Beginning New Portable and Phonograp Standings in Gold Cup Contest; Tun-

# 

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SATURDAY,

# SEE FRIENDS OVER RADIO



#### DOG SEEKS MASTER SPEAKING ON RADIO

HERE'S another version of "His Master's Voice." When Captain William H. Funston resigned from the New York police to become chief in Schenectady, a left his dog, "Joffre," at the home of his daughter, in White Plains. A few nights ago Funston gave a talk from WGY, here and his daughter tuned in to hear him. Chief Funston hadn't spoken half a dozen words when "Joffre" began frantic search for his master, racing from one end of the house to the other.

#### Opera Officials Refuse Broadcasting Permission

Broaccasting Permission

LONDON.—Keen disappointment has been felt by fans here that the number of transmissions of the present opera season from the Royal Opera house was limited to two. These were on the opening nights of the German and Italian seasons, the first being a broadcast of Act III of "Der Rosenkavalier." The British Broadcasting company was expecting and willing to give twelve transmissions of the opera, but the opera house authorities would not permit it.

To Broadcast at Capital Show
WASHINGTON, D. C.—A miniature
up-to-the-minute broadcasting station
will be installed by the Radio Corporation of America at the second annual
Radio show to begin in this city on
October 5, according to the Radio
Merchants association of Washington,
which is sponsoring the show.

# **TELEVISION IS HUGE SUCCESS DURING TESTS**

View All Things Plainly

Demonstrate How Faces of People May Be Transmitted by Simple Process

By A. C. Blackall

LONDON.—Further details are now available of the wonderful new television apparatus briefly described in Radio Digest in May. It is the invention of John L. Baird, a young Scottish electrical engineer, who is continuing his experiments with it in a London laboratory.

"My invention has nothing whatever to do with transmitting pictures by Radio," Mr. Baird explained in an interview. "That has been done already. With television the object in front of the transmitter is Instantly seen on the screen of the receiver."

See Image Plainly

He thrust his own face into the wooden

He thrust his own face into the wooden frame at the transmitting end of the apparatus and requested a visitor to set his eye at the light-excluding funnel at the (Continued on page 2)

Kentucky Station to Observe Anniversary

Old Southern Station Has Envi-able Reputation

LOUISVILLE, Ky.—WHAS, the Louis-ville Courier-Journal station here, is pre-paring for the celebration of it's third "birthday." On July 18 three years will have passed since the plant in the heart of Old Kentucky blue grass region first went on the air.

Old Kentucky blue grass region first went on the air.

The station has one of the most remarkable records of any in this country. In three years of continuous broadcasting there has only been an involuntary silence of sixty minutes. This record is largely due to the work of J. Emmett Graft, the chief engineer.

An examination of government records has brought to light the fact that WHAS was the twelfth station of its kind installed in the world.

Upper left, Ruth Leigh, formerly with "Apple Blossoms" and "Maytime," now with Loew's theaters, whose remarkable soprano voice is frequently heard from WHAR, Cleveland. In circle: FIO Kennedy of the Ziegfeld Follios, She appears weekly at WGCP, New York. Below, Byrdeatte Hoffman Evans, who is frequently heard from WGN, Chicago.



CONSENSUS OF OPINION VOTE	
Send to Radio Digest, 510 N. Dearborn Street, Chicago	
To be forwarded by Radio Digest to the Department of Commerce for the atte	ntion
Scratch off w does not an	hichever
1. Do you want less class B (500 watts or more power) stations? Yes	No.
2. Shall B stations be reduced to 94 in number, so that they can be	-
accommodated satisfactorily in the "ether roadways" now available	
for the use of broadcasting stations?Yes	No
3. How far away, approximately, is the nearest class B station?	mi.
4. Are you troubled by B stations heterodyning and interfering with	
one another?Yes	No
5. Have you read a description of the Kintner plan? Yes	No
6. Are you in favor of it or some similar plan which will help clear the	
air of the present "traffic" congestion?Yes	No
7. Do you favor the appointment of an unbiased, non-partisan broad-	
casting control board for the settlement of all differences pertaining	
to broadcasting and the interpretation of present or future Radio legislation?	No
8. Include separately a list of five stations you like most and five you dislike	most
and my you arbitals	most.
How many members Name	
How many members Name	*********
And the second s	
Address	
Are all of the same	
mind as yourself? City, County, State	
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#### McNAMEE STAYS AT TOP IN CUP CONTEST

PUTS MORE DISTANCE BE-TWEEN SELF AND HAY

Race Grows Intense—Who Will Be World's Greatest Announcer for 1925? Fans Wonder

The sage of the East, Graham McNamee, for the second consecutive week has kept his lead on George D. Hay in the 1925 Radio Digest Gold Cup Award. and last week gained considerable leeway between his vote and that of "The Solemn Old Judge" of WLS, who last year won the title of world's greatest Radio announcer.

With the contest approaching a spirited finish and but six more weeks to go, the keeness of the race is keeping everyone's interest high pitched.

McNamee now has 23,364 votes; Hay has 26,503.

has 20,506. How has 20,504 which one will win? Or will perhaps another contestant nose in at the finish? Wagers are rampant. The final vote will tell.

another contestant nose in at the finish? Wagers are rampant. The final vote will tell.

Few Other Changes

The feature race for top position seemed to be the main activity during the past week. Up to seventh place not one contestant changed his position. MenNamee, Hay, Rouse, Field, The Hired Hand and Arlin kept the first six places in the order named, which was the same as the previous week.

Frank S. Lane, tenth last week, jumped to seventh this week, and displaced Leo Fitzpatrick, who had that place, throwing him down to tenth. Both Lane and Fitzpatrick, who had that place, throwing him down to tenth. Both Lane and Fitzpatrick, who had that place, throwing him down to tenth. Both Lane and Fitzpatrick, who had that place, throwing him down to tenth. Both Lane and Fitzpatrick, are acting very erratic. One can never tell what position they will be in the next week.

Lambdin Kay, now eighth, was ninth last week. W. G. "Bill" Hay, of KFKX, now ninth, was eighth last week. Another trade.

Stanley Barnett took N. Deau Cole's place, eleventh, while Cole took Barnett's, twelfth. Charles Erbstein stayed on the unlucky number, thirteen. Robert Emery climbed one notch to fourteenth, while O. E. Becker slipped one notch to fitteenth.

Jerry Sullivan, who held sixteen for a long time, has dropped to oblivion, while "Uncle John" Dagestt, director-announce of KHJ, Los Angeles, has pulled into sixteenth from oblivion.

Standing of Sixteen Leaders.

The standing of the sixteen leaders, with the total number of votes accredited date, at the close of the week is as follows:

Pasition Name and Station Votes

Capacition Name and Station Votes

Capacit

	Posi	tion Name and Station	Votes	
	1.	Graham McNamee, WEAF	23,364	
	2.	George D. Hay, WLS	20.503	
	3.	Gone Rouse, WOAW	13,716	
	4	Henry Field KENE	11.691	
	5.	The Hired Hand, WBAP	10.989	
	6.	H. W. Arlin, KDKA	8,265	
	7.	Frank S. Lane, KFRU	5,220	
	8.	Lambdin Kay, WSB	4.567	
	9.	W. G. "Bill" Hay, KFKX		
	10.	Leo Fitzpatrick, WDAF	4,448	
	11.	Stanley W. Barnett, WOO	4.001	
	12.	N. Dean Cole, WHO	3.916	
	13.	Charles Erbstein, WTAS	3,483	
	14.	Robert Emery, WEEL		
	15.	O. E. Becker, WGR	3.110	
	16.	John Daggett, KHJ	2,759	
r		new nominations were		,

Two new nominations were received during the week: Jack Gritton, WADC, and Mrs. B. G. Waters, WCTS. They are rather late, but still might win some recognition.

recognition.

How to Vote and Get Bonus

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

The ballots, top of page two, numbered consecutively, will appear in each issue of

the Radio Digest until the close of the contest, with the August 22 number.
Each of these ballots will count for one vote when sent in separately. You can hold these ballots until you have 4 that are consecutively numbered, and when they are sent in a bonus of 3 votes will be allowed for your favorite announcer. For each 8 consecutively numbered ballots your candidates will receive a bonus of 20 votes. For each 12 consecutively numbered ballots, 30 votes. For each 12 consecutively numbered ballots, 50 votes, and for each 22 consecutively numbered ballots, 50 votes, and for each 22 consecutively numbered ballots, 60 votes bonus will be allowed.

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

#### Oakland Station Starts Health Training Exercise

Health Training Exercise
OAKLAND, Calif.—An important addition to the KGO Schedule begins Monday,
July 13, when free hand calisthenics, or
health training exercises, will be broadcast, daily except Sunday, at 7:15 to 7:30
and 8:15 to 8:30 a. m., Pacific time.
Hugh Barrett Dobbs, an experienced
director of physical education, will have
charge and give most of the lessons. Included in the physical education schedule
will be heard, from time to time, stars
of the athletic world of football, swimming, baseball, tennis, polo, and golf, each
telling his own story of health and personal efficiency. Physicians and specialists in hygiene will also speak as part of
this program.

#### CAN SEE OVER RADIO

(Continued from page 1)

CAN SLE OVER RADIO

(Continued from page 1)

receiving end. On the ground glass screen inside the visitor could plainly see Mr. Baird's face.

The image was crude, coarse and flickering, but it was recognizable, and much of the indistinctness was due, not to defects in the invention, but simply to the present roughness of the apparatus.

How It Works

In the present stage of the invention a strong electric light is thrown on the object to be transmitted. Behind the light is a disc containing a number of lenses set in a'spiral formation.

Behind this disc is another revolving disc with serrated edges, very similar in appearance to the toy cinematograph, or the zoetrope of 50 years ago. On this disc the scene transmitted appears like a scene in the view-finder of an ordinary camera. The disc with the lens is made to revolve at a speed of about 600 revolutions a minute, and the serrated disc runs ten times as fast.

A cell sensitive to light is behind the serrated disc, and, thanks to the whirling spiral of lenses, the light reflected from every part of the object being transmitted is thrown in a very rapid succession upon the cell. This creates an electric current which is strong at the high lights, weak at half tones, and cut off altogether at darkness. The current controls an electric light.

Whole Image Appears

To another revolving disc, traveling at precisely the symmetric and the contravents and cut off articolar and received the symmetric and receive

light. Whole Image Appears

To another revolving disc, traveling at precisely the same speed as the one at the transmitting end, the light from this lamp passes with immense speed in the form of a small spot of light on a glass screen. The spot is bright at the high lights, dim at the half tones, and goes out altogether at black parts of the image. Owing to the principle of persistence of vision (the principle employed in the ordinary motion picture projector), the rapidly moving spot causes the whole image to appear simultaneously.

# Looking Ahead

Next Week the Seventeenth Ballot in the Gold Cup Award will appear, and with it the standing of the top sixteen contestants. Will Graham McNamee continue to hold the lead he has so well held for the past two weeks? Will held for the post two weeks? Will held for the post two weeks? Will held for the post or some dark horse win the coveted, solid 14-carat gold cup as the world's most popular announcer for 1925? Only six more weeks to go.

CONTENTS

Bridge Receivers Built by Milo Gurney will be shown with the next article of his surprise series. To show that all he has been telling us can be put into practice, he has constructed a receiver whose circuit is very similar to figure 36, shown last week, with compensator and cabling of battery leads.

Assembly of the Portable and Phonograph Super will come next week as the second article of this series of three articles. John G. Ryan covers it completely but concisely and there is plenty of detail in this series so that anyone may build this outfit.

KFRU, "The Voice of Oklahoma," where the Oklahoma Pepper Bird and Frank S. Lane hold forth, will be pictured and described in next week's issue. Although in a small city with thinly populated surrounding country, KFRU has succeeded in becoming very popular.

The Propagation of Radio Waves is accomplished by two means, one of which is electromagnetic radiation. Professor Moreton presents this phase of Radio communication as his next lesson in the A-B-C's of Radio. After reading this next installment our readers will understand why shielding is necessary.

#### Jack Albin, Whiteman Protege, Not so Hot

NEW YORK.—On the hot nights of summer, the Radio audience, usually enjoined to pity the poor musicians playing from a stuffy studio, need let no such thought mar their enjoyment of the new WBAF feature presented by Paul Whiteman—Jack Albin and his Hotel Bossert Marine Roof orchestra.

This combination, broadcasting from aboard their ship (the hotel roof is completely made over to resemble the decks of an ocean liner) and swept by the breezes from the picturesque New York harbor which it overlooks, is probably cooler than most of its listeners.

Broadcast in Public Parks

Broadcast in Public Parks
WINNIPEG.—Another one of CKY's
dreams has come true. A year or more
ago the Winnipeg station suggested to
the Radio trade that it would be an excellent idea if arrangements could be
made with the City Parks Board whereby
loud speaker sets could be placed in the
parks and special concerts broadcast by
CKY. Now it is announced that Radio
sets will be installed in the three principal parks. The first program so received,
was broadcast from CKY on Sunday evening, June 21.

Find Lost Boy by Radio
SALT LAKE CITY.—An 11-year-old
boy of this city who had been missing for
several days recently was located. 170
miles away from home, by Radio. It was
but a short time after the station had
broadcast the report that the youth was
found although he was in a tiny country
town.

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sstands Don't Always	SEND	IN THE	BLANK	TODAY
Have One Left				

WHEN YOU WANT

New

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#### **NEWS BRIEFS FROM** THE BROADCASTERS

EVEREADY LIGHTENS PROGRAMS FOR SUMMER

Marine Band on Four Stations—"B ster's Million" at KGO—Tom Brown at WHT -"Brew

Appreciating the difference between broadcast program interest in summer and in winter, the directors of the Eveready Hour have adopted a new summer program policy. Programs are being prepared for rendition during July and August consisting of light and cheerful music, particularly adapted to tuneful microphone presentation. Two orchestras will alternate on Tuesday nights through July and August, the Eveready Salon orchesta, Nathaniel Shilkret directing, and the Eveready Chamber Symphony orchestra, Max Jacobs directing, Solo voices will occasionally break the straight hour of instrumental music.

Enlargements in KAO's schedules to ac-Emiargements in KAO's schedules to ac-commodate dinner concerts from the Brown Palace hotel, Denver, and after-noon musicales from the Rialto theater, also of Denver, have met with sweeping favor. Both attractions have been billed daily except Saturday and Sunday.

The Capitol theater orchestra of Spring-The Capitol theater orchestra of Spring-field, Mass, under the direction of Fred A. Pullen, was secured recently by WBZ as a weekly feature of this station's pro-grams. This organization will be heard every Monday night during the entire summer season. An hour's concert is given.

After a long and strenuous winter, the popular U. S. Marine band has deserted the inner regions and come out into the open to play for WJZ and, WRC on the steps of the Capitol in Washington. These concerts are given on Thursday evenings and broadcast by Stations WRC and WJZ, both of the Radio Corporation of America; by WGY, General Electric company, Schenectady, N. Y., and WBZ, Westinghouse company, in New England.

Glen Rice has assumed the duties of program and studio manager for the Anthony studio of KFI, a position heretofore held by Paul Reese, who is returning to the vaudeville stage. Mr. Rice comes to his new position with a wide experience in matters of entertainment.

Each Wednesday night while the Mac-Millan polar expedition is in the Arctic, Superstation WHT is broadcasting a spe-cial program to the explorer and his party. Each of the programs is furnished by one of the many organizations in Chicago be-fore which Lieut. Commander MacMillan has spoken. WHT uses the 'experimental call letters 9XN while broadcasting to the expedition, so that direct communication can be done.

"Brewster's Millions," the great stage success of a generation ago, will be broadcast Thursday evening, July 16, by the KGO players in Radio form. Wilda Willson Church, assisted by Fred Thomas and Bert Horton, will direct the production.

Tom Brown, the saxophone king, has Tom Brown, the saxophone king, has been signed as a regular Monday night feature of WHT, Wrigley building, Chicago. He will broadcast with a 40-piece saxophone band. The term of the contract runs until October 1, when Mr. Brown and his five brothers leave for a tour of Europe.

#### ADOPT NEW TOURISTS' RADIO-TO-FRIEND PLAN

Milwaukee Amateur Club Starts Summer Correspondence

Summer Correspondence

MILWAUKEE.—Members of the Milwaukee Amateurs Radio club, the local organization of the American Radio Relay league, have joined with the tour bureau of the Milwaukee Journal in creating machinery which will permit tourists visiting Milwaukee to transmit messages by Radio to their friends and relatives back home.

Elanks for Radiograms will be provided at the several auto camps in and adjacent to the city, at the headquarters of the tour bureaut in the Journal building, and at the Milwaukee Municipal Tourists, Welcome bureau. These messages will be picked up at regular intervals by the Milwaukee ameteurs and relayed by them.

French Radio enthusiasts in Paris havelected a queen to reign over their social activities. At a recent dance by the Radio club of the 5th arrondissement of Paris, Mlle. Germaine Lemaire was chosen Queen of the Radio fans.

#### WILL SAVE \$50,000 WITH SET SAYS FAN

San Francisco.—Here's a prize story from Eric H. Palmer, world Radio tourist. He was talking to a man who had just purchased an elaborate set for use in China. When asked what he expected to hear there the man said, "Not much. But I've been passing time playing poker and losing continuously. I decided that listening in would keep me away from the game and probably save me \$50,000 next year at the rate I'm going now."

#### **BROADCAST 14 HOUR** RELIGIOUS SERVICES

HICAGO.—The National Radio chapel sponsered by superstation WHT here, is one of the longest non-stop programs broadcast from any WHT here, is one of the longest mon-stop programs broadcast from any station in North America. Commencing at nine o'clock every Sunday morning, the Radio chapel services are kept on the air without a single stop until 11:30 P. M. The service is under the direct supervision of Rev. Paul Rader, one of the most distinguished evangelists in America.

#### TELLS THE LADIES HOW TO DRESS



Helen Spring is the lady who gives the style talks regularly from General Electric Station WGY, at Schenectady. She is a member of the WGY staff.

#### Foreign Notes

The public school system of Mexico has hardly been a thing to boost of in the past, but soon every Mexican child will have the benefit of the best facilities the country can afford, by means of the wireless. Picked teachers will broadcast their lectures all over the land, from stations is the big stiles and receiving sets will be in the big cities; and receiving sets will be installed in the schools to bring their voice to the pupils.

For fifteen minutes recently the auction For fifteen minutes recently the auction sale at Christic's world-famous rooms of the Earl of Carnarvon's art treasures, at which an almost priceless Gainsborough came under the hammer, were broadcast. The auctioneer described the bidding, which was very exciting, reaching an amount representing a substantial fortune.

Construction work has been finished on the new station at Seville. This is the second of the Radio stations which are being erected at important Spanish cities, to be completed. Its power is three times that of the first, at Bilboa, which has been heard on the air for some time past.

Radio is gaining in popularity in the Emerald Isle and approximately 3,000 re-ceiving sets had been licensed up to April 1, although Ireland is still without a broadcasting station.

#### Broadcast Talks on Astronomy from CKY

Noted Astronomer to Deliver "Illustrated" Lectures Soon

WINNIPEG, Man. - The broadcasting

WINNIPEC, Man.—The broadcasting of talks on astronomy "illustrated" by means of a system of numbers which the Iskener can plot on squared paper, is CKY's latest original feature.

The talks will commence at an early date and will be delivered by a member of the Royal Astronomical society of Canada. They will be made to appeal particularly to young people and prizes will be offered for the neatest representations of the various constellations, as plotted from the groups of figures transmitted.

Miss Mary Proctor, F.R.A.S., F.R. Met. S., known in the United States as "The Children's Astronomer." is coming to Winnipeg next year and will give a short talk over CKY.

#### Fights Rio de Janeiro Fires

WASHINGTON, D. C.—Reports received nere state that the fire department at Rio de Janeiro is planning to erect two Radio stations. One will be installed at its main building at the Praca da Re-publica and the other at its Maritime station on the Illha de Santa Barbara.

It is usually cheaper to buy a new condenser than to attempt to fix one which has become damaged.

#### WNAC TRIES TO END SARGENT NAME USE

WOULD ENJOIN WHT FROM EMPLOYING TITLE

'Jean Sargent" First Radio Name Case in Litigation —Battle in Court Looms

CHICAGO.—For the first time in the history of broadcasting a battle is now on between WNAC, Boston, and Superstation WHT here, over the use of a name—"Jean Sargent."

Jean Sargent, of whom mention has

WHIT here, over the use of a name—"Jean Sargent."

Jean Sargent, of whom mention has been made previously in Radio Digest, is probably the most conspicuous woman broadcaster in the world. She made WNAC famous for its women's features, all of which were arranged by Jean Sargent, who really is Bertha Mitchell. She made the name "Jean Sargent" mean something.

But she didn't originate it. It was suggested by the Shepard Stores, Boston, owners of WNAC.

And so, when Superstation WHT made an attractive offer to Miss Mitchell, and she accepted because, it has been said, working conditions were not altogether satisfactory in Boston, the Shepard Stores threatened to enjoin WHT and the lady in question from using the name of Jean Sargent.

Sargent.

Sargent.

Attorney Says Use Name

Attorneys for WHT and Miss Sargent have advised that she may use her Radio name as long as she desires, providing she announces, as she now does, "Jean Sargent, formerly of WNAC."

In the meantime WNAC may continue to use the name "Jean Sargent." The only question remaining is whether or not WNAC's successor to Miss Mitchell's post can keep the name as popular as it was.

was.

Miss Sargent is now organizing a WHT
Women's club. The drive she has inaugurated has already been eminently successful and members are still being listed.
When she left Boston, her WNAC Women's

When she left Boston, her WNAC Women's club had a membership of 20,000. Miss Sargent will have regular meet-ings of the club in the studios of WHT, in the Wrigley building, and in this way will become better acquainted with what Chicago women desire from the Radio.

#### New Stations

KLDS, Reorganized Church of Jesus Christ of Latter Day Saints, will now be on the air as a 1,000-watt station. WCBD, Zion, 'III., is another station to take advantage of the summer permit to use more power. This station is now operating on 2,000 watts.

Many stations are still changing locations and wave lengths. WABI, Storrs, Conn, now uses the call WCAC at Mansfield, Conn. KPVO, Kirksville, Mo, although a new station has been given the call KFKZ, WCBZ, Chicago Heights, is now WOK, Homewood, III. WGAQ, Shrèveport, has the call KWKH. WSAP, New York, is WSDA. WWAE has moved to Plainfield, III.

New licenses have been issued this week to WKEG, C. L. Carrell, Chicago, Ill., 100 watts, 215.7 meters (portable); WIBP, First Presbyterian church, Meridian, Miss., 5 watts, 209.7 meters; KFVZ, Glad Tidings Tabernacle, Inc., San Francisco, Calif., 50 watts, 234 meters; WGMU, A. H. Grebe & Co., Inc., Richmond Hill, N. Y., 100 watts, 236 meters, (portable); WEELS, Robert E. Hughes, Evanston, Ill., 20 watts, 205.4 meters.

Twelve commercial class "A" station licenses were deleted last month. These were: WGBO, San Juan, P. R.; WRAN, Waterloo, Iowa; WABM, Saginaw, Mich.; WCBY, Buck Hills, Fa.; KFBE, San Luis Obispo, Calif.; WGBN, La Salle, Ill; WSL, Utica, N. Y.; WCBL, Houlton, Maine; WRAL, St. Croix Falls, Wis.; WDBF, Youngstown, Ohio; KFQG, Los Angeles, Calif.; KFRP, Redlands, Calif.

#### Predicts Cost of Radio in Near Future Will Be Small

Near Future Will Be Small
LONDON.—After making the most exhaustive and continuous tests for nearly a month aboard a transatlantic steamer in New York harbor, Major Secretan, one of the foremost British amateur Radio engineers, is absolutely convinced that really dependable communication can be made by the use of low power and short waves, both day and night. Major Secretan said, "The tests proved conclusively that an entirely new system will eventually have to be used for international Radio communication. Our present methods are obsolete and costly. Radio of the future will not cost, more than one-twentieth part of what it does today. This applies both to telegraphy and telephony."

#### **'CURB IS THE LIMIT' CLUB HUGE SUCCESS**

# YOUNGSTERS JOIN SAFETY ORGANIZATION AT KYW

More Than 57,000 Children Have Signed Pledges in Uncle Bob's Club at Chicago

at Chicago

CHICAGO.—Uncle Bob's safety campaign for children from KYW here has assumed a nation-wide interest, not only among children but by civic bodies as well. Principals of schools have adopted his "The Curb Is the Limit", as a slogan, and have promoted the tenets of Uncle Bob's activities to the school children. The chamber of commerce in many large cities has taken to it with keen enthusiasm as have the Kiwanis clubs, the Elsa; the Rotary clubs, the Boy Scoutts, and various women's organizations, all of whom are joining in making the "Curb Is the Limit" an atlonal issue.

"The Curb Is the Limit" was formed by Uncle Bob's idea and the issue has reached proportions beyond the fondest dreams. Insurance companies have printed large placards and posters for country-wide distribution, using Uncle Bob's slogan as the pivot of safety for children. Safety commissions of Chicago and other cities have written Uncle Bob, commending him for his Radio activity and telling of the immense good he has done along the lines of safety.

On June 1, Uncle Bob had received 57.

of safety.
On June 1, Uncle Bob had received 57,600 pledges signed by children in all corners of the United States, not to cross the
street without first counting to ten. To
all who send in a pledge, Uncle Bob sends
an attractive button signifying membership in his "The Curb Is the Limit" club.

#### ITCHING FEET GET N. Y. ANNOUNCERS

Metropolitan Radio Men Show Love of Change by Making Many Shifts

Many Shitts

NEW YORK—The past month has seen more changes in the family of Metropolitan announcers than any similar period since old WJZ started broadcasting canned music over in Newark years and years ago.

Eddleg Squires has left WMCA and returned to Chicago from whence he came some time ago, while A. Llufrio, one-time WEAF announcer has travelled across Herald Square to WMCA.

Norman Brokenshire, of WJY-WJZ, has followed Omar Khayyams' advice and left for Washington, where he will announce for WRC.

Feland Gannon—who used to say "WRC" a year or so ago—is now introducing the artists from WOR. NTG is still on the job at WHN, and WAHG's turnover is also zero.

Gilson Y. Willets, formerly of WOS and more lately of WOC, is now performing for a new station atop the Hotel Roosevelt.

#### WJR, Jewett Station, to Officially Open Aug. 15

Officially Open Aug. 15
The official opening date of WJR, to be
operated by the Jewett Radio & Phonograph company, has been set for August
15. The transmitting equipment of WJR
is housed in a splendid new building on
the Jewett factory grounds at Pontiac,
Mich. The main studios will be in the
Book-Cadillac hotel in Detroit. Howard E,
Campbell, widely known engineer of many
years' Radio experience, will be in complete charge of all the station's activities.
C. W. Kirby will officiate at the studio.
Both are familiar personalities to the Radio public.

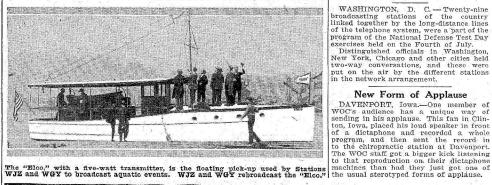
#### WBBM Adds Samovar Cafe Orchestra to Entertainers

Urchestra to Entertainers CHICAGO—The new maximum power station, WBBM here, has further increased it's popularity by hooking up Samovar orchestra, playing at the Samover cafe.
WBBM now has two orchestras. With the addition of the Samover orchestra, arrangements of which have just been completed, WBBM is one of the foremost stations in the Chicago territory, as regards orchestral entertainment.

#### Antenna Technical Treatise

URBANA, Ill.—"Investigation of Antenniae by Means of Models," is the title of a recent bulletin, No. 147, of the, engineering experiment station of the University of Illinois. It is a technical discussion of various types of antennae, and may be obtained for thirty-five cents a conv.

#### "ELCO" IS FLOATING WJZ PICK-UP



BRADLEYDENSER

BRADLEYLEAK

BRADLEYOHM

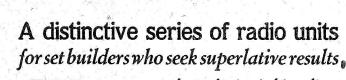
The Allen Bradley Line of Perfect Radio Devices

#### Twenty-Nine Stations in Defense Day's Link

WASHINGTON, D. C.—Twenty-nine broadcasting stations of the country linked together by the long-distance lines of the telephone system, were a part of the program of the National Defense Test Day exercises held on the Fourth of July.

