received; and give you your choice of "B" Storage Battery or a bandsome nickla finish Auto Spotlite, FREE. Write TODAY.

WORLD BATTERY COMPANY WORLD BATTERY COMPANY

60 E. Roosevalt Road Dapt. L. CHICAGO, ILL.

This FREE "B" Storage Battery takes the place of dry cell
"B" batteries. Can be recharged and will lest indefinitely.

To be sold retail for \$6.00. It is the only bettery of its kind
equipped with sold rubber case—and insurance sgalast sold
and leakage. Take advantage of this remarkable introductory
offer NOW. (To those who prefer it, we will send FREE a
handsome nickel finish Auto Spotlite, instead of the "B" Battery. Be sura to apecify which is wanted.)

GIVEN FREE To introduce





The new FAHNESTOCK Display Case
Will stimulate your salas of Fahnestock Radio
Products. 14 of tha most popular stylas and sizes
ara included. Shows the purchaser instantly the
corract pieca for his act. A constant invitation to
buy Fahnestock Producte. Dealars are offared 200%
profit on each case, an unusual offer on standard
merchandisa.

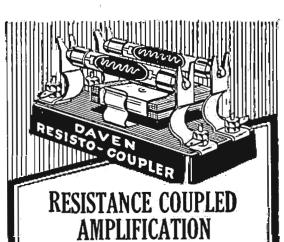
Price to Dealer \$17.50
West of Mississippi 18.50
Transportation prepaid when
money order or check accompanies order. Subsequent orders
at regular price of \$20.00.

at regular price of \$20.00.

Contents Retail for \$51.50
Reflis will be supplied at the regular 100 lot prices, shown in catalogus, which comas with casa, less discount shown on anclosed sheet. Send check or money ordar, today.

FAHNESTOCK ELEC. CO.

LONG ISLAND CITY NEW YORK



The tone quality from a Daven Resistance Coupled Amplifier is the most perfect known to the radio

The Daven Resisto-Coupler, illustrated, greatly simplifies the construction in building up one of these distortionless amplifiers. Sold everywhere

\$1.50

Ask your Dealer for the "DAVEN RESISTOR MANUAL"

—a practical hand book for Radio Builders and De-

signers.
PRICE 25 CENTS DAVEN RADIO CORP.

"Resistor Specialists"
11 Campbell Street Newark, N. J.



# Puts the Ban on Distortion

With the "HEGEHOG" on guard will get plenty of volume without distortion,—that plague of radio. The "HEGEHOG" is a marvel for purity and perfection of tone. Its exclusive self-shielding feature effectively shuts out foreign noises.

The size of the "HEGEHOG" is a revelation. It occupies half the space of any other transformer,—hardly larger than an English Walnut. Mounts anywhere. Easy to connect. Ideal for portables.

Ratios 1 to 3, 1 to 4 and 1 to 5—\$3.50 Ratio 1 to 10—\$4.50

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.

MAKER OF Quality Radio Parts

# Combination That Saves A. F. Stages

TWO CIRCUITS IN ONE SET

# Different Circuits Use Two Stage Amplifier

The illustration shows a circuit I have just completed. It is a Harkness reflex combined with a Kleinberger. The main idea is to save the price of two stages of

# WORKSHOP KINKS EARN A DOLLAR—

THERE are many little kinks worked out at home that would aid your fellow Radio worker if only he knew about them. There are new hook-ups, new ways of making parts and various unique ways of operating sets that are discovered every day. Radio Digest is very much interested in obtaining such material. Send them in with full details, including stamped envelope, so rejected copy may be returned. The work must be entirely original, not copied.

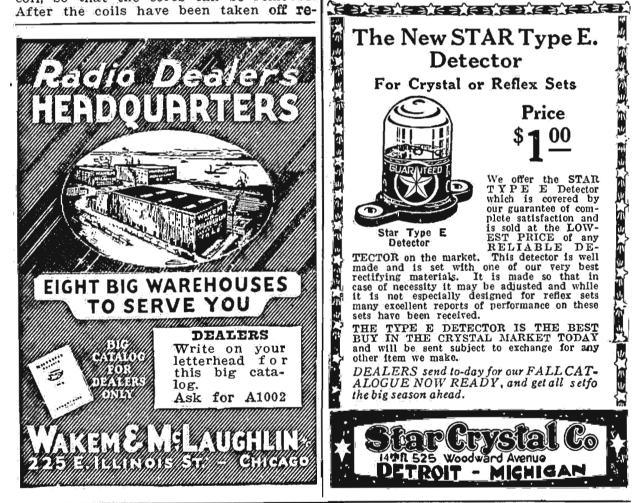
RADIO KINKS DEPARTMENT, Radio Digest,

510 North Dearborn St., Chicago

audio frequency. By the aid of a switch shown as number 2 the two stages of audio frequency can be used for either the Harkness or the Kleinberger, thus making it a one, two or three tube set for each one. The switch number 1 changes the aerial and ground from one circuit to the other. I find one set better for local and the other for distance. Very little expense is required to combine the two.-William P. Jeans, Philadelphia, Pa.

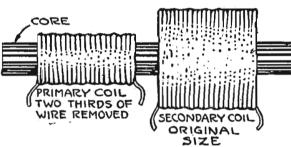
### Audio Frequency Transformer

The illustration shows a way to make a transformer for audio frequency amplification. It is constructed from the parts of a Ford automobile spark coil. One of these coils is to be procured and the covering removed. Twist the two small coils, used in the make up of the coil, so that the cores can be removed. After the coils have been taken off re-



# NO.1

coil over the core. Remove about two-



thirds of the wire from the other coil and slide it over the core. Test the coils out

The New STAR Type E.

Detector For Crystal or Reflex Sets

TECTOR on the market. This detector is well made and is set with one of our very best rectifying materials. It is made so that in case of necessity it may be adjusted and while it is not especially designed for reflex sets

many excellent reports of performance on these sets have been received.

THE TYPE E DETECTOR IS THE BEST BUY IN THE CRYSTAL MARKET TODAY and will be sent subject to exchange for any other item we make.

DEALERS send to-day for our FALL CAT-ALOGUE NOW READY, and get all setfo

Star Type E Detector

the big season ahead.

Price

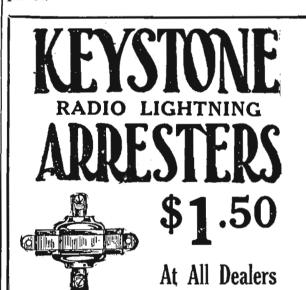
We offer the STAR TYPE E Detector which is covered by

our guarantee of com-plete satisfaction and is sold at the LOW-EST PRICE of any RELIABLE DE-

move the heavy wire from the core with phones and the B battery. and fill the space with paper. Slide one hook-up is the same for these coils as in the ordinary transformer.—Edward Concannon, Davenport, Iowa.

### Inductance Switch

Inductance switches of the type made up with lever and points in one assembly for panel mounting, are much to be pre-ferred over the individual points inserted in the panel. They have the points exactly spaced and the electrical characteristics are usually good. They avoid the danger of loosening when soldering, as is the case when the points are in the panel.



Buy your Keystone Arrester today-install it according to instructions supplied, and forget about lightning. Made of Bakelite weather-proof. No vacuum to lose. Approved by Underwriters, At all Dealers, \$1.50.

