

"Static-Free Aerials," by Dr. Rogers

# Radio Digest

EVERY WEEK **PROGRAMS** **Illustrated** **TEN CENTS**

REG. U. S. PAT. OFF. & DOM. OF CANADA

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No. 1



*Hoot Owls Hoot and the "Mystery Girl" Unmasks; "King" Milo Gurney Simplifys Radio; Lack of Radio Lost Georgian War; Women's Programs; "Ohm" the Radio Dog, Speaks*

# PIONEER ANNOUNCER WILL FORSAKE MIKE

## VOICE OF HAROLD W. ARLIN GAINED FAME AT KDKA

### Promotion in Westinghouse Company Will Necessitate His Making Mansfield, Ohio, His Home

PITTSBURGH.—One of the best known voices in the world became silent, as far as the Radio audience is concerned, when Harold W. Arlin, pioneer announcer of the world and chief announcer of Westinghouse Station KDKA since its beginning in 1920, severs his connection with the station to take a position in the commercial world that will necessitate ending his residence in Pittsburgh.

Mr. Arlin remains with the Westinghouse company, however, as he has been appointed manager of personnel for the Westinghouse Electric Products company, at Mansfield, Ohio, and with his removal to the Ohio city has resigned his position as Chief Announcer of KDKA.

#### Popular All Over World

The hold Mr. Arlin has on the Radio audience is evidenced by the thousands of letters he has received from every section of the United States and from nearly every civilized country in the world. He is one of the incorporators and the first vice-president of the National Association, Radio Announcers of America.

One of the highlights of Mr. Arlin's Radio activities was the handling of the concerts from Wanamaker's in New York and Philadelphia which were transmitted to England by the Westinghouse international short wave relay system.

Mr. Arlin is a native of Missouri and is a graduate of the University of Kansas with the degree of bachelor of science in electrical engineering.

# FUNDS ASKED FOR INSPECTION FIELD

## Bureau of Budgets Recommends Sufficient Funds to Increase Force

WASHINGTON.—If the recommendation of the bureau of the budget is adopted by congress, sufficient funds will be provided for the Radio section to greatly increase its inspection field force. A step would result in greatly improved service to the public through the elimination of interference.

Officials of the budget bureau refuse to disclose the amount they have recommended for the Radio service. The opinion prevails, however, that the demands of the Radio bureau were given more consideration this year than at any previous time.

The budget bureau recommended an increase in the appropriation for the Radio service last year, but the recommendation was defeated in the house appropriation committee.

# Pushing Cow Up-Hill Is Better Than Radio Drill

## Strong Willed Bossey Provides Exercise and Plenty Laughs

SAN FRANCISCO.—At last something has been found which Radio cannot do. Health training exercises broadcast from KGO are good enough, as thousands of letters testify. But pushing a cow up-hill every morning before breakfast, causing joy in the entire neighborhood, is held to be more efficient than Radio physical drills.

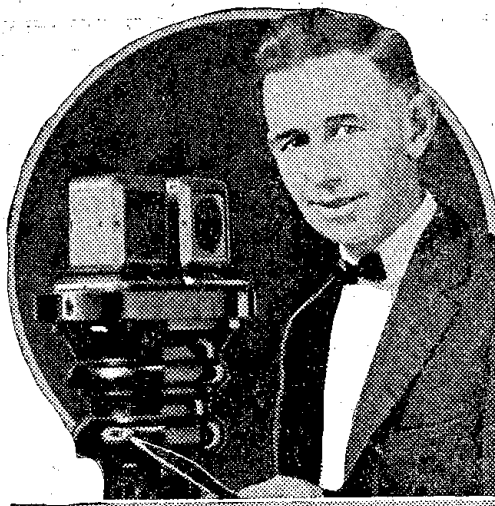
Here is a letter sent to the studio manager of KGO. "I have tried all your exercises, but I like my own little work-out better. Every morning, before breakfast, I wrestle with a strong-willed, determined-eyed cow, pushing her up-hill against her wishes. I must say it puts our Radio exercises completely in the shade for efficiency.

My cow exercises bring all the muscles of the body into play, and at the same time gives plenty of chance for muscles of the jaws. And the whole neighborhood gets the benefit of the 'laughing exercise,' which you recommend so highly.

# Canadian Listeners Can Rent Telephone Poles for Aerials

WINNIPEG, Manitoba.—The owners of Radio receiving sets in Manitoba do not have to take a course in steeplejacking or hire a human fly to put up an aerial. The Manitoba Telephone System, operators of Station CKY, rents the use of its poles for the attachment of Radio antennas in cases where the poles are conveniently located. A small fee is charged for rental, labor and inspection.

# Arlin Leaves KDKA



Harold W. Arlin before the microphone of the Westinghouse Station KDKA at Pittsburgh, which he will leave to take up new duties at Mansfield, Ohio.

# Deny Broadcasting Stations All Higher Power Requests

WASHINGTON, D. C.—It is understood that the Radio section of the department of commerce is receiving a large number of requests from low-power broadcasting stations in class A for increased power. The department is turning down these requests, it is understood, as recommended by the recent Radio conference in which it was held that increased power should be treated as new stations.