Distinguished officials in Washington, New York, Chicago and other cities held two-way conversations, and these were put on the air by the different stations in the network arrangement.

#### New Form of Applause

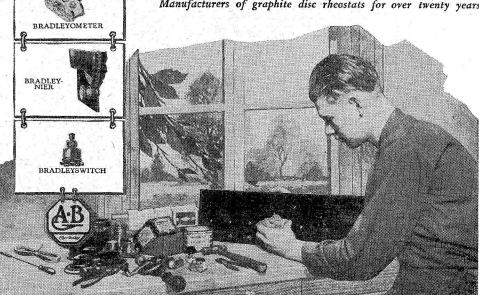


EVERY amateur yearns for perfection in his radio receiver. Better quality, greater volume, and closer selectivity are the requirements of discriminating radio enthusiasts, and the circuits which meet these requirements are inevitable favorites.

The experienced set builder has learned the value of fine radio parts, and he knows the important part they play in getting maximum results from a selective circuit. Hence, it is not strange that the Allen-Bradley line has gained increasing popularity with the introduction of the super-selective hookups. In fact, for stepless, noiseless, perfect control, Allen-Bradley Radio Devices have no peers. Your set will be a better set if you use them. Let us send you an illustrated folder about the Allen-Bradley line.

#### Allen-Bradley Co. Electric Controlling Apparatus 290 Greenfield Ave., Milwaukee, Wis.

Manufacturers of graphite disc rheostats for over twenty years



# KDKA, the World's Pioneer Broadcaster

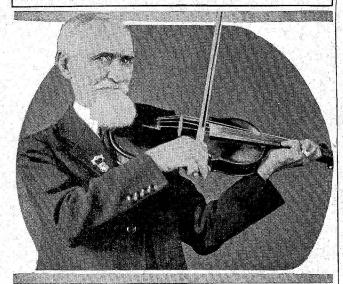


daily broadcasting on election night in 1920.

From an improvised studio on the roof of the nine story building at the East Pittsburgh works of the Westinghouse Electric and Manufacturing company, with the broadcasting set and antenna nearby, the station has grown until today it has a building especially constructed of non-metallic material to house the powerful standard and short wave transmitting sets, a studio at the works, another at the plant of the Pittsburgh Post, in the center of the Pittsburgh downtown district, and another at the University of Pittsburgh and the National Stockman and Farmer, with special pickup lines from every large church and auditorium in the city. The station has grown too large for



#### VETERAN FIDDLER KING TELLS LIFE



Capt. M. J. Bonner

"Chicken in the bread tray Shoo, fly, shoo, Swing that pretty girl An' I'll swing you." "Now you're right and now you're wrong, Swing that pretty girl all day long."

Ey Susan Haymes

THE sunshine of a summer afternoon
east golden beams along our path
spacious Texas home of the world's champion fiddler, Captain M. J. Bonner. With
true hospitality, the great oak door was
opened by the Captain himself. Further
greetings were extended by his estimable
wife and mother of their two daughters
and five sons.

wife and mother of their two daughters and five sons.

Captain Bonner, seventy-eight, yet not appearing a day over fifty; here, indeed, is no senile dodderer striken with relentless years. Emphatically the opposite, his frame shows plainly that time has only seasoned him. His eyes are as bright as when they first sighted along his gleanding rifle barrel. And his back is as straight as the arrows shot after him by the Indians. Hair and goatedgrey, yes; but one, somehow, feels that always this has been their color. Trim, snugly shod feet, in a size that milady might covet.

#### KDKA, WORLD PIONEER

KDKA, WORLD PIONEER

(Continued from page 5)
established the new profession of Radio announcing, and now there are several co-announcers for announcing the programs from the various studios. His exceedingly clear enunciation and clear, middle register voice, the "quiet American voice," as one Australian admirer calls it, have been great factors in making the station so popular to people in distant lands, especially the English speaking countries.

Fran. E. Mullen, whose "good evening," everybody; how are you all tonight?" is known from the trading posts of the Arctic coast to the equator, is director of the Stockman-Farmer studio. His summary of the day's news, given every week day at the closing livestock and produce market report period, has been the means by which isolated people such as the lonely sheep herders in the Rockies, and traders and trappers in the north country, have been able to keep in touch with daily events in the world.

Miss Mary Frances Philput, director of the University of Pittsburgh studio, is responsible for the courses of educational addressed given from that studio by members of the university faculty.

P. A. Boyd is director of the Post studio, the downtown studio, where most of the musical programs are broadcast, and he arranges the popular musical and theatrical programs broadcast twice a week ofter the theater closing time.

#### Vets' Hospital Completely Equipped with Radio Sets

Equipped with Kadio Sets
FORT EAYARD, N. M.—The Radio
installation in the U. S. Veterans Hospital
No. 55, Fort Bayard, New Mexico, is
unique, allowing as it does over 500 patients to listen, individually or collectively, to Radio programs broadcast fromall parts of the nation. At the heads of
256 beds are installations for telephone
head sets, this circuit being left open
from 7:00 p. m. to midnight. Sixteen
loud speakers throughout the assembly
rooms and general wards are discontinued at 10:00 p. m.

Bonner Photo by Ker Our talk drifted back to the stirring days of '63 when Bonner was a courier in the Twelfth Texas cavalry in "Buck-skin" Parson's regiment; back to the days of buffalo hunts, cattle stampedes, hostile Indians and the long, long drives up the trail. He was younger then, and if life was cheap, living was sweet.

Talked, also, of the old fiddlers' contests, when this veteran met all comers and was declared the winner. The Captain's pride is his fiddle and it is this sweet-toned instrument which has assisted in introducing him to, the Radio public. "You will call it a violin, I reckon," he said. "No, we shall not," we retorted, remembering that a rose by any other name would be as sweet. The captain looked pleased.

"I've fiddled ever since I can remember," the aged fiddle king continued, "learned from the negroes, playing 'round the cabin doors. The fiddle I play now is 387 years old and I've had it since I was eight years old, and that's seventy years back. It was pawned by its original owner, and brought over to this country by an old German, and through him it came into my possession."

Captain M. J. Bonner is frequently heard over WBAP, the Fort Worth Starteleyram station. Here it was that he introduced, played and had called the first Radio square-dance program. So popular was this program that between four and five thousand telegrams came in every twenty seconds for an hour. Doesn't sound much like a jazz-mad world, obe's it?

"General Station. Here it was that he introduced, played and had called the first Radio square-dance program. So popular was this program that between four and five thousand telegrams came in every twenty seconds for an hour. Doesn't sound much like a jazz-mad world, obe's it?

"General Roman and the server the fidle champion said, "but it's best to try and go by your selected program. The favorites are "Pigure Eight," "Three Little Sisters," "Sally Goodin," "Turkey in the Straw," "Arkansaw Traveler" and "Leather Britches"—and I don't like that last un either, rather

"Leather britches, full of stitches, Mammy sewed the buttons on, Daddy whipped me out of bed, 'Cause I had my britches on."

'Cause I had my britches on."

But Captain Bonner does not live and think only in retrospect—indeed, no! He is actively engaged in business and his plans as laid far into the future. Before the ink on this page is dry, he will have made records for one of the leading concerns of the country, and will be crossing the continent to fill other engagements.

Records of the old songs, "lonesome tunes" and square dances—which generations yet unborn will cherish; tunes that were prime favorites in this country when your grandmother and ours were young. Truly American folk songs are these.

#### Head Sets Replace Loud Speaker in Train Coach

speaker in Train Coach, allowing as it does over 500 pato listen, individually or collectron Radio programs broadcast from the State of the nation. At the heads of des are installations for telephone sets, this circuit being left open 7:00 p. m. to midnight. Sixten the speakers throughout the assembly and general wards are discontinued and general wards are discontinued 100 p. m.



#### GIVE FAREWELL TO **POLAR NAVIGATORS**

WHT HOLDS PROGRAM FOR BIG ARCTIC EXPEDITION

Broadcast for Adventurers as "Bowdoin" and "Peary" Prepare for Long Journey

CHICAGO.—A special farewell program dedicated to Lieut. Commander Donald B. MacMillan's polar expedition was broadcast from Superstation WHT, Wrigley building, Chicago, on Wednesday night, June 17, between the hours of midnight and 1 a. m. Rev. Gardner MacWhotter was in

Gardner MacWhorter was

building, Chicago, on Wednesday night, June 17, between the hours of midnight and I a. m.

Rev. Gardner MacWhorter was in charge of the program arrangement and arranged farewell speeches by Capt. Waldo Evans, commandant of the Great Lakes Naval Training station, former mayor William Hale Thompson, Frederick Clerk, superintendent of New Trier high school and life long friend of Lieut. Commander MacMillan.

The WHIT program consisted of Revolutionary war songs, classical and popular music, vocal solos and Husk O'Hara's Red Dragon orchestra in an appropriate selection of melodies.

The two ships in the MacMillan expedition left. Boston harbor at noon June 17 as the main feature of the Bunker Hill Day celebration.

Thirty-Three to Sall

Among those aboard the S. S. Peary and S. S. Bowdoin, and to whom the program was dedicated, are: U. J. (Sport) Hermann, manager of the Cort theater; Lieut. Commander Donald B. MacMillan, Lieut. Com. Byrd, U. S. N., who will be official observer for the Navy department and will be in charge of the three amphibian planes carried by the expedition; Lieut. Com. Eugene F. MacDonald, U. S. N. R., who will command the Peary; Capt. John Steele, an experienced polar navigator, who will command the Bowdoin; Raiph Robinson, first assistant to Commander MacMillan; John M. Jaynes, chief engineer, and a crew of twenty-four.

John L. Reinartz, short wave expert, was appointed way last January as first operator in charge of Radio on the MacMillan arctic expedition. Since this appointment, Commander MacDonald combed the entire United States in an endeavor to find a second operator who would be in charge of Radio on board the entire United States in an endeavor to find a second operator who would be in charge of the davance airplane base.

Paul J. McGee, a Radio engineer in Centilt's own organization, was discovered to possess exactly the qualifications needed and was appointed to the position.

#### Amateur Hears Bowdoin

Amateur Hears Bowdoin
BIRMINGHAM, Ala.—John H. Newman,
Radio amateur of Mobile, Ala., is believed
to be the first amateur in Alabama to pick
up Lieut. Commander MacMillan's ship,
the Bowdoin, as it was preparing to enter
the Arctic ocean. He kept in communication with the vessel for some time.
Mr. Newman heard the Bowdoin's signals shortly after midnight on a 40-meter
wave length.

#### U. S. AND CANADIAN RADIO BOSSES



#### Largest Organization of Fans Is in London

League Has Free Insurance for Sets of Members

LONDON, England.—Little doubt now remains that the wireless league recently formed here will soon be the largest association of Radio fans in Europe, if not lin the world.

The primary object of the league is to obtain for the listener a voice in the management of broadcasting and to protect him against any interest or authority which tries to impose upon him. The second object of the league is to provide practical, technical and legal assistance for members by means of expert advice.

The league has arranged for its members a free insurance covering damage by fire or lightning of Radio sets, aerlals, and accessories up to a value of \$125, and third party risks (persons and property) in connection with Radio sets and aerials up to \$500 in respect of any one accident.

#### NEW ETHER LAWS BEING PREPARED?

Department of Commerce Has Judge Davis Busy on Bill,

### **BROADCAST AT WGY** ON 4 WAVE LENGTHS

1660 TO 38 METER RANGE IS USED FOR EXPERIMENT

Ask Fans to Report Reception Obtained on Different Waves for Re-search Work

on Different Waves for Research Work

SCHENECTADY, N. Y.—All programs of WGY here may now be found on four wave lengths. Experimenters in the field of Radio are thus afforded an opportunity to compare the same program under similar conditions, but with differences in power and frequency.

Evening programs of the General Electric company's eastern station, are going out on four channels as follows: WGY. 379.5 meters; 2XAF, 38 meters; 2XX, 109 meters; 2XAF, 38 meter heavy lower three groups of call letters are special experimental licenses of the company.

Continue Research

Tondonate Research

Tondon

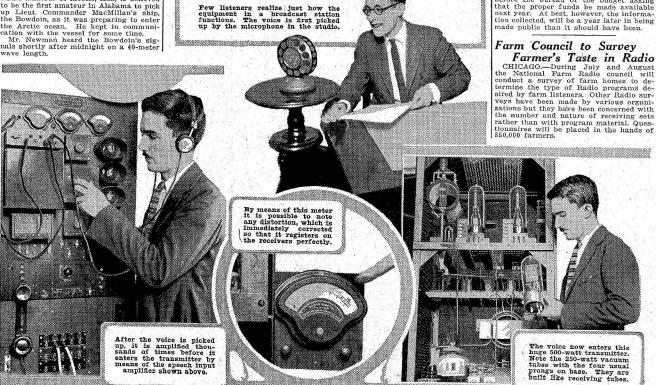
#### TIGHT PURSE STRINGS **DELAY FARM CENSUS**

Congress Allows No Money to Tabulate Radio Data

WASHINGTON, D. C.—Because of lack sufficient money from congress, the rm Radio census which was recently ken by the bureau of the census for the st time, cannot be tabulated and made

first time, cannot be tabulated and made public.
All of the data has been collected but it will cost several thousands of dollars to tabulate and disseminate this information. Sufficient funds are not available. Director Stewart of the bureau has gone before the bureau of the budget asking that the proper funds be made available next year. At best, however, the information collected, will be a year later in being made public than it should have been.

Farm Council to Survey



# TECUMSEH, INDIAN TENOR, AT KJR

#### Saturday, July 11

But the sample was a second

Saturday, silent night for; CNRT, KFAE, KFDM, KFUO, KFWA, KLDS, KLX, KOA, WBAP, WBAV, WBZ, WGAU, WGBO, WCX, WDWF, WEAD, WEEI, WFI, WHAD, WHX, WHX, WHY, WTY, WKAQ, WLIT, WMAK, WOAN, WOO, WSUI, WTIC, WWJ.

#### Atlantic or Eastern Daylight Saving Time Stations

CKAC, Mantreal, Can. (410), 7 p. m., "Hygiene," in Fronch and English; 730, Harry Salter and his Wind-sor hotel connect orchestra; 8:30, stadio program; Quebec Aktractions for Tourists"; 10:30, Windsor hotel

Quebec Attractions for Tourisis"; 10:30, Windson hoted dance orchestra. 435, 8 p. m., Chiteau Laurier Carlot Quebeck, and Carlot Carlot

concert, William Fenn note; 5-209, St. John ener-William Vork, N. Y. (481-5), 4-5 p. m., E. J. Dantzik, and his Brooklyn Elke dub ordestra; 6-7, dinner music, Waldorf-Astoria; 7-715, Ethet-J. Lifeth, Jinnik, 7-15-129, Queen Trofford, seprence Dulg, tenor; 7:50-8, Mattida Zimher; 8-3-15, George Dulg, tenor; 7:50-8, Huyler's Forenost Four; 8:43-1015, concert, U. S. Army band, dictition of Sweeney, bartions; 19:30-11, henorous half hour; 11-12, Vincent Lopez Hotel Pennsylvania orthestra.

henorous half hour; 11-12, Vincent Lopez Motel Pennsylvania orthesta.

WGBS, New York, N. Y. (315.6), 3-4.

WGBS, New York, N. Y. (315.6), 3-3.

Horarous 96-30, Unde Geebee, 6:30-7. Renominas 19-630, Under Geebee, 6:30-7. Renominas 96-30, William 19-630, Surpan Quartet; 8:40-8:30, Lilliam 18-800, 8:93-8:40, Smyrna Quartet; 9:16-9:20, Virginta Lefevre, controllor; 9:30-9:30, Gustaliam 19-8:40, Smyrna Quartet; 9:16-9:30, Virginta Lefevre, controllor; 9:30-9:30, Gustaliam 19-8:40, Smyrna Quartet; 9:16-9:30, Gustaliam 19-8:40, Smyrna Quartet, 19-10,

WHN, New York, N. Y. (2007); 10. M. Junchean music program. WIP, Philadelphia, Pa. (508.2), 1. p. m., lumchean music from Steel Pier; 3, some of the surf; 3.30, Confort's Trom Steel Pier; 3, some of the surf; 3.30, Confort's Confort's Philamentic Confort's Philamentic Corchestra; 43, 500 of of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli's band; 10.95, Howard Lamin's dance programs of the surf; 8.50, Veselli

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

Program. VIA. N. Y. (454.3). 4-4.09 p. m., baseball program. VIZ. New 5.33-6. daily rapacts; 6-5.92, baseball scores; 6-6.92, baseball scores; 6-6.92, baseball scores; 6-6.92, baseball scores; 6-6.92, baseball scores; 8-02-8-25, "The Night AI Mail," Paul Hendrown; 825-10-90, concert from Lewisoln shadium; 10:30-11:30, Joseph Knecht's Waldorf-Astoria roof orchestra.

citestria S.S.242, Baragonii scores; SULS-SSS, Come Afford Lewisolin stalium; 10:30-11:30, Joseph Knecht's Wal-dorf-Astoria reof orichestra. WHACA Nove. Frank Skt; 4:300-4:45. Frank Skt; 6:305-7:30, Amphinas critestra; 7:30-7:45, Leonard Hoeminger, battone; 7:39-58, Engliss Die Rosa; 6:31-16-26; Gene Ulrina; Sorchestra; 11-12, Ernic Golden and his Hotel Mealpin concentra; 11-12, Ernic Golden and his Hotel Mealpin concentra; NNYC New York N. V. (3:20, 3-7:25 D. m. police alarms; 7:33-8, dance prorram; 8-3:15, talk; 811-10-15, concert from the Mall, Central Park; 10:15-10:30, popular songs; 40:20, 7:315-7:30 D. m., sports (a)8, Bill Wathey; 7:30-8, the Commanders.

Call, Bill Wather; 7:308-2, hr Company, p. m., sports (Lik, Bill Wather; 7:308-2, the Commander Daylight Saving Time Stations (EDKA, Pittsburgh, Pa. (309.1), 2:30-5 n. m., baseball scores; 7, baseball; 8:45, Westinghuose Employees hard; 9:35, baseball (400), 8:30 n. m., concert or-PWX, Havaman, Cuba (400), 8:30 n. m., concert or-WBBM, Chicago, III. (220), 8:12, Sunset male quartet; Samovar orchestra; Dava Nudelman; Crillon orchestra; Cort Hanks, titulete soldist; Leo Matise, Havaffan Charlie Garlind, Plantist, Plant Morris, Polly Willis, John Poat, Eddie WCX, Detritt, Mihc. (516,9), 2:30 n. m., Amstater, M.

#### Headliners of the Week

ATURDAY is the time for another exhilianting meeting of the Lost Angels at KHJ. Freeman Lang, chief angel, has gathered together a group of congenial spirits all guaranteed to be thoroughly lost. Esther White, blues singer, and Hardle Hynes, reader, will be the chief entertainers. The Lost Angel orchestra will play.

old Hynes, reader, will be the chief entertainers. The Lost Angel or chestra will play.

These summer Sunday evenings are a real pleasure to the fan with the Radio set when he can sit out on his cool screened-in porch and listen to concerts as fine as those sponsored by WGN. The Drake concert ensemble is always worth listening to and this station has a happy faculty for picking out the right artists to entertain together.

The Grand Lodge convention of the B. P. O. E. at Portland, Ore, begins Monday. The entire opening session from 8 to 11 p. m., will be broadcast by KGW. Various programs during the week will be influenced by this influx of Elks. WHAZ has enlisted the help of Mrs. John Vaughn, reader and Elva C. Vincent, violinist, Monday evening, to give the fans an unusually fine program. A quartet will also sing at Troy.

"Sweet and Twenty," a delightful little skit produced by the Theater Workshop will be the Tuesday feature at WRC. The Aeolian Duo is this evening's feature at WBZ. This

Duo was so well received upon their last appearance that they have been invited to broadcast again.

Wednesday offers many special features this week. The Serenaders' Plectrum quintet, a famous old mandolin orchestra, well known and liked in New York, makes its Radio debut at WAHG. The lowa State Ladies' Radio quartet composed of four singers chosen from among the best in Radio quartet composed of four sing-ers chosen-from among the best in the state of Iowa, will appear at WHO. Kiutus Tecumseh, an Indian tenor, who is fast working his way into the grand opera class will be heard this week with his talented Esikimo accompanist, Simeon Oliver, at KJR and KFOA, Seattle. These two musiclars are soneoged by WIS.

Eskimo accompanist, Simeon Oliver, at KJR and KFOA, Seattle. These two musicians are sponsored by WLS. WJZ will entertain the children Thursday, with music especially adapted and interesting to the little folks. Harriet Ayer Seymour is in charge of this attractive 5 o'clock program. Finish off the evening at WSMB, New Orleans with the New Orleans Harmony Kings and the Sunshine Twins.

"How to Dress for Mountain Needs," is the talk scheduled by the Colorado Mountain club Friday, at KOA. This will be pertinent to the camper and climber, who does not wish to carry extra luggage. The Princess Anne Academy male quartet is the Friday feature at WOO, Philadelphia.

WORD, Batavia. III. (275), 8 p. m.; Webster hotel orchestra and concert.

WOL, Chiesee, III., (447,5), 7-5 m.; Ralph Williams
and the Relevant of the Concern of the Conc

WGY; 10, Innet anytome Walling and partial state of the Manufacture of

F. Stanley: 9:15, Bleycle playing card sextet; 12, Penular Decrease Onice (388.4), 6:7 p. m. Heide Statler concert orchestra; 8:4, studio program; 9:12, Ev Jones and the Coo-Coo club. WTAS, Etcin, Ht. (302.5), 8:10:36 p. m., Ton Rudolm WTAS, Etcin, Ht. (302.5), 8:10:36 p. m., Ton Rudolm MTAS, Etcin, Ht. (352.7), 3 p. m., Detroit News orchestra; 3:55, baseball.

#### Central Standard Time Stations

Central Standard Time Stations

KFAB, Lincoln, Nebr. (240), 11-12:30 a. m., midnight
rounders, meandeah, Iswa (265), 7:30 b. m., concert from
Cregon, James R. Pettljohn, director.

KFRU, Bristow, Okla. (363, 5), 7:30-8 p. m., Sunday
exhool losson; p.12; music.

KFRU, Bristow, Okla. (343, 1), 7 p. m., program and stato,
connecty.

KSD, St. Louis, Mo. (345, 1), 7 p. m., program and stato,
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KSD, St. Louis, Mo. (345, 1), 7 p. m., program and stato,
connecty.

KSD, St. Louis, Mo. (345, 1), 7 p. m., program and stato,
city club.

KTHS. Hot Springs National Park, Ark. (374, 8), 9:159:25 p. m., bussball results; 9:25-016. fl. dance selectry.

KYLW, Chicago, III. (336), 6-6:30 p. m., Congress hetal
dinner connect: 7:28, White Arnold Trier, soprano; W.

KYW, Chicago, III. (336), 6-6:30 p. m., Congress hetal
dinner connect: 7:28, Pully Arnold Trier, soprano; W.

WCCO, Minneapolis-St. Paul, Minn. (416.4), 6 p. m.,
hasebull socress: 6:30, Otisinal George Obsober's Nocelle
badd ovchestra: S. musicata: 9, banchull: 10, Dick
WMOAF, Kansas City, Mo. (355, 6), 6-7 p. m., address,
Rogre W. Babson; Tell-Me-a-Story lady; Raft Coleprogram, Davers; Johnute Campbell's Kansas City
et al. Programs of the construction of

WHAS, Louisville, Ky. (399.8), 7:30-9 p. m., Scotts-burgh, Ind., night, Frances Sellers, director; baseball. WMC, Memphis, Tenn. (499.7), 12:30 p. m., musted program, O. K. Houck Plane company; 8:30, concert, Wannphis Plectrum orchesta, R. L. Sharp, director. Works Charles, 1997,

his orchestra; 7:30, speakers more places Omaha Printing company; 11, 4thur Hays, orwands places Omaha Printing company; 11, 4thur Hays, orwands places of the places of t

#### Pacific Standard Time Stations

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Pacific Standard Time Stations

KFOA, Seattle, Wash. (484.3), 6-6-35 p. m., baseball results; Olympic hold concert ordestris; 6:45-8:15, Rhodes Department store program; 8:30-19, Times days and the state of t

guitatif, Albert Sheia, concertina goldst. Ned Santry, WCEE, Esias, H. (725), 10-32 middated, Lawrence dance program, Jee Rodolph and the Basy Own or Company of the Compan

#### Sunday, July 12

Sunday, silent night for: CKAC, CNRT, KFAB,
KWCAE, WCAC, WCEE, WCX, WY, PXX,
WCAE, WCAC, WCEE, WCX, WNAF, WCAE,
WEBJ, WFI, WGBS, WGR, WHAD, WHAS,
WIF, WLIT, WMAK, WMAQ, WMC, WOO, WOR,
WRC, WFAD, WSAI, WSMB, WTAM,

Atlantic or Eastern Daylight Saving Time Stations

WBBR, New York, N. Y. (272.6), 130 a. m., Walchioser ordestra; 19:30, L. Marlon Brown, sugrams; 10:30, Bible lecture, Jodge Rutherford; 11, L. Marlon Brown, soprano; Walchiower orchestra; 9 p. m., Instrumental selection; choral singers; 9:20, Fred Twroseik, tenor; 10:30, Bible lecture, Judge Rutherford; 10, choral dragers; 21:30, Instrumental selection; 10:20, choral dragers; 21:30, Instrumental selections; 10:20, choral dragers; 21:30, Instrumental selections; 10:20, choral dragers.

singers, survey, singers, WCAE, Pittsburgh, Pa. (461.3), 3 p. m., People's Radio Church services; 6:30, dinner concert, William Penn

Wöße, Pittsburgh, Pa. (461.3), 2 p. m., People's Radio Church services; 6:30, dimor concert, William Pittsburgh, WDWF, Providence, R. I. (440.3), 10 a. m. echimes; 5 WDWF, Providence, R. I. (440.3), 10 a. m. echimes; 5 WEAF, New York, N. Y. (491.6), 3:-5 m. echimes; 5 WEAF, New York, N. Y. (491.6), 3:-5 m. echi-sunday Hymm Sing. Federation of Churches; 7:29-515, Goldman Mis Gang, Capital theater; 9:15-10:15, Goldman WEEI, Boston, Mass. (470), 7:30 p. m., Bosy and his Gang, S:30. Goldman band, WFI, Philadelphia, Pa. (304.5), 10:29 p. m., Bosy and his gang; 8:30. Goldman band, WFI, Philadelphia, Pa. (304.5), 10:29 a. m., services, WEI, Bridsdelphia, Pa. (304.5), 10:29 a. m., services, WEI, Philadelphia, Pa. (304.5), 10:29 a. m., services, WGBS, New Yorkhodis, Spissonal church. Pricadilly theater programs, 05:20, 3:39-4:39 p. m., Piccadilly theater programs, 05:20, 3:39-4:39 p. m., Piccadilly theater programs, 05:20, 3:39-4:39 p. m., pricadilly theater programs, 05:20, 3:39-4:39 p. m., brot served rectal, Sesside hold thrig; 2:15, sermon, Rev. WHAR, Atlantic City, N. I. (275), 2:39 p. m., short served rectal, Sesside hold thrig; 2:15, sermon, Rev. WHAR, Atlantic City, N. I. (275), 2:39 p. m., short served rectal, Sesside hold thrig; 2:15, sermon, Rev. WHAR, Atlantic City, N. I. (275), 2:39 p. m., stort served rectal, Sesside hold thrig; 2:15, sermon, Rev. WHAR, Atlantic City, N. I. (275), 2:39 p. m., stort served rectal, Sesside hold thrig; 2:15, sermon, Rev. WHAR, Atlantic City, N. V. (360), 1-1:39 p. m., stort served rectal, Sesside hold thrig; 2:15, sermon, Rev. WHAR, Atlantic City, N. V. (360), 1-1:39 p. m., stort served rectal, Sesside hold thrig; 2:15, sermon, Rev. WHAR, N. V. (360), 1-1:39 p. m., stort served rectal, Sesside hold thrig; 2:15, sermon, Rev. WHAR, Atlantic City, N. V. (360), 1-1:39 p. m., stort served rectal, Sesside hold thrig; 2:15, sermon, Rev. WHAR, N. V. (360), 1-1:39 p. m., stort served rectal, Sesside hold thrig; 2:15, sermon, Rev. WHAR, Sad Juan, P. R. (305.2), 10:35 p. m., stort serve

WKAQ, Sas Junn, P. R. (340.7), S-10 p. m., Mimicipal band concert, ore, k. V. (340.7), 1.12 p. m., service of the property of

Eastern Standard or Central Daylight

Saving Time Stations

KDKA. Pitthburgh Pa. (309.1). 9.43 a. m. First
Dappitst church p. m., baseball; 7. First Church of
Christ Scendati. (226). 4-5 m. missed after
WBBM. Chleage. In create the control of the

# ELKS MEETING BROADCAST BY KGW

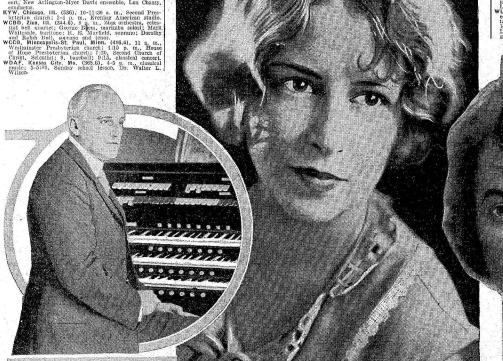
#### Sunday, July 12

(Continued from page 8)

White; 9, Any E. Winning, organist; Nora LaMar Moss, controller, Torleis Young, tenor; 9:25, sermon, Milliam Register, State Country, tenor; 9:25, sermon, King, Milliam Santonal Park, Art. (374.8), II La. III., 10 12 pt. III., services, Pirst Presbyterian church, Rev. Chauney Mickob, baster, Frances Hardin, or-panist; 9:11-5-23, bastebul; 9:12-10, classical con-cenductor. Aringian-Myer Darks encoulte, Lun Chassy.

sopram: John Clark, battirors 8:45, Blimer Kalter's Rivertew Park, ballroam, oedenira; 10:15, minises from WHT, 10:36, Chicago Bousters; Al Carmey; erganist; Davida Boyd, whistler; Geisle Brothers; 11, Waller Danwan, tosor; Grait Stockenberg, harmonica phonolis; Husk O'Hare's Red Drugons orclestra; 12, Pet Barnes, Irish melodites; Chicaro specialites; Johnson Williams, Al Carney, organist; 1, Al Carney, burtle and ups. Al Carney, organist; 1, Al Carney, WIJD, Mooscheart, Ill. (302, 9), 6:35-7:15, p. m., dinner concent; 7:15-8, Mooscheart Nevelty orchosira; Belmont correstors; Absert F. Brown, organist captal and ups. WKRG, Gincinnati, Ohio (325), S. p. m., musical program, members Robert D. Bently Past, American Cornects train Shaber F. Brown, organist spatist, and the Cornect Cornect Control of the Cornect Cornect Control of Cornect Cornect

Post of the Beating of the



Robert H. Prutting, organist and choir-master of the First Methodist church and professor of theory at the Hartford Theological seminary is giving the organ concerts Tuesdays at WTIC, Hartford-

concerts Tuesdays at WHIG, Hartford.