> Manufacturers of over a million Lightning Arresters

# **ELECTRIC SERVICE SUPPLIES CO.**

F. A. D. ANDREA, INC.

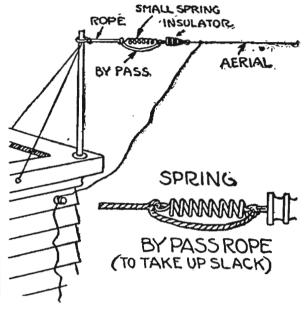
1581 Jerome Ave. New York

www.americanradiohistory.com



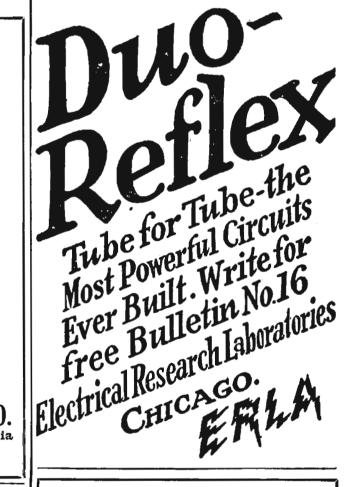
# Aerial Line Kept Taut With Spring in Holder

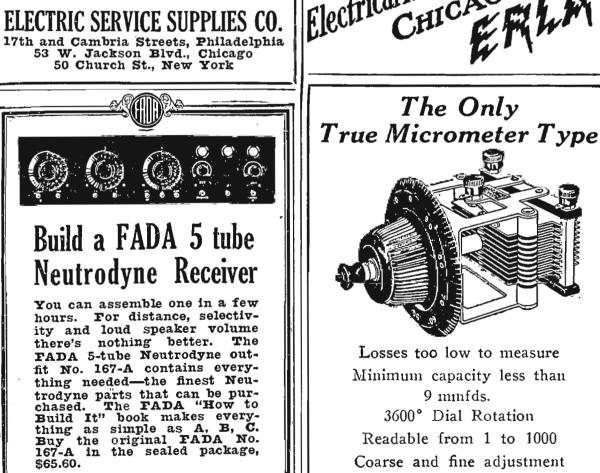
The accompanying illustration shows how to use an ordinary spiral spring, which may be obtained from an old bed. to improve an aerial. By placing one or more of these springs in an aerial between the rope and the insulator an aerial wire may be pulled up tightly between two firm points and still be flexible without the use of weights.



As the fans know the rope is much shorter when it is wet than when dry and also that the wire in the aerial is shorter in extreme cold weather than in hot weather, due to the expansion and contraction in the different temperatures.

The rope is run around the spring simply to guard against the possible breaking of the spring. This will support the wire until a new spring is inserted. I have no trouble with my aerial since I used this stunt.—Robert A. Nolan, Albany,





3600° Dial Rotation Readable from 1 to 1000 Coarse and fine adjustment Fixed plates 2 inches from panel

Dealers and Jobbers should get our proposition

Either .00025 or .0005 \$6.00

BARRETT & PADEN

# Questions and Answers

Two Variometer Set

(8232) JHB, Ann Arbor, Mich. I will deem it a courtesy, indeed, if you will refer to issue of March 15, 1924, page 23, and let me have the full dope on the two-tube, two-variometer set, which I in-

tend to try.

To be more specific: What condensers are used in the aerial circuit? The variometers both alike with the exception of the leads? What make is best for the purpose? What tubes are used and what resistances are used between ground and first variometer, between grid and filament of the detector tube? What grid condenser and leak? What phone condenser? Is the 25-turn coil wound in the same directin as the variometer stator? Would there be any advantage in winding the latter in a staggered fashion? So that contiguous wires are nowhere parallel but have an angular relation to each other. Do you think this outfit sufficiently simple for the average experimenter to construct successfully? In performance will it surpass the ordinary, single-circuit, twovariometer set? How selective is it?

A.—One .0005 mfd. and one .001 mfd. condenser are indicated capacities in the antenna circuit.

Any standard, well advertised variometer will serve. Both the same.

The UV-201A tube is recommended. A potentiometer 200 ohms and a 2 megohm grid leak are resistances indicated.

A.—.00025 mfd. grid condenser. The twenty-five turn coil is wound in the same direction as stator of variometer. No advantage is obtained in stagger-

The circuit of discussion is within the ability of the novice and effective.

### Electrolytic Rectifier

(0S180) HMV, Algona, Iowa.

I am interested in the battery electrolytic rectifier, which you illustrate in the Digest for March 15.

Please tell me where I can purchase the aluminum and lead rods, also the rubber

A.—We are advising in your inquiry that aluminum and lead rods for use in electrolytic rectifier are not manufactured units. The material for this purpose is available through any metal concern, and doubtless, locally.

AGENTS WANTED TO ADVERTISE OUR goods and distribute free samples to consumers; 90c an hour; write for full particulars. American Products Co., 2147 American Bldg., Cincinnati, O.

TVORY RADIO PANEL. Grained white "IVORYLITE" makes most beautiful set of all. Guaranteed satisfactory. Any size 3/16" thick sent prepaid 3c per square inch. Sample free. E. P. Haltom, Dept. D, 614 Main St., Fort Worth, Texas.

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.

Men to build radio sets for me in spare Leon Lambert, 501-H Kaufman Bldg., Wichita, Kansas.

# Don't You Get

Tired of only hearing LOCAL stations on your Crystal

your aerial every night from stations far away. If you want to hear it without buying a tube set, WRITE ME TODAY.

LEON LAMBERT 501 South Volutsia

Wichita, Kansas

# **SUPERTRON**

A GOOD TUBE

ALL TYPES \$4.00 All Good Dealers Sell Supertrons VICTOR RADIO MFG. Co., 32 Union Sq., N. Y. C.

### -WHOLESALE ONLY!!-

If you are contemplating going int the RADIO BUSINESS

SEND FOR OUR NEW ILLUSTRATED CATALOG, WITH BARGAIN PRICES

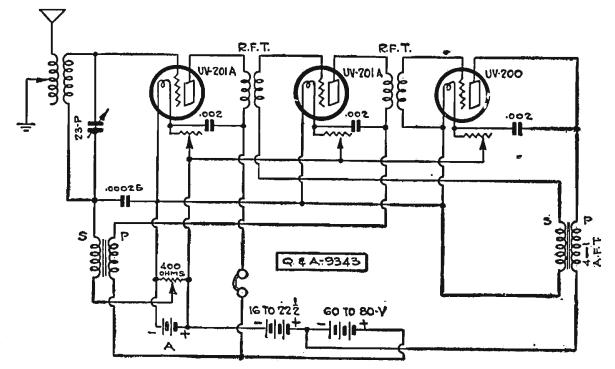
MANHATTAN RADIO CO.

112 Trinity Pl.

New York City

**QUINCY RADIO** LABORATORIES ILLINOIS Est. Dealers: Write for

No11A CATALOG Discounts



Grimes Reflex

(9343) GU, Rock Island, Ill.

You will oblige me very much if you show a correct diagram of a three-tube Grimes inverse duplex (two-tube and detector) set.

If you have none, can you tell me where I can obtain one? I have constructed a Grimes according to instructions in your inagazine of Dec. 8, 1923, but have had no results.