# COY MISS ON COVER GIVES BEAUTY HINTS

SOME folks have their good looks by a gift of nature. Others acquire them. We venture that the dainty little miss on our cover this week was just naturally endowed. But one would think it was acquired, to hear her talking to the listeners in over WMBB, Chicago. The call letters stand for the "World's Most Beautiful Ballroom" and that is what they call the Trianon, and beauty is the keynote and spirit of the place. Miss Beulah Clark, this week's cover girl, tells those who would like to know in the privacy of their own homes, by means of the Radio, just what to do to keep beautiful and how to do it. She arouses interest when she is heard and carries conviction when she is seen.

# Canadian Railway Stations Are Heard in Los Angeles

MONTREAL, Canada.—Canadian Radio broadcasting stations have long ago established quite enviable reputations for sending their programs great distances, yet a new record has been established by CNRA and CRNV, the Atlantic and Pacific stations, respectively, of the Canadian National Railways, in simultaneously making known their presence in Southern California. The unusual performance was described in a recent letter from Paul J. Potter of Los Angeles, 3,004 miles away from the most distant of the two plants.

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# Looking Ahead

**What Does Jiggs Think of Mike When Jiggs Happens to Be a Movie Monk and Mike a microphone?** See the answer in next week's Radio Digest. Special article with pictures tells how monkeys, sea lions, birds, dogs and other animals behave in the presence of the microphone and the effect on the listener.

**Radio Pie and Wireless Spaghetti** are among the new and practical by-products of kitchenette radio. Ida Bailey Allen, the "Nation's Home-Maker," broadcasts recipes and gives wholesome advice to thousands of listeners who write to her and are helped by her kitchen suggestions. In the next Radio Digest.

**Another One of Those Big Eastern Stations—WMCA**—will entertain readers of the Radio Digest by proxy of a staff correspondent next week. There will also be an interesting account of how two Kansas City brothers got their start in college through the microphone of the Kansas City Star Radio station.

**Radio Station KFOA Is One of the Pioneer Stations of the Great Northwest.** It started back in 1922, at the Rhodes department store with 50 watts. It has kept pace with the times and last September marked its third step of progress when it went to 1,000 watts. Story of the rise of this remarkable station in next week's issue.

**A. B. C. of Radio Fundamentals**, as expounded by Milo Gurney, next week takes up the relationship between Radio and the two allies from which it borrows much—wire telephony and audio telephony. Mr. Gurney, being an old-timer in this field, and having followed it from its dot and dash infancy of 1906, is in a position to give our readers correct, concise, reliable information.

**For the "Operating and Trouble Shooting" Series** the staff has gone over the Thorola Isodyne and the results of its findings will be contained in next week's issue. These articles are not alone of value to the man who happens to own one of the sets mentioned, but contain much of value as to set design for the home builder.

## Newsstands Don't Always Have One Left

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# AMRAD COMPANY IS BOUGHT BY CROSLLEY

## STATION WARC WILL AGAIN BROADCAST PROGRAMS

### New Radio Receiver Is Designed for Factories of American Radio and Research Corporation

BOSTON.—Assets of the American Radio and Research corporation at Medford Hillside, which went into bankruptcy last April, have been purchased by Powel Crosley, Jr., nationally prominent Radio manufacturer of Cincinnati, it was announced recently by Harold J. Power, former president of the corporation, and before many weeks it is expected that listeners in will again hear Station WARC. A new 500-watt transmitter is near completion and it is planned to send its programs out from one or several of the Boston studios.

A newly organized Amrad Radio corporation will soon go into production, it was announced, with Mr. Power president and Mr. Crosley probably chairman of the board of directors. Mr. Power is credited with being the man responsible for the first programs over the air, back in 1915, when his station was operated under an experimental license with the call letters 1XE. Later, it became WGI, and its last call letters were WARC.

# STATIONS STRIVE TO GET LICENSES

## Prospective Broadcasters Making Every Effort for Wave Length —Door Has Closed

WASHINGTON, D. C.—Almost frantic efforts are being made by the owners of new stations already constructed or almost near completion to get wave lengths for them before the door is finally closed to new broadcasters.

In some cases, these newly constructed stations will be given wave lengths, according to officials of the department of commerce. It will depend entirely on the circumstances connected with each individual case.

Three stations are known by the department of commerce to be near completion and about ready to go on the air. One is in New York, another in Chicago, and the other in St. Louis. In the cases of the New York and Chicago stations, it is doubtful if they have much chance of getting a wave length at present. It is believed that the new St. Louis station may be given a wave length as soon as it is possible to do so.

In individual cases, according to commerce officials, much will depend on whether the station was warned in advance that it could not get a wave length. If the station was constructed in the face of such a warning, it may not receive very sympathetic consideration by the government.

# Radio to Link British, U. S. Telephone Lines

## Committee to Investigate Possibilities Following Experiments

LONDON.—With a view to linking up the American and British telephone systems by means of Radio telephony, further experiments will be made at an early date. For some time there has been regular transmission of Radio telephonic messages from America to England, and these have been received by the post office and by the International Western Electric company.