WFAA, Dallas, Texas (475.9), 6:364-7:30 p. m., Radio Bible class, Dr. William Anderson; Bible study, sospial substitution of the control of the cont

Rev. R. R. Brown; 9, chapte services, Hope mission that the control of the contro

Mountain Standard Time Stations
KFWA, Ogden, Utal (201), 8-11 p. m., musical program, Chamber of Connectes.
KFWA, Ogden, Utal (201), 8-11 p. m., musical program, Chamber of Connectes.
KGA, Deaver, 60d. (322A), 11,300 a. m., Augustana Lutheran church; 3, Augustana Lutheran church; 3, Augustana Lutheran church.

Definition of the Control of the Con

Fran, Beverly Hills Autscrees, Tole Ludovishs strular, KPO, San Francisco, Califf, (428.3), 6-6:330 n. m., States restaurant exchestra; 6:30, baseball scores; 6:35-7:30, Palace hotel concert ordestra, Cyrus Trophe, direct y-8:30, Palace hotel concert orchestra; 8:39-10, Rudy Sefger's Fairmont hotel orchestra.

#### Monday, July 13

Monday, slient night for: CKAC, CNRT, KFAE, KFDM, KGW, KHJ, KLDS, KYW, PWX, WBAV, WBBM, WBCN, WCAU, WDWF, WEAO, WBBH, WEBJ, WFI, WGN, WGBS, WGES, WHAS, WIBO,

Dorothy Dunyon, violinist, will broadcast from KGO, Saturday, July 11. Albertine Schmidtke, soprano, is as vivacious and pretty as she sounds over the microphone of WWJ, Detroit.

WIP, WJY, WKAQ, WLS, WMAQ, WMBB, WOC, | WOAI, WQ, WRC, WREO.

WIF. WIX. WKAQ. WLS. WMAQ. WMBB. WOC. WOAL WGI, WRC, WREO.

Atlantic or Eastern Daylight Saving Time Stations

CHNC, Toronto, Can. (396-7), 8 n. m., OHNC orchestra; Gercard J. Kally, tenor; Dwight Wilson, bartione, sports laft, Thornton Pister, 7:45-8, Mrs. Amy Mitchell, soprato; 8-815, Horace J. Tayler, reader; 8-15-9, Snychrophase string trio; 9-415, Norman Orasyon, 11:30, dance string trio; 19-10:50, dance music; 11:30-11:30, dance music; 11:30-11:30, dance music; WBBB, New Yorks, Toute Monbaid and Elizabeth Awad; 8:10, vocal selections; 8:20, World News Dipest; 8:30, vocal selections; 8:20, World News Dipest; 8:30, vocal selections; 8:20, World News Dipest; 8:30, vocal selections; 8:40, "The Harp of God," Bible instruction; 8:50, Syrlan Oriental music, dimer concept, with the selection of Syrlands and Silvabeth Awad; 8:10, vocal selections; 8:20, world, one of the control of the selection of God," Bible instruction; 8:50, Syrlan Oriental music, dimer concept, within the selection of Joseph Plunis and Silvabeth Awad; 8:10, 4:

with the control of t

eral Pershing's staff.

WGR, Buffalo, N. Y. (319), 2-30-4-30 p. m., WGR's
atternoon program; 6-30-7-39, Olympie dance orchestra
9-9-30, plano rectika, Mrs. Carl J. Dickerman; 9-30-10,
John Dodsworth, reader; 10-11, popular program, Royal
Arcanum; 11-1 a. m., supper-dance music, Vincent
Lopez' Hotol Statler dance orchestra, Harold Gisser.

director.

HAR, Attantic City, N. J. (275), 7:30 p. m., address;
Sessade totel thin, N. J. (275), 7:30 p. m., address;
Sessade totel thin, N. J. (360), 7:30-9 p. m., Alla and
lis. WHN orchestra; S-8:05. "Storage Batteries," H.
E. Shontz, S:05-8:35, Roseland dance orchestra; 8:35-8:40, talk; H. W. Carlough, Terminal Barber Shops;
11:11:30, organ rectain, Low's Lexiptort (heater; 12-12:30 a. m., Harry Richmand and his Club Kichmand entirtainers.

entertainers.

WIP, Philadelphia, Pa. (598.2), 1 p. m., luncheon music from Steel Pler; 3, song of the surf; 3.59. Comfort's Philharmonic orchestra; 6.05. Benjamir Pranklin consecut orchestra; 7. Uncle Wip's bedtime stories. WIAR, Pravidence, R. I. (305.9), 8 p. m., Berry Spring dunce team; 9, A. & P. Gypsy string ensemble. WIZ, New York, N. Y. (483.4), 4:305-30 p. m., Fred Hall's Royal Petrace occhestra; 5:30-6, daily reports; 6-f. U. S. Navy band; 3:309-350, program, Landay 6-f. U. S. Navy band; 3:309-350, program, Landay

Hall; 10:45-11:45, Jacques Green and his Club Desaville orchestra.
WILT, Philadelphia, Pa. (394.5), 12:02 p. m. dnily
alimane; Stanley the terroit of the Concert orchestra
and the Concert orchestra of the Concert orchestra
4:39. Marcella North, planist; 7:39. Dyram Daddy
beddime stories; 9, Stanley theater hour; moving picture
geriew, Jannes A. Nassau; 10, Arcelia cafe dance or-

beddine stories; 9, Stanley theater hour; moving picture review, Janses A. Nassau; 16, Arcadia café dance or WMCA, New York, N. Y. (340.7), 3-3:15 p. m., Ben Rernard, tenore; 6:30-7:36, Ernic Golden and his Hotel McAlpin orchestra; 8-9, lecture, Birst Church of Christ Hotel McAlpin Gride force and the starter; 10-10:30, WNYC, New York, N. Y. (528), 6:50-7 p. m., market high snots; 7-7:25, Orlinal Charleston Five; 7:35-8, think shows a constant of the starter of the s

Martin's band; 19:15-10:30, "Trend of the Times," Dr. Sydney N. Ussher. 2000. Philadelphia, Pa. (568.2), 11 a. m., organ recital, Mary E. Vogit, 12:02 p. m., Golden's crystal tea room Mary E. Vogit, 12:02 p. m., Golden's crystal tea room Golden's band occorett, Walbert Carbestria; 8. Mark Strand theater concert; 9. Goldenan band concert, Walbert Kauppi, cornectist; 10:15, Oulseppe di Bendetto, tenor; 10:30, Hotel Bossett Marine roof crehestra. (20:2), 6:15-7:15, p. m., Ernie Krickett, Cinderella orchestra; 7:15-7:39, sports talk, Bill Wathey; 8-9, Newark Phillarmonic band; 9-10, Al Reid's hour; 10:35-11:30, the Commanders.

Eastern Standard or Central Daylight

Eastern Standard or Central Daylight
Saving Time Stations
(KOK., Pittsburgh, Pa. (399.1), 2:39-5 p. m., baseball;
WEZ., Sorlighteld, Mass. (333.3), 6 p. m., program,
Capitol theater orchestra; 6:30, baseball; 6:52, Capitol
theater orchestra; 8, enouert, Alegno drum enorge; 5:30,
tratlo; Eric Anderson, tenor; William Burbank, accompanita; 9, Eddan Banson, soornor; Mariotet
Gold, Dook Capitol, Banson, soornor; Mariotet
Gold, book Capitol, Bennett B. Schneiter; 9:30, basebill.

9:50, book review, Bennett B. Schneider; 9:50, base-ball, book review, Bennett B. Schneider; 9:50, base-ball, Bennett B. Schneider; 9:50, base-ball, Bennett B. Schneider, Bennett B. Schneider, Bennett B. Schneider, B. Schneide

secroiders.

WGY, Schenectady, N. Y. (379.5), 5:30 p. m. John Fink's Hotel Ten Eyek orchestra; 6:15, "Increasing Fully Hotel Ten Eyek orchestra; 6:15, "Increasing Poultry Froits and Improved Methods," R. C. Ogle 8:35, WGY orchestra; Lealis Joel Haite, contraint, which was a superstance of the contraint of the c

WMAK, Lockport, N. Y. (265.5), 8:30-10:15 p. m., unusicals, Max Freedman. (384.4), 6:30-7 p. m., Fleetwood Radio orchestra; 7-7:30, Pleetwood Radio orchestra; 10:12, dance music, Fleetwood Radio orchestra; 8-9, dance; Refrancia, barlione; Norma Richter, soprance; Herman, Darlione; Norma Richter, soprance; Herman, Darlione; Norma Richter, soprance; Herman, Principal (19), dance fleetwise, 10:11, symboody probability, 10:11,

Contral Standard Time Stations

KFAB, Lincoln, Nebr. (240), 7:30-9:30 p. m., Budd
Hasa, reader; Clyde Davis, violaniat; Otto Kumpt,
barilone; Seward entertainers.

KFAF, Shenandash, Iowa (266), 7:30 p. m., concert,
Henry Field Seed company.

KFUL, Bristow, Okla. (394.5), 7-8 p. m., Oklahoma
ethicational hour, 8-10-30, music.

Clusterion of the contral contral control of the cont Prayer."

KFVE, University City, Mo. (240), 7-8 p. m., Radiocast review, Romaine Fielding; 10, song resital, Goo. Me-

plano trlo; Theodere Festay, reader WCO. Mineaudis-St. Paul, Minn. (416.4), 6 p. m., baseball; 6:46; F. & R. family; 9, weather, baseball; 10, All Star Melody boys WDAF Kansas City, Mo. (365.6), 5:304-43, pp. m., WDAF Kansas City, Mo. (365.6), 5:304-43, pp. m., WDAF Kansas City, Mo. (365.6), 5:304-43, pp. m., which is the control of the control of the control of the dense information period; Planatation players; 11:45-1 a. m., Merry Old Chief and Planatation players; Chirles as City, Athletic citb orderettre. WFAA, Dallas, Toxas (478.9), 6:304-730 p. m., Artie Collins and his Jolly Pirotes; 8:304-9:30, Lilia Griffin, planats.

(Continued on page 10)

# AEOLIAN DUO VISITS WBZ TUESDAY

#### Monday, July 13

(Continued from page 9)

WHA, Madison, Wis. (535.4), 7:45 p. m., community celebration and pageantry, Marie Dicore; "Wissonsin Highways and Rocreation Grounds," Frank A. Camon. WHAO, Milwaukee, Wis. (275), 6-7 p. m., Arthur Richter, organist, 8-0, Marquette university studio

brogram. WHO, Des Moines, Iowa (526), 7:39-8 p. m., Stewart Watson, baritone; Helen Birmingham, pianist; 8-9,



Marion Henke, teacher of vio-lin is one of the musicians who is entertaining the invisible andience of WHAD, Milwaukee. Miss yenke is always waukee. Miss
Henke is always
accompanied by
Florence Henke
Stepnes who is
also a well
known Milwaukee artist.

artists, Dean Holmes Cowper, director; 11-12, organ recital.

WhC, Memphis, Tenn. (489.7), 13:39 p. m., musteal program, O. K. Houde Piano company; 8:39, concert, WOAN, Lawrenschurg, Tenn. (282.8), 9 p. m., Vaughan Radio orchestra; Vaughan male quartet.

WOAW, Omnaha, Nehr. (529.), 6 p. m., Phyllis Griswold, organist; 6:39, McCroyr's popular period; 6:45, organist; 6:30, McCroyr's popular period; 6:45, organist; 6:45, organist; 7:45, organist

Dianist. Leading Autry, Sucopinensis; Jose Sutton, Williams, M. (229), S20 p. m., Bible questions of answers; 845, musical program, WOS, Lefferson Gity, Mo. (40-9), 8 p. m., musical program, Mary Armstrong, (40-9), 8 p. m., musical program, 8-20-10-30, Legis Gapter's Patic Royal orpostram; 8-20-

#### Mountain Standard Time Stations

ANGUNIAM STRUCTURE 11 THE STATIONS (KFWA, Orden, Uth.) (281), 9-11, p. m., studio, program, KOA, Derver, Colo. (322.4), 8:39 p. m., Harbort White and his Silver State orchestra; 7:30, Sandman's hour; 8, Hawnlian presentation, Keystone banjo trio; Alice A. Riley and Domingo Alanom, guitar diesis; KOA, orchestra; "Alleronlinee Excursion through Hawati," Rev. A. G. A. Buxton; Helen Freenam Beckulå, soprancy, Courge Gavin, yold! numbers; talk for nature livers; 2. A. Salmi!

#### Pacific Standard Time Stations

Pacific Standard Time Stations

KFOA, Stattle, Wash. (454.3), 6-6-45 p., m., Olympic
holds concert ordestern; 5-05-515, Stemmen, M.,
holds of the Station of

Arthur S. Garbett, Concentum Lowers, "Inside Dope on Curing Automobile Ills," Louis P. ("Inside Dope on Curing Automobile Ills," Louis P. ("GW ortland, Ore. (991.5), 6-7 p. m., Borrest Taylor Steek company ordestris, 8-11, B. P. O. E. Grand Lodge convention.

KNX. Hollywood, Castudie, 8-11, 628.9, 5-39-6-55 p. m., Wur-KNX. Hollywood, Castudie, 9-15, 16-15 p. m., Wur-KNX. Hollywood, Castudie, 9-15, 16-15 p. m., Wur-Knx. Hollywood, Castudie, 9-15, 9-15, 16-15, 1

#### Tuesday, July 14

Tuesday, silent night fer: CNRT, KFAE, KFNF, KFUO, KFWA, KOA, PWX, WAHG, WBAV, WBBR, WCBD, WEAO, WHAD, WHAZ, WKAQ, WLIT, WMAK, WTAM.

#### Atlantic or Eastern Daylight Saving

Time Stations
CKAC, Montreal, Can. (410), 7 p. m., talks; 7:30, classical concert, Windsor hotel orchestra; 8:30. S. S. Metagama orchestra; 10:30, Windsor hotel dance orches-

classical concert, Windsor hotel orchestra; 8:30, 8, 8, 8, Kretagann orchestra; 10:30, Windsor hotel dance orchest-CMRA, Moncton, Can. (313), 9, p. m., Scottish evening, pipers' band of Truo, A. Victor MacCallum; Moncton male quartet; CNRA, dance orchestra, WCAE, PittShurgh, Pa. (461.3), 6:39, p. m., dinner con-

cert, William Penn hotel; S, program New York; 8:30, Gold Dust Twins; 9, Eveready hour; 10, Grand Opera.
WCAU, Philadelphia, Pa. (278), 6:39 n. m., Billy Hayes Calinsty Tea Garden dance orchestra; 7:30, recital, N, Snellenburg and Oc; S, talk, Clara Zillessen; 10:30. Hilly Hayes and his Cathar Tea Garden dance orchestra.

WDWF, Providence, R. I. (440.9), 8:30 p. m., Ar-

ceri, William Penn hotel, S. program New York, S.30, Gold Dust Twins; 9, Eveready hour; 10, Grand Opera.

Opera.

Pic Al. Philadelphia, Pa. (278), 6:39 p. m., Billy Hayes Catinsty, Tea Garden dance orchestra; Tea, Pecifical Catinsty, Tea Garden dance orchestra; Tea, Pecifical Catinsty, Tea Garden dance orchestra; Tea, Pecifical Catinsty, Tea Garden dance orchestra; Tea, Providence, R. I. (440.9), S:30 p. m., Arctical orchestra, R. I. (440.9), S:30 p. m., Arctical orchestra, N. Y. (491.5), 4-415 p. m., Harold P. Noble, tenes; 4:15-439, Cameron Emilie, pianist; 4:30-5, women's program; 6-7, dinner music, Waldorft, P. Noble, tenes; 4:15-439, Cameron Emilie, pianist; 4:30-5, women's program; 6-7, dinner music, Waldorft, Tilloff, Sold Columbia university lecture; 7:30-5, Knickerbocker quartet; 8:8:30, Abbas trio; 8:39-9, Will, Okahanis Chatheau Stanley; 3:30-16, Pian, Iuncheon musical Park orchestra; 11:30-12, Club Alabam orchestra; 11:30-12, Club

# music; 11-12, Ernic Golden and his Hotel Mealpin wortherstram Vork, N. Y. (329), 6:50-1 p. m., market high spots, 7-7-135, song resthist; 7:55-7:50, baseshall results; 7:30-7:35, police alarms; 7:35-8, municipal talk; 8:103, econect program, 11 a. m., organ results; 7:30-7:35, police alarms; 7:35-8, municipal talk; 8:103, econect program, 11 a. m., organ results; 8:103, and organ; 12 a. m., organ results; 8:103, and organ; 13 a. m., organ results; 13 a. M. Candion's encort orchestra. We may be supposed to the suppose of the s

Saving Time Stations

KDKA, Pittsburgh, Pa. (309.1), 2:30-5 p. m., base-ball; 8:45, concert; 9:55, baseball; 10:30, Grand theater.

Lastern Standard or Central Daylight
Saving Time Stations

KDKA. Pittsburgh. Pa. (399.1). 2:30-5 p. m., baseball: 8:35, concert; 2:55, baseball: 10:30, Grand

WBBM, Chicago, Ill. (226). 8:12 p. m., Sandy Meek.
Scotch tenor; Lester Kelegy; Harry Sonik, biamist;
Cellion orchestra: Sylvide Gainka, sopramy and the second content of the content of the second content of the content

Cay a Bond Hill House orenestra; 19:50, saley talk, but a Machael and Automobile scule, J. J. Arnold, and the program.

WLS. Chicago, Ill. (344-59, 6:39 p. m., Ralph Emerson, organist; 7:5. Ree's Cormissers; 7:36, billaby thmosphere, 19:36, billaby thmosphere, 19:

World's Pontiar Marchas; S:20 sones, Mary Gretchen Wall, Louise Vinta, recommendate, concert, processing, processi

#### Baseball Scores

 $T_{\rm ABULATED}$  below is a time table of the stations giving baseball scores this week. Stations are divided into the different standard times in use. The hours are given in the kind of time in use at each listed

In use. The hours are given in the station:

Atlantic or Eastern Daylight Saving Time Stations

Saturday, July 11: 4:30, WJZ;
5:30, WJZ; 5:40, WPG; 7:15, WOR;
7:25, WNYC; 8, WJZ, WPG; 7:15, WOR;
7:25, WNYC; 8, WJZ, WISH, W

KYW; 3:45, WEAR; 3:55, WWJ; 4, KYW; MWAQ; 4:30, KYW; 5, KDKA, KYW; MAQ; 4:30, KYW; 5, KDKA, KYW; WMAQ; 4:30, KYW; 5, KDKA, KYW; 6, WGN, WES; 6:50, WTIC; 7:30, WEBH, WLW; 9:50, WBZ; 9:55, KDKA; 10, WEBH, WLW; 9:50, WBZ; 9:55, KDKA; 10, WREO.

Central Standard Time Stations Saturday, July 11; 3:15, WHAS; 3:30, WDAF; 4:30, WDAF, WGCO; 8:15, KTHS.

Sunday, July 12; 3:30, 4, WDAF; 6:30, WSMB; 9, WGCO; 9:15, KTHS.

Monday, July 13; 3:30, 4, WDAF; 4:30, WFAA; 5, WDAF; 5:05, WGS; 6:46, WGC; 9, WGCO; 9:155, KTHS.

Monday, July 13; 3:15, WHAS; 3:30, WDAF; 4, WGC, WDAF; 430, WFAA; 5, WDAF; 5:05, WGCO, WDAF; 4:30, WSMB; 9:15, KTHS; 9, WGCO, WCC; 6:20, WOAW; 6:30, WSMB; 9:15, KTHS; 9, WGCO, WDAF; 4:30, WGAF, 4:30, WGCO, WDAF; 4:30, WGCO; 9:15, KTHS; 9, WGCO, WDAF; 4:30, WGAS; 4, WGCO, WDAF; 4:30, WGAS; 4, WGCO, WDAF; 4:30, WFAA; 6, WGCO,

Mountain Standard Time Stations Monday, July 13: 6, KOA. Tuesday, July 14: 6:30, KOA. Thursday, July 16: 6:50, KOA. Thursday, July 16: 6:50 KOA. Friday, July 17: 6, KOA.

Amusuay, July 16: 6:30, KOA.

Padiday, July 17: 6; KOA.

Pacific Standard Time Stations
Saturday, July 11: 25, KNX; 6,
KPOA; 6:15, KPO; 8, KFWB, KHJ,
Sunday, July 12: 6:30, KPO; 8,
KHH; 9, KFWB;
Monday, July 13: 6, KFOA; 6:15,
KPO; 6:45, KGO; 7:30, KGW; 8,
KFWB; July 14: 6, KFOA; 6:15,
KFWB; KGO; 7:30, KGW; 8,
KFWB; KGO; 7:30, KGW; 8,
KFWB; KHJ,
Wednesday, July 15: 2, 3, 4, KNX; 6,
KFOA; 6:15, KFOP, 6:45, KGO; 7:30,
KGW; 8, KFWB, KHJ,
Thursday, July 16: 5:30, KFOA; 6:45, KGO; 7:30, KGW; 8, KFWB,
KHJ,
Friday, July 17: 2, 3, 4, KNX; 6,
KFOA, KPO; 6:45, KGO; 7:30, KGW; 8,
KFWB, KHJ,

Gold Dust Twins; 8-10, Eveready hour; 10-11, grand opera, "Martha," WFAF Grand Opera company; 11-12, Vincent Lopes' Pennysivania ordestra, m., Dan Barnett's orchestra; 7:45-8, Joe Urich, tenor, accompanied by Lou Neddie; 8-815, railrand talk, G. T. Gerr; 8:15-8:30, Rudolph Jostcovitz, violinitz, Norman Williams and Company, and the Company of the Co

sic from Steel Pier; 3, Song of the Surf; 3:39, Comfort's Philharmonic orchestra; 6:09, Benjamin Frank-lin ceneer crehestra; 7, Unde Wij's bedtime stories, 8, Comfort's Philharmonic orchestra; 8:45, Song of the Surf; 8:50, Veselit's band; 1:095, weekly more talk, Ell M. Orowitz; 10:30, Howard Lanin's dance orchestra.

the State S. S. S. Veseth's Dann, 1979, vesety horize orchestra. In Orovits; 1936, Howard Lamin's dense prochestra.

WJAR, Providence, R. I. (305.9), 8:30 p. m. Gold Dust Twint; 9, severable hour.

WAMDASSAGO: BORNEY STATES ST

Warner's Seven Aces, one of Dixle's premiere orchestras, are seen here looking over their first phonograph record. The Aces play regularly Monday nights at 100 Mes. The Aces play regularly or the selection of the control of the con



Left to right they are: "Shnoks" Parks, drummer; C. J. Buckner, saxophonist; El Pritchett, saxophonist; Ealph Bennett, violinist; Byron Warner, directorpianist; Bob Pittman, banjoist; Tumpeter man, ager; Don McBlvain, trombonist; Captain Jimmie O'Neal, bass.

# JAZZ PROGRAM THURSDAY AT WSMB

#### Tuesday, July 14

(Continued from page 10)

TAM, Cleveland, Ohio (389.4), 6-7 p. m., Hotel Statwilding, developing to the total control of the total content of the tot

Ta. Detroit, Mich. (352.7), 6 p. m., dinner concert; meert from WEAF.

KFRU, Britz, Shintz, (394.5), 10:30-12 midnight, fish-ing trip, in trip, in

Janet Maloon, soprano; Irene Polzin, planist; Fiorence Ruth Brown, contraito; Glen Chamberlain, tenor; Mary Pasmore, widmist; Route trio; Radio male chorus; contrained to the sound of the

Vina; Loretta Kerk, pianist; 6:45, Bollevuo Stratford roof garden trio.

WGBS, New York, N. Y. (3(5,6), 8-3:10 p. m., "How to Thee a Manuscript," Hund Herbert; 3:10-3:20, and the strategy of the strategy of



/DAF, Kansas City, Me. (365.6), 6-7 p. m., piant tuming-in number on the Duo-Art; Plantation players in the Markov of Color of the Carl Nordbers', Plantation julies and the Color of the Carl Nordbers', Athletic club orchestral of the Color of the Carl Athletic club orchestral of the Carl of the Carl FAA, Dallas, Texas (475.9), 6:30-7:30 p. m. respec-redcia, Hacultes School of Hawaiian musics 3:30-3:30, p. Behreshal Color; 11-12, rettal, Darte D., Behreshal

A, Daimes A, Dai

Richter, organist.

WHAS. Ludiville, Ky. (399.8), 7:33-9 p. m., concert, Wayne W. Lord and his orchestria: thrift talk; Mrs. New York of the Concert, Wayne W. Lord and his orchestria: thrift talk; Mrs. December of the Concert, Wayne W. Lord Stoke Williams, accompanist; W. D. Carl, Stoke W. Lord, W.

word, Batavia, III. (275), 8:30 p. m., William Hoke, WSMB, New Orleans, La. (319), 6:30-7:30 p. m., dinner

wSMM, New Orleans, La. (319), 6:39-7:39 p. m., dinner musicale.