How is the coupler made to use this set with an aerial and ground? I am using Hedgehog transformers audio 3 to 1 and 4 to 1. Same make Radio transformers-air core 200-600 meter wave length. What results are usually received with a set similar to the above?

A.—We are complying with your re-

# ANTENNA EFFICIENCY

USE DRY-GAP INSULATORS and LIGHTNING ARRESTERS to keep your aerial constant in all kinds of weather. The only insulator and lightning arrester that has been developed for radio that has a 

THE ANTENNA INSULATOR CO.

# FEDERAL .....

STANDARD RADIO PRODUCTS

Dealers Write for Discounts

# Prairie State Radio Co.

39 W. Adams St. CHICAGO, ILL.

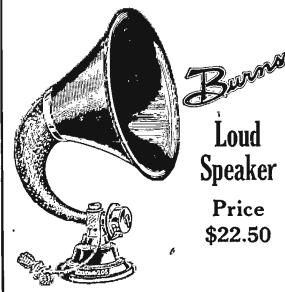
ទីសមាលាការណ៍សារណ៍ការបានប្រជាពលរបស់ការបានប្រជាពលរបស់ការបានប្រជាធិបតី

### -S. & H. "B" BATTERY-"Will Keep Your Set Alive

Is "NOISELESS." increases volume and range with maximum clearness. Made of the finest material to give extra service.

Aro not two days old when they're m clearness, production of the state of the 22½ V. Variable, Large M'd'm Smali \$1.80 \$1.60 \$1.00 WIRELESS BATTERY \\\ 45 V. Variable.
Large Medium Small
\$3.60 \$2.75 .......

Sold With a Money-Back Guaran- We Pay Postage tec-Money Orders or C. O. D. We S. & H. BATTERY SUPPLY CO. Brooklyn, N. Y. 41 Nevins St., Dept. (D)



A Speaker of distinction with VOLUME, CLARITY, BEAUTY

Designed and built by experts for 30 years makers of telephones

State and 64th Streets CHICAGO, U. S. A.

American Electric

quest by giving the diagram of a threetube Grimes Inverse Duplex circuit showing the substitution of the variocoupler for a loop to permit the operation on an antenna system.

A standard variocoupler is indicated and consists of fifty-six turns of number 22 wire, tapped at every seventh turn for primary and fifty turns of number 26 wire for secondary.

# PATENTS

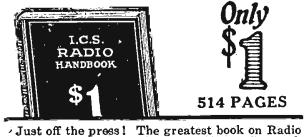
Write for my free Guide Books "How to Obtain a Patent" and "Invention and Industry" and "Record of Invention" blank before disclosing inventions. Send model or sketch of your invention for instructions. Promptness assured. No charge for above information Clarge charge for above information. Clarence A. O'Brien, Registered Patent Lawyer, 2004 Security Bank Building, directly across street from Patent Office, Washington, D. C.

# 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 ter-ritory to proven salesman. Territory going fast. Write today for large il-lustrated book No. 100. Don't fail to give name of your county. OZARKA, INC. 815 Washington Blvd. Chicago, III. Big **Profit** 

# 

# **RADIO HANDBOOK** Only



ever written. Price only \$1. Filled with sound, practical, tested information for every radio fan, from beginner to hard-boiled owl. Written, compiled, and edited by men of national reputation. Every page tells you something useful—and there are 514 pages. Mail \$1 to-day and get this I. C. S. Radio Handbook before you spend another cent on parts. Money back if not satisfied

--- TEAR OUT HERE ---

INTERNATIONAL CORRESPONDENCE SCHOOLS

Box 8278-M, Scranton, Penna.

I enclose One Dollar, Please send me

postpaid—the 514-page I. C. S. Radlo

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.

The circuit in question is a superior type but critical in operation and dependent upon careful assembly and a considerable degree of understanding of its characteristics for realization of its inherent efficiency. It is capable of good range and affords excellent volume on a minimum number of tubes.

### Electrolyte

(9465) IA, Chicago, Ill.

Will you kindly tell me the best electrolyte to use in an aluminum, iron rectifier, and the proper connections to use both halves of the cycle. Each cell has two aluminum and one iron plate.

A.—A solution of ammonium phosphate and distilled water is suitable, although probably more expensive than necessary in consideration of the fact that 20 Mule Team borax is often used.

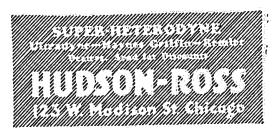
A RELIABLE and thoroughly experienced radio manufacturing and merchandising organization wants live-wire representa-

tive in your community. Complete line of highest quality receiving sets and accessories, exclusive territory, and liberal discounts without annoying quantity regulations. Write or wire Radio Development Co., 25 S. 13th St., Harrisburg, Pa.

# 

WE are jobbers of nationally advertised radio sets and parts. Send us your orders. We ship same day.





L. G. Harriston and American States and the Company of the Company of the Company of the Company of the Company

# 514-Page RADIO Handbook Only \$1

Just off the press. The greatest book on Radio ever written. 514 pages. Compiled by Harry F. Dart, E.E., formerly with the Western Electric Co., and U. S. Army Instructor of Radio. Technically edited by F. H. Doane. Filled with sound, practical tested information for practical, tested information for every radio fan, from beginner to hard-boiled owl. Send \$1 to-day, and get this 514-page I. C. S. Radio Handbook before you spend another cent on parts. Money back if not satisfied. 50,000 already sold.

Mail the Coupon To-day

International Correspondence Schools

Box 8277-M, Scranton, Penna. I enclose One Dollar. Please send mc—post-paid—tho 514-page I. C. S. Radio Handbook. It is understood that if I am not onlirely satisfied I may return this book within five days and you will re-

fund my money.

# 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 four parts, serially continuously, on page 31. 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 Radiocasting 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 appears helow. The first eppeared iast week.

KFPM, Greenville, Tex. 242 metere. 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 find "The Blackest Land, the Whitest People." Daily ex Sun, 2 pm, music. Dally 7 pm, beseball. Tues, Wed, Thurs, Fri, 8 pm. Sun, 11 em, services. Centrai. KFPN, Jefferson City, Mo. 242 meters. 100 watts. Missouri National Guard. Announcer, Lieut. Roy M. Schnell. Slogan, "Voice of the Netional Guerd." Tues, 10-11:30 pm, news, music. Sat, 10-11 pm, talks, music. Centrai.