The success of the American experiments led the postmaster-general in 1923 to appoint a committee to investigate the possibility of transatlantic Radio telephony being established on a reliable commercial scale.

# Cincinnati Organists Will Present Series of Concerts

CINCINNATI.—Radio listeners will have the opportunity to hear the outstanding organists of Cincinnati in recitals to be given through the Crosley WLW broadcasting station every Sunday afternoon, beginning at three o'clock.

The first recital was by Adolph H. Staderman, who was organist for the Cincinnati May festival for many years.

Programs are made up of a group of old favorite hymns and also the standard organ repertoire.

Among the organists who will participate in this service, are: Mrs. Lillian Tyler Plogstedt, John J. Fehring, C. Hugo Grimm, Leo Thuis, Mrs. Lillian Arkell Rixford, J. Alfred Schehl and others.

# OVERSEAS TRYOUTS FOCUS DIALS

## NEWS BRIEFS FROM THE BROADCASTERS

### ART HICKMAN LEAVES KHJ FOR LURE OF FLORIDA

Victor Concerts Now on WJZ Chain—Old Fiddlers Meet at WOS—Paul Reese at KFI

Florida is even attracting southern Californians. Art Hickman's band, long a broadcasting event of KHJ, Los Angeles, is moving to that state. A very good orchestra, Don Clark's La Monica orchestra takes the place of the band. Don Clark the leader was formerly a saxophone soloist with Paul Whitman.

A series of fine programs will be given this winter by the Victor Phonograph company over stations WJZ, WRC, WBZ, KDKA, and KFKX. These programs will include many celebrities.

Station WOS, Jefferson City, Mo., fiddled out the old year and fiddled in the new when over 80 old-time fiddlers from the state of Missouri gathered before the microphone of this broadcaster. The best old-time fiddler was chosen by the fans listening in. Postcards, telegrams, and telephone calls determined the winner.

Paul Reese, the popular announcer at KFI, Los Angeles, after an absence of several months, during which time he has been studying operatic roles, will return to his home station.

The KGO Little Symphony orchestra, Sunday afternoon, January 10, will feature the Dvorak New World symphony. Arthur S. Garbett, musical interpretative writer, will give a short talk about Dvorak and his work before the playing of the symphony by the orchestra. Ruth Waterman, contralto, will be the guest artist assisting.

The children had a special matinee recently at WOR Newark, when "Alice in Wonderland" was given. Only the most amusing scenes were played. The director of the Children's Radio theater, Clare Tree Major, gave the play in January because this is the birth month of Lewis Carroll.

The Wanamaker series which was popular with fans last year has been resumed from WJZ, New York. The opening program presented the famous Russian string quartet and John Barnes Wells, tenor.

On Saturday night, January 16, the Hernandez Brothers, artists of all stringed instruments plucked with the fingers, will broadcast their first concert to American listeners, from KGO, Oakland, beginning at 8:10 p. m., pacific time. The brothers are native Indians from Columbia, Central America, and play the music of their native land as only natives can.

Robert Visconti's Hotel Gibson orchestra will be heard through WLW from 12:30 to 1 p. m. central time Tuesday and Fridays, and Monday, Wednesday and Thursday evenings from 7 to 8 p. m.

Norman Brokenshire who has been heard lately from WRC, Washington, D. C., is back at WJZ, New York. He will take care of the microphone of the station which will use at times 50,000 watts.

Old favorites are rapidly returning to the air and one of the recent "come back's" is the Sunday evening concert by Joseph Knecht's orchestra at WJZ.

The Curb is the Limit club has reached its 100,000th member. Uncle Bob of KYW sent the 100,000th membership button to Joan Jule Kovacs, South Bend, Indiana. This club is to remind children to look both ways and count 10 before crossing streets.

Vincent Lopez and his orchestra, who since 1923 have been one of the most popular dance organizations on the program of WEA, is now broadcasting from a chain of eight stations direct from Casa Lopez (the house of Lopez), in New York city.

Rudy Seiger, violinist-director of the Fairmount hotel orchestra, a daily feature of KPO, is again on the air. Mr. Seiger returns from a three months' European tour, during which he studied the new music and broadcasting conditions in European countries. He appeared this summer at WLS, Chicago; WEA, New York; 2LO, London, and FL, Paris.

## International Test Programs

COMPLETE, exclusive and special programs for the week of January 24 to 30, inclusive, for every European broadcasting station participating in the international tests, will appear in advance in Radio Digest, edition of January 23. Pictures and stories relating to European stations will appear as well in this special issue. Radio Digest staff correspondents in Great Britain and Continental Europe will give American listeners the best information obtainable anywhere on the international tests.

Wave lengths, hours, descriptions in detail of each number to be broadcast by European stations—all this and more will be found in the January 23 issue of Radio Digest. Be sure to reserve a copy at your newsstand. The special International Week issue will be in great demand.