MNGuntain Standard Time Stations

CNRR, Regina, Can. (359), 8 p. m., Jingle kiddles;
Ross Bauermeister concert parts.

Ross Bauermeister concert parts.

Ross Bauermeister concert parts.

Ross Bauermeister concert parts.

Pacific Standard Time Stations

FOA, Seattle, Wash. (45-33), 46-455 p. m., Olympic hotel concert orchestra: 6:45-8:15, Rhodes Department store program; 8:39-10. Times studio procram (FFWR, Hollywood, Galif. (252), 6-7 p. m., children's hour, Big Borther of ErWills; 8-9, program, Western's hour, Big Borther of ErWills; 8-9, program, Western's Asiro trio, Charles Reuchang, temp. Introduction of the California, Non-Detonating Charles (15), 6-11, Warner Bruss, Folic, direction Charlie Wellman.

Wellman.

KGO, Oakland, Calif. (361.2), 6-7 p. m., dinner concept, Wiley B. Allen company; 8, Magnavox company;

Catherine Jackson, left, is one of the west coast's premier harpists. She is a popular guest at KHJ, Los Angeles. William Anderson, Hawaitan steel guitarist, will be heard at WGES, Friday and Saturday. Alice King, right, is one of the charming sopranos who may be heard at KDKA.

pers Music Trades association; 10-11, Art Hick-s Biltmore hotel dance orchestra, Earl Burt-leader.

mus sittinore notes cance occessiva, cari Butta(MX, Hesboad, Calif. (336.9), 5:28-9-15, p. m., WurHiscr pibe oran saudio; 6:15, travel talk, W. P.
Alder; 6:30-7. Atvater, Kent Radio orbestra, Paul Pinstein, lender; 7-7-30, dinner hour music; 7:30, scram; 10-12, movie night as the Ambandon, Abre Lyman's Cocanut Grove dance orbestra. Pour Lyman's Cocanut (Grove dance orbestra. 10-12, movie night as the Ambandon, Abre Lyman's Cocanut Grove dance orbestra. The Company of the Compan

#### Wednesday, July 15

Wednesday, silent night for: CKAC, CNRT, KFDM, KGO, KLDS, WBAV, WBBR, WCBD, WDWF, WFAA, WFI, WGBS, WGY, WHAR, WHAZ, WIP, WMAK, WMC, WOAW, WORD, WPG, WRBC, WRC, WREO, WTIC,

#### Atlantic or Eastern Daylight Saving Time Stations

Time Stations

CNRO, Ottawa, Can. (435), 8 p. m., Chateau Laurier concert, orchestra; 9, regimental band, Governor Generousert, orchestra; 9, regimental band, Governor Generousert, orchestra; 9, regimental band, Governor Generousert, orchestra, walled foot guards, Chateau Laurier dance dreiert. Walled foot guards, Chateau Laurier dance dreiert. Walled foot guards, Chateau Laurier, Santa, State and Fred Fisher; 8-315, Frederick Weierter, burlione; 8-35-45, Petertum quintet, 10-10-00, descre music, 11-30-11-30, dance music, 11-30-30, dance music, 11

WGAU, Philadelphia, Pa. (228), 6:35 p. m., Hotel Pennsylvania concert ordestaris, F. cential; 10:33, Jack Myers' Whuseld Architects. W. (491:5), 4:445 p. m., Landau', Blossom Hardt serenders 4:345.7 Life Sayting and Swimming. Captain Charles Seully; 6-7, dinner music, Waldord-Astoria; 7:7-30, services, Duited Synapous of America, 7:30-1, concert, United States Army John Troubadours; 10-11, Royal Little symphony; 11-12, Hotel Bossert Marine roof orchestra. Wells, New York, M. V. (233), 8:5:30 p. m., dance States Army, 11-12, Hotel Bossert Marine roof orchestra. Wells, New York, M. V. (233), 8:5:30 p. m., dance serenders; 9:45-10, Doris Sheldon, contrallo. WFI, Philadelphia, Pa. (349-5), 1 p. m., Bellevue Stratford concert trio; 3, "Horses," Dr. William H.

Alice King, right, is one of the charming be heard at KDKA

supper-dance music, Vincent Lopez' Hotel Statler dance with the charming of the heard at KDKA

supper-dance music, Vincent Lopez' Hotel Statler dance with the charming of the cha

songs.

WOO, Philadelphia, Pa. (368.2), 11 a. m., organ rectal. Many E. Vogt; 12:02 p. m., Golden's crystal tea room ordelers; 4:35, organ rectals, Mary E. Vogt; 10:02 p. m., Golden's crystal tea room ordelers; 4:35, organ rectals, Mary E. Vogt; 10:03 flored Spivanta organ rectal, Mary E. Vogt; 10:03 flored Spivanta, Wo E. Newark, N. J. (405.2), 6:15-7:15 p. m. Tiroli thealer ordelerts; 7:15-7:30, sports talk, Bill Wather; 10:15-11, Jascha Gurawthe samplance momentic.

Eastern Standard or Central Daylight
Saving Time Stations

KDKA, Pitsburgh, Pa. (399.1), 2:30-5 p. m.; baseball;
7, baseball; 8:45, Dry Slitz hour of music; 9:55, base-

PWX Havana, Cuba (400), 8:30 p. m., Cuban nary band, WBBM, Chicago, Ill. (228), 8:10 p. m., Maurico Silver-man, tener; Samovar orchestra; Harold Anderson, plano-

WKRC, Cincinnati, Obic (325), 3 p. m., book review, Alice B. Coy; S.15, Lelia LeMarr, planist; S450, popular songs and tearures; 9, Marion McKay's Boot popular songs and tearures; 9, Marion McKay's Boot popular songs and tearures; 9, Marion McKay's Boot with the second secon

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

Central Standard Time Stations KFAB, Lincoln, Nebr. (240), 7:30-9:30 p. m., Harry Snodgrass, pianist; Waikiki trio, Hawaiian enter-(Continued on page 12)

# SERENADER'S PLECTRUM QUINTET, OLD

#### Index to Popular Concerts

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

Atlantic or Eastern Daylight Sav-ing Time Stations Saturday, July 11: 7:30, WHAR; 8:15, WEAF; 8:45, WIP. Sunday, July 12: 7:20, WCAE, WBAF, WEEI; 9, WNYC; 10, WHN, WNYC.

WEAF, WEEI; 9, WNYC; 10, WHN, WNYC; MHN, WHN, Monday, July 13: 6:45, WFI; 7:30, WEBI, WHN; 7:45, WAHG; 8:15, WAHG; 9:15, WAHG; 10: WAHG; 8:15, WAHG; 10: WAHG; 10: WAHG; 10: WHN; 7:45, WHN; 3:0, WCAU, WHN; 7:45, WHN; 3:0, WCAU, WHN; 7:45, WEBI; 8:30, WCAE, WEBI, WFI; 8:46, WIP; 9, WGBS; 10, WGBS; 10:30, WGBS, WGAE; WHN; 8; WAHG; 8:45, WFI; 7, WHN; 8, WAHG; 8:45, WEBI; 9:15, WHN; 8, WAHG; 8:45, WEBI; 9:15, WHN; 8, WAHG; 8:45, WHB; 9:15, WHN; 8, WAHG; 8:45, WHB; 9:15, WHN; 8, WAHG; 8:45, WHB; 9:15, WHN; 9:30, WJZ, FHday, July 17: 6:30, WGBS; 6:45, FHday, July 17: 6:30, WGBS; 6:45, WFI; 7:30, WGBS; 6:45, WHAR, July 17: 6:30, WGBS; 6:45, WFIday, July 17: 6:30, WGBS; 6:45, WFIday, July 17: 6:30, WGBS; 6:45, WHAR, July 17: 6:30, WGBS; 6:45, WGBS; 6:4

WJZ: Friday, July 17: 6:30, WGBS; 6:45, WFI; 7, WGR; 7:45, WAHG; 8, WEAF, WEEI, WLIT; 8:30, WEBI; 8:45, WAHG, WLIT; 9, WOO; 9:30, WHN; 10, WLIT; 10:30, WEAF.

WHN; 10, WLIT; 10:30, WEAF.

Eastern Standard or Central Daylight Saving Time Stations
Saturday, July 11: 8, WBEM, WHT.
SAVING WMEB: 9, WBEM,
WAS, 8:30, WMEB: 9, WBEM,
WAS, 8:30, WMEB: WTAS; 10.
WBEM WKRC, WQJ; 10:30, WCEE,
WGES, WHT, WJJD; 11, WBEM,
WGES, WHT, WJJD; 11, WBEM,
WGES, WJ; 11:30, WCEE, WJJD;
12, WHT, WQJ, WREO, WSAI; 1,
Sunday, July 12: 6:20, WWJ;
WBEM, WTAS; 8:30, WEZ, WMEB;
9, WBEM, WTAS; 9:15, WHT; 9:30,
WMEB; 10, WTAS; 10:30, WGES; 11,
WGES, WTAS; 12, WBEM, WJJD; 1,
WJJD.

12:30, WEBH, WJJD; 1, WIBO, WQJ.
Wednesday, July 15: \$ WEAO, WLS,
WTAS: 8:30, WBBM, WHBB: 9,
WBBM, WTAS; 9:30, WBH, WMBB: 10, KYW, WHT,
10:30, WCBE, WHW, WSAT:
10:30, WCBE, WHW, WSAT:
WHEO, WLS, WQJ, WSAT; 11:30,
WCBE, WBH, WJJD; 12, WGES,
WJJC; 12:30, WEBH, WJJD; 14, WGLS,
WJJ, 12:30, WEBH, WJJD; 14, WQJ,
Thursday, July 16: \$ WEBM,
WTAS: 8:30, WBBH, WJBB: 10,
WTAS; 9:30, WEBH, WMBB: 10,
WGJ, WTAS; 10:30, KYW, WBEH,
WGN, WHT; 11, WHT, WQJ, WTAS;

WILLIS, WLW; 11:30, WEBH; 12, WIEO, WQJ; 12:30, WEBH; 1, WIBO, WQJ; 2; WIEO.

Friday, July 17: 8, WBBM, WTAS; 8:30, WEZ, WEBH, WMBE; 9, WBBM WTAS; 9:30, WMBE; 10, KYW, WEBH, WIBO, WLS, WMBE, WTAS; 10:15, WHT; 10:30, WCEE, WGN, WJJD, WQJ; 11, KYW, WEBH, WHT, WIEO, WLS; 11:30, WCEE, WJJD, WQJ; 12, WEBH, WHO, WQJ; 12:30, WJJD; 1, WQJ.

#### Central Standard Time Stations

Central Standard Time Stations
Saturday, July 11: 7, KSD; 8:30,
WSWB; 9, KFRU, WOAW; 9:30,
WSWB; 10, KFRU, WOAW; 9:30,
WSRB; 11, KFAB, KFRU, KFVE; 10:45,
WSE; 11, KFAB, KFRU, KFVE;
WOAW; 11:45, WDAF,
Sunday, July 12: 9:30, WFAA,
MONDAY, July 12: 9:30, WFAA,
MONDAY, JULY 12: 9:30, WFAA,
WOAW; 10:45, WSB; 11:45, WDAF,
Tuesday, July 14: 6:30, WFAA,
WOC, 8, WCCO, WSB; 10:30, KFRU,
WOAW; 10:45, WSB; 11:45, WDAF,
WOAW; 10:45, WSB; 11:45, WDAF,
WHO, 8, KFRU; 8:30, KFAB, WSMB;
KFRU; 10:45, WSB; 11:45, WDAF,
WHO, 8, KFRU; 8:30, KFAB, WSMB;
KFRU; 10:45, WSB; 11:45, WDAF,
TENERSDAY, JULY 18: 7:30, KFAB,
WHO; 8, KFRU; 8:30, KFAB, WSMB;
KFRU; 10:45, WSB; 11:45, WDAF,
TENERSDAY, JULY 18: 8, WCCO; 9,
WFAB; 8, WDAF; 8: 80, WFAA; 7:30,
KFAB; 8, WDAF; 8: 30, KFAB; 9,
WOAW; 10:45, WSB; 11, KFRU;
11:45, WDAF; 12, KFRU.

Mountain Standard Time Stations

#### Mountain Standard Time Stations

Saturday, July 11: 8, KOA.
Sunday, July 12: 8-11, KFWA.
Monday, July 13: 8, KOA; 9, KFWA.
Tnesday, July 14: 6, KOA; 8, CNRR;
9, CNRR;
Wednesday, July 15: 8, KOA; 9, KFWA.

Thursday, July 16: 9, CNRC; 10, CNRC. Friday, July 17: 8, KOA; 8:30, CNRC.

#### Pacific Standard Time Stations

Pacine Standard Time Stations
Saturday, July 11: 6, KPOA, KHJ;
6:30, KNX; 6:45, KFOA; 7:30, KHJ,
KNX; 8, KGO; 8:15, KHJ.
Sunday, July 12: 6:30, KHJ; 6:35,
KHJ; 6:30, KHJ; 6:35,
KHJ; 6:40, KNX; 8, KNX, KPO;
Monday, July 13: 6, KFOA, KGW;
6:45, KFOA; 7:30, KFAE, KNX; 8:30,
KFAE; 9, KPO.
Tuesday, July 14: 5, KFOA, KHJ;
6:30, KNX; 6:40, KPO; 6:45, KFOA;
7:45, KFWB; 8, KGO, KPO; 8:30,
KFOA; 9, KGW; 9:15, KPO; 10,
KGW.
Wednesday, July 15: 6, KFOA

KGW.
Wednesday, July 15: 6, KFOA,
KHJ: 6:45, KFOA: 7, KNX: 7:30,
KPAE: 8, KNX, KPO: 8:30, KFAE,
KPOA, KHJ: 9, KNX, KPO.
Thursday, July: 26: 6, KFOA, KHJ:
6:30, KNX: 8, KGW, KPO: 9, KNX,
KFO.

Taursday, July 18: 6, KFOA, KHJ; 6:30, KNX; 8, KGW, KPO; 9, KNX, KPO. Friday, July 17: 6, KFOA, KHJ; 6:15, KPO; 6:45, KFOA; 7:30, KFAE; KNX; 8, KHJ, KNX; 8:30, KFAE; 9, KGW, KNX.

William VanHoogstraten is the conductor of the New York P concerts will be tri-weekly features from WJZ, WGY, WBZ. Boswell (below), are three attractive entertainers at WSM of their own skits Monday, June 13. Norma Ruth Hetsch, Dixie contest, recently returned from the national contest at both WLW and WSAI this ; 6:30-7, Atwater Kent Radio orchestra, Paul ein, leader; 7-8, Ambassador hotel concert or-ra, Josef Rosenfeld, director; 8-9, program, Se-7 Trust and Savings bank; 9-11, KNX fature CURTO TITUS and SATINGS OF THE CONTROL OF THE CONTR Thursday, July 16 Thursday, silent night for: CKAC, CNRT, KFAB KFAE, KFDM, KFDA, KFUO, KFVE, KFWA, KOA KSD, PWX, WAHG, WBAY, WCEE, WEAO, WEB WHAD, WHAZ, WJJD, WKRC, WLIT, WOR, WRBC WTAM.

#### Atlantic or Eastern Daylight Saving

(SAD, PWX, WAHG, WEAV, WCE, WEAO, WEBI, WHAD, WHAZ, WIJD, WKRC, WLIT, WOR, WBBC, WTAM.

Atlantic or Eastein Daylight Saving

Class Railways Can. (410). 9 p. m., canadian Nathard Control of the Control

Room ordestrin; 4:45, organ rectial, Mary E. Vogt. 7:30. A. Candidori's concert orchestra. 7:00. Candidori's concert orchestra. WOR. Newark. N. J. (405.2), 6:16-7:15 p. m., Tom. Compre's Country club orchestra; 7:15-7:30, spects talk, Bill Wattey.

Eastern Standard or Central Daylight

Saving Time Stations
KDKA, Pittsburgh, Pa. (369.1), 2:38-5 p. m., baseball;
7, baseball; 8, farm program, National Stockman and
Farmer studio; 9:55, baseball; 10:15, concert from
Wilson

, baseball; 8, farm program, Naumai Sameri Framer studio; 9:55, baseball; 19:15, concert from Willow. Willow. Well M. (2:5), 8:12, m. Samoru erghener; Sandy Meek, Scotch cener; Larry Soudit; Crillichestra; Sandy Meek, Scotch cener; Larry Soudit; Crillichestra, Mariles H. Awditan cultarist; Marie Winter, plants; Honky Tonk; gloom chasers; Charlie Garland, plantat; Albert Blaha, con-

guilarist; Marie vanesse, planist; Albert Binne, con-chasers; Charlie Garland, planist; Albert Binne, con-chasers; Charlie Garland, 233.3), 6 p. m., Leo Beis-man; Hotel Lema vensemble; 6.36, baseball, 7.36, United States Marine band, WRC, W3Z, WGX; 9, mited quartet, William Blis Weston; 256, baseball, WGBD, Zion, Ill. (344.6), 8 p. m., saxophone quintet, celestial beti quartet, ladder cherus; John McBloro, centralto; Ide Peterson, soprano; Sydney Stowart, violinist; Wesley Carey, reader; Richard F. Hire, planist. — Mich. (516.9), 4:15 p. m., concert: 6,

\*\*North Author (1984) 1.3 B. h. m. sacquadne stuffer, sacopholist; vocal due, Carry Sisters; Builth Carey, entirality; Vocal due, Carry Sisters; Builth Carey, entirality; Wesley Carey, reader; Richard F. Hire, valuntial; Wesley Carey, reader; Richard F. Hire, WCX, Detroit, Mich. (516.9), 4:15 p. m., concert; 6. dinner concert, Rook-Calillae heist; 1:30, band con-line with the concert of the concert

DANCING
(Central Time)
tral Standard Time)
turday July 11: 8,
Wmbb Wpg, Wtas:
Wpjs 8:30, Ksd.
h, Whaz, Wjz; 9,
bf Wnica, Wor, Wpg.
Wis; 9:25, Kths;
Wcce, Weaf, Wges,
h, Wjjd: 10, Kpo,
hg, Wees (10:30)
bl, Wges; 11, Kfab
e, Wfan, Wjjd.

#### Wednesday, July 15

(Continued from page 11)

rs. Mrs. Hazel Miller and Frank Carrell; Colonian The state states and real cannot combined the friends at the combined of the c

March of Progress."

KFVE, University City, Mo. (240), 7-8 p. m., Radiocast review, Romaine Fielding; 10, "Orchestra Romaine."

KSD, St. Louis, Mo. (545.1), 7 p. m., Silverman's ora. Hot Springs National Park, Ark. (374.8), 9:25 ... classical recital, New Arlington-Meyer Davis,

i., ciassical recital, New Arlington-Mayer Davis, unential quartet. Officage, ill. (536), 5 p. m., children's hour; 6. Congress hode; 6: 333-345. 'Entertaining Pians,' (Stephenson) 9: 11:30, midnight revue; Albert Hay tte, organist.

D. SCHRIMERSON, 2-11.007, IRRIBATION FOUR. ADMINISTRATION OF MAINTAIN OF THE M

scortes. WHO. Des Moines, Iowa (526), 6:30-7:30 p. m., Bankers Life Radio orchestra; 7:30-9. Iowa State Fair Ladies; otgartet; Myrtie Williams, soprancy Holen Birminghau, pianist; Edward Biggs, violinist; Holen Dawson, accompanist; 10:20-11:30, Barrett; Philoreck orchestra,

WOAN, Lawrencehurs, Tenn. (282.8), 9 p. m., Yaughan Radio orchestra; male quartel.
WGC, Dawngort, 19wa (483.6), 9-10 p. m., Erwin Swindell, organist; May Chambers, soprano.
WGRD, Bathwid, ill. (275), service to 9:30 p. m., hymns and sacred songs, I. B. S. A., choral singers; address, W. E. Page.

WORTO, BRAWTH, II, (20), Service to 3-30 fingers; address, W. E. Page.
W. E. Page.
W. S. Page.
WOS, Jeffersen Gity, Mo. (440.9), S. p. m., address, George A. Pickens; Dr. Recker's susponine band, market and the service of the servi

tertalament. Mountain Standard Time Stations

KFWA Dudas, Utal (281), 9-11, p. m., old time musle,

KFWA Dudas, Utal (281), 9-11, p. m., old time musle,

KWA Dudas, Utal (281), 9-11, p. m., old time musle,

KWA Dudas, Utal (281), 9-11, p. m., Herbert White

and his Silver State orchestra; 7:30, Sandman's hour;

8, Edward Millstone, violinist; Grace Mass, planist;

June King, contrailo; Junalia Previlt, reader; one play,

KOA players; "Rocky Mountain Wild Plowers," Mrs.

Henry F., Brooks.

TOA players: "Incky Mountain Wild Flowers," Mrs. Henry F., Broofs.

Pacific Standard Time Stations

KFAE, Pulman, Wash, (348.6), 7:30-9 p. m., Dorts

McRewnolds, violinist; Kenneth Bell, reader; Paccy

Severance, suxphoniat; zongs and nelosy no.

Bernard,

age 37; Pauline Williams, planist; "Heavenly Bath
tuhe," Lila Naider; book chat, Alice Lindezy Webp;

"Choosing the College Course," N. Alken; "Departa
KFOA, Seattle, Wash, (648.3), 6-8-85 p. m., Olympie

bofel concert orchestra; 6:43-8:15, Hopper-Kelly com
pury study program; 18, 2022, 19nes study children;

hour, Dig Drother of KFWD; 7-8, program, Beverly
ridge company, Beverlyride collectans; 8-9, Warner

Independent Furnture Mandraturing company; 10-11,

Warner Iras Tolle, direction Charlie Wellman,

KOO, Oakkand, Calif. (361.2), 6-7 p. m., Ben Black's

KGW, Pertland, Ore. (491.5), 6-7 p. m., Bein Black's

KGW, Pertland, ore. (491.5), 6-7 p. m., Bein Black's

KGW, Pertland, ore. (491.5), 6-7 p. m., Zakels Souder?

KGW, Portland, Ore. (491.5), 6-7 p. m., Jackie Souders' orchestra; 8-10, Elks' bands; 10-11, Sherman, Clay &

orchestra; 8-10, Ella' bands; 16-11, Sherman, Clay & Rompany studes, Calif. (46.52,), 5:20-6, n.m., Leighton's Arcade cafeteria orchestra, Jack Grosshaw, leader; 6-3:30, At Hickman's Bullmore hold concert orchestra, Jack Grosshaw, leader; 6-3:30, At Hickman's Bullmore hold concert orchestra, 16-3:30, and Leighton's Library or Li

#### DANCING

# LD MANDOLIN ORCHESTRA, AT WAHG



#### DANCING

Cartal Time)

Cattal and Time)

Saturday, July 11: 8.

Kew, Winb), Win, Whan

Sato, Wiley: 5-36, Kid.

Wiley: 10: 5-36, Kid.

Wiley: 10

Knx, Kpo, Wq; 1.

riday, July 17: 8.

v, Weae, Wear, Whn,

t, Winbb, Wtas, W.

to, Web, Wha,

Kow,

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to, Wear,

to, Wea Wijd, Wtas; 10, Kpo, Wgr; 10:30, Webh, Wijd; 11, 11:30, Wijd; Wdaf; 12, Khj, 1, Knx.

financial talk: 9. Verdi trio; 9:30, Jack Chap-

8:40, financial talk; 8, Verdi trid; 9:30, Jack Chapman's orrhestra.

WHBB, Chicag O'Nti, sognator Banard Sanason, vicinities, Marie Qu'Nti, sognator Banard Sanason, vicinities; Marie Catuso, soprano; Clarence Jacobs, planist; Wang King, saopholosit; Lindany McPhail, planist; Woodlawn theater program; 8:30-10:30. Transon one; Ethers and Wayne; Charles Agne, marimble soloist; Cecil and Esther Ward.

WGI, Chicago, III. (447.5); Everett G. Mitchell bardson; Kenneth Sterling, tenor; Kane McDuffee, Marie J. (1994); Everett G. Mitchell bardson; Kenneth Sterling, tenor; Kane McDuffee, whistler; 10-1 a. m. Raibh Williams and his Ratinob Cardens orchestra; Raibh Keim, planolocial. And Burley, Mary Jane, 12-2, Clinger bonr, Little Stylarks. WGC, Washington, D. G. (468.5), 2:35 p. m., Washington, D. G. (468.5), 2:35 p. m., Washington, D. G. (468.5), 2:35 p. m., Washington, Washington, D. G. (468.6), 3:35 p. m., Washington, Washington, D. G. (468.6), 3:35 p. m., Washington, D. G. (468.6), 4:30 p. m., Bedline, etc. Williams, D. G. (468.6), 4:30 p. m., Bedline, etc. Williams, D. G. (468.6), 7:30 p. m., Science, Violinist, Oren Hogan, Jonyano, Frank Reddin, etc. Violinist,

ist. ist. KFNF, Shenandeah, Ia. (266), 7:30 p. m., Science Ridge orchestra.
KFRU, Bristow, Okla. (394.5), 10:30-11:30 p. m., pipe

KFAU ornester.

KFAU ornester.

KFAU, University City, Ma. (240), 7-8 p. m., pdpe of gan.

KFVE, University City, Ma. (240), 7-8 p. m., Radiceast review, Komaine Pidelins.

KFMS, Mot Sparsag.

KFMS, Mot Spa

Louisville, Ky. (399.8). 7:30-9 p. m., Ken-Kardinals of Bowling Green, concert; baseball scores.
WHO. Des Meines, la. (526), 7:30-9 p. m., musical 11-12, dance program.
WMC, Memphis. Tenn. (499.7), 12:30 p. m., musical program, O. K. Houck Plane company; 8:30, musical

11-12, dance wogram.

WMC, Memblis, Tenn. (499.7), 12:30 p. m., musical program, O. R. Houck Plano company; 8:30, musical program, O. R. Houck Plano company; 8:30, musical WOAW. Omaha, Nebr. (626), 6 p. m., ever child's story hour, Grace Sorcison; 6:20, basehali; 6:30, to be amnounced 0:45, Randall's Story Houtenells or WOC, Davesport, Iowa (483.6), 7-8 p. m., Atwater Kent Radio artists; 8:30 Silverbown Cond corbetts; 1:1-12, London Company of the State of the State of the Company of the State o

Mountain Standard Time Stations RC. Calgary, Can. (435.8), 9 p. m., Orpheus quarter;

B. A. Choppen, tenor; Mrs. B. A. Choppen, accom-panist. 0A, Denver, Colo. (322.4), 6:30 p. m., Herbert White and his Silver State orchestra.

#### Friday, July 17

Friday, silent night for: KFAE, KFUO, KGO, KLDS, PWX, WBBR, WGBD, WEAO, WFI, WGBS, WHAZ, WIP, WKAQ, WKRC, WLW, WMAK, WOR, WRC, WREO, WSAI, WTAM.

#### Atlantic or Eastern Daylight Saving

Atlantic or Eastern Daylight Saving
Time Stations
CNRA, Monton, Gan. (313), 9 p. m., Caledonia male
quartet; J. Ed Matheson, etnor; J. S. Allen, bartlone;
R. Motl. Fraser, planist; male quartet; CNRA dance
orchestra: Walter Neal.
WARG, Halmedon Harder, A. (315.6), 7:30-745 p. m.,
WARG, Halmedon Harder, T. (315.8), 30-745 p. m.,
WARG, Halmedon Harder, S. 8-30, violin and plano,
Emery Deutch and E. Everett Remieb; 3:30-8:45,
"Speech in the Home." Prof. Richard E. Mayne,
S:35-9, Mrs. Paul Vallen, sporance; 9-31.5, 1ac Nov.
3:35-9, Mrs. Paul Vallen, sporance; 9-31.5, 1ac Nov.
3:35-9, Mrs. Paul Vallen; 10-10-15, Radio tails, William P.
Diehl; 10:15-10:55, dance music; 11:05-11:30, dance
music.