Schnell. Slogan, "Voice of the Netional Guerd."
Tucs, 10-11:30 pm, news, music. Sat, 10-11 pm, talks, music. Centrai.
KFPO, Denver, Colo. 231 meters. 500 watts. Colo. National Guard.
KFPP, Olympia, Wash. 236 meters. 20 watts. G. & G. Radio and Elec. Shop. Dally 6:30-7:30 pm. Wed, 8-11 pm. Pacific.
KFPQ, Denison, 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. Centrai. KFPR, Los Angeles, Ceilf. 231 meters. 500 watts. Los Angeles Co. Forestry Dept. Irregular schedule.
KFPS, Casper, Wyo. 242 meters. 10 watts. Carter A Ross Motor Service Co. Wed, 9-10 pm. Mountain. KFPT, Salt Lake City, Utah. 268 meters. 500 watts. Radio Service Corp. of Utab. Announcer, Earl Jay Glade. Mon, Wed, Fri, 9 pm. Mountain.
KFPV, San Franclsco, Callf. 236 meters. 50 watts. Helntz & Kohlmoos, Inc. Announcer, Ralph H. Heintz, Slogan, "Ain't We Got Fun." Sun, 7-8:30 pm. Pacific. (FPW, Carterville, Mo. 268 meters. 20 watts. St. John M. E. Church, S. Slogan, "Keeplng Pace with Christ Means Progress." Wed, 8-10 pm, popular program. Sun, 11 am, church service. Central. KFPX, Pine Bluff, Ark. 242 meters. 100 watts. First Presbyterian Church. Announcer, Howeli L. Westbrook. Sun, 11 am, 12 m, 8-9 pm, church services. Central. KFPY, Spokane, Wash. 283 meters. 100 watts. Symons Investment Co. Announcer, E. B. Craney. Daily ex Sun, 12-1 pm; 6-7, markets, news, music. Tues, Thurs, Sat, 9-11 pm, lectures, music. Pacific. KFQA, St. Louls, Mo. 261 meters. 50 watts. The Stablyth Dab Co.

Principia, KFQB, Fort Worth, Tex. 254 meters. 100 watts. The

KFQB, Fort Worth, Tex. 254 meters. 100 watts. The Searchlight Pub. Co.
KFQC, Taft, Calif. 227 meters. 100 watts. Kidd Bros. Radio Shop.
KFQD, Anchorage, Alaska. 280 meters. 100 watts. Chovin Supply Co.
KFQE, Colorado Springs, Colo. 224 meters. 5 watts. Dickinson-Henry Radio Laboratorles.
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.

Central.

KFQG. Los Angeles, Callf. 226 meters. 100 watts.

Southern Callf. Radio Assn. KFQH, Burilngame, Calif. 231 meters. 50 watts. Radio Service company.

KFQI, Culver City, Calif. 234 meters. 100 watts.

KFQI, Culver City, Calif. 234 meters. 100 watts.

Thomas H. Ince Corp.

KFQI, Oklahoma City, Okla. 236 meters. 150 watts.

Harbour Longmire Co. Announcer, R. Rex Rennee.

Dally ex Sun, 2-4 pm, concert, news; 9:30-12, dance muslc. Central.

KFQK, Fayette, Mo. 236 meters. 10 watts. Democrat Leader.

Leader.

KFQL, Muskogee, Okla. 252 meters. 20 watts. Oklahoma Free State Fair Assn. Announcer, Burle R. Jones. Slogan, "Our Gates Stend Open." Mon, Wed, Fri, 8-9 pm, music. Ccntral.

KFQM, Austin, Tex. 268 meters. 50 watts. Texas Highway Bulletin. Announcer, George M. Baker. Daily ex Sun, 7 pm, 9. Central.

KFQN, Portland, Ore. 283 meters. 5 watts. Third Baptist church. Wed, Fri, 8-9 pm. Sun, 9:45-10:30 am; 9-10 pm. Pacific.

KFQO. Russell, Kansas. 261 meters. 15 watts. Meier Badio Shop. Announcer. A. R. Meier. Mon. 8:30-9:45

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 Clty S. Carson, Jr. Clty, Iowa. 224 meters. 10 watts. George S. Carson, Jr.

KFQR, Oklahoma City, Okla. 250 metere. 10 watts.

Watter La Fayette Ellis.

KFQS, Manltou, 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 mldnight, dance music. Sun, 8:30-10 pm, classical

music. Mountain.

KFQT, Dennison, Tex. 252 meters. 10 watts. Texas
National Guard. KFQU, Holy Clty, Calif. 234 meters. 100 watts. W. KFQV, Omaha, Neb. 231 meters. 100 watts. Omaha

Grain Exchange.

KFQW, North Bend, Wash. 248 meters. 50 watts. The Photo Radlo end Elec. Shop. Mon, Wed, Frl, 8-9:15 pm. Pacific. KFQX, Seattle, Wash. 233 meters, 250 watts. Alfred M. Hubbard. KFQY, Belden, Neb. 273 meters. 10 watts. Farmers

State Bank. KFQZ, Hollywood, Calif. 240 meters. 250 watts. Tafe Radio company.

Radio company.

KFSG, Los Angcies, Caiif. 278 mcters. 500 watts.

Angeius 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 slient. Pacific.

KFSY, Helena, Mont. 261 meters. 10 watts. The Van Blarlcom company. KGB, Tacoma, Wash. 252 meters. 50 watts. Tacoma

Dally Ledger. Announcer, Albert M. Ottenhelmer. Slogan, "This is KGB in Tacoma, Washington, the Slogan, "This is KGB in Tacoma, Tashing to Mount Lumber Capital of America and the Gateway to Mount Tashing "Mon. Wed. Frl, 7-9 pm. Pacific.

Lumber Capital of America and the Gateway to Mount Tacoma." Mon, Wed, Frl, 7-9 pm. Pacific. KGG, Portland, Ore. 360 meters. 50 watts. Hallock & Watson itadio Service. Slogan, "The Rose City." KGO, Oakland, Calif. 312 meters. 1,000 watts. Gen. Elec. Co. Announcer, Howard I. Milliolland. Dally ex Sst. Sun, 1:30 pm; Sat, 12:30, markets, weather; Mon, Wed, Frl, 3 pm, music. Mon, 4-5:30 pm, orchestra. Dally ex Sun, Mon, 4-5:35 pm,

orchestra. Daily ex Sat, Sun, 6:45 pm, reports, news. Mon, Tues, Thurs, Sat, 8 pm, lectures, music. Tues, Sat, 10-1 am, dance music. Sun, 11-12 m, 7:45-9 pm, church services; 3:30-5 pm, concert. Pacific.

KGU, Honolulu, Hawaii. 360 meters. 500 watts. Marlon A. Mulrony, The Honolulu Advertiser. Daily, 7:30-9 pm. Tues, Thurs, Sat, special program. 150th meridian. 2½ hours later than Paclfic.)

KGW, Portland, Ore. 492 meters. 500 watts. Portland Morning Oregonian. Announcer, Richard V. Haller, Slogan, "KGW, Keep Growling Wiser." Daily ex Sat and Sun, 11:30 am, weather; 3:30 pm; 7:15, police reports; 7:30, baseball, markets. Mon, Tues, Wed, 8 pm, concert. Frl, 8:15 pm, 10:30, Hoot Owls, Wed, Thurs, Sat, 10 pm, orchestre. Sat, 11:30 am, weather; 3 pm, children's hour. Sun, 6 pm, church services. Paclfic.

KGY, Lacey, Wash. 258 meters. 10 watts. St. Martlins College. Slogan, "Out Where the Cedars Meet the Sea." Tues, Fri, Sun, 8:30-9:30 pm, news, concert, lecture, Paclfic.

KHJ, Los Angeles, Calif. 395 meters. 500 watts. Los Angeles Times. Announcer, John Daggett. Slogan, "Kindness, Happiness, Joy." Daily ex Sun, Mon, 12:30-1;30 pm, 2:30-3:30, 6-7:30, 8-10. Sun, 10-12:30 pm, 6:30-7:30, 8-10. Mon, 12:30-1:30 pm, 7:30-3:30, 6-7:30, 8-10. Sun, 10-12:30 pm, 6:30-7:30, 8-10. Mon, 12:30-1:30 pm, Pacific.