## TRULY SHATTUCK TELLS SECRETS



Truly Shattuck, one of the many musical comedy stars who have joined the ranks of Radio, recently told WLW listeners her secrets of beauty. Plastic surgery operations were a big help, she remarked, but proper diet and exercise are equally important. The picture above is mute testimony to the truth of her statements.

## WLW Broadcasts Reports On Ohio River Conditions

CINCINNATI.—Through the efforts of Major W. W. Parker of the U. S. Engineers here, navigators, shippers, farmers and others for a stretch of 1,000 miles along the Ohio river, from Pittsburgh to Cairo, are receiving complete river information by Radio each morning.

At 10:45 a. m. central time, WLW broadcasts the official news of the weather, its prospects, the river and its stages, any unusual conditions or prospects in the tributaries of the Ohio, and whether the many dams on the thousand-mile stretch are up or down.

## E. C. J. Sandback WGBU Director

BROOKLYN.—Edward C. J. Sandback of Brooklyn N. Y., has been appointed studio director and chief announcer at Station WGBU, Fulford-by-the-Sea, in place of "Bob" Nolan who has resigned on account of his health, it was announced recently by M. C. Tebbetts, president of the Fulford-by-the-Sea chamber of commerce, which operates the station.

## KTNT Tower Tumbles

MUSCATINE, Ia.—KTNT, located here, but a few weeks on the air, had a bad stroke of beginner's luck when one of its towers, 133 feet high, collapsed and fell to the ground while being erected. A temporary wooden pole has enabled broadcasting to proceed, however.

## Station Changes

Florida is booming in Radio stations as well as in real estate. The new voice is WDBO, Winter Park, Fla., 500 watts, 240 meters. The director is an old WSB man, Ed McConnell.

"The Voice of St. Louis" went on the air last week with the call KMOX. This station is more or less a community affair as 13 St. Louis organizations are contributing to its support. The station is located on the Hotel Mayfair at Kirkwood, Mo. The wave length is 261 meters.

The Haverford college new 1000-watt station is nearing completion and soon the call WABQ will be heard throughout the United States. This broadcaster is located in a suburb of Philadelphia.

Another familiar broadcaster is puzzling fans with a new call. KFDJ, Corvallis, Ore. went on the air recently with the call KOAC.

The new Baltimore station, WBAL, has changed its wave length. Dial 246 meters or 1220 kilocycles now for this broadcaster.

## Loud Speaker Hook-Up

Dance music sufficiently loud to fill a good-size hall may be had by wiring several loud speakers together in series.

## FANS ARE AWAITING FOREIGN PROGRAMS

### INTERNATIONAL TESTS HOLD GREAT INTEREST

With Pacific Coast Stations Only Exception, U. S. Broadcasters Getting Excellent Cooperation

CHICAGO.—With the interest of the Radio audiences over Europe and the western hemisphere steadily increasing and the greatest cooperation in the history of the tests being enjoyed by the broadcasters in the different countries and by those in charge of the arrangements, the Fourth International Radio Broadcasting tests, during the week January 24-30, promise to be the biggest event that has been staged in the industry. Fans from more than 20 nations are clamoring for information concerning the tests and stations everywhere except on the Pacific coast are adopting an unselfish attitude, expressing their willingness to do what lies within their power to assure an overseas exchange of programs.

#### To Unite Radio Fans

The international Radio week will be the most extensive program of international cooperation yet staged and the good to result from it will do more toward drawing the Radio fans of the world together than any single thing that has been done so far, in the opinion of Powel Crosley, Jr., chairman of the executive committee for the tests.

Foreign stations are arranging the most extensive programs they have put on the air and, undoubtedly, American and Canadian stations will extend themselves during the week. The complete programs of both the American and foreign stations will be carried in the Radio Digest in the issue of January 23. The call letters, wave lengths and other information to help the listener in will be given as well as pictures and feature articles relating to the European artists and stations.

#### Will Use High Power

Numerous stations this side of the Atlantic have signified their intention of increasing their power for the tests and practically every transmitter will be put in its best shape to get its greatest efficiency. Station OAK of Lima, Peru, is one of the latest foreign stations to announce their cooperation and will send on a wave length of 380 meters with increased power. Seven languages will be heard in the special addresses broadcast from Station KFUV, St. Louis, on Sunday, January 24, the opening day. Seven students of theology at Concordia seminary will broadcast the same message to the world.

#### Friday Night Is U. S. Special

During the week all broadcasting stations in the North American continent, including some South American stations, will be silent from 10 to 11 p. m., central standard time, to allow the European programs, which will be broadcast from 4 to 5 a. m., Greenwich time, to be received here without interference. This schedule will be followed during the week except on Friday night when for the first 15 minutes of the silent hour, the Atlantic coast stations will have the monopoly of the air, for the second 15 minutes the central western stations will broadcast, for the third quarter of the hour, the Rocky Mountain stations will be heard, and for the last 15 minutes of the specified time, the Pacific Coast stations will be sending out their programs.

#### Canada and Mexico Saturday

Saturday of the Radio week, January 30, the same domestic program will be carried out during the silent hour, except that during the first 15 minutes, the Canadian stations will have their chance, then the northern U. S. stations, next the southern U. S. stations, and during the last 15 minutes our Mexican neighbors will fill the air with their "hot tamale" messages.