Jean Moresco, tenor, accompanied by Norman Hennewill, Philadelphia, Pa. (394-5), 1 p. m. Selleure Stratford concert tria; 3, Caroline Huffman, planist; 6\*45,
Balleure Stration roof garden trio; 316-320 p. m.,
WoBS, New York, correctly 153-330, reclusions,
C. L. Odetz, 2\*30-340, Pauline Fleratain; 3\*46-350,
theory lessons, Dr. Alfred G. Robern; 3\*50-4, Pauline
Pleratein; 6\*500, Unice Gebeen; 8\*50-4, Pauline
Pleratein; 6\*500, Unice Gebeen; 8\*500, Unice Geb

#### Index to Classical Concerts

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

Atlantic or Eastern Daylight Saving Time Stations

Staturday, July 11: 6, WEAF; 6:05, WIP: 6:45, WJ2; 7, WEAF; 6:05, WIP: 6:45, WJ2; 7, WEAF; 6:05, WIP: 6:45, WJ2; 8:45, WEAF, WJ2; 8:39, CKAC, WAGE, WGE, WHYC, S:39, CKAC, WAGE, WGES, WHAF; 9:50, WIP; 9, WGBS, WHAF; 9:15, WGAE; 8:50, WIP; 9, WGBS, WHAF; 9:20, WEEI; 10, WGAE; 8:45, WJ2; 9, WBBR, WHAR; 9:15, WGAF, WJ2; 6:30, WGAE; 8, WJ2; 9, WBBR, WHAR; 9:15, WGAF, WIP; WJ2; 6:30, WGAE, WGBS; 7:15, WGAF; 7:46, WGAF, WIP; WJ2; 6:30, WGAE; 8:50, WGAE; WGAF, WIP; WGAE; WGAF, WGA

#### Eastern Standard or Central Daylight Saving Time Stations

light Saving Time Stations
Saturday, July 11: 6, KYW, WIBC;
6:30, WGN; 6:45, WJJD; 7, WHT;
7:30, WGN; 6:45, WJJD; 7, WJTD;
7:30, WCX; 7:35, KYW; 8, WORD,
WSA1; 8:15, WSA1; 11, WKRC;
WHT.
WHAL
WELLIAM
WELLIA

8:30, WEBH, WLW; 9, WEAR, WGN, WQJ.

Monday, July 13: 6, WBZ, WCX, WMAQ, WW1; 6:30, WGN; 7, WEAR, WHT; WLW; 7:15, WJJD; 7:30, WCX, WHT; 8, WBZ, WWJ; 8:15, WBZ; WHAZ; 8:30, WCX: 8:45, WBZ, WLW; 9, WBZ, WORD: 9:15, WBZ; 9:30, WBW; 10, WSA1; 12:30, WHT.
Tuesday, July 14: 6, WBZ, WCX, WBO, WMAQ, WWJ; 6:30, WGN, WLS, WLW; 6:45, WJD, WSA1; 7, KYYW, WEAR, WHT, WIBO, WMBB, WCX, WEBH; 8, KYW, WBZ, WBAY, WSA1; 8, KYW, WBZ, WBAY, WSA1; 8, KYW, WBZ, WBAY, WSA1; 8, KYW, WBZ, WBAY, WWAY, WSA1; 8, KYW, WBZ, WBAY, WWAY, WSA1; 8, KYW, WBZ, WBAY, WWAY, WGRD, WSA1; 10, KYW, WLW, WORD, WSA1; 10, KYW, WLW; 10:30, WHT.

#### Central Standard Time Stations

Central Standard Time Stations
Saturday, July 11: 6; WOAW: 6:30,
WPAA, WSMB: 7:30, KFNF, WHAS;
8, WBB; 8:30, WPAA, WHAS; 8:35,
KYW: 9; WCCO, WOC.
Sunday July 12: 6:30, KLDS; 7:30,
WHO; 8; KFDM, WCGD; 9; WOAN;
9:15, KLDS, WCCO; 9:25, KTHS;
9:30, WOC.
MOORDY, July 13: 6, WOAW; 6:30,
WFAA, WSMB; 7:30, KFNF, WHO;
8, KSD, WOAN; 6:30, WFAA,
WSMB; 7:30, KFNF, WHO;
8, KSD, WOAN; WGAW; 6:30, WFAA,
WSMB: 7:30, WHAS; WCGO,
WOC; 7:30, WHAS, WHO; 8; KFDM,
KLDS, KSD, WOC; 8:30, WFAA,
WHAS, 9, WOAN, WOAW;
Wednesday, July 14: 6:30, WFAA,
WASMB: 7:30, KFNF, WSMB,
WSMB: 7:30, KFNF, WGCO,
Thursday, July 16: 6:30, WFAA,
WSMB: 7:30, KFNF, WHAS,
WSMB: 7:30, KFNF, WHAS,
WSMB: 7:30, KFNF, WHAS,
WSMB: 7:30, KFNF, WAS,
WSMB: 7:30, KFNF, WAS,
WSMB: 7:30, KFNF, WAS,
WSMB: 7:30, WFAA, WGC; 8:30, WFAA,
WSMB: 7:30, WFAA,
WSMB: 7:30, KFNF, WHAS,
WHO; 8, KLDS, WCBD,
WSMB: 7, KSD; 7:30, KFNF, WHAS,
WHO; 8, KFDM, WCOC, WGE,
8:30, WFAA, WHAS, WHO; 9, KFDM,
WOAN; 9:35, KFMB,
WOAN; 9:35, KFMM,
WOAN; 9:35, KFMM,
WOAN; 9:35, KFMM,
MOAN; 9:35, KTHS,

#### Mountain Standard Time Stations

Monday, July 13: 8, KOA. Tuesday, July 14: 8, CNRR. Wednesday, July 16: 8, KOA. Thursday, July 16: 8, CNRC. Friday, July 17: 8, KOA.

#### Pacific Standard Time Stations

racinc Standard Time Stations
Saturday, July 11: 8, KFWB, KNX;
9, KFWB, KNX; 10, KFI, KFWB; 11,
KNX; 11:30, KHJ; 12, KNX; 12:30,
KHJ: 1, KNX.
Sunday, July 12: 8, KHJ; 9, KFWB,
10, KFWB.

dance music. Vincent Lonez Hotel Statler dance or dance music. Vincent Lonez Hotel Statler dance or what a music could be seen that the country of the count

7:30-7:35, police alarms; 7:35-8, municipal talk; 8-8:15, song recital; 8:15-10:15, Nahan Franko and his crehestra from Central Park; 10:15-10:30, popular songs.

crchestra from Central Park; 19.15-19.30, popular Wongs, Bildelphin, Pa. (568-2), Il. a. m., organ restial, Dury E. Vept; 12.92 p. m., Golden's crital tar recent crchestra; 4:45, organ rectal, Mary E. Vept; 7:50, A. Candelori's concert orchestra; 8, R. C. O. band; 8:30, Princess Anne Academy male quartet; 19, organ rectal, Mary E. Vept; 7:50, Sylvania dance or-drestra.

talk, Bill Wathey; 6:30-7, Man in Mon.

Eastern Standard or Central Daylight

Saving Time Stations

CNRT, Torento, Can. (357), 5:30 p. m., Luigi Romanelli
and his King Edward hotel concert orchestra; 8:30,

CNRT instrumental tric; W. Bennett Arther, tenor;
10:30, Luigi Romanelli and his King Edward hotel

dance orchestra. KDKA, Pittsburgh, Pa. (309.1), 2:30 p. m., bascball; 8:45, concert; 9:55, baseball.

WBAV. Columbus, Ohio (293.9), 8 p. m., Methodist Home for Girls orchestra, 9.10 p. m., Shoppard Levine, teno; Crilion orchestra; Marie Winters, planist; Harold Anderson, plano-accordianist; Charlis Garland, planist.

Garland plaints.

WEZ, Springheld, Mass. (393.3), S. p. m. dinner concert. Entel Kimball trio, Jan Geerts; 6:30, baseball; S. Francis Gerrior, violinist; 8:39, Bull Boyle's entertainers broadcast, Copey Plaza hotel; 9, concert, Edith Hemworth, planist; 9:15, to be announced; 9:30, baseball.

WCX, Defroit, Mich. (516.9), 4:15 p. m., concert; 6, (Continued on page 14)

# An Evening at Home with the Listener In

	Meters Call	Meters Call	Meters Call	Meters Call	Meters Call
226 WBBM	275.3 WJAS	315.6 KFDM	365.6 WDAF	405.2 WOR	468.5 WCAP
226 WIBO		315.6 WAHG	365.6 WHB	406 WBAR	468.5 WRC
233 WEBJ 240 KFAB	278 WCAU	315.6 WGBS	370 CYB	410.7 CKAC	475.9 WBAP
240 KFVE	278 WLBL	319 WGR	370.2 WEBH	416.4 WCCO	475.9 WEEL
243.8 WAMD	278 WRBC	319 - WSMB	370.2 WGN	421 KIAF	475.9 WFAA
250 WGES	280.2 WNAC	322.4 KOA	374.8 KTHS	422.3 WLW	480 CYL
250 WMBB	282.8 WOAN 285.5 WKAR	325.9 WSAI	379.5 WGY 379.5 WHAZ	428.3 WSB	483.6 WOC
252 KFWB	285.5 WKAR 285.5 WREO	330 CYX	379.5 WHAZ 384.4 CKY	428.3 KPO	483.6 WSUI
252 WGCP	293.9 KJS	333.3 WBZ	384.4 KJR	434.5 CNRO	491.5 KGW
261 KFWA	293.9 WBAV	336.9 KNX	384.4 WMBF	434.5 NAA	491.5 WEAF
265.5 WMAK	293.9 WEAO	340.7 WKAQ	389.4 WEAR	435 AT9	499.7 WMC
266 KFNF	296.9 KPRC	340.7 WMCA	389.4 WTAM	434.5 CFCN	508.2 KLX 508.2 WIP
266 WBCN	299.8 KFMO	344.6 WCBD	394.5 KFRU	440.9 KLDS	508.2 WIP 508.2 WOO
272.6 WBBR		344.6 WLS	394.5 WFI	440.9 WDWF	516.9 CJCA
272.6 WFBH	299.8 WPG	348.6 KFAE	394.5 WLIT	440.9 WOS 447.5 WMAQ	516.9 WCX
273 WRW	302.8 WJJD	348.6 WTIC	394.5. WOAI	447.5 WOJ	526 WHO
275 KFAU	302.8 WTAS	352.7 WWJ	399.8 WHAS	454.3 KFOA	526 WNYC
275 WABL		356.9 CFCA	399.8 WHT	454.3 WJZ	526 WOAW
275 WHAD		356.9 CHNC	400 PWX	455 KTW	535.4 KYW
275 WHAR				461.3 WCAE	545.1 KFUC
275 WORD	313 CNRA	361.2 KGO	405.2 WJY	467 KFI	545.1 KSD

#### INSTRUCTIONS FOR USE OF TABLES

INSTRUCTIONS FOR USE OF TABLES

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

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

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

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

Listeners using Central daylight saving time: Use Eastern time table. No changes of the revent of the table save are necessary.

#### Friday, July 17

(Continued from page 13)

(Continued from page 13)

dinner concert, Book-Cadillae hotel; 7:39, Municipal band concert, Bolie Isie; 329, mustal provatam. WEAR, Gleveland, Olin G830-4), 7-8, "Children's Hour," Sealer, Gleveland, Olin G830-4), 7-8, "Children's Hour," December of the Concert, Concert, Canada Ca

WHT Derefuel, II. (2020.), 7-5.36 m. i. BreathWHT Derefuel, III. (2020.), 7-5.36 m. i. BreathTailout, bartinone; Generitore Barry Burnham, spracoDean Remick, plansit; Kitchen Kinerer Klassites, Al.
Carney, organist; Jelke Musical moments; 8:35-1,
Riverriev Park Ballroom orotestra; Loftils hair/hour,
Juneau Symeopation, review; Al. Carney, organist,
Organist; Martha Meier, contrallo; 7:15, Rex's Cornbuskers; 7:35, Jullaby time, Aunt Martha, Uncle
George; 8, hild-prodigt program, Arthur Knopluski,
violinist; Billy Yeo, reader; Vermon Schuman, sincers;
Savier, planist; 8:45, Ann Williams, contrallor;
Hoy Margaret Anderson, planist; Koby Skrinsky, riolinist; Gladys Weyforth, contrallo; 11-11:30, Rex's
WMAQ, Ohleksen, III. (447.5), 8, p. m., Chiegus thesete.

Brooks Colby, violinist; Harold Smith, savophonist; 19, Margaret Anderson, Jamis; Koby Shirnisty, violinist; Chadys Weyforth, contrallo; 11-11:30, Rec's WMAQ, Discape, III, (447-5), 6 p. m., Chiesgo thenetee organ rectal; 6:25, Danily Allar league; 6:35, Jack WMAQ, Discape, III, (447-5), 6 p. m., Chiesgo thenetee organ rectal; 6:25, Danily Allar league; 6:35, Jack Shapelet's church choft Danily and Chapman's orchestra; mar's orchestra. III, (250), 7-3; 30, 30, 30-6 Chapman's orchestra; III, (250), 7-3; 30, 30, 30-7 Chapman's orchestra; III, (250), 7-3; 30, 30-7 Chapman's Chapm

stra. , Detroit, Mich. (352.7), 6 p. m., dinner con-t; 9, Orange Blossom's orchestra.

c; 9, Orange Biossom's orenestra,

Central Standard Time Stations

M, Beaument, Tex. (315.6), 8-10:30 p. m., Rere hand. KFDM, Seaument, 1-c. (266), 7:30 p. m., program. KFRU, Bristow, Okla. (394.5), 11-1 a, m., Brown Derby club,

KFVE, University City, Mo. (240), 7.5 p. m., Radiceast, review. Romaine Fielding; 10, "Orchestra Romaine-KSD, St. Louis, Mo. (345.1), 7 p. m., Hotel Statler KSD, St. Louis, Mo. (345.1), 7 p. m., Hotel Statler KSD, St. Louis, Mo. (345.1), 7 p. m., Hotel Statler KSD, St. Louis, Mo. (345.1), 7 p. m., Hotel Statler KSD, St. Louis, Mo. (345.1), 7 p. m., Hotel Statler KSD, St. Louis, Mo. (345.1), 7 p. m., Louis Land Statler KSD, St. Louis Land Statler KSD, Louis Land Statler Land Statler Land Land Statler Land Land Statler Land Land Land Land Lan

Program, baseball.

Mountain Standard Time Stations

GNRE, Edmanton, Gan. (516.9), 7.30 p. m., kidder

beddime travel story; S.30, Edmanton Hawalian or,

chestra Guden, Utah (261), 9-11 p. m., KFWA Radio

Boya Ganco orchestra.

KOA, Denver, Cole. (322.4), 6.30 p. m., Herbert White

and his Silver State orchestra; F. First Presbyterian

church cholt; KOA orchestra; Proper Clothing on a

Camping Trip.

and his Silver State orchestra; S. First Presbytesian church choir; KOA orchestra; "Proper Cibriling on a Camping Trip."

Even Company Castif. (232), 6-7 p. m., children's Charles Castif. (232), 6-7 p. m., children's Father Company Castif. (232), 6-7 p. m., children's Father Company Castif. (232), 6-7 p. m., children's Father Castif. (232), 6-7 p. m., Ealdwin Piano company 16-35, 9-12, 9

		7/3v 90 2 3			(FOR I	ACIFIC	TIME				
ī	Call	Met.	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Met.	Call
	GFCA	435 356.9		3:00- 4:00 4:00- 5:00	Silent Silent	Silent 5:15- 6:15	Silent 5:15- 6:15	5:00- 7:55 5:15- 6:15	Silent Silent	435 356.9	AT9 CFCA
ì	CFCN CHNC CJCA	434.5 356.9 516.9	Silent	Silent	Silent 4:30- 5:30	Silent Silent	Silent Silent	7:00- 8:00 Silent	Silent	434.5 356.9	CFCN
	CKAC	410.7	4:30- 9:30	6:30- 7:30 1:30- 2:30 5:00- 7:45	6:30- 8:30 Silent Silent	6:30- 7:00 4:30- 9:30 6:30- 8:45	5:90- 7:00 Silent	4:30- 9:30	Silent	516.9 410.7	CKAC
	CNRA	313 434.5	Silent 4:30- 9:30	Silent Silent	Silent	4:30- 5:30 Silent	Silent Silent 4:30- 9:30	6:00- 7:00 Silent Silent	6:30-7:45 4:30-5:30 Silent	384.4 313 434.5	CKY CNRA CNRO
	CYB .	480	8:15- 9:45 Silent	Silent	Silent	7:15- 8:15 8:00- 9:30	Silent Silent	Silent	Silent 8:00- 9:30	370	CYB
	KD KA KFAB		Silent 5:45- 6:55		7:15- 8:30 5:45- 6:55	Silent 5:45- 8:30	Silent	Silent	7:15- 8:45	330 309.1	CYL CYX KDKA
2	KFAE	240 348.6 275	9:00-10:30 Silent Silent	Silent Silent	5:30- 8:00 Silent 7:00- 8:00	Silent Silent Silent	5:30- 8:00 7:30- 9:00	Silent	5:30- 8:00 Silent	240 348.6	KFAB
	KFDM KFI	315.6 467	Silent 6:45-12:00	6:00- 7:00	Silent 6:45-11:00	6:00- 8:30 6:45-11:00	Silent Silent 6:45-11:00	Silent Silent 6:45-11:00	7:00- 8:00 6:00- 8:30 6:45-11:00	275 315.6 467	KFAU
	KFMQ	299.8 266	Silent 5:30- 6:30	Silent 4:30-8:00	Silent 5:30- 6:30	7:00- 8:00 Silent	Silent 5:30- 6:30	Silent 5:30- 6:30	Silent	299.8 266	KFMQ KFNF
3	KFDA KFRU KFUO	454.3 394.5 545.1	6:00-11:80 5:30-10:00	Silent 3:00- 5:00 6:15- 7:15	6:00-10:00 5:00-8:30 6:00-7:00	6:00-11:30 8:30-10:00	6:00-10:00	Silent 8:30-9:30	6:00-11:30	454.3 394.5	KFOA
	KFVE	240	Silent 8:00-10:00 Silent	Silent 7:00-10:00	8:00-10:00 8:00-10:00	Silent 8:00-10:00 8:00- 9:00	7:15- 8:15 8:00-10:00 8:00-11:00	Silent Silent Silent	Silent 8:00-10:00	545.1 240	KFUO
at	KFWB KGO	252 361.2	7:00-11:00 8:00- 1:00	9:00-11:00 3:30- 9:00	8:30-11:00 8:00- 1:00	7:45-11:00 8:00- 1:00	7:00-11:00 Silent	7:00-11:00 8:00- 1:00	8:00-10:00 7:00-11:00 Silent	261 252 361.2	KFWA KFWB KGO
of n-	KHJ	491.5 405.2	5:30-11:00	7:30-10:00 6:00-11:00	6:00- 7:00 7:00- 1:30	9:00-12:00 5:30-11:00	8:00-11:00 5:30-11:00	8:00-12:00 5:30-11:00	9:00-12:00 5:30-11:00	491.5	KGW
r- on	KIAF KJR KJS	421 384.4 293.9	Silent	2:00- 3:00 7:00- 8:00	7:00-8:00 6:00-10:00	Silent Silent	7:00-8:00 8:30-10:00	Silent 10:30-12:00	7:00- 8:00 8:30-10:00	421 384.4	KIAF
u- is.	KLDS	440.9 508.2	Silent Silent Silent	7:15- 9:30 4:30- 8:00 Silent	Silent Silent 6:00-11:00	8:00- 9:00 6:00- 7:00 Silent	Silent Silent 6:00-11:30	8:00- 9:00 6:00- 7:00	Silent Silent	293.9 440.9	KLDS
in	KNX	336.9 322.4	8:00- 2:00 8:00-11:00	5:00-11:00 3:30- 7:30	6:30-12:00 7:00- 8:00	-6:30-12:00 Silent	7:00-10:00 7:00-11:00	Silent 6:30-12:00 Silent	6:00-10:30 6:30-12:00 7:00-8:00	508.2 336.9 322.4	KLX KNX KOA
ed or	KPO KPRC KSD	428.3 269.9 545.1	6:25-12:00 6:30- 7:30 5:00- 7:30	6:30-10:00 5:00- 7:00	6:30-11:00 6:30- 7:30	6:30-11:00 6:30-7:30	6:30-11:00 6:30-7:30	6:30-11:00 6:30- 7:30	7:00-11:00	428.3 269.9	KP0 KPRC
ex	KSL	299.8 305.9	7:00-10:00 Silent	Silent 8:00-10:00 7:50- 9:15	7:00-9:00 7:00-10:00 .8:00-10:00	4:30-6:30 8:00-10:00 7:00-8:00	5:30-6:30 7:00-10:00 7:00-10:00	Silent 7:00-10:00		545.1 299.8	KSD KSL KTCL
re	KTHS	374.8 455	6:30- 8:00 Silent	6:80- 9:30 7:00- 9:30	6:30- 8:00 Silent	6:30- 8:00 Silent	6:30- 8:00 Silent	6:30- 7:30 6:30- 8:00 Silent	7:00-12:00 6:30- 8:15	305.9 374.8	KTHS
of er	KWWG	535.4	6:30-7:30 4:00-10:30	Silent 1:00- 5:00	Silent Silent	6:30- 7:30 4:00- 8:30	Silent 4:00-10:30	6:30- 7:30 4:00- 8:30	Silent Silent	455 278 535.4	KTW KWWG KYW
at	NAA PWX WABL	434.5 400 275	Silent 5:30- 8:00 Silent	Silent Silent Silent	4:45- 5:00 Silent 4:00- 6:00	4:45- 5:00 Silent Silent	4:25- 5:40 5:30- 8:00	4:45- 5:00 Silent	4:00-10:30 4:45- 5:00 Silent	434.5 400	PWX
re	WAHG	315.6 243.8	9:00-11:00 8:00- 9:00	Silent 12:00- 8:00	4:00-10:00 Silent	Silent 8:00- 9:00 5:30- 8:45	4:00- 6:00 3:30- 8:00 8:00- 9:30	Silent Silent 8:00- 9:30	4:00- 6:00 4:00- 7:30 8:00- 9:00	275 315.6 243.8	WABL WAHG WAMD
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:25	WCBD	278 344.6	Silent	1:00- 4:00 6:00- 7:00	Silent 5:00- 7:30	2:30- 8:00 Silent	2:30- 7:45 Silent	2:30- 7:30 5:00- 7:30	2:30- 7:30 Silent	278 344.6	WCAU
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lar h-	WEBI	233	4:30- 9:30 Silent	4:00- 6:00 Silent	Silent Silent	4:30- 9:30 4:00- 5:00	4:30- 9:30 3:00- 5:00	4:30- 9:30 Silent	4:30- 9:30 4:00- 5:00	370.2 233	WEBH WEBJ
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	WOAL	526 394.5	4:00- 6:00 2:30- 6:20 Silent	5:00- 7:00	3:00- 7:00 3:00- 6:20	3:20- 6:20 6:30- 8:30	4:00- 6:00 3:30- 6:30 Silent	4:00 - 6:00 Silent 7:30 - 8:30	4:00- 6:00 3:30- 6:20	526 394.5	WNAC WNYC WOAI
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st	WREO	285.5	7:00- 8:00 6:00- 8:30	4:30- 5:30 5:00- 8:30	Silent 6:00- 8:30	4:00- 9:00 5:15- 6:45 6:00- 8:30	Silent 6:00- 8:30	4:00- 8:00 5:15- 6:45 6:00- 8:30	Silent Silent 6:00- 8:30	285.5 273	WRC WREO WRW
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# An Evening at Home with the Listener In