KHA, Seattle, Wash. 360 meters. 500 watts. Steele KIAF, Slihtipoc, Minn, 421 meters. 500 watts. Steele

Wasmer.

KIAF, Sintipoc, Minn. 421 meters. 500 watts. Steele Co. Program irregular.

KJQ, Stockton, Calif. 273 meters. 5 wstts. 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. Pacific.

KJR, Seattle, Wash. 283 meters. 50 watts. Northwest Radio Service Co. Daily ex Sun, 5:30-6:15 pm, reports. Mon, 7:30-8:30 pm, music. Wed, Thurs, 7:30-8:30 pm, concerts, lectures, bedtime stories. Pacific. KJS, 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, iectures, etc. Sun, 10:45-12:30 pm, 6-6:45, 8-9:30, church services. Pacific. KLS, Oakland, Csiif. 360 meters. 250 watts. Warner

6-6:45, 8-9:30, church services. Pacific.

KLS, Oakland, Csiif. 360 meters. 250 watts. Warner Bros. Radio Supplies. Daily 11:30-1 pm, Fri, 8-9 pm. Sun, 12-1 pm. Pacific.

KLX, Oakland, Celif. 509 meters. 500 watts. Oakland Tribune. Announcer, L. L. Taylor. 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, tslks; entertainment. Pacific.

KLZ, Denver Colo. 283 meters. 250 watts. Reynoids Radio Co. 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, Calif. 248 meters. 50 watts. San MJ. Fresno, Calif. 248 meters. 50 watts. San Joaquin Lt. Pr. Corp. Announcer, R. C. Denny. Slogan, "Voice of the San Joaquin." Irregular sched-

KMO, Tacoma, Wash. 360 meters. 10 wetts. Association Station. (Love Electric Co.) Mon, Wed, Fri, 6-7 pm, popular program; 9-10, artlst's program. Pecific.

KNT, Kukak Bay, Alaska. 263 meters. 100 watts.

Pecific.

KNT, Kukak Bay, Alaska. 263 meters. 100 watts. Walter Hemrlch.

KNX, Los Angeles, Calif. 360 meters. 100 watts. Elec. Lighting & Supply Co. Mon, 2:30 pm, Wed. Fri, 3:15 pm, concert. Pacific.

KOB, State College, N. M. 360 meters. 500 watts. N. M. College of Agri. & Mech. Arts. Announcer, R. W. Goddard. Slogan, "The Sunshine State of America." Daily 11:15-12 m, 9:55-10 pm, tlme, reports. Mon, Wed, Frl, 7:30-8:30 pm, concert. Mountain.

KOP, Detroit, Mich. 286 meters. 500 watts. Detroit Police Dept. Announcer, W. L. Potts. Slogan, "Safety First." Daily ex Sun, 1 pm, 6:30, reports, police information, emergency. Safety talks. Eastern.

KPO, San Francisco, Calif. 423 meters. 500 watts. Hale Bros., Inc. Announcer, Clair E. Morrison. Slogan, "The City by the Golden Gate." Daily ex. Sun, 12 m, reeding. Daily ex Sat, Sun, 1-2 pm. 4:30-5:30 pm, music. Daily ex Sun, 2:30-3:30 pm, studlo 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 mldnlght, music. Sun, 1i-12:15 pm, church services, 8:30-10, music. Pacific."

Pacific.

KQP, Hood River, Ore. 360 meters. 10 watts. Apple City Radlo Club. Announcer, H. B. Reas. Slogan, "The Home of the Hood River Apple." Fri, 6:30 pm, music. Wed, 9 pm, special. Pacific.

KQV, Plttsburgh, Pa. 270 meters. 500 watts. Doubleday-Hill Elec. Co. Announcer, Florence Potts. Daily ex Sun, 11-11:30 am; 1-1:30 pm. Mon, Tues, Wed, Thurs, Frl 3:15-3:45 pm, 4:30-5, music, twillght tales. Mon, Wed. Fri, 9-10, concert. Eastern daylight saving. KQW, San Jose, Caiif. 30 meters. 50 watts. Chas. D. Herrold. Daily ex Sun, 1-1:30 pm. Wed, 8-9 pm,

Herrold. Daily ex Sun, 1-1:30 pm. Wed, 8-9 pm, concert. Pacific.

KRE, Berkeley, Calif. 275 meters. 50 watts. Daily Gazette. Announcer, J. E. Wiggin. Mon, Wed, 8-10 pm, concert. Pacific.

KSD, St. Louls, Mo. 546 meters. 500 watts. St. Louis Post Dispatch. Announcer, V. A. L. Jones. Daily ex Sun, 8:40 am, 9:40, 10:40, 11:40, 12:40 pm, 1:40 2:40, 4. Mon, 7 pm, 9, 11. Wed, Sat, 8 pm.; Fri, 7 pm, 11. Tucs, Thurs, silent nights. Sun, 9 pm. Centrai.

Centrai.

KTW, Seattle, Wash. 360 meters, 750 watts. First Presbyterian Church. Announcer, J. G. Presley, Sun, 11-12:30 pm, 3-4:30, 7-9:30, church service. Pacific. KUO, San Francisco, Calif. 360 meters. 150 watts. San Francisco Examiner, Slogan, "The Voice of the West." Daily ex Sat, Sun, 9:05-9:20 am, weather, news; 11-11:30, markets; 3, financial bulletin; 6-6:15, financial report; 6:40, weather. Sat, 9:05 am, weather; 6-6:15 pm, financial report; 6:40, weather. Sunday, 9:05 am, 6:40 pm weather. Pacific.

pm, financial report; 6:40, weather. Sunday, 9:05 am, 6:40 pm, weather. Pacific.

KUY, El Monte, Caiif. 256 meters. 50 watts. Coast Radio Co. Wed, 4-4:30 pm. Sat, 3-4 pm. Pacific.

KWG, Stockton, Celif. 360 meters. 50 watts. Portable Wireless Telephone Co.. Daily ex Sun, 4-5 pm, news, concert, markets. Tues 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.

Shop, Levres & Joaquin Co., Ltd.

KYW, Chicago, Ill. 536 meters. 1000 watts. Westinghouse Elec. & Mfg. Co. Announcer, Edward Barroff.

Dally 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. Dally ex Sun, Mon, 6:50, bedtime story;
7-7:30 pm, dinner concert; 8, concert; 9, special.

Tues, Thurs, 2:30-3 pm, musical frolic. Wed, Fri,
3:30. Tues, Thurs, 10-11:30 pm, "at home" program.

Wed, Fri, 9-12:30, midnight revue. Sun, 11 am,
World Crier every haif hour. Centrel daylight saving.

KZM, Oakland, Cailf. 360 meters. 100 watts. Western

Radlo Inetitute (Hotel Oakland). Dally ex Sun, 6:45-7
pm, news. Pacific.

Radlo Inetitute (Hotel Oakiand). Dally ex Sun, 6:45-7 pm, news. Pacific.