#### Pacific Coast Refuses Period

At this time, just prior to going to the press, there remains but one obstacle to perfect cooperation between the different sections of this country in the tests. The majority of the major stations of the Pacific coast have refused to keep off the air or participate in the test program for the interchange of entertainment, and, unless previous decisions are rescinded, will prevent the United States from giving their full cooperation to the other 25 to 30 nations who will take part in the tests. KGO, the General Electric company's station at San Francisco, have, however, signified their intention of remaining silent at the specified times during the week as requested by the International Radio Week committee.

# Three-Word Radiogram Could Have Won War

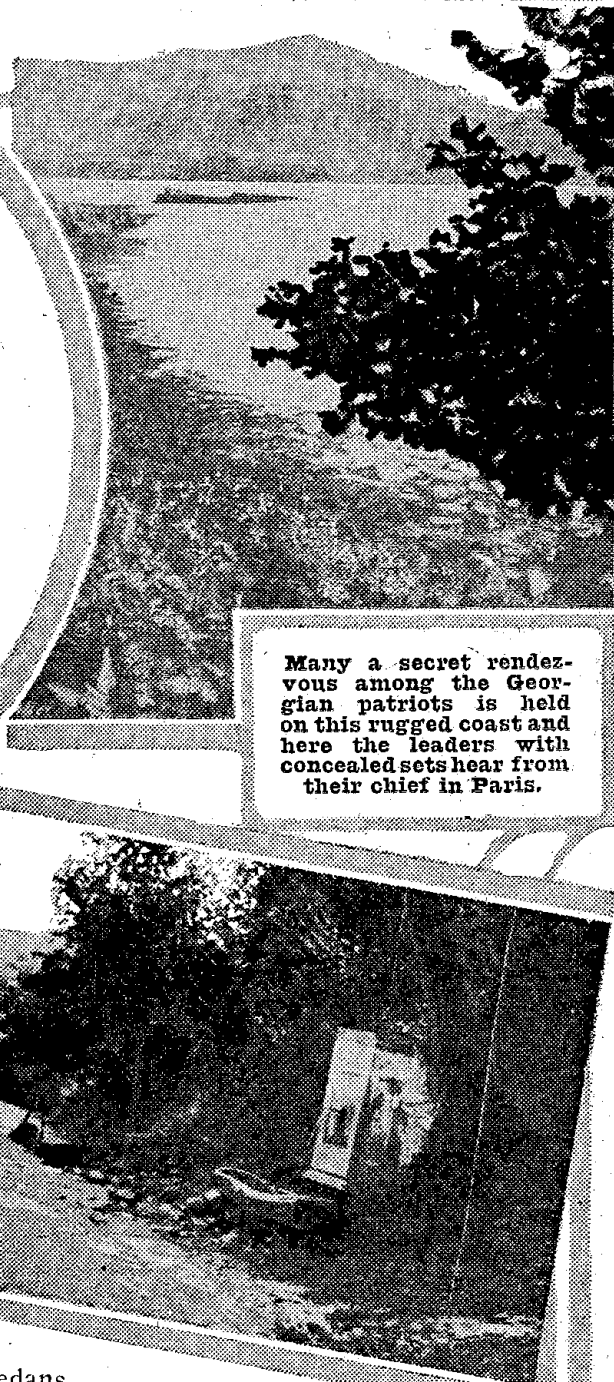


This smiling "Molly Pitcher" of the Georgian rebellion helped fight for her country's freedom.

Government by Radio is conducted from Paris by President M. Jordiana (below) of Georgia republic.



Georgian warriors chased Russian Reds over this road.



Many a secret rendezvous among the Georgian patriots is held on this rugged coast and here the leaders with concealed sets hear from their chief in Paris.

**A**T LAST the hour had struck. The patriots of Georgia were marching to war for freedom from Red Russia. All the arduous months of rigid discipline and constant drilling in the hidden recesses of the Caucasian foothills had culminated. They had come to the jump-off. And now it was war—war to freedom for the white race against the bronzed slavic.

The leaders were devoted and ready to die for their cause. They had rehearsed every attack, had forefended every imaginable contingency, and yet, they had missed one vital point, one modern weapon—

Through the night the armed units moved bravely and swiftly. They surrounded the garrisons of the hated Russians. Struggles were brief and invariably successful for the conquering heroes. But it was a far flung line. The detachments that held the bridgeheads to the main command of the Moscow hordes were out of constant touch. One small detachment was surprised by the enemy. A spark—three words to the next command—"blow up bridges" would have saved a nation—but—

Frederic M. Delano, Paris correspondent of Radio Digest, presents herewith an exclusive and vivid account of one of the most dramatic incidents of modern history.

**BY FREDERIC M. DELANO**  
*Paris Correspondent of Radio Digest*  
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Under the heel of the Moscow terrorist is this proud city of Tiflis (below), capital of the Georgian republic. But Radio keeps the spark of hope alive and some day the patriots may rise again.