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Call	Saturday	Sunday 5:00- 6:00	Monday	Tuesday	Wednesday	Thursday 7:00- 8:55	Friday Silent	Call AT9	Location Fort Bragg, N. C	Met.	Saturday	Sunday 6:00- 7:00	Menday	Tuesday	Wednesday	Thursday 8:00- 9:55	Friday	Call
CFCA CFCN CHNC	Silent 11:00- 1:00 Silent	6:00- 7:00 Silent Silent	Silent Silent 6:30- 7:30	7:15- 8:15 Silent Silent	7:15- 8:15 Silent Silent	7:15- 8:15 9:00-10:00 Silent	Silent Silent Silent	CFCA CFCN CHNC	Toronto, Ont	356.9 434.5 356.9	Silent 12:00- 2:00	7:00- 8:00 Silent	Silent Silent	8:15- 9:15 Silent	Silent 8:15- 9:15 Silent	8:15-9:15 10:00-11:00	Silent Silent	CFCA CFCN
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CYL	Silent Silent	Silent Silent Silent	Silent Silent 9:15-10:30	9:15- 10:15 10:00-11:30 Silent	Silent Silent Silent	Silent Silent Silent	Silent 10:00-11:30 9:15-10:45		Mexico City, Mex Mexico City, Mex	480	11:30-12:45 Silent	Silent	Silent Silent	10:15-11:15 11:00-12:30	Silent	Silent	Silent 11:00-12:30	CYB
KDKA KFAB	7:45-8:55 11:00-12:30	2:00- 6:30 4:00- 5:00	7:45- 8:55 7:30-10:00	7:45-10:30 Silent	7:45- 8:55 7:30-10:00	7:00-10:30 Silent	7:45- 8:55 7:30- 9:30	KDKA KFAB	Mexico Gity, Mex Pittsburgh, Pa Lincoln, Nebr	330 309.1 240	8:45- 9:55 12:00- 1:30	Silent 3:00- 7:30 5:00- 6:00	10:15-11:30 8:45- 9:55 8:30-11:00	Silent 8:45- 9:30 Silent	Silent 8:45- 9:55 8:30-11:00	Silent 8:00-11:30 Silent	10:15-11:45 8:45- 9:55 8:30-10:30	KDKA KFAB
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KFNF KFOA KFRU	8:00-1:30 7:30-12:00	Silent 5:00- 7:00	7:30-8:30 8:00-12:00 7:00-10:30	Silent 8:00- 1:30 10:30-12:00	7:30- 8:30 8:00-12:00 8:00-10:30	7:30- 8:30 Silent 10:30-11:30	7:30- 8:30 8:30- 1:30 11:00- 1:00	KFOA	Shenandoah, Ia Seattle, Wash Bristow, Okla	266 454.3 394.5	8:30- 9:30 9:00- 2:30 8:30- 1:00	7:30-11:00 Silent 6:00- 8:00	8:30- 9:30 9:00- 2:00 8:00-11:30	Silent 9:00- 2:30 11:30-1:00	8:30- 9:30 9:00- 2:00 9:00-11:30	8:30- 9:30 Silent 11:30-12:30	8:30- 9:30 9:00- 2:30 12:00- 2:00	KFNF KFOA KFRU
KFUO KFVE KFWA	Silent 10:00-12:00 Silent	8:15- 9:15 Silent 9:00-12:00	8:00-9:00 10:00-12:00 10:00-12:00	Silent 10:00-12:00 10:00-11:00	9:15-10:15 10:00-12:00 10:00- 1:00	Silent Silent Silent	Silent 10:00-12:00 10:00-12:00	KFVE KFVE	St. Louis, Mo University City, Mo Ogden, Utah	545.1 240 261	Silent 11:00- 1:00 Silent	9:15-10:15 Silent 10:00- 1:00	9:00-10:00 11:00- 1:00 11:00- 1:00	Silent 11:00- 1:00 11:00-12:00	10:15-11:15 11:00- 1:00	Silent Silent	Silent 11:00- 1:00	KFU0 KFVE
KFWB KGO KGW	9:00- 1:00 10:00- 3:00 8:00- 2:00	11:00- 1:00 5:30-11:00 9:30-12:00	8:30- 1:00 10:00- 3:00 8:00- 9:00	9:45- 1:00 10:00- 3:00 11:00- 2:00	9:00- 1:00 Silent 10:00- 1:00	9:00- 1:00 10:00- 8:00	9:00- 1:00	KFWB KGO	Hollywood, Calif Oakland, Calif Portland, Ore	252 361.2 491.5	10:00- 2:00 11:00- 4:00 9:00- 3:00	12:00 - 2:00 6:30-12:00	9:30- 2:00 11:00- 4:00	10:45- 2:00 11:00- 4:00	11:00- 2:00 10:00- 2:00 Silent	Silent 10:00- 2:00 11:00- 4:00	11:00- 1:00 10:00- 2:00 Silent	KFWB KG0
KIAF	7:30- 1:00 Silent	8:00- 1:00 4:00- 5:00	9:00-3:30	7:30- 1:00 Silent	7:30-1:00	7:30- 1:00 Silent	7:30- 1:00	KIAF	Los Angeles, Calif	405.2	8:30- 2:00 Silent	9:00- 2:00 3:00- 4:00	9:00-10:00 10:00- 4:30 8:00- 9:00	12:00- 3:00 8:30- 2:00 Silent	8:30-, 2:00 8:00- 9:00	11:00- 3:00 8:30- 2:00 Silent	8:30- 2:00 8:00- 9:00	KHI
KJR KJS KLDS	Silent Silent Silent	9:00-10:00 9:15-11:30 6:30-10:00	8:00-12:00 Silent Silent	Silent 10:00-11:00 8:00- 9:00	10:30-12:00 Silent Silent	12:30- 2:00 10:00-11:00 8:00- 9:00	10:30-12:00 Silent Silent	KJR KJS KLDS	Seattle, Wash Los Angeles, Calif	384.4 293.9 440.9	Silent Silent Silent	10:00-11:00 10:15-12:30 7:30-11:00	9:00- 1:00 Silent Silent	Silent 11:00-12:00	11:30- 1:00 Silent	1:30-3:00 11:00-12:00	11:30- 1:00 Silent	KJR KJS
KLX	Silent 10:00- 4:00 10:00- 1:00	Silent 7:00- 1:00 5:30- 9:30	8:00- 1:00 8:80- 2:00	Silent 8:30-2:00	8:00-1:30 9:00-12:00	Silent 8:30- 2:00	8:00-12:30 8:30- 2:00	KLX KNX	Independence, Mo Oakland, Calif Hollywood, Calif	508.2 -336.9	Silent 11:00- 5:00 11:00- 2:00	Silent 8:00- 2:00	9:00- 2:00 9:30- 3:00	9:00-10:00 Silent 9:30- 3:00	Silent 9:00- 2:30 10:00- 1:00	9:00-10:00 Silent 9:30- 3:00	Silent 9:00- 1:30 9:30- 3:00	KLDS KLX KNX
KOA KPO KPRC	8:25- 2:00 8:30- 9:30	8:30-12:00 8:00- 9:00	9:00-10:00 8:30- 1:00 8:30- 9:30	Silent 8:30- 1:00 8:30- 9:30	9:00- 1:00 8:30- 1:00 8:30- 9:30	Silent 8:30- 1:00 8:30- 9:30	9:00-10:00 9:00-1:00 Silent	KPO KPRC	San Francisco, Calif Houston, Texas	322.4 428.3 296.9	9:25- 3:00 9:30-10:30	6:30-10:30 9:30-1:00 9:00-10:00	9:30-11:00 9:30-2:00 9:30-10:30	Silent 9:30-2:00 9:30-10:30	9:30 - 2:00 9:30 - 2:00 9:30 - 10:30	Silent 9:30-2:00 9:30-10:30	10:00-11:00 10:00- 2:00 Silent	KOA KPO KPRG
KSD KSL KTCL	7:00- 9:30 9:00-12:00 Silent	SHent 10:00-12:00 9:50-11:15	9:00-11:00 9:00-12:00 10:00-12:00	6:30-8:30 10:00-12:00 9:00-10:00	7:30-8:30 9:00-12:00 9:00-12:00	Silent 9:00-12:00 8:30- 9:30	7:80-9:00 10:00-12:00 9:00-2:00		St. Louis, Mo Salt Lake City, Utah Seattle, Wash	545.1 299.8 305.9	8:00-10:30 10:00- 1:00 Silent	Silent 11:00- 1:00 10:50-12:15	10:00-12:00 10:00-1:00 11:00-1:00	7:30- 9:30 11:00- 1:00 10:00-11:00	8:30-9:30 10:00-1:00 10:00-1:00	Silent 10:00- 1:00 9:30-10:30	8:30-10:00 11:00- 1:00 10:00- 3:00	KSD KSL KTCL
KTHS KWWG	8:30-10:00 8:30- 9:30	8:30-11:30 Silent	8:30-10:00 Silent	8:30-10:00 8:30- 9:30	8:30-10:00 Silent	8:30-10:00 8:30- 9:30	8:30-10:15 Silent	KTHS	Het Springs, Ark Brownsville, Texas	374.8 278	9:30-11:00 9:30-10:30	9:30-12:30 Silent	9:30-11:00 Silent	9:30-11:00 9:30-10:30	9:30-11:00 Silent	9:30-10:30 9:30-10:30 9:30-10:30	9:30-11:15 Silent	KTHS
KTW KYW NAA	Silent 6:00-12:30 Silent	9:00-11:30 3:00- 7:00 Silent	Silent Silent 6:45- 7:00	Silent 6:00-10:30 6:45- 7:00	Silent 6:00-12:30 6:25- 7:40	Silent 6:00-10:30 6:45- 7:00	Silent 6:00-12:30 6:45- 7:00	KTW KYW NAA	Seattle, Wash Chicago, III Radle, Va	455 535.4 434.5	Silent 7:00- 1:30 Silent	10:00-12:30 4:00- 8:00 Silent	Silent Silent 7:45-8:00	Silent 7:00- 11:30 7:45- 8:00	Silent 7:00- 1:30 7:25- 8:40	Silent 7:00- 11:30	Silent 7:00- 1:30 7:45- 8:00	KTW KYW NAA
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WBBR WBCN WBZ	6:00-7:00 8:00-12:00 5:30-7:55	6:00-7:30 4:00-11:00 6:00-7:30	6:00- 7:00 Silent 6:00- 7:55	Silent 8:00- 2:00 7:15- 7:55	Silent 7:00-11:00 6:00- 7:55	6:00- 7:00 8:00- 1:00	Silent 8:00-12:00 5:45- 7:55	WBBR WBCN WBZ	Staten Island, N. Y Chicago, III Springfield, Mass	272.6 266	7:00- 8:00 9:00- 1:00	8:00-9:30 5:00-12:00	7:00- 8:00 Silent	Silent 9:00- 3:00	8:00-10:00 Silent 8:00-12:00	8:00-12:00 7:00- 8:00 9:00- 2:00	8:00-10:00 Silent 9:00- 1:00	WBBM WBBR WBCN
WCAE	6:00- 7:30 Silent Silent	2:00- 6:30 3:00- 8:15	6:00-10:00 6:20- 9:00	6:00- 9:00 Silent	6:30 - 9:00 5:45 - 9:00	5:30- 7:55 6:00- 9:00 Silent	6:30- 7:30 6:20- 7:20	WCAE	Pittsburgh, Pa Washington, D. C	333.3 461.3 468.5	6:30- 8:55 7:00- 8:30 Silent	7:00- 8:30 3:00- 7:30 4:00- 9:15	7:00-8:55 7:00-11:00 7:20-10:00	8:15- 8:55 7:00-10:00 Silent	7:00- 8:55 7:30-10:00 6:45-10:00	6:30- 8:55 7:00-10:00 Silent	8:45-8:55 7:30-8:30 7:20-8:20	WCAE
WCAU WCBD	Silent 6:05-11:00	3:00- 6:00 1:30- 9:00 4:10-10:15	Silent 7:00-9:30 6:00-11:00	4:30-10:00 Silent 6:00- 9:00	4:30- 9:45 Silent 6:00-12:30	4:30-9:30 7:00-9:30 6:00-10:00	Silent	WCC0 WCGD	Philadelphia, Pa	278 344.6 416.4	Silent Silent 7:05-12:00	4:00- 7:00 2:30-10:00 5:10-11:15	Silent 8:00- 10:30 7:00-12:00	5:30-11:00 Silent	5:30-10:45 Silent	5:30-10:30 8:00-10:30	5:30-10:30 Silent	WCAU
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WEAF WEAO	4:00-10:00 Silent	5:20- 8:15 Silent 2:30- 9:00	4:00- 9:80 Silent	4:00-10:00 Silent	4:00-10:00 7:00- 8:00	4:00-10:00 7:00- 8:00	4:00-10:00 Silent	WEAF	Previdence, R. I New York, N. Y Columbus, Ohio	440.9 491.5 293.9	5:00-11:00 Silent	4:00- 5:45 6:20- 9:15 Silent	Silent 5:00-10:30 Silent	7:30- 8:30 5:00-11:00 Silent	Silent 5:00-11:00 8:00- 9:00	Silent 5:00-11:00 8:00- 9:00	5:00-11:30 5:00-11:00 Silent	WDWF WEAF WEAO
WEAR WEBH WEBJ	6:00-7:00 6:30-11:30 Silent	6:00- 8:00 Silent	6:00- 7:00 Silent Silent	6:00-10:00 6:30-11:30 6:00- 7:00	6:00- 7:00 6:30-11:30 5:00- 7:00	6:00-10:00 6:30-11:30 Silent	6:00-10:00 6:30-11:30 6:00- 7:00	WEBI	Cleveland, Ohio Chicago, III New York, N. Y	389.4 370.2 233	7:00- 8:00 7:30-12:30 Silent	3:30-10:00 7:00- 9:00 Silent	7:00- 8:00 Silent Silent	7:00-11:00 7:30-12:30 7:00- 8:00	7:00-8:00 7:30-12:30 6:00-8:00	7:00-11:00 7:30-12:80 Silent	7:00-11:00 7:30-12:30 7:00-8:00	WEAR WEBH WEBJ
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WFI	4:00-5:45 4:00-10:00	2:30-6:30 1:30-8:30 5:30-10:00	Silent Silent	6:00-8:00 4:00-10:00	4:45- 5:45 Silent	5:45- 9:00 4:00-11:00	4:45- 5:45 Silent 5:30-10:00	WFI	Philadelphia, Pa	272.6 394.5 315.6	5:00-6:45 5:00-11:00	4:00- 7:00 3:30- 7:30 2:30- 9:30	10:30- 1:00 Silent Silent	10:30- 1:00 7:00- 9:00 5:00-11:00	10:30- 1:00 5:45- 6:45 Silent	10:30-1:00 5:45-10:00 5:00-12:00	10:30- 1:00 5:45- 6:45 Silent	WFBH WFI WGBS
WGCP WGES WGN	Silent 9:30-1:00 5:30-10:30	9:30- 1:00 1:30- 9:00	5:30-10:00 Silent Silent	Silent 9:30-1:00 5:30-10:30	5:30-10:00 9:30-1:00 5:30-10:30	Silent 9:30-1:00 5:30-10:30	9:30-1:00 5:30-10:30	WGES	New York, N. Y Oak Park, III Chicago, III	252 250 370.2	Silent 10:30-2:00 6:30-11:30	6:30-11:00 10:30- 2:00 2:30-10:00	6:30-11:00 Silent Silent	Silent 10:30- 2:00 6:30-11:30	6:30-11:00 10:30- 2:00 6:30-11:30	Silent 10:30 - 2:00 6:30-11:80	6:30-11:00 10:30- 2:00 6:30-11:80	WGES
WGR	Silent 8:00-11:00	4:45- 5:45 5:30-10:00	5:00-10:00 5:30- 7:30	5:00- 8:00	5:00- 8:00 Silent	5:00- 8:00 5:45-10:30	4:00-10:00 6:15- 9:30	WGR	Buffalo, N. Y Schenectady, N. Y	319 379.5	9:00-12:00	5:45- 6:45 6:30-11:00	6:00-11:00 6:30- 8:30	6:00- 9:00 7:10-11:00	7:00- 9:00 Silent	5:00- 9:00 6:45-11:30	5:00-11:00	WGR
WHAD WHAR WHAS	6:00- 7:00 5:30- 8:00 7:30- 9:00	Silent 7:00-10:00 4:00- 5:00	6:00-10:00 5:30- 8:00 Silent	6:00- 7:00 5:30-10:00 7:30- 9:30	6:00-12:30 Silent 7:30- 9:00	6:00- 7:00 5:30- 8:00 7:30- 9:00	5:30-10:00 7:30- 9:00	WHAR	Atlantic City, N. J Louisville, Ky	275 275 399.8	7:00- 8:00 6:30- 9:00 8:30-10:00	Silent 8:00-11:00 5:00-6:00	7:00-11:00 6:30- 9:00 Silent	7:00- 8:00 6:30- 9:00 8:30-10:30	7:00- 1:30 Silent 8:30-10:00	7:00- 8:00 6:30- 9:00 8:30-10:00		WHAR
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WHO WHT WIBO	Silent 6:00-12:00 5:00- 7:00	7:30-8:30 11:00-9:30 5:00-11:00	7:30-12:00 -6:00-12:00 Silent	7:30-9:00 3:00-12:00 5:00-2:00	6:30-11:20 6:00-12:00 5:00-11:00	7:30-12:00 6:00-12:00 5:00- 2:00	7:30-12:00 6:00-12:00 5:00- 1:00 Silent	WHT	Des Moines, la Deerfield, III Chicago, III	526 399.8 226	Silent 7:00- 1:00 6:00- 8:00	8:30-9:30 12:00-10:30 6:00-12:00	8:30- 1:00 7:00- 1:00	8:30-10:00	7:30-12:20 7:00- 1:00	8:30- 1:00 7:00- 1:00	8:30- 1:00 7:00- 1:00	WHO
WJAR	6:00-10:05 Silent	2:15- 8:15 5:20- 8:15	Silent 6:00- 8:00	6:00-11:00	Silent	6:00-11:00	Silent 6:00-10:00	WIP	Philadelphia, Pa Providence, R. I	508.2 305.9	7:00-11:05	3:15- 4:15 6:20- 9:15	Silent	7:00-12:00	6:00- 3:00 Silent 6:30- 7:30	7:00-12:00 7:00-10:00	Silent	WIP
WIAS	Silent 5:45-12:00	Silent 7:45- 9:00	7:30-10:00 5:45-12:00	7:30-10:00 5:45-12:00	7:30-10:00 5:45-12:00	6:30- 9:00 Silent	6:30- 9:00 5:45-12:00	MIID	Pittsburgh, Pa Mooseheart, III	275.3 302.8 405.2	Silent 6:45-1:00		8:30-11:00 6:45- 1:00	6:45- 1:00	8:30-11:00 6:45- 1:00	8:30-10:00 Silent	6:45- 1:00	
WIZ	Silent 5:00- 9:30 Silent	6:15- 7:15 6:00- 9:00 6:00- 8:00	Silent 6:15- 7:15 Silent	6:30- 9:15 6:10- 9:30 Silent	Silent 7:30- 9:30 6:00- 8:00	6:30- 8:00 6:30- 9:30 Silent	Silent	WKAQ	New York, N. Y New York, N. Y San Juan, P. R	454.3 340.7	Silent 6:00-10:30 Silent	7:00- 9:00	7:15- 8:15	7:30-10:15 7:10-10:30 Silent	Silent 8:30-10:30 7:00- 9:00	7:30-9:00 7:30-10:00 Silent	7:45- 8:45 7:15- 9:45 Silent	
WKAR WKRC WLBL	11:30- 1:00 9:00-11:00 11:59-12:59	Silent 5:45-10:00 Silent	6:00- 7:00 9:00-11:00 Silent	Silent 9:00-12:00 8:00- 9:00	7:00- 8:15 7:00-11:00 Silent	Silent Silent 8:00- 9:00	Silent	WKRC	Lansing, Mich Cincinnati, O Stevens Point, Wis	285.5 422.3 278	12:30- 2:00 10:00-12:00 12:59- 1:59	Silent 6:45-11:00	7:00- 8:00	Silent	8:00- 9:15	Silent Silent 9:00-10:00	7:00- 8:00 Silent	
WLIT WLS WLW	5:30- 6:30 6:45-12:00 5:00- 7:00	Silent 6:30- 7:55 5:30- 7:30	5:30- 9:00 Silent 7:15- 9:30	Silent 6:00-12:00 6:00-9:00	5:30-9:00 6:00-10:30 6:00-10:00	Silent 6:00-7:55 6:00-11:15	5:30- 9:00 6:00-10:30 Silent	WLIT	Philadelphia, Pa Chicago, III Harrison, O	394.5 344.6 422.3	12:59- 1:59 6:30- 7:30 7:45- 1:00 6:00- 8:00	7:30- 8:55	6:30-10:00 Silent	Silent 7:00- 1:00	6:30-10:00 7:00-11:30 7:00-11:00	Silent	6:30-10:00 7:00-11:30	WLIT
WMAK	Silent 7:00- 9:00	Silent	7:30- 9:15 Silent	Silent 7:00- 9:15	Silent 7:00- 8:45	10:00-11:00 7:00- 9:15	Silent	WMAK	Lockport, N. Y	265.5 447.5	Silent	Silent	8:30-10:15	Silent	Silent	11:00-12:00	Silent	WMAK
WMBB WMBF		6:00- 9:30 5:30-11:00	Silent 5:30-11:00	6:00-9:30 5:30-11:00	6:00- 9:30 5:30-11:00	6:00- 9:30 5:30-11:00	6:00- 9:30 5:30-11:00	WMBB	Chicago, III	250 384.4	8:00-10:00 7:00-10:30 6:30-12:00	7:00-10:30 6:30-12:00	Silent Silent 5:30-12:00	8:00-10:15 7:00-10:30 6:30-12:00	8:00-9:45 7:00-10:30 6:30-12:00	7:00-10:30	7:00-10:30	WMBB
WMC WMCA WNAC	7:00-10:00 6:00- 8:00	Silent 1:00- 5:00 1:00- 7:30	7:30-9:30 7:00-10:00 6:00-8:00	7:30-12:00 7:00-10:00 6:00- 8:00	6:00- 8:00	7:30-9:30 7:00-10:00 6:00-8:00	6:00- 8:00	WMCA	Memphis, Tenn New York, N. Y Boston, Mass	499.7 340.7 280.2	8:30-10:30 8:00-11:00 7:00- 9:00	2:00-6:00 2:00-8:30	8:30-10:30 8:00-11:00 7:00- 9:00	8:00-11:00	8:00-11:00		8:00-11:00	WMCA
WNYC WOAI WOAN	4:30- 8:20 Silent Silent	7:00- 9:00 7:30-10:30 9:00-10:00	5:00- 8:20 Silent 9:00-10:00	5:20-8:20 8:30-10:30 9:00-10:00	5:30- 8:30 Silent 9:00-10:00	5:20- 7:30 9:30-10:30 9:00-10:00	5:30- 8:20 Silent	WNYC	New York, N. Y San Antonio, Texas Lawrenceburg, Tenn	526 394.5 282.8	5:30- 9:20 Silent Silent	8:00-10:00 8:30-11:30 10:00-11:00	6:00- 9:20 Silent	6:20- 9:20 9:30-11:30	6:30-9:30 Silent	6:20-8:30 10:30-11:30	6:30- 9:20 Silent	WNYC
WOAW	6:00-12:00 6:30-12:00	9:00-10:00 8:00-11:30	6:00-11:00 Silent	6:00- 1:00 6:30- 8:00	Silent 6:30-10:00	6:00-10:00	6:00-10:00 6:30-10:00	WOAW	Omaha, Nebr Davenport, Ia	526 483.6		10:00-11:00	7:00-12:00	7:00-11:00 7:00- 2:00 7:30- 9:00		7:00-11:00	7:00-11:00	WOAW
WOO WOR WORD	5:30~ 6:30 4:15-10:00 7:30- 9:30	2:45- 5:00 Silent 5:45- 7:00	5:30- 9:30 4:15-10:00	5:30- 6:30 4:15- 5:30 7:30- 9:00	5:30- 9:30 4:15-10:00	5:30- 6:30 4:15- 5:30	5:30- 9:30 4:15- 5:30	WOR	Philadelphia, Pa Newark, N. J	508.2 405.2	6:30- 7:30 5:15- 9:00	Silent	5:15- 9:00				6:30-10:30	WOO WOR
WOS	Silent 5:00-10:00	7:30- 8:30 1:15- 9:00	7;30- 8:45 8:00-10:00 5:00- 9:30	Silent 6:00- 9:00	7:30- 9:00 8:00-10:00 Silent	7:30- 9:00 Silent 5:00-10:15	7:30-9:30 8:00-10:00 5:00-9:00	WOS	Jefferson, City, Mo Atlantic City, N. J	275 440.9 299.8	8:30-10:30 Silent 6:00-11:00	8:30-9:30 2:15-10:00	8:30-9:45 9:00-11:00 6:00-10:30	8:80-10:00 Silent	9:00-11:00 Silent	8:30-10:00 Silent 6:00-11:15	8:30-10:30 9:00-11:00	WORD WOS
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# Radio Digest

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#### Now to Scold Stations

Now, to Scold Stations

When the great artist, the vaudeville star, the actor has finished his or her performance and applause is given, it remains a tradition of the stage that a bow at least shall be given to the audience. Not to do so would be a violation of common courtesy. Yet broadcasting stations, the MAJORITY OF THEM, are very lax in the way they make their bows. The applause, of course, is a little different. The invisible audience uses the mail or telegraph. In reply it expects the courtesy of a reply. It expects this reply within ten days after the applause has been sent. The public is not exacting too much. It does not expect a personal letter. All that is wanted is some form of acknowledgment card or letter.

Going further, some of the members of the audience are collecting station reception verification stamps. When these members send excerpt notes of a station's program for verification, and ten cents for the stamp, there is all the more reason for that station's showing haste to either return the ten cents, if stamps are not supplied, or send the verification stamp at once. Not a week should elapse.

But do the stations handle their correspondence in accordance with common courtesy? No, absolutely, not Instead, the applause mail and telegrams are often filed or even thrown away without a thought of a postal card acknowledgment.

What happens? The station, which undoubtedly expects to carry good will for the purpose of indirect advertisement, loses ardent supporters and listeners by the score. The people feel that if correspondence is handled so, how must the newspapers, Radio apparatus, or other manufactured products sold by the broadcasting company be handled? If a hotel, how are the guests treated? In the same way as the applause correspondence?

It pays to be courteous at all times in all branches of business.

It pays to be courteous at all times in all branches

It pays to be courteous at an times in an of business. We are in receipt of a detailed letter from a listener who has made a research on how poorly applause mail is treated by the broadcasters. This man took pains to list and time each station to which he sent mail. He was collecting station stamps. He sent dimes with each letter.

Six stations out of twenty-eight addressed were written FIVE times before the courtesy of a reply was extended.

was extended.

This is outrageous. Stations who are unable to handle their applause decently, that is to at least send a form acknowledgment postcard reply, should refrain from broadcasting. They do not deserve to have

#### Upon Meeting a Station Director

HE WAS a most pleasant fellow to meet, this director-announcer. He had never seen the editors or offices of Radio Digest, and, while visiting the city, made a call to get acquainted. We, as representatives of the listening public, were agreeably surprised at his youth, strong personality and good judgment.

ment.

After we had taken him about the city and shown him the various studios, we spent an enjoyable evening with him discussing broadcasting. His observations were not what one would expect from a young man. They were keen and showed careful analysis.

He was amazed at the number of different ways in which the city's stations were conducted.

"To the listener, the broadcasters probably appear to be very much the same," he said, "but to me the procedures are unique in almost every case. But that is what is improving the art. Studio practice is being perfected by such innovations, and some day, when perfection is reached, if it is ever, will be time enough for standardization of methods."

At the present time it is a matter for the individual announcer to figure out the procedure that fits his individual case. Fairs in one part of the country like one thing while in another part something else is wanted.

We like to get a committed with the discrete and

We like to get acquainted with the directors and other members of the station personnel. It gives one an insight on conditions from a different set of eyes than one is liable to acquire by sitting in the editor's

#### RADIO INDI-GEST

#### Why They Took the Electric Wires Down

Why They Took the Electric Wires Down

RADIO station has been installed in Linton that deserves, special mention by reason of the fact that it is more or less a county affair and evidences the courteous treatment that is accorded our guests at the county boarding house. From the flag pole on the belfry tower over our jail or blind-pig correction house, floats a Radio aerial and below in the lounging room in front of the cells is an up-to-date Radio receiving machine for the use of the inmates. We think that Linton can boast of having the most modern correction house in the state. Shortly after the three gentlemen who were so unlucky as to get caught with shooze in their possession were compelled to accept the invitation of Judge McKenna to be jail guests of this county, the leading mechanic of the trio brought down his Radio from his home and installed it in jail and now they pass the evening hours away listening to lectures and concerts far away until it is time to go to bed or home for the night. On Sundays as a matter of convenience they will have their Sunday sermon by the Rev. Splurgeon from Sprugown brought to them over the Radio. It has been suggested to us that this Radio station should be given the name of Jail. De Luxe, and call by the initials J-L-D Luxe. Reports say that the inmates are very much perturbed over the fact that the electric wires in that vicinity interfere with the action of their Radio, and it is possible that the electric wires will have to be removed that our guests may not be inconvenienced. Reclining clairs will be installed next week. (News clip from Doc. W.E.W.)

Our jail ain't the same as when I was a boy; They've even removed all the moss, And taken the roof from off of the top To cut down the di'lectric loss.

#### When They Moved

When they were planning to make a move From one town to another, They wanted one thing specially—A den for the Radio brother.

So they searched the places all around For a house that was just a fit
For the family, and would still have room
For all of the Radio kit.

They wanted a place on a quiet street
Far away from the noisy crowd
With lots and lots of open space
Where they could think out loud.

Well, at last they found an eight room house With neighbors they liked right well, And they thought at last they were in heav'n, But—it is sad to tell.

The numerous wires were all strung up And evrything else in place Then the brother took a look around And you should have seen his face!

A Heterodyne right next to them A super behind, in a flat, And a ten tube set at the corner, Now what do you think of that!

They now get what they have time to get Before the others begin. The house soon will be "To Let," again, With the Radio set thrown in!

L. G.

LONDON BOBBY writes to tell us that he overheard two men talking about how to get to a certain house. "Well," says the one, "How'll I find it when I get on that street?" "You can't help it," replied the other," if's the only house in that block that hasn't got an aerial on it."

n it." Now, that's a real distinction!

#### Lit-tle Rol-lo at the Ra-di-o Store In Words of One Syllable

In Words of One Syllable

What does the pic-ture show? It shows lit-tie Roi-lo in a Ra-di-o store. He is buy-ing a Ra-di-o. The salesman is say-ing, "for vol-ume, dis-tance and se-lec-tiv-i-ty you can't beat this out-fit. Ten dol-lars down and ya can drag it home."

"Be-fore we en-ter pe-cu-ni-a-ry dis-cus-sions," replied lit-tie Roi-lo, "let us ex-a-mine the tech-ni-cal fea-tures. Is the cir-cuit a-per-i-o-di-cal-ly bal-anced on the nega-tive po-ten-ti-o-me-ter?"

"Oh, yah. Just one knob, push the but-ton, a twist of the wrist and in comes the beau-ti-ful mu-sic. Shall I wrap it up?"

of the wrist and in comes the beau-ti-ful mu-sic. Shall I wrap it up?"
"And what of the sche-ma-tic pic-tur-i-za-tion of os-cil-lat-ing in-duc-tion?" con-tin-ued lit-tle Rol-lo.
"Use pea-nut tubes and get coast to coast." re-plied the sales-man. "You can't lose. She's a world beat-er. It's the last one in stock. Shall I wrap it up?"
"Is su-per-he-ter-o-dyn-lng ob-via-ted by conden-sers?—"Rol-lo," cried a voice. It was mother. "You have been read-ing a-gain. And as for you, sir, we do not want a Ra-di-o in the home as it would keep Rol-to from his bas-soon les-sons. Come. Rol-lo, we will see if fa-ther is back from work at the cus-pi-dor fac-tory."

THE THIRD TROMBONE PLAYER. THE THIRD TROMBONE PLAYER.

What with youthful wizards in chess, mathematics, music, astronomy and everything else we are rather surprised none has appeared in Radio as yet.

#### Funny Joke

While 2LO in London was broadcasting a program someone in the studio dropped a penny. A Scotchman in Aberdeen picked it up on the Radio.

Nothing looks so well at the bottom of a column as

#### The Swap



#### Condensed BY DIELECTRIC

I seldom step beyond the borders of the United States to find material for comment in these columns, yet many of you readers are tuned nightly to Canadian and other outside stations. There is a lesson to draw from the manner of announcing at Station CFCF, Montreal, Canada, applicable to some of our broadcasting stations, but not all. While Smith's orchestraplayed dance numbers the announcer wasted not a second between selections in giving his station call, nor did he omit the call. That is where so many of our best stations make a serious error.