NAA, Radlo, Va. 435 meters. United States Navy Dept. Daily ex Sun, 9:45-10:40 am, i2:25-12:40 pm, 1:45-2:20, markets, weather; 2:45-3 (Tues only), Dept. Interlor; 3:25-4:40, 5:05-5:20, markets, weather 10:05-10:20, weather. Wed, 7:25-7:40 pm, Civ. Ser. Daily ex Sat. Sun, 7:45-8 pm, dept. programs. Mon, 8:25-8:40 pm, Dept. of Interlor. Eastern.

OA, Ottawa, Ont., Can. Dept. of Marine & Fisheries. Discontinued temporarily.

PWX, Havana, Cuba. 400 meters. 500 watts. International Tel. & Teieg. Corp. Wed, Sat, 8:30-11 pm, music. Eastern.

music. Eastern. WAAB, New Orlcans, La. 268 meters. 100 watts. Valdemar Jensen.

Valdemar Jensen.

WAAC, New Orleans, La. 360 meters. 400 watts. Tulane Univ. Announcer, D. Elllott. Frl, 7:15-7:30 pm, reports; 8-9:30, educetlonal and entertainment program. Central.

WAAD, Clnclnnati, O. 360 meters. 25 watte. Ohio Mechanice Inst. No regular echedule.

WAAF, Chicago, Ill. 286 meters. 200 watte. Chicago Duily Drovers Journal. Announcer. R. B. Singer. Duily ex Sun, 8:40 pm, 10:30, 10:45, 12:30 pm. Dully ex Sun, Sat, 12:45, 3, 4:30, live stock and weather reports. Central.

lates Wealth." Dally ex Sun, 8:45 am, 9:45, 10:45, 11:45, 12:15-1 pm, 8, market reports. Thurs, 8-9 pm, talk. Central.

WABA, Lake Forest, 1li. 266 meters. 100 watts. Lake Forest University. Wed. eve, music, talks. Centrai, daylight saving.

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.

WABD, Dayton, O. 283 meters. 5 watts. Parker High School. Fri, 7-8 pm. Central.

WABE, Wasbington, D. C. 283 meters. 100 watts. Y. M. C. A. Temporarily discontinued.

WABH, Sandusky, O. 240 meters. 20 watts. Lake Shore Tire Co.

WABI, Bangor, Me. 240 meters. 100 watts. Bangor Ry. & Elec. Co. Announcer, W. G. Burrill. Slogan, "The Pinb Tree Weve." No regular schedule.

WABL, Storrs, Conn. 283 meters. 200 watts. Connecticut Agri. College. Mon, Wed, Fri, 7-9 pm. Eastern.

WABM, Saginaw, Mich. 254 meters, 100 watts. F. E. Doherty Automotive & Radio Equip. Co. Announcer, W. A. Rorke. Daily ex Sun, 10:15 am, news, markets, weather, stocks; 6, news, stocks, sports, music. Esstern.

WABN, La Crosse, Wis. 244 meters. 450 watts. Ott Radio Inc.

WABO, Rochester, N. Y. 283 meters. 10 watts. Leke Avenue Baptlst Church.

WABO, Haverford, Pa. 261 meters. 50 watts. Haver-

WABP Dover, O. 266 meters. 100 watts. Robert F. Welnig.
WABQ, Haverford, Pa. 261 meters. 50 watts. Haverford College Radio Club. Announcer, Dr. James McF. Carpenter. Irregular evenlng programs.
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.
WABT, Washington, Pa. 252 meters. 100 watts. Holiday-Hall Radlo Engineers.

day-Hall, Radlo Engineers.

WABU, Camden, N. J. 226 meters. 50 watts. Victor Talking Machine Co.

WABW, Wooster, O. 234 meters. 100 watts. The Coilege of Wooster, Dept. of Physics. Announcer, Victor

Andrew.

WABX, Mt, Ciemens, Mich. 270 meters. 150 watts.

Henry B. Joy.

WABY, Philadelphia, Pa. 242 meters. 50 watts, John Magaldi, Jr. Slogan, "Quaker City Sleep Dodgers" Ciub. "The American Broadcasting Club." Sun, 9 pm, music; 10:30, "Sleep Dodgers' Session." Eastern.

music; 10:30, "Sleep Dodgers' Session." Eastern.
WABZ, New Orieans, La. 263 meters. 100 watts. The
Coliseum Place Baptist church. Slogan, "The Station
with a Message." Wed, 8:45-10 pm, talks, music;
Sun, 11 am, 12:15 pm, 7:45, 9. Central.
WAR, Sisiht, Wis. 406 meters. 500 watts. Kopp Radio
Co. Indefinite schedule.
WBAA, W. Lafayette, Ind. 283 meters. 250 watts.

Co. Indefinite schedule.

WBAA, W. Lafayette, Ind. 283 meters. 250 watts. Purdue University. Announcer, R. V. Achatz. Daily ex Sun, 9:50-11:35 am, stocks, markets. Mon, Fri, 7:15 pm, special programs. Central.

WBAK, Harrisburg, Pa. 400 meters, 500 watts. Pennsylvania State Police. Announcer, C. M. Wilhelm. Daily ex Sun, 10:30 em, 1:30 pm, 5:45, police reports, fire protection, markets; 12 midnight, 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.

wbao, Decatur, Ill. 275 meters. 50 watts. James Millikin Univ. University activities. No definite

Millikin Univ. University accretions schedule.

WBAP, Fort Worth, Tex. 476 meters. 750 watts. Fort Worth Star-Telegram. Announcer, "The Hired Hand" Ciub, "Radio Truth League." Daily 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 Central.
WBAV, Columbus, O. 423 meters. 500 watts.

WBAV, Columbus, O. 423 meters, 500 watts. The Erner and Hopkins Co. Announcer, R. Bohamon. Slogan, "We Broadcast a Variety." Daily ex Sun, 12-1 pm. Tues, Fri, 8-10 pm. Eastern.

WBAX, Wilkes-Barre, Pa. 360 meters. 70 watts. John H. Stenger, Jr. Wed, 8 pm-12 midnight. Eastern.

WBAY, New York, N Y. 492 meters. 500 watts. A. T. & T. Co. Experlmentai purposes only.

WBBA, Newark, O. 240 meters. 10 watts. Newark Radio Lab. Announcer, P. E. Horton. Daily ex Sun, 6:30-7:30 pm, news. Mon, Thurs, 7 pm, musicale. Sun, 2:30 pm, Radlo Chapei Service. Eastern.

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

WBBF, Atlanta, Ga. 270 meters 500 watts. Georgia School of Technology. Announcer, Thomas W. Fitz-gerald. Slogan, "The Southern Technical Institution

gerald. Siogan, "The Southern Technical Institution with a National Reputation."

WBBG, Mattapolsett, Mass. 248 meters. 500 watts. Irving Vermilya. Wed, 8-10 pm, music. Sun, 10:30-12:30 pm, church service. Eastern. WBBH, Port Huron, Mich. 246 meters. 50 watts. J

Irving Bell.

WBBJ, West Palm Beach, Fia, 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.

WBBL, Richmond, Va. 283 meters. 5 watts. Grace
Covenant Presbyterian church. Tues, 8 pm, Sun,
11 am, 6:15 pm. Eastern.

WBBM, Chicago, Ili. 226 meters. 200 watts. Frank
Atlass Produce Co. Discontinued.