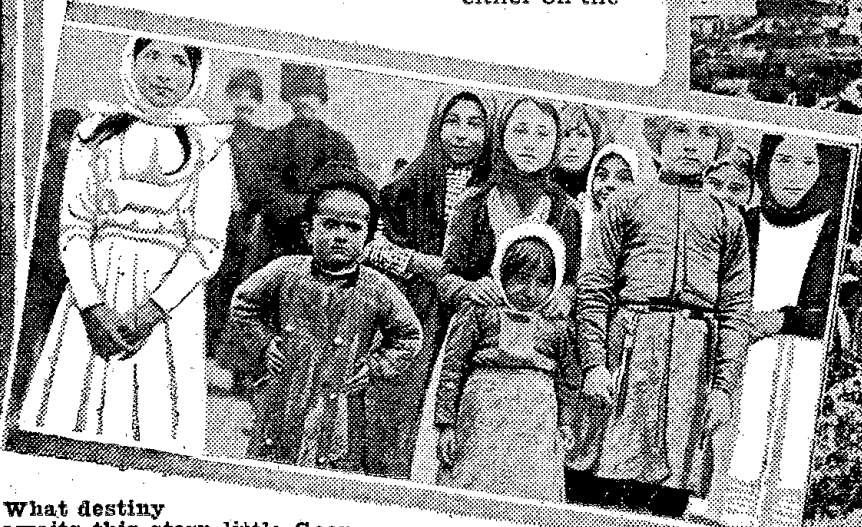
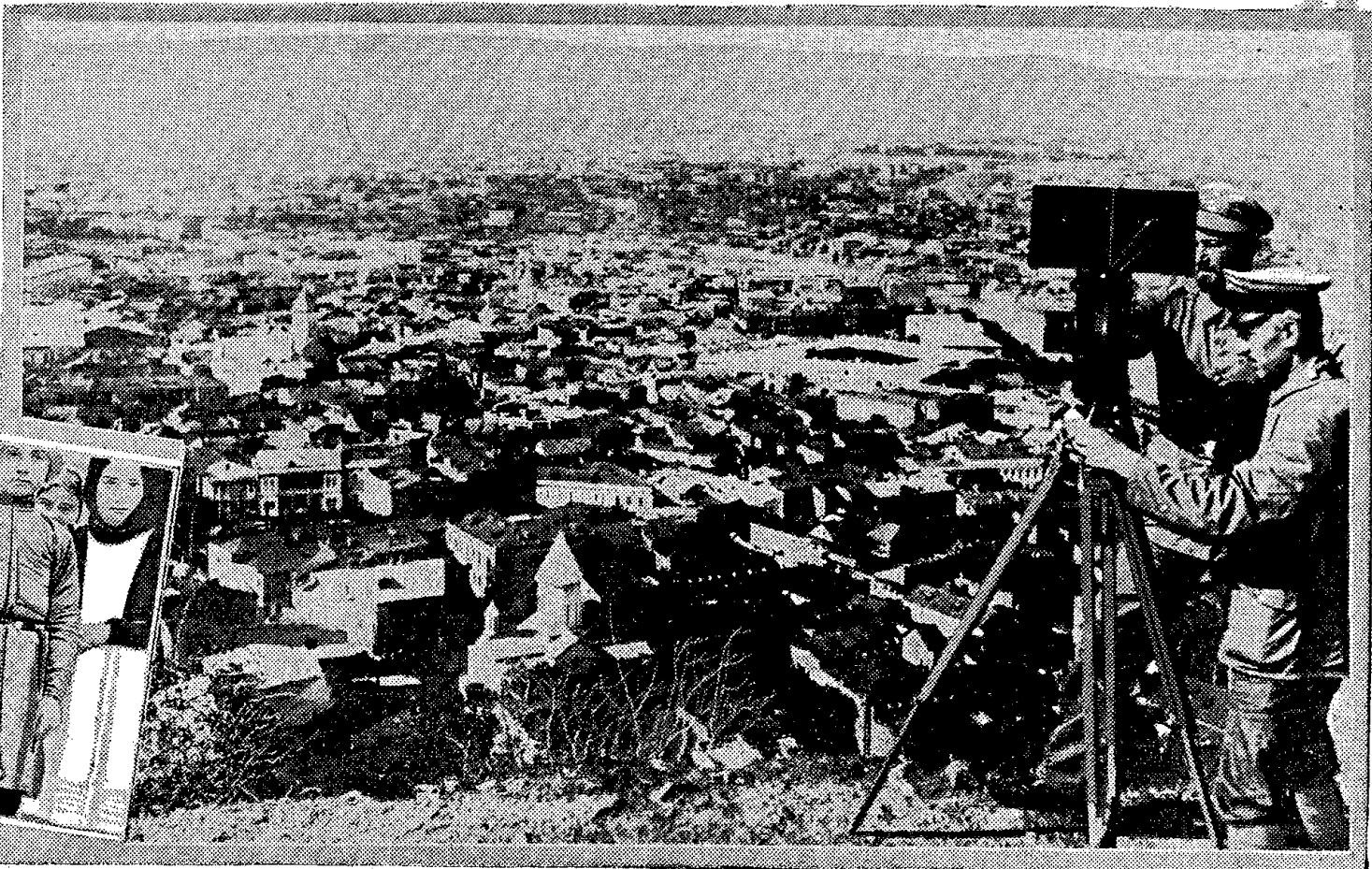
altar of freedom, so they give the Russians little trouble. The Mohammedans of Adzerbadjan look to Turkey for future aid and are content in the meantime to offer merely sullen acquiescence to the rule of the Moscow politicians. But the Georgians, white-skinned, proud mountaineers, are made of sterner stuff, and on several occasions they have risen and sought to drive out the oppressors.