At least for this season, we may expect no more college glee club concerts, a form of entertainment that has a pretty general appeal, so long as the rahrah-rah stuff is kept in the background. Most of the clubs are trained by men of considerable musical talent and present uniformly good work, as for instance that of Yale university which rendered songs and banjo numbers in a concert in New Haven, Conn., and broadcast through Station WJZ. It was very pleasing entertainment.

Station WCCO, the Gold Medal station at St. Paul-Minneapolis, has a fairly wide reception radius with audiences mostly in favor of their programs. The Gold Medal trio is establishing a name for itself among broadcast features purely on its merit and successfully chooses numbers most likely to meet the varied tastes of the Radio public. Perhaps the Silver Lake band is not deserving of extraordinary praise, yet it is the equial of many good bands being heard from broadcasting studios.

While mention is made from time to time of those stations indulging in uscless time-consuming performances, such as reading telegrams, etc., it is only fair to point to other stations whose evident purpose is to meet the wishes of listeners in. So I call attention to WRC, Washington, where the announcer interrupts only so long as is required to give the call letters between orchestra numbers. Listening to the Paradise band from that station was enjoyable for that reason.

I believe "Stars and Stripes Forever" has seldom been played with the snap put into it by a band appearing in the studio of WTAS, Elgin, not long ago. In fact, every number was rendered in a manner to indicate enthusiasm of all the players. The announcer was kept rather busy announcing various quantities of cartons of cigarettes, which were either presented to, or by, a large male audience ranging in age from one year upward. What was the brand name? N. B. tobacco interests.

One of the best talk features heard during these warm evenings was that of a reporter discussing bootlegging in somewhat of a humorous vein from Station KYW. Songs were heard during the same evening, some of them good and others—songs, that's all. And yet, there is more of paradise in ANY song than in Monday night advertising from Chicago's suburban agencies. Silence, or no ads; there's a motto!

Those of us who were tuned to WGY, Schenectady, during the broadcasting of a Scotch program were well paid for twisting the dials. There is a station with uniformly excellent transmission, even though certain sections suffer fading from this station, and much care and thought is given to every feature before it is put on the air.

# Recent Advances in Tuned R.F. Amplification

Part VII-Shielding and Compensating Condensers

By Milo Gurney

THE letter response to the series of articles upon Wheatstone bridge circuits, which were to have been concluded with my last installment, has been so large I now regret that I did not bring up for discussion additional features pertinent to the subject. These would border, in 'part, upon structural details, particularly as they apply to shielding and the type and location of capacitive balances used.

in 'part, upon structural details, particularly as they apply to shielding and the type and location of capacitive balances used.

No doubt the reader has realized that in circuits of this character every tendency toward interstage coupling whether of the inductive or capacitive order, should be under control. Note, in particular, that I use the term "under control" as against zero relationship in interstage influence, and I so employ the term in order that one may not attempt the impossible. Obviously, progressive result is desired up to the point of allowing a coupled regenerative booster just below the point of oscillation. Uncontrolled progression would, in all essentials, be as disastrous as total elimination of capacitive coupling. As such portions of the circuit as inductances, wiring, etc., are uncontrolled factors, while the variable capacities are controllable, it is then apparent that individual stage shielding is all important. Each stage, in effect, is an individual isolated receiving unit with no repeater action, other than forward, being possible.

Good as Super-Ret for DX

The capacitive factors being variable, in a large measure, furnish us the total control desired. There can be no question but that a well constructed bridge circuit is superior in all around performance to the popular super-heterodyne, although I am quite ready to admit that, not unlike the super, experience will count most toward success. One cannot build them on a board with hay wire and expect other than the pleasure of tearing them down. To the contrary, after viewing some of the factory types which will be presented this fall and learning from them the average method used for shielding, one may then accomplish very ingenious and most acceptable receivers which should, and no doubt will prove a revelation to the constructor.

Shielding, to be effective, should employ cither copper, brass or aluminum for

accomplish very ingenious and most acceptable receivers which should, and no doubt will prove a revelation to the constructor.

Shielding, to be effective, should employ either copper, brass or aluminum for the housing, aluminum being preferred with copper second and brass a poor third.

Shielding Details

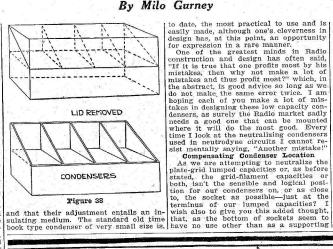
Of such completed models of receivers employing bridge circuits that I have seen, each seems to favor mounting the tuning condensers in a metal compartment just below or above the inductances, such a compartment not to have any subdivisions, but following an oblong whose depth and height are equal. If mounted below, then the top of the housing is of sufficiently heavy stock to act as a support for the mounting of the inductance units or, as one might term it, a sub panel tor the inductance members. Each inductance stage should, however, be also totally shielded, metal partitions between stages serving the purpose nicely. The total shield may then follow the general lines shown in figure 38 which is nothing with a horizontal metal sub panel, the top portion divided into stalls which are nothed in the lower portion. No attempt should be made to make any portion of the face of the shielding the operating of face panel. However, if one does not desire to use bakelite as a face panel, a three-ply veneer wood panency be designed.

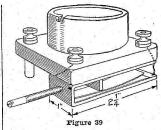
I believe may fine one yet a three-ply veneer wood panency of the factory made sets which will be offered this fall will show the used. White for efficient shielding, a totally is desired, it is obviously impossible to scanlishing shorts or unintentional grants if metal is used.

White for efficient shielding, a totally is desired, it is obviously impossible to exemplish this result so long as it is source will be had, while as such openings concern only six wires, one can readily so space them as to eliminate loop coupling in the high frequency wiring, and in the low potential as well.

\*\*Neutralizing Condensers\*\*

We now come to the most important part of our balancing system, viz., tha



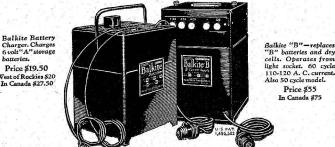


medium, then why not mount the socket base on pillars and place our condensers immediately beneath it. Surely the socket will not object, while it is my thought that at this location the condensers would be well out of the way, at the same time admitting of extremely short connecting leads.

Figure 39 shows such an arrangement

Figure 39 shows such an arrangement while figure 40 indicates a suggested de-

(Continued on page 20)



# A uniform, constant power supply for both "A" and "B" circuits

Here at last is a convenient and unfailing power supply for your radio set. Balkite Radio Power Units furnish constant uniform voltage to both circuits, and will give your radio set greater clarity, power and range. The Balkite Battery Charger keeps your "A" storage battery charged. Balkite "B" replaces "B" batteries entirely and supplies plate current from the light socket.

Based on the same principle, both the Balkite Battery Charger and Balkite "B" are entirely noiseless. They have no bulbs or moving parts, and nothing to break, adjust or get out of order. They have a very low current consumption, are simple and efficient in operation, and can be put in use at any time by merely connecting to a light socket. Both are guaranteed to give satisfaction.

Sold by leading radio dealers everywhere

# FANSTEEL

BALKITE BATTERY CHARGER - BALKITE "B" PLATE CURRENT SUPPLY

Manufactured by FANSTEEL PRODUCTS COMPANY, Inc., North Chicago, Illinois

# A. B. C. Course in Radio Fundamentals

### Chapter XVI—Transmission of Electromagnetic Waves

By David Penn Moreton

THE transmission of intelligence by Radio is brought about by sending out from the transmitting point what are called electromagnetic waves, which produce an effect upon receiving station for the production of these waves may be transmitted. Special equipment is required at the transmitting station for the production of these waves, and other special equipment is required at the receiving station for their reception. Since the transmission of electromagnetic waves is somewhat similar to that of other kinds of waves, such as light, sound, heat, water, etc., we will just discuss wave motion in a simple and general manner and then apply this discussion to electromagnetic waves that the stress is transmitted. The motion of the water will be set up at P, which will be production in which the stress is transmitted. For example, if a stone be dropped in a still pond at the point P, figure 66, an up and down motion of the water will be set up at P, which will be transmitted to a point at P, without any permanent displacement of the medium itself in the water from P to P<sub>1</sub>, which can be proven by observing the behavior of a small float placed between the points P and P<sub>1</sub>. When the stone was dropped at the glady of the produce the bulges at these waves way from P to vard the point P, fends to raise the level all around P, but, on account of inertia, this cannot be done in a short time, which results in the level being raised at the points P<sub>1</sub> and P<sub>2</sub>.

Figure 67

or both of two kinds: namely, potential

or both of two kinds: namely, potential and kinetic.
Potential energy is stored energy and is due to condition or position. The potential energy is stored in a clock or victrola spring when this spring is wound up, and potential energy is stored in the weights of a grandfather clock when these weights are raised by winding the clock. Kinetic energy is the energy possessed by an object due to its motion. For example, a baseball thrown from one player to another possesses a certain amount of kinetic energy while it is speeding through the air.

Energy Transfer

Energy Transfer

Each of these forms of energy may be transformed into the other kind. When a baseball is thrown high into the air by a

particle of water involved in the transmission of the wave will be executing a circular motion in a clockwise direction. The formation of the crests or troughs is the result of the various particles being at any particular time at different stages of their circular motions. For example, where the particles zere moving horizontally in the direction of the wave travel a crest will appear, since a large number of particles are then at or near the top of, the circular path in which they travel. On the other hand when the particles are moving horizontally, but in the opposite direction to the direction in which the wave is being transmitted a trough will appear, since a large number of particles are then at, or near, the bottom of the circular path in which they travel.

Let us now consider the energy possessed by the particles of water in the various positions they have in their travel around their circular path. The energy possessed by the particles may be either the possessed by the particles may be either the passes of the player. Now as the ball falls, it is uppermost positions they have in their travel around their circular path. The energy possessed by the particles may be either the passes of the player when it leaves the hand of the player. Now as the ball of the player will be a considered the passes of the player will be a considered the passes of the player. Now as the ball falls, it is uppermost positions they have in their travel around their circular path. The energy possessed by the particles of water in the various positions they have in their travel around their circular path. The energy to the passes of the player will be passed by the ball when it left the hand of the player, when the travel around their circular path. The energy the passes of the player will be a passed by the ball when it left the hand of the player will be a passed by the ball when it left the hand of the player and the kinetic energy will be a passed by the passed by the

Hair Spring Example

Hair Spring Example

Another good example of the transformation of energy from one form to another is the hair spring and balance wheel of your watch. When the balance wheel comes to rest, it possesses no kinetic energy and there is potential energy stored in the hair spring. Now as the balance which rotates it gains in kinetic energy and the spring loses potential energy until the wheel reaches its mid position of travel when the kinetic energy is a maximum and the potential energy on the spring is zero. As the wheel travels to its next position of rest, it loses kinetic energy and the spring gains in potential energy until the kinetic energy of the wheel is zero and the potential energy of the spring is a maximum. If there were no losses in this operation the wheel would oscillate back and forth

(Continued on page 21)



# The Best Transformer Money Can Buy

You secure Marvelous Reception with these New KARAS HARMONIK Audio Frequency Amplifying Transformers

What Karas Harmoniks Do that Other Trans-

formers Cannot Do

THEY amplify with GREAT VOLUME the extremely low frequency tones that other transformers fail to amplify at all—KARAS HARMONIKS also amplify EQUALLY all of the many vital harmonies and rich overtones that combine to form pleasing musical sounds.

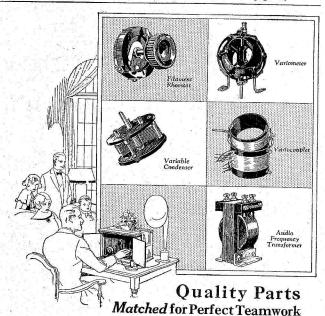
With KARAS HARMONIKS there is no muffling of sounds—no fuzz on the edges of words—no thin, squeaky, distorted tones. Instead, EVERY tone is clean-cut, separate and distinct from every other tone

BEST FOR PORTABLE SETS The Results of Karas Harmoniks

The result from any radio set of any and all efficient circuits is an outpouring from the loud speaker of soft, rich, round, full, mellow tones such as you have never before heard from any radio—a surprising volume of REAL MUSIC to which it is a delightful pleasure to listen. Price \$7.00 each. Order from your dealer if he has them, or direct from

KARAS ELECTRIC COMPANY

4049 North Rockwell Street, Chicago



Your "pet" hook-up needs first quality parts -perfectly matched-to give you real radio.

Every Federal Standard Radio Part is designed, made, matched and guaranteed by Federal. That is why you find Federal parts in all the better hook-ups-that is why you should insist on Federal parts when purchasing.

FEDERAL TELEPHONE MANUFACTURING CORP.

# Portable and Phonograph Super-Heterodyne

Part I—Analysis of Design

By John G. Ryan

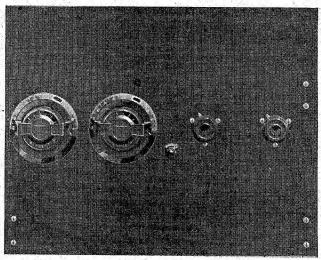
In PREVIOUS years, portable sets have always consisted of one, two or three tubes, with an occasional four tuber, which was to be operated from an antenna of some sort which usually consisted of a wire thrown over a tree branch or hastily strung between the summer bungalow and a tall tree. Although the five tube set, in the form of a neutrodyne or tuned R.F. receiver, was popular in 1924, it did not lend itself readily to portable use since these circuits were found to be very satisfactory on storage battery tubes, but not very efficient with the dry cell filament tubes. The broadcast situation which came about last fall made necessary the use of a receiver with a selectivity far in advance of the average five tube set, or the reflex, and as a consequence the super-heterodyne attained great popularity because of its remarkable ability to separate stations, even though within a few meters of each other. The Radio public has by now become more or less used to the principle of the super-heterodyne and to its construction and operation. So the writer in presenting a portable, which makes use of a super-heterodyne kit, does not feel that he is presenting something for Radio Digest readers which is beyond the ability of the average fan.

Why Super Is Preferable

Due to its tremendous sensitivity and long range the super-heterodyne of super-

Why Super Is Preferable

Due to its tremendous sensitivity and long range the super-heterodyne can be operated from a loop but it would be operated from a loop but it would be necessary to entirely enclose such a receiver within shielding so that there would be no interaction between the air core transformers and the loop antenna. Super-heterodynies are the super-heterodyne is much to be preferred rearnsformers are not subject to this difficulty because they are usually encased in small metal containers, or have an iron core which limits the field around the coil, and greatly hinders the tendency to interact with other units. Because of the dabove mentioned facts a seven tube super-heterodyne is are necessary and these can be carried to the writer that if the set were designed only for such use the table to distinct the same points on the distance of the dabove mentioned facts a seven tube super-heterodyne can be built to occurred to the writer that if the set were designed only for such use that its useful period during a year would be the above mentioned facts a seven tube super-heterodyne can be built to occurred to the writer that if the set were designed only for such use that its useful period during a year would be used to the control of the writer that if the set were designed only for such use that its useful period during a year would be used.



Front view of set showing arrangement of controls on panel.

ceiver which is still another point in its be a demand from the public for a comfavor for use in portable sets. The super-heterodyne is much to be preferred because of the fact that only two tuning controls are necessary and these can be accurately logged so that stations will always be found at the same points on the dials.

When planning this set for portable use it occurred to the writer that if the set were designed only for such use that its useful period during a year would be limited to the time that people were on vacation which may vary between three weeks and three months. There seems to

kit. Potentiometer, 400 ohm Rheostat, 2 ohm..... 1 Audio frequency transformer 2 Grid Condensers with clips... 2 Grid leak cartridges, seven megohms megohms

1 By-pass condenser .5 mfd....... Fixed mica condenser .006 mfd Fixed mica condenser .002 mfd 1 Fixed mica condenser .002 mfd
1 Fanel 18"14"x ½",
1 Shelf 17"x3"x ½"
1 Shelf 17"x6"x ½"
4 Brackets with 6" depth
kit)
2 Brackets 2" (if necessary for kit) Small speaker Vernier dials . Miscellaneous .... Total cost . Accessories
Loop Antenna, folding ......
Dry cells No. 6 (A battery)
Tubes UV-199 or C-299 type \$ 10.00 C-299 type .. 21.00 B batteries. 7.00 4 Intermediate size B 1 C battery 7½-volt Total cost

of this set of a size that will fit two or three of the more popular upright models. A different type of construction would be desirable if the receiver were to be used in a horizontal position in a console model. As the set stands, it will contain its own batteries and its loud speaker while the loop antenna may be one of the folding type of which there are so many on the market, or it may be fitted into the rear cover of this set on which it can swing to secure the desired directional effect.

There are some who may feel that a single stage of audio frequency amplifica- (Continued on page 20)

# That Very Natural Tone

of the Bristol Loud Speaker is not due to chance, but to a long-time experience in the manufacture of finely-adjusted scientific instruments.

For over 36 years The Bristol Company has been manufacturing Bris-

tol's Recording Instruments-which measure and record the minute changes in heat, cold, humidity, electrical current, and numerous other properties.

That this experience and factory fitness is reflected in the sweet tone of the Bristol Loud Speaker is a very natural thing.

For \$25 and \$30 you can get a Bristol Speaker; and there are others as low as \$12.50. Ask your dealer to send one out. Write us for Folder No. AY-3022, telling why the Bristol is such a delight to the ear.

THE BRISTOL COMPANY, WATERBURY, CONN.



# An Advertisement Ve Did Not Write



Bluefield, W. Va.,

All-American Radio Corp., Chicago, Illinois.

Gentlemen:

I certainly could expect no finer results from a transformer than I am now obtaining with your Audio Frequency Transformer.

I have used five stages of Audio Frequency Amplification with varying resistances across the secondaries and also with fixed condensers across the primaries or in series, and have perfect reception, which speaks well for Audio efficiency.

Yours very truly,

(Signed) R. L. Edmonson,

c/o St. Luke's Hospital and X-ray Dept

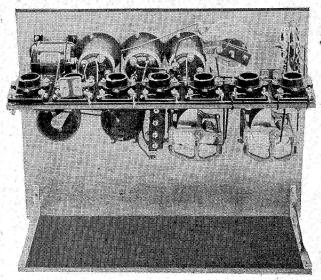
To enjoy modern radio at its best, send 10 cents for the RADIO KEY BOOK ALL-AMERICAN RADIO CORP.

E. N. RAULAND, President

4203 BELMONT AVENUE

CHI

Largest Selling Transformers in the World



Rear view of set, showing sub panel and space for batteries and loud speaker.

#### PORTABLE SUPER-HET

(Continued from page 19)

(Continued from page 19) tion, using the UV-199 or C-299 vacuum tubes, does not give sufficient volume, but the writer has found that when a single-stage of this type follows a super-heterodyne receiver, the volume is plenty for nearly any use or location in which the receiver may be. The volume is not sufficient for dancing, but is of a round smooth quality that is most pleasing and there is practically no distortion. A group of 8 or 10 people may sit on the veranda or around a camp fire in the quiet of a summer evening and hear distinctly every word that is said, and enjoy the music, without any effort to strain the sense of hearing.

without any effort to strain the sense of hearing.

After studying the front and rear views shown with this first article, the reader will note that the layout is subject to considerable variation to suit the Individual needs or whims, and that the width of 18' is made necessary only because of the size of the super-heterodyne kit used. This kit was chosen because it is the largest of all those available, and takes up the greatest space, so the writer felt that no matter what kit Radio Digest readers might use there would be ample space for the various parts necessary. If you know of a kit which occupies less space, that you feel is efficient, it can be used with perfect confidence and the width of the panel can be reduced, if that is necessary so the panel will go into your talking machine. All of the upright models have the sound chamber at the top and space in the bottom for records in which the partitions may be either horizontal or vertical. The width of this

lower compartment should be carefully measured and, if found to be less than 18 inches, the various units can be put somewhat closer together because the various parts are somewhat smaller. This is presuming that a smaller kit has been chosen.

#### Parts Used

been chosen.

Parts Used

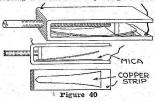
Super-heterodyne kits are largely a matter of personal preference, as they are all alike in principle, and it is only the small refinements here and there which make any difference between them. The writer prefers the kit used simply because the filter circuit consists of two tuned air core inductances, the coupling of which may be varied. The condensers should be of a good low loss type, in which pigtails furnish the connection to the rotor plates, and preferably there should be adjustable bearings so that the ease of tuning can be varied for smoothness and therefore delicacy of operation. The audio transformer should be one of the improved types which made their appearance on the market this past season and which contain large cores with sufficient wire to guarantee an impedance more than the tube impedance to which they are coupled. Variable grid leaks were not found to be necessary as the 199 tube used as a detector in the superheterodyne does not appear to be particularly critical wife regard to grid allers. heterodyne does not appear to be partic-ularly critical with regard to grid bias. The writer's set seems to work equally well without grid leaks of any kind, but a barely perceptible improvement in ton quality could be noticed when cartridges of from five to eight megohms were in-

serted.
There are some who will criticise this (Continued on page 22)

#### TUNED R.F. ADVANCES

(Continued from page 17)

sign which would permit of using an in-sulated adjustment screw and it is of the utmost importance that this adjustment be thoroughly insulated, in order that no capacity effect may be transferred from a screw driver or other media used when seeking a balance. In any design of such



i Figure 40

minimum condenser, wherein a fixed plate is used, so taper it as to permit a graduated minimum. Figure 40 pictures my thought, in which you will note that, while a portion of the fixed plate is of the width of the mounting, at one end its taper, at its apex, has followed close to a 45° angle. This permits the securing of values most minute if required.

There is no reason apparent why such condensers could not be made in a very substantial manner and I would be grateful to those of you who care to submit constructional designs for condensers which will mount on or underneath a socket. Don't try spending a lot of money in attempting to secure a patent on such a device; patents are expensive air castles as a rule, and lead to, many disappointments. If you must have a patent, secure it in some field other than in Radio as Radio now has about eight thousand too many.

Patent a scheme to add six inches onto

a ditch digger's shovel at about half an hour before quitting time and make heaps of money, but in Radio, never! There must be over a hundred low loss variable condensers, most of them patented or living in hopes, each designed by Radio men and my thought is that most of them were treated shamefully in not letting the mechanical engineer design at least the mounting screws.

Looking Ahead Next week I shall summarize the genral picture story, not only of the Wheat-stone Bridge circuits, but also have some-

stone Bridge circuits, but also have something to say about aerials and grounds. Every Radio set needs both of them and, while the press keeps harping upon the subject, still, but mighty few seem to realize the importance of the subject. As I glance out over the roofs in my neighborhood I have counted sixty-two aerials. Of these, two appear to have been installed for Radio reception, while the others would make terribly poor clothes lines and, thank goodness, it is these chaps who refuse to listen to other than California stations, except when company comes.

California stations, except when company comes.

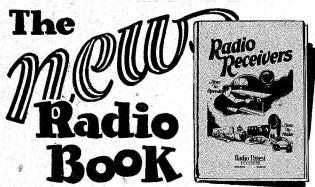
Before closing, I want to answer a question, so often asked in my mail, and that is—"Is it possible to use a stage of-radio frequency ahead of a three tube regenerator using tickler feedback without neutralizing it?" The answer is, that in most of such circuits, you can if you will use a UV-199 or C-299 in the radio frequency stage, and a separate filament control for it. The constants of the circuit and its arrangement have much to do with its use, but, in general, this scheme works very satisfactorily.

(TO BE CONTINUED)

#### (TO BE CONTINUED)

sa rule, and lead to many disappoint-ents. If you must have a patent, secure in some field other than in Radio as adio now has about eight thousand too any.

Patent a scheme to add six inches onto



How to ≈ understand radio, assemble circuits, improve reception, operate sets.

VERY phase of Radio reception gathered into one book at last! Explanation of elementary principles, directions for constructing parts, detailed how-to-build articles for the assembly of sets, operating directions on popular manufactured outfits.

Haven't you often wondered what all the spirals, wriggly lines and zig-zag lines were about on diagrams? A big chart shows you a picture of the part as you see it and, beside the picture, the symbol used in diagrams. Other articles show clearly just what happens within the mysterious little vacuum tubes that glow hour after hour within your set, apparently without change, yet pass every note of a jazz orchestra or soprano.

Antennas, for whose erection there are seemingly no rules, are covered fully; the reason for a long wire in some locations and a short one in others, is readily grasped by anyone. Crystal sets. one tubers, two tube reflexes, three tube regenerative and reflex outfits, four tube R. F. and neutrodynes, five tube assembliesall types are presented up to the nine tube "super," king of the air.

#### For the Man That Bought His Set

For the non-technically inclined there is a two-color broadcast map of the country, operating schedules of all the leading stations, call letters and power rating of every station on the air, suggestions for the care of batteries and tubes.

No matter what type of receiver you own, there are dozens of valuable suggestions on tuning, trouble shooting and operating. Your head receivers, loud speaker, antenna and certain parts within the set, require frequent cleaning, adjusting and care. Interference and its remedies are factors you should understand even though you care nothing about "what makes it go."

Compiled by the technical staff of Radio Digest, it represents the high lights of the past twelve months in the Radio field. All this data is indexed for ready reference and logically arranged. Only a few thousand have been printed and this offer will stand for a limited time. The only book of its kind and is FREE with one year's subscription to Radio Digest. This offer good only on subscriptions sent directly to this office, not through agents or agencies.

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# Unicontrol Regenerative Receiver

#### Dial Device Controls Tickler Regeneration

So much trouble has been encountered by the use of regenerative receivers in an oscillating condition, that I designed a one dial regenerative receiver which will not oscillate if handled properly and yet

#### 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 operparts 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.

Radio Digest, 510 North Dearborn St., Chicago

brings in all wave lengths with maximum regeneration and this by tuning only one

regeneration and this by tuning only one dial.

The circuit is one generally used in re-generative receivers and uses a three-cir-

#### A. B. C. RADIO COURSE

(Continued from page 18)

indefinitely after it was set in motion. The losses are overcome by the main spring of the watch, whose potential energy is available after the watch is

energy is available after the watch is wound.

Considering now the particles of water involved in the transmission of a wave as shown in figure 67. A particle of water at the point B, possesses potential energy due to its elevation above the average or normal surface of the water and also some kinetic energy in the direction of the wave travel since it has a velocity in that direction. Now as the particle continues to rotate, its displacement from the average or normal level grows less and less and so does the component of its velocity in the direction of the wave travel and, in the position D, its potential energy is zero and also its kinetic energy in the direction of wave travel is zero. As the particle rotates, still further, its potential energy becomes negative as it is below the average or normal level of the water and its kinetic energy increases and reaches its maximum value at the point E, but in the opposite direction to the direction of the wave travel. At the point E, the kinetic and potential energy of the particle are exactly equal to the value they had at the point B, but opposite in sign.

Kinetic Plus Potential Energy

#### Kinetic Plus Potential Energy

Kinetic Plus Potential Energy
The potential energy of a particle at
any point is exactly equal to the kinetic
energy in the direction of wave travel,
provided there is no change in the shape
of the wave taking place. Due to this
relation of potential and kinetic energy,
there must be a fixed relation between
the displacement of a particle above or
below the average or normal level of the
water and the component of the velocity
of the same particle parallel to the direction of wave travel.

The total energy of a particle of water.

tion of wave travel.

The total energy of a particle of water, potential and kinetic, in the direction of wave travel, is continually changing as the wave progresses, the particle in question passing its energy along to the particle adjacent to it in the direction of wave travel, and this transfer of energy from one particle to another is the underlying principle of all wave motion in water.

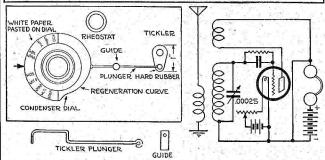
lying principle of all wave motion in water.

Electromagnetic waves are due to a disturbance of an electromagnetic nature and are such that they produce at points all around the center of disturbance a varying magnetic and a varying electric field. For example, if a wire, in space, has an alternating current established in it for a short interval of time it will set up an alternating magnetic field and an alternating electric field all around itself, and these fields starting from the vicinity of the conductor will travel away from it with the velocity of light. To set up these fields requires energy, which means that a certain amount of energy must be drawn from that available in the conductor in order that the electromagnetic disturbance be created at all. This transfer of energy from the wire to the field is known as "electromagnetic radiation" or simply "radiation."