WBBN, Wilmington, N. C. 275 meters. 10 watts. A. B.
Blake. Announcer, E. J. Hopkins. Mon, Wed, Sat.
8-8:15 pm, markets; 8:15-10, music and educational
program; 10, weather. 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, Wcd, Sat, 8-9 pm, lectures, music. Sun, Thurs,
9:10-10:30 pm. Eastern, daylight saving.
WBBT, Pbliadeiphia, Pa. 234 meters, 5 watts. Lloyd

WBBU, Monmouth, Ill. 224 meters. 10 watts. Jenks

mann. Daily ex Sun, 12:55 pm; 1:15, time, weather, markets; 6-7, music; 7-7:30, baseball scores, lecture; 7:30, bedtime story; 7:40-10:30 (ex Fri), music; 10:55, time, Wed, 11:20 mm; 10:25

7:30, bedtime story; 7:40-10:30 (ex Fri), music; 10:55, time. Wed, 11:30 pm-12:30, am, dance music. Fri, 10-12 mldnight, music. Sun, 9-10:30 pm, concert, Eastern daylight saving.

WCAD, Canton, N. Y. 280 meters. 250 watts. St. Lawrence Univ. Announcer, Herold K. Bergman. Slogan, "The Voice of the North Country." Daily, 11 am, weather, reports, time. Wed, 8:30 pm, program. Eastern.

weather, reports, time. Wed, 8;30 pm, program. Eastern.

WCAE, Pittsburgh, Pa. 462 meters. 500 watts. Kaufman & Baer Co., Pittshurgh Press. Announcer, Joseph Sartory. Deily ex Sun, 12:30 pm, news; 3:30, news, musle, 4:30, reports, entertainment; 6:30, music; 7:30, Uncle Kaybee; 9:30, muslc. Mon, Thurs, 11-12 midnight, concert. Sun, 3:30 pm, sermon; 7, music. Eastern daylight saving.

"CAG, New Orleans, La. 268 meters. 100 watts. Clyde R, Randall. Mon, Thurs, 8-9 pm, professional concert. Centrai.

WCAH, Columbus, O. 286 meters. 200 watts. Entrekin Elec. Co. Slogan, "The Heart of Ohio." Daily ex Sun, 11:30-12:30 am, muslc, news. Tues, 8-10:30 pm, Sun, 10-12:30 pm, 7:30-9, church services; 4, vespers. Eastern.

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, Nebr. 283 meters. 500 watts. Nebr. Wesleyan Univ. Announcer, J. C. Jensen. Daily 10:30 am, weather. Tues, 7 pm, children's hour. Fri, 9 pm, muslc, jectures. Central.

WCAK, Houston, Tex, 263 meters. 10 watts. Alfred P. Daniel. Slogan, "Where Eighteen Railroads Meet the Sea." Daily, 7-7:30 pm, talk. Wed, 7-9 pm, concert. Sun, 3-4 pm, feature program. Central.

WCAL, Northfield, Mlnn. 360 meters. 500 watts. Dept. of Physlcs, St. Olaf College. Slogan, "The College on the Hill." Daily ex Sun, Mon, 9:45 am, chapel. Thurs, 9 pm, muslc. Fri, 8:30 pm, talk. Sat, 12 midnlght, music. Sun, 11 am, cburch services; 8:30 pm, sermon, music. Centrai.

WCAO, Baltimore, Md. 360 meters. 50 watts. Sanders & Stayman Co. Daily ex Sun, 12-1 pm. Mon, 8-9 pm. Eastern.

WCAP, Washington, D. C. 469 meters. 500 watts.

& Stayman Co. Daily ex Sun, 12-1 pm. Mon, 8-9 pm. Eastern.

WCAP, Washington, D. C. 469 meters. 500 watts. Chesapeake & Potomac Tei. Co. Announcer, Paul 5-245, program. Fri, 7:40-8 pm, Sun, 7:20-10 pm, jointly with WEAF. Eastern.

WCAR, San Antonio, Tex. 360 meters. 200 watts. Southern Radio Corp. of Texas. Club, "Royal Order of Prevaricators." Mon, Thurs, Sat, 8:30-9:30 pm, concert. Wed, Sat, 11 pm. Central.

WCAT, Rapid City, S. D. 240 meters, 100 watts. S. D. Stete School of Mines. Announcer, J. O. Kammerman. Daily ex Sun, 9:30 am, 12:30 pm, weather, reports. Thurs, 7:15 pm, concert. Mountain.

WCAU, Phliadelphia, Pa. 286 meters. 250 watts. Durham & Co. Dally, 5:45 pm, markets. Sun, 10:55 am, service; 3 pm, telk; 3:15, telk; 4:10, Bible readings; 6-8, concert. Eastern daylight saving.

WCAV, Little Rock, Ark. 360 meters 20 watts. J. C. Dice Elec. Co. Wed, Fri, 8:30 pm, iecture, music. Sun, 9-10:30 pm, special musicai concert. Central. WCAY, Milwaukee, Wis. 266 meters. 250 watts. Miiwaukee Civic Broadcasting Statlon. Announcer, Ray Mitchell. Mon, Fri, 8-9 pm. Tues, Thurs, 10:30 pm. Central.

WCAZ. Carthage. 111. 246 meters. 50 watts, Carthage

WCBC, Ann Arbor, Mich. 280 meters. 200 watts. U. of Mich.
WCBD, Zion 1ii. 345 meters. 500 watts. Wilbur Glenn Vollva. Slogan "Where God Ruies, Man Prospers." Mon, Thurs, 8-10:15 pm, concert. Thurs, 2:30-3:45 pm, service. Sun, 9-10:45 am, Bible Schooi; 2:30-6, church services. Central daylight saving.
WCBE, New Orleans, La. 263 meters. 5 watts. Uhalt Radio Co. Slogan, "Second Port U. S. A." Mon, Thurs, 9-10 pm, concert. Sun, 1-2 pm, dlnner concert. Central.
WCBF, Pittsburgh, Pa. 236 meters. 50 watts. Paul J.

Radio Co. Slogai, Second Fort U. S. A. Mon, Thurs, 9-10 pm, concert. Sun, 1-2 pm, dinner concert. Central.

WCBF, Pittsburgh, Pa. 236 meters. 50 watts. Paul J. Miller. Slogan, "We Cheerfully Broadcast Freely." Closed for the summer.

WCBG, Ruleville, Miss. 268 meters. 10 watts. Howard S. Williams. Slogan, "Will Christ Be Glorified?" Daily 7:45 pm, sermon. Sun, 3 pm, 7:45, service. Central. (Portable, moves often.)

WCBH, Oxford, Miss. 242 meters. 20 watts. U. of Mississlppi.

WCBJ, Jennings, La. 244 meters, 10 watts. J. C. Mans. WCBK, St. Petersburg, Fla. 266 meters. 500 watts. E. Richard Hull. Mon, Thurs, 7-8 pm. Tues, 8-8:15 pm. Sun, 8-10 pm. Eastern.

WCBL, Houlton, Me. 280 meters. 100 watts. Northern Radio Mfg. Co. Announcer, Lee J. Beli. Slogan, "Call of the North." Wed, 7:30-10 pm. Sun, 10:30 em. 7 pm. Eastern.

WCBM, Baltimore, Md. 229 metere. 250 watts. Charles

WCBM, Baltimore, Md. 229 metere. 250 watts. Charles Schwarz. Announcer, John F. O'Hara. Tues, Thurs, 10 pm-1 am. Sat, 9:30-12 mld. Sun, 8:30-10:30 pm. Eastern.

WCBN, Fort Benjamin Harrison, Ind. 266 meters. 50

watts. James P. Boland.

WCBO, Memphis, Tenn. 250 meters. 20 watts. Tho Radio Shop, Inc. Wed, Sun, 8:30 pm. Central.

WCBQ, Nashviile, Tenn. 236 meters. 100 watts. First Baptist church. Announcer, R. G. Monahan. WCBR, Providence, R. I. 246 meters. 5 watts. Charles

WCBR, Providence, R. 1. 246 meters. 5 watts. Charles H. Messter.

WCBT, Worcester, Mass. 238 meters. 250 watts. Clark University, Collegiate Dept.

WCBU, Arnold, Pa. 254 meters. 50 watts. Arnold Wireless Supply Co. Announcer, John Cooper. Slogan, "The Booming Town." Daily ex Sun, 5:30-6:15 pm. music. Wed, 7:30-8:30 pm. Sat, 12 midnight, test program. program. Eastern.
WCBV, Tullahoma, Tenn. 252 meters. 10 watts. Tullahoma Radio Club. Thurs, educational program. Sun,

religious..

WCBW, Macon, Ga. 226 meters, 20 watte. Maitland Soloman and G. P. Rankin, Jr. Irregular schedule.

WCBX, Newark, N. J. 233 meters. 100 watts. The Radio Shop. Tues, Wed, Fri, 6-6:30 pm; 7:30-10:30. Eastern daylight saving.

WCBY, Buck Hill Falls, Pa. 268 meters. 10 watts.

WCBY, Buck Hili Falls, Pa. 268 meters. 10 watts. Forks Electric Shop. Announcer, Hugh Kemper.
WCBZ, Chicago Helghts, 111. 248 meters. 50 watts. Coopoteill Brothers Music House. Announcer, John King. Slogan, "Where the Lincoln and Dixie Highways Meet." Mon. Fri, 8:30-10:30 pm, program. Central daylight saving.
WCK, St. Louis, Mo. 360 meters. 100 watts. Stix, Baer & Fuller Dry Goods Co. Dally, 12:10-12:40 pm; 3-3:30, music. Mon, Wed, Fri, 7-8 pm, music. Fri, 11-12 pm, dance music. Basebail scores during home games. Central.
WCX, Detroit. Mich. 517 meters. 500 watts.

Rothers.

WBU, Monmouth, Ill. 224 meters. 10 watts. Jonks Motor Sales Co.

WBV, Johnstown, Pa. 248 meters. 5 watts. Johnstown, Radio Co.

WBW, Norfolk, Va. 222 meters. 50 watts. Ruffner Junior High School. Announcer, Lee W. Klinefelter. Wed. 4 pm, music. Fri, 10 pm. Eastern.

WBY, Charleston, S. C. 263 meters. 20 watts. Washington Light Infentry. Announcer, Hugh Easterly. Wed. 8-10:30 pm, talks, music. Sun, 6:30-9:30 pm, orchestra. Eastern.

WBBZ, Indianapolls, 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. The Police. Announcer, H. Kifong. Daily ex Sun, 11:30, 12. Eastern.

WBS, Newark, N. J. 360 meters. 250 watts. D. W. May, Inc. Daily, 11-12 m, music; 12:15 pm, dance music. Baseball scores during home games. Central.

WBS, Newark, N. J. 360 meters. 20 watts. Noble Police. Announcer, H. Kifong. Daily ex Sun, 10 ann. 10:30, 11, 1:30 pm, 2, 4:30, 5:45, 7, 11, 11:30, 12:30-39 pm. Eastern daylight saving.

WBS, Newark, N. J. 360 meters. 100 watts. D. W. May, Inc. Daily, 11-12 m, music; 11-2:15 pm, dance music. Baseball scores during home games. Central.

WBA, Frithman, Schollenberg. Slogan, 10:30 am, 7:15 pm, church services. Eastern.

WDAF, Butler, Pa. 1599 meters. 50 watts. Thus, 11:30, 12:2-15 pm, reports, music. Thus, 11:11. 11:30, 12:30-3 pm. Eastern daylight saving.

WBA, Charlotte, N. C. 360 meters. 500 watts. Southern Radio Corp. Announcer, R. B. Knollenberg. Slogan, "Queen City of tho South." Daily ex Sun, 11 am, weather; 6:30, nusle; 7:15, markets, Tues, Thurs, 9 pm, music. Central.

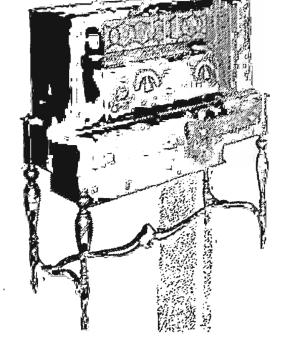
WDAF, Ellenberg. Slogan, 12:2-15 pm, unsic; 12:15 pm, 12:10-15 pm, unsic; 12:15 pm, 13:10-15 pm, unsic; 12:15 pm, 13:10-15 pm, 13:10-15 pm, 13:10-12 pm,

www.americanradiohistory.com



ranging from controlled excomaximum in examination. For 1—tunes through excomply two 3—brings in each st

Model X
With light socket power
unit \$550
For use on batteries
\$450



The new Super-Zenith is a NON-regenerative, six-tube set in four different models ranging from \$230 to \$550, with a new, unique and really different patented circuit controlled exclusively by the Zenith Radio Corporation. Amplification is always at a maximum in each stage for any wave length. The Super-Zenith line is not affected by moisture. For the first time, you have a set that—

- 1—tunes through everything and selects the station you really want—when you want it.
- 2—requires only two hands—not three—to operate.
- 3—brings in each station at only one point on the dial—and always at that single point.
- 4—affords such mathematical precision and simplicity that you can run over the entire dial in 1½ minutes and pick up more stations with greater clarity and volume than any other set on the market. Direct comparisons invited. The new Super-Zenith was perfected in Zenith's laboratories in the center of the eleven powerful Chicago broadcasting stations. Even under these extremely adverse conditions the new Super-Zenith tunes through everything and "gets the outside" on loop, inside, or outside antenna.
- 5—produces not only the seemingly impossible in perfect selectivity, but also possesses such artistry of design, such finished craftsmanship, that it lends distinction and exclusiveness to any living-room or library.

Write for the name of the nearest dealer from whom you can obtain a demonstration of this outstanding marvel of the radio world.

# Super-Zenith X Exclusive Features

Contains two new features superseding all receivers. 1st—Built-in, patented, Super-Zenith Duo-Loud Speakers (harmonically synchronized twin speakers and horns) designed to reproduce both high and low pitch tones otherwise impossible with single-unit speakers. 2nd—Zenith Battery Eliminator, distinctly a Zenith achievement. Requires no A or B batteries or charger.

Dealers and Jobbers: Write or wire for our exclusive territorial franchise

# ZENITH RADIO CORPORATION

332 South Michigan Avenue, CHICAGO

1269 Broadway, NEW YORK

Zenitl	n Radio	Corpor	ation
Dept.	10B		
220 6	THISTON	A	CILIA

Gentlemen: Please send me illustrated literature giving full details of the Super-

Name	·····

Zenith.

Address