The last big attempt was in the fall of last year. After serious fighting throughout the country, the rebellion was crushed. According to one of the most prominent of Georgian leaders in the field at that time "it was crushed through lack of Radio."

What he meant was this. The country is fairly big, with exceedingly difficult communications. The rising had, of course, to be prepared in profound secrecy and the guerilla nature of the fighting made open relations between the different districts difficult. "We lacked some means of general communication between our various columns. We lacked, for instance, some swift means of conveying an order to one local commander to blow up certain railway bridges on the main line the Russians had to use in order to bring up reinforcements. Had we had any Radio equipment, this would have been a (Continued on page 28)

**R**ADIO is playing a leading part in one of the strangest and most moving of national dramas of our time in the rugged foothills of the Caucasus, where the Georgians are awaiting their next opportunity to rise against the Russians.

In its main outlines, the story of this heroic struggle is well known. The three Caucasian republics, Armenia, Georgia and Adzerbadjin have for some years past been under the rule of Red Moscow. The Armenians, as is their nature, seek trade and profit where it is to be got without any burning desire to sacrifice either on the



What destiny awaits this stern little Georgian? Will Radio change his whole career?

# Ohm Tells Wee Lo of Story Tellers' Hour



was a real Radio Dog and not any other kind of a dog and he smiled and when he answered it was a hum like a Lullaby Song.

"On my back, Big Dog Ohm—  
You'll slow me up where e'r I Roam  
But where'll you go, China or Home?"

Ohm was fidgeting on the Wire as though it were red hot. He looked back at the Sandman who was getting nearer and he said:

"To China, if you please—  
Get me there, quick as a sneeze!"

Well, would you believe it, as quick as a sneeze and about one millionth of a second quicker Ohm, the Big Radio Dog, broadcasting from USA was in China. Once more he found himself swinging on an aerial. This time it was stretched between two high bamboo poles. Below him was a red tile roof. And back of the roof he could look down into a garden with rose bushes in full bloom and a little stone fountain. He was still panting for it was a fast hop—about 186,000 miles a second—as he sat swinging on the aerial his long, flat paper-like tail twisted about the No. 14 strand wire. Over the house tops he could see the Ocean and the Sun was getting up from its morning's bath like the half of a great rose-red plate. He had passed it on the ocean after he had left the USA.

And as Ohm, the Big Radio Dog, broadcasting from USA at the regular Bed (Continued on page 10)



This is Val McLaughlin (above) the Lady with a Thousand Smiles who was first the Voice for the Little Listeners of WOC, Davenport, and more recently of WOAW, Omaha. In the circle above is Cousin Oswald of KHJ, Los Angeles. In the circle at the left is Big Brother Bob Emery of WEEL, Boston. Dream Daddy Harry E. Ehrhart (left), WLIT, Philadelphia, is one of the original Bed Time Story Tellers. At the bottom of the page is famous "Uncle Bob" of KYW, Chicago. Beside him are two of the millions of Little Listeners.

BY H. P. BROWN

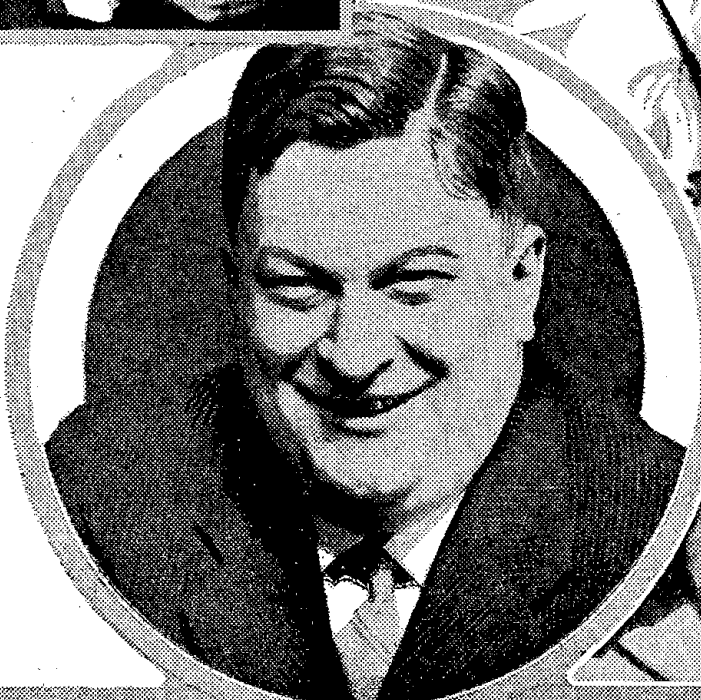
THERE sat Ohm, the Big Radio Dog, broadcasting from Station USA during the regular Bed Time Story Hour, there he sat like a paper doll (because he had no thickness) on the Aerial with his ears pricked up like a tall M watching Something that crept slowly toward him from the Shadows of the dark buildings.

The Something that kept creeping along swinging its arms was the Sandman. It was early and the bag was full of sand so that he could hardly carry it. Ohm, the Big Radio Dog, jumped up on his hind feet that looked like an inverted A. Only a Radiolier could have seen him because it was just like looking at the edge of a piece of paper. He was afraid of the Sandman. He did not want to go to bed. But it was almost the end of the Bed Time Lullaby Hour and that is the time when most Radio Dogs (Big Ones by the name of Ohm) should be tucked into Bed.

And as the Sandman drew nearer, Ohm, the Big Radio Dog, grew so Nervous he almost slipped off the Aerial. Just then a Long Radio Wave—about a thousand Meters, I guess, came loping along like a measuring Worm. Ohm, the Big Radio Dog, called to it:

"Bow Wow! Heigh Ho!  
On your back, may I go?"

Although he was in a Great Hurry the long, loping Radio Wave turned around to see if it



# KPRC Helps Conquest of Texas Air Ranges

**T**EXAS IS the biggest brother in the big family Union. Every school child knows there is more air at large over the area between Amarillo and Brownsville and El Paso and Beaumont than over the entire German republic.

Yet it is scarcely true to declare that this vast ethereal space over the Lone Star state is "at large." The fact is it is pretty well roped and tied according to the standards established by the fathers when barbwire was unknown and ranches were ordinarily defined by the surveyor's stakes.

Texas may be a big state but it is not gawky. The big men (they also grow more six feet to the square mile than any other state in the Union) have the atmosphere pretty well corralled so far as Radio is concerned. The 262,896 square miles within its borders are charged with the finest kind of Radio entertainment. The lonely rancher far off the motor trails and the track of the Iron Horse can slip out of his saddle into an easy chair, flip a dial or two, and hitch his Pegasus before the Rice Hotel of Houston or the Paso del Norte at El Paso, go in and listen to the music.

W. P. Hobby, former governor of the state personally inaugurated KPRC at Houston. He tendered the institution to the service of the state on behalf of the Houston Post-Dispatch of which he is president. Houston needed a Radio station. It was the strategic point for one and on three weeks' notice G. E. Zimmerman, the present supervisor, had the parts assembled and put together ready for the first concert.

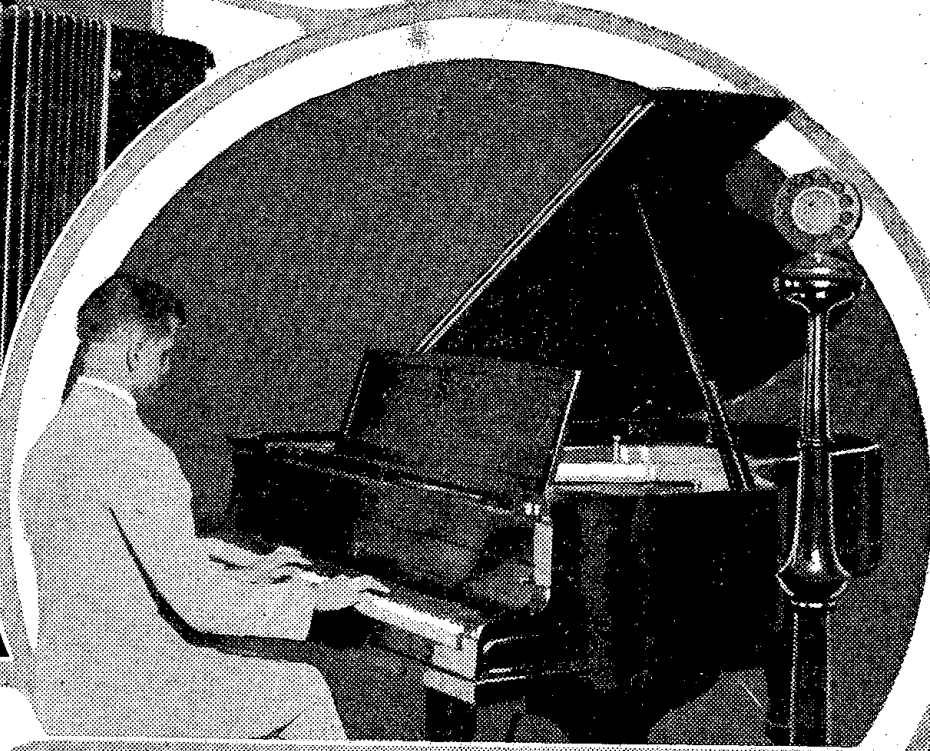