(An explanation of electromagnetic

(An explanation of electromagnetic radiation and how it is caused and controlled, will form the basis of Professor Moreton's article next week.—Editor's

#### DETAILS OF UNICONTROL DEVICE



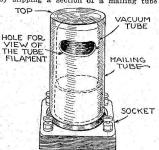
curve or you may not get it exactly right.

If by mistake you cut, the dial too deeply in places and cause the tube to oscillate at these points, stip the tickler back slightly on the shaft so the tube does not oscillate at these points and work tube is on the verge of oscillation over the whole scale. When cutting the curve on the dial have aerial and ground connected as for receiving, and be very careland glue it exactly in the center of the



#### Tube Covers Protect Against Dropped Tool

Many a tube has been broken by some-thing falling on it. This can be avoided by slipping a section of a mailing tube



over it and closing the upper end. A hole is cut in the side for a clear view of the filament.—Bernard H. Porter, Houlton, Maine.

blank space opposite the graduations on the dial. The pointer should project one inch over the dial forming quite a circle on the paper. Draw a line along the paper forming an arc along which the tip of the pointer moves. This dial should be the wave length dial and it will be found very accurate and stations will always be located at the same place. When each new station is brought in mark down the call letters of the station opposite the pointer setting. If your receiver also has a tap switch cutting in more or less turns; mark the number of the tap used after the call letters. Thus if an inexperienced member of the family wishes to tune in it is only necessary to set the pointer and the tap switch and pull out the battery switch—Max Mueller, Thiensville, Wis.

When attaching an aerial to a tree, have the wire insulated about 15 feet from the tree to avoid loss.



DON'T blame the weather for all summer radio troubles. . . . How are the tubes? All tubes, remember, grow weak mer radio troubles. Now are the tubes! All tubes, remember, grow weak with use—especially in summer when operated at higher voltage. Bring them back to full efficiency—right in your own home—with the Jefferson Tube Rejuvenator! Takes only 10 minutes; attach to a convenient electric light socket. Completely restores paralyzed or exhausted tubes. Used once a month, it doubtes and Trebusts the life of tubes! Quickly pays for itself in saving of tubes and batteries. A home rejuvenator for tubes is just as essential to satisfactory radio reception as a charger for storage batteries, lefferson Rejuvenator takes large or small tubes—201-A, 301-A, UV-199, C-299. Fully guaranteed. At leading stores selling radio supplies. If your dealer can't supply you, send \$7.50 to

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# **Questions and Answers**

Fournier Super; B Eliminato

Fournier Super; B Eliminator (13882) RLD, Memphis, Tenn.
Can you give me a little more information on the four filter Fournier super?
How about using some readymade coil for an antenna coil? Couldn't I use a Bremer Tully tuner or something of the kind? Which make would you advise? Do you think the homemade one would be superior? I haven't very much room for a large coil of any kind.
What do you think of using a B battery eliminator with the same voltage on all plates, e.g. 100 volts, instead of varying the plate voltages?
A.—The low loss coupler mentioned can be purchased from the Davenport Radio

A.—The low loss coupler mentioned can be purchased from the Davenport Radio Laboratory of Davenport, Iowa., but you can use any other type of coupler providing it is so made that you can tap in on the secondary at the center point. Uncle Sam Electric company of Plainfield, N. J., make a very good coupler which occupies but little space and which they call their "baby tuner."

The four filter super can be run on a B eliminator. The writer is doing that now. The set seems to work equally well whether the detectors have 45 volts or the same voltage as the amplifiers.

Masterpiece Kit Troubles
(13951) RB, Bridgeport, Ohio.
I am having built a five tube low loss neutrodyne, using Freshman low loss coils and would like to know what is wrong. If you fix the coils the way the Freshman Masterpiece coils are mounted on the condensers, the set will squeal, but if you turn the coils straight out from the condensers it does not squeal but distance suffers.

if you turn the coils straight out from the condensers it does not squeal but distance suffers.

A.—When the coils are mounted flat against the rear of the condenser as Freshman does in his receivers, you are evidently getting the benefits of regeneration and therefore you get the distances. When you mount the coils at right angles to that position you evidently lose the regeneration and cut down your range.

It should not prove difficult to mount the coils at some angle between these two positions so that regeneration is secured to a controllable degree, and that you have range without squeal. It will be impossible to find any position at which you can have regeneration over the entire wave length range, but by turning the coils at different angles you will find a position at which you will have maximum possible regeneration at about 225 meters with less regeneration and less range as you reach the higher wave lengths.

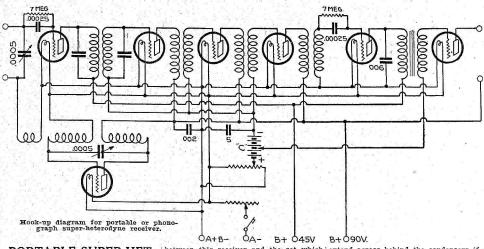
Your range at 526 meters will be only about one-half that at 275 meters. This is a condition which cannot be avoided with the apparatus which you have.

Locating Trouble

When a set fails to produce a signal the trouble may be caused by incorrect connection of A or B batteries, defective tubes, short circuits in the set or aerial, broken or loose connections, fraying of the loud speaker or phone cord, or failure of the spring tension in the sockets or phone jacks.

### THAT NOISE

INTER-STATE SIGNAL CO., Dept. 1, Columbus, O.



PORTABLE SUPER-HET

(Continued from page 20)
design because it has only one filament rheostat, but no improvement could be noticed when four rheostats were used so it was decided to cut out all but one. This leaves the panel with a pleasant scarcity of controls and those shown are as follows: Looking at the front view, the large dial at the left is the oscillator dial, while the other large dial controls the wave length of the loop tuning circuit. The filament switch is next, and the first knot is the potentiometer which controls the bias on the grids of the intermediate amplifiers and thus the regeneration. The other knob controls the rheostat and the flament brilliancy. There is one odd thing about this receiver for which the writer has no explanation, but is quite pleased with the result. The potentiometer was not sufficient in itself to produce enough grid bias for maximum possible range and volume. It was found necessary to insert 7½ volts of C battery between the center connection of the potentiometer and the three grid returns. The result was a very pleasing surprise, as a milliameter in the minus B lead from the batteries now showed that the set was drawing only 17 milliamperes instead of 29 as it had at first. Since most of the superheterodynes which have been designed in the last few months draw anywhere from 25 to 40 milliamperes, this was felt to be a decided improvement of particular value in a portable where the B batteries could be of only the intermediate size. There is not a great deal of difference



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Fits in standard socket in place of detector tube in Neutrodyne and R.F. sets. No change in wiring.

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DA+B- OA- B+ O45V
between this receiver and the set which the writer built and described last fall under the title of "The Simplest Possible Super," and, as a matter of fact, the wiring diagram of the Simplest Super could be used for this receiver providing the proper kit were employed.

Battery Location
The phonograph shown with this first article does not make clear the installation of either batteries or loud speaker, but the photograph will be published later which will do so. Locking at the second photo which accompanies this article, and which has been taken from the rear, six No. 6 dry cells can be placed on the bottom shelf in the lower right corner just below the variable condensers while four upright intermediate size B batteries can be placed at the left, below the rheostat and potentiometer. The loud speaker may occupy a space between the rheostat and potentiometer and the back of the cabinet, and may also

B+090V.

extend across behind the condensers if a long narrow speaker is more readily obtainable. Another variation that was found possible consists of placing a baby speaker of the dragonfly size on the lower shelf at the left and there was plenty of room for it to come up behind the rehostat. The A batteries were placed as before beneath the condensers, three cells as a bottom layer and three cells on top of them, lying flat, while the B batteries were stood upright on top of the dry cells and extending up behind the variable condensers. The batteries can be held together in any position desired by means of heavy friction tage.

(The actual construction is withheld

(The actual construction is withheld until the next issue to give our readers time to procure the various parts neces-sary for this set. Those living in smaller town: any have to send away for some of th "is.—Editor's Note.)

THERMIODYNE

ULTRADARE MURDOCK **QZARKA** 

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low their lead

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The radio which told the world that the MacMillan North Pole expedition was safe and sound. The radio that kept communication open to Leonard Weeks at Minot, N. D., when all other receivers failed.

There is nothing better than the Crosley 50 for the radio beginner.

There is nothing to excel it in value; unless it be the larger Crosley sets.
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tubes helps in a large measure to over-come the radio disadvantages of summer. Good dealers everywhere sell MAG-NATRONS in 3 types-the DC-201A and the 199 with large or miniature

base. All types \$3.

CONNEWEY ELECTRIC LABORATORIES



# Radiophone Broadcasting Stations

#### Corrected Every Week\_Part IV

#### FIND MISTAKES AND YOU'LL GET DOLLAR

ONE DOLLAR will be paid to the Radio fan reader of Radio Digest submitting the most errors in any one station's listing in the Directory of Radiophone Stations, which appears in five parts, serially continuously on the next to last page. 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 so-called accurate Radio directories or lists. Verifications must accompany corrections. 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. appears in five parts, serially continu-

#### United States (Cont'd) \*

NOTE —The fourth part of the schedule list appears low. Part five appears next week.

I.B., Sterens Point, Wis. 278 meters. 500 watts. Wisconsin Dept. of Markets. Slogan, "Wisconsin Land of Beautiful Lakes." Daily ex Sun, 8:45-am. 9:45, 10:45, 11:45, 12:30 pm, 1:46, markets. Toes. Central, Jun. Sat, 11:29 pm. "Enemies of Sleep."

Control Dil. S81, 11:39 Jin. Fatelines of Steep."

W.I.T. Philadelphia, Pa. 394.5 meters. 500, watts. 7-Li Bros. Announcer. Harry E. Ehrhart. Club. "Morning Glory." Dalive et sun, 12:32 pm, nusit; 2, nusit. 24, 24:30 pm. 12:30 pm. 13:20 pm. 11:10. Nusit; 2, nusit. 34:30 pm. 14:30 pm. 14:30 pm. 15:30 pm. 15:31 pm. 16:30 pm. 1

Junior R. F. D. program; 7:55-1. Sun, 7:39-5:55. Central Children of . 492.3 meters. 5600 watts. This Country of the control of . 492.3 meters. 5600 watts. This Crockey Badlo Corp. Announcer, Fred Smith. Daily ex Sun, 10:45 sun, 11:55, then, 1:300 pn. Daily ex Sun, Fri, 7, dinner hour; 7:30, basebul; 6:35, markets. Daily ex Sun, 1:45, 190 pn. Ved. Thurs. 10:2 at Alforsta. Moral What Country of the country of

WMAK, Lockport, N. Y. 205 meeters, 500 wates, 207-ca.
Laboratories, Announcer, I. R. Loumberry, Daily
ex Sun, 11 am, weather, Mon, 5-12 pm, Thurs, 12
2010.

Experimental Committee of the Commit

WMAQ, Chicago, III. 447.5 meters, 500 watts. The Chicago Daliy Kews. Aumouncer, Roberty Wittney, Daliy ex Sun, Mon, Scio pun. Central Daylight.

WMAY, St. Louis, Mo. 247 meters, 100 watts. Kings-Michiway Preshyterian church. Shoran, "May Divery By-WMAY, St. Louis, Mo. 247 meters, 100 watts. Kingst-Michiway Preshyterian church. Shoran, "May Divery By-Central.

WMAZ, Macon Ga. 261 meters, 160 watts. Mercer university, Announcer, Carey O. Pickard, Mon, Thurs, Sep. pn. Wed. 11-12. Eastern.

WMBC, Chicago, III. 250 meters, 500 watts. American Chydon WMBC, Chicago, III. 250 meters, 500 watts. American Chydon WMBC, Membris, Thurs, 100 meters, 500 watts. American Chydon WMBC, Membris, Thurs, 100 meters, 500 watts. American Chydon WMBC, Membris, Thurs, 100 meters, 500 watts. Mercer, 100 meters, 100 watts. The WMC, Membris, Tenn, 497, meters, 500 watts. The WMC, Membris, Tenn, 497, meters, 500 watts. The WMC, Membris, Tenn, 497, meters, 500 watts. The Commercial Announced, Announcer, G. L. Dearting, Slogan, WC, Marchi, Tenn, 497, meters, 500 watts. The Commercial Announcer, Marchine, 100 meters, 500 watts. The Commercial Announcer, Marchine, 100 meters, 500 watts. The WMC, Membris, Tenn, 497, meters, 500 watts. The Commercial Announcer, Marchine, 100 meters, 500 watts. Membris, 100 meters, 500 watts. The Sheard Stores, Announcer, John J, Fanning, 100 watts. The Sheard Stores, Announcer, John J, Fanning, 100 watts. The Sheard Stores, Announcer, John J, Fanning, 100 watts. The Sheard Stores, Announcer, John J, Fanning, 100 watts. The Sheard Stores, Announcer, John J, Fanning, 100 watts. The Sheard Stores, Announcer, John J, Fanning, 100 watts. March March, 100 meters, 250 meters, 100 watts. Membris, 100 meters, 250 meters, 100 watts. Membris, 100 meters, 250 meters, 100 watts. The Sheard Stores, Announcer, John J, Fanning, 100 watts. Mem

Central.

WARR, Buller, Mo. 231 meters. 20 watts. First
Guristkan church. Announcer, Perry V. Riley. Sun,
WART, Philadelphia, Pa. 250 meters, 100 watts. Lennits Bros. Co. Announcer, less Birlinton Xouns. Shogan,
"We Never are Tirled." Wed, 6:50 µm. Eastern daywere Never are Tirled." Wed, 6:50 µm. Eastern day-

MAY. Knoxville, Tenn. 233 meters. 500 watts. Peoples Telephone & Telegraph Co. NAX. Tanko, S. D. 244 meters. 100 watts. Dakota Radio Apparatus Co. Dally ex Sun, 11:38-11:45 am, markets, weather; 5-6 bm, music. Central, N. N. Nevark, N. J. 252 meters. 500 watts. Radio Shop of Newark, Inc. Amounter, W. A. Bingenhelmer, Stoppen, The Voice of Newark. Thes, Wed. Fri, Segam. The Voice of Newark.

Dally ex Sun, 12:15-12:45 pm, concert. Daily ex Sat, 9-10 pm, concert. Central. OAW, Omah. Neb. 526 meters. 1000 watts. Woodmen of the World. Announcer, "GR," Gene Rouss. Siogan, "The City Surrounded by the United States." 11:12 ministry, dance. Sun, Ved. 12:30-1 pm; 5:45-7:30, 9-11. Sat, 11-12 ministry, dance. Sun, 6-10:45-8 mis-9-11 pm. Gentral.

WLOW, OBBRIANCES SEMBLES (1874). "Green Houses Slogen, "The City Surrounded by the United States." Daily ox Sun, Wed, 12:30-1 pm; 5:45-7:30, 9-11. St., 10-11 pm; 10-15 pm; 10-1

serrice: 16, service. Eastern duylight.

WPSG, State College, Pa. 221 meters. 500 waits. Pa. State. College. Stogan: "The Voice of the Nittany WOAA, Parkedurg, Pa. 220 meters. 500 waits. Horace A. Beale, Jr. Temporarily discontinued. WOAG, Amarillo, Tex. 230 meters. 500 waits. Gish WOAG, Amarillo, Tex. 230 meters. 50 waits. Moore Radio News Station. Amouncer, Emerts. Sevent. 10:30 am. Aucht State College. 50 waits. Moore Radio News Station. Amouncer, 10:30 am. Month Station. 10:30 am. Author Month Station. 10:30 am. Month Manni. The Most Southern Radiocasting Station in U. S. Dally ex Sun, 5:15-9:39 pm. Sun, 7:30-9 pm. Externs. 100 waits. Seranton. Thines. Amouncer, T. V. Neelon. Slogan, "The Voice of the Anthractic." Daily ex Sun, 12:30-1 pm. 2:30-5 news, reports, baseball, music. Tues, Fri, S. WAO, News Reports, Month Station. 10:30 am. WAO, New York, Children Walts. Station in the World. Station of Operated Eroadeasting Station in the World." Sin, 11:30 am. WAO, News Mannier, 10:30 meters. 100 waits. Prince-Walter Co. Walts. Calvary Baptist Church. Amouncer, R. E. Bogardus. Slogan: "The First Church Owned and Operated Eroadeasting Station in the World." Sin, 11:30 am. WAO, News World. Wass. 202 meters. 100 waits. Prince-Walter Co. Walts. Calvary Mannier. Months Station. Amouncer Rev. Edward. Schuler. Walter Co. Walts. Calvary Mannier. Months Station. Months Station. Amouncer Rev. Edward. Months Station. Mo

WGAS, Lowell, Mass. 202 metris. 140 wasts. Calumet Waller Co. III. 447.5 meters. 509 watts. Calumet Baking Powder company—Rainbo Gardens. Announcer, Jerry Sullyan. Daily ex Sun. 1452-235 pm, woman's hour; 10-1, 1-2, ginger hour. Sat. 10-3. Daily ex Sun. Mon. 7-8 pm. Mon. 34 pm; 8-10. Central

Daylight. RAA, Houston, Tex. 256 meters. 100 watts. The Rice

Contral.

WRAK, Escanaba, Mich. 256 meters. 100 watts. Economy Light Company. Announcer, Ken Voght. Slogan, "The Gateway to Cloverland." Mon, Fri, 8:30 pm.

omy Light Company, Announcer, Ken Yoght, Slogan, The Gateway to Glorerland," Mon. Fri, 8:30 pm. WRAM, Galesburg, Ill. 244 meters. 100 watts. Lembard College, Special program. WRAY, Friend Williams, 263 meters. 100 watts. Lembard College, Special programs, 263 meters. 100 watts. Avenue WRAW, Reading, Fa. 283 meters. 100 watts. Avenue WRAW, Reading, Fa. 283 meters. 10 watts. Avenue WRAW, Reading, Fa. 283 meters. 10 watts. Avenue Pladio, Eliec. Shop. Slogan, "The Schupkill Valley pin, bisseball. Thurs, 7:10, sport talk. 10-11:30 pm. Eastern WRAW, Announcer, Anna D. Fleron, Mon. Thurs, Fri. evening, program. Eastern WREG, Valparaiso, Ind. 278 meters, 500 watts, Jm. WREG, Valparaiso, Ind. 278 meters, 500 watts, Jm. WREG, Walparaiso, Ind. 278 meters, 500 watts, Jm. WREG, Walparaiso, Ind. 278 meters, 500 watts, Radio "Corp", of Americae. Announcer, Norman Brokenshipe, 10-230 pm. Sun, 7:30, church service. Eastern Con., 7:30 when WRC, Washington, D. C. 4685. meters, 100 watts. Radio "Corp", of Americae. Announcer, Norman Brokenshipe, 10-230 pm. Trees, Thurs, Sat, 1-12 midnith, Eastern, WREG, Coldwater, Miss, 254 meters, 10 watts. Worled, Stadio & Elec. Oo, Announcer, S. D. Wooten, WREG, Lamida, Mich. 285. meters, 50 watts, Radio WREG, Lamida, Mich. 285. meters, 50 watts, Radio WREG, Lamida, Mich. 285. meters, 500 watts, Radio watts, Radio WREG, Lamida, Mich. 285. meters, 500 watts, Radio watts, Radio WREG, Lamida, Mich. 285. meters, 500 watts, Radio watts, Radio WREG, Lamida, Mich. 285. meters, 500 watts, Radio watts, Radio WREG

McCarthy, Dally ex Sun, 12-1 pm. Sun, 10:30-12

McCarthy, Dally ex Sun, 12-1 pm. Sun, 10:30-12

WSAU Casteram, N. H. 229 meters. 20 watts. Chicago
WSAU, Chicago, Jll. 268 meters. 20 watts. Chicago
WSAX, Chicago, Jll. 268 meters. 20 watts. Chicago
WSAX, Chicago, Jll. 268 meters. 50 watts. Chicago
WSAX, Chicago, Jll. 28 meters. 50 watts. Chicago
WSAX, Chicago, Jll. 28 meters. 50 watts. Chicago
WSB, Atlanta, Ga. 4283, meters. 50 watts. Chicago
WSB, Atlanta, Ga. 4283, meters. 50 watts. Chicago
WSB, Atlanta, Ga. 4283, meters. 50 watts. Atlanta
of the South." Dally ex Sun, 12-1 pm. music, weather;
2:30, report; 5, orchestrs, time story; 8-6, concert
car Wed) created watts. 25 meters. 50 watts. Chicago
WSBA, New York, N. Y. 283 meters. 250 watts. Win,
3:50-3:39 pm. Eastern daylight.
WSBA, New York, N. Y. 283 meters. 250 watts. World's
Star Knitting Co.
Senger Annuscenett Co. and The Majson Binneh Co.
Senger Annus

New James Chip, vres, fri, Sun, Aviz muonsus. Welli, low city, In 482,6 meters, 509 units. Univ. of \*lowa. Announcer, Carl Menzer, Mon, Tues, Wed, Thurr, Fri, 12:39-1 pm, Mon, 3, mussic, talks. Sun, 8-9:30, music, Central.

WY, Announcer, Ala. 250 meters, 500 watts. Alabama WY, Announcer, Ala. 250 meters, 100 watts. Alabama River Dally Hernald. Dally and Sun, o pm, organ. Tues, Thurs, 8-10 pm, Wed, Sat, 5 pm. Eastern standard.

standard.

'Annotown, Pa. 267.8 meters. 190 watts. Penn. Traffic Co. Announcer, D. B. Cole. Mon. Fri, 7:39-10 pp. Estato, Children C. Announcer, D. B. Cole. Mon. Fri, 7:39-17 pp. Estato, Children C. Announcer, E. B. Frank, Slogan: "The Gateway to the Sea." Daily ex Sun, 8:30 pm. Estatern.

Eastern.
TAM, Cleveland, Ohio, 339.4 meters, 1,500 watts, Willard Storage Eattery Co. Announcer, A. R. Herske, Stogan: The Votice from the Storage Battery." Daily can, 6-7 pm, dlinner programa. Mon, 8-15 pm, confession, 6-7 pm, dlinner programa. Mon, 8-15 ml, confession, 6-8 pm, 284, 5-12 mlddight, dance.

Slogan: "The Voice from the Storage Entery." Discrete Sun, 6-7 pm, dinner program. Mon. 8-12 pm. consequences of the State of Sta

WTG, Manhattan, Kan. 273 meters. 50 watts. Kan. State Agri. College. Daily. 9:55 an, 4 pn, weather. WTHS, Flint, Mich. 218.8 meters. 250 watts. Flint Senior H. S. WICK, Hartford. One 368.6 meters. 560 watts. Flint Senior H. S. WICK, Hartford. One 368.6 meters. 560 watts. Flint Senior H. S. WICK, Hartford. One 368.6 meters. 560 watts. Flint Senior H. S. WICK, Hartford. One 368.6 meters. 560 watts. Daily Wed, 6:50 pm, basehall. Eastern. 400 meters. 160 watts. Slogan, "Penn City Station." Mon, 7:45 pm. Eastern Adylline meters, 560 watts. WAS, Slogan, "Penn City Station." Mon, 7:45 pm. Thurs, 7:45 pm. Eastern Adylline meters, 560 watts. Slogan, "Penn City Station." Mon, 7:45 pm. Thurs, 7:45 pm. Eastern Adylline meters, 560 watts. Slogan, "Penn City Station." Mon, 7:45 pm. Statern City Station. WAS, 180 meters. 250 watts. Mich. 362.7 smeters. 250 watts. Mich. 362.7 smeters. 500 watts. Florid Motor Co. Wed. 5:18 pm. music, lectures. Eastern. WH, Deathorn, Mich. 362.7 meters. 500 watt. The Death Motor Co. Wed. 5:18 pm. music, lectures. Eastern. WH, Deathorn, Mich. 362.7 meters. 500 watt. The Death Motor Co. Wed. 5:18 pm. music, lectures. Sun, 3-8:39 am. settling-up exercises: 9:30-948, household links 10:20-21-010, weating: 11:55-125. Sun, 6-7, dinner concert; 8:20, more of pm. Central. 44.6 baseball scores, markets. Dully ox Sat. Sun, 6-7, dinner concert; 8:20, more of pm. Wed, Fri, 6 pm. orchestra. Sun, sunset Mon. Wed, Fri, 6 pm. orchestra. Sun, concert; 6:20, Roys and his watts. Manouncer. O. L. Abell. Sat, 8-9 pm. Central. markets, weather; 5-4 min, nuti. Central.

WII. Newark, N. J. 252 meters, 500 watts. Pandle Shop of Newark, The Announcer, W. A. Bingenheimer.

Shogan, The Voice of Newark, Thes, Wed, Fri., 198 meters, 500 watts. Pandle Shop of Newark, Thes, Wed, Fri., 198 meters, 500 watts. Pandle Shop of Newark, Thes, Wed, Fri., 198 meters, 500 watts. Pandle Shop of Newark, The Voice of Newark, Thes, Wed, Fri., 198 meters, 500 watts. Pandle Shop of Newark, The Voice of Newark, These, Wed, Fri., 198 meters, 500 watts. Roo, Dayler, World, N. Y. 528 meters, 500 watts. Roo, 10.30 m, 10.30 m,

town Radio Research Laboratory. Announcer, Frederick Koenig. Slogan, "Everything in Radio Daily 11:30 pm. Sun. 5:4 pm. 10:39-11:30, Eastern down light.

Wortheast Mo. State Feeders College, Mon. Wed, 5:35, pm. 10:29-11:30, Eastern down light.

Wortheast Mo. State Feeders College, Mon. Wed, 5:35, pm. 1esture; 9, cenertis. Contral.

WSAC, Clemson College, S. C. 336, 9 meters. 500 watts. Clemson Arch. College. Announcer, H. E. Galfrey.

WSAO, Providence, R. I. 256 meters. 100 watts. Fourcer-Seveletz, Mon. 9:40, 252, wasts.

WSAO, Providence, R. I. 256 meters. 250 watts.

WSAO, Providence, R. I. 256 meters. 250 watts. WSAO, St. Federaburg, Fla. 256 meters. 250 watts.

WSAO, St. Federaburg, Fla. 256 meters. 250 watts. WSAO, St. Federaburg, Fla. 256 meters. 250 watts. Mon. 9:43, m. Tuer, 7:10 pm. WSAO, 10:12 miningtain. pm. 5:40. Central daylight 12:145 am. Sun, 3-4 pm. 5:40. Central daylight 12:145 am. Sun, 3-4 pm. 3:40. Central daylight 12:145 am. Sun, 3-

SPE, Rio de Janeio, Brazil.

Solicitade de Nicolador de Watts.

Marconi (Radio Societado de Nicoladorio, Brazil.

Societade de Nicoladorio, Brazil.

Societade de Nicoladorio.

Seo Fealbo, Brazil.

SPO Brazil.

S

BAV, Heren, Belgium, 1800 meters, 1,000 watts.
Daily, 1 pm, 2, 4:59, 0:39, weather,
SRB, Brussels, Belgium, 265/meters, 1,500 watts.

Canada (The power ratings of the following

CThe power ratings of the following Canadian stations are given in "oscillating" watts, rather than watts output —the method in which American stations are rated in this directory.)

CFAC, Calgary, Alla, Can. 434.5 meters. 500 watts. "Calgary Herald Amounter, Fred Carleton Daily et Sun, 1 pm, news, markets, music. Wed, 7:45-8:45 OFGA. Toronto, 1 pm, CCMC, 30 June 500 watts. Toronto Star. Announcer, E. J. Børera. Dally ex Sun, 1 pm, weather, news, stocks; 5:30-56 pm, news, 10 pm, 1

ornestra. Some and so

10-12 midnight, dance. Sun. 11 am, 7 nm. Eastern. CH10. Toronto, Can. 356.9 meters. 500 watts. Northern Pielectric Company. Announcer, R. W. Lowman. Alternate Mon. 10-1136 pm. Eastern. Eastern. Alternate Mon. 10-1136 pm. Eastern. Eastern. Ch10. Toronto. Ch10. Special Sp



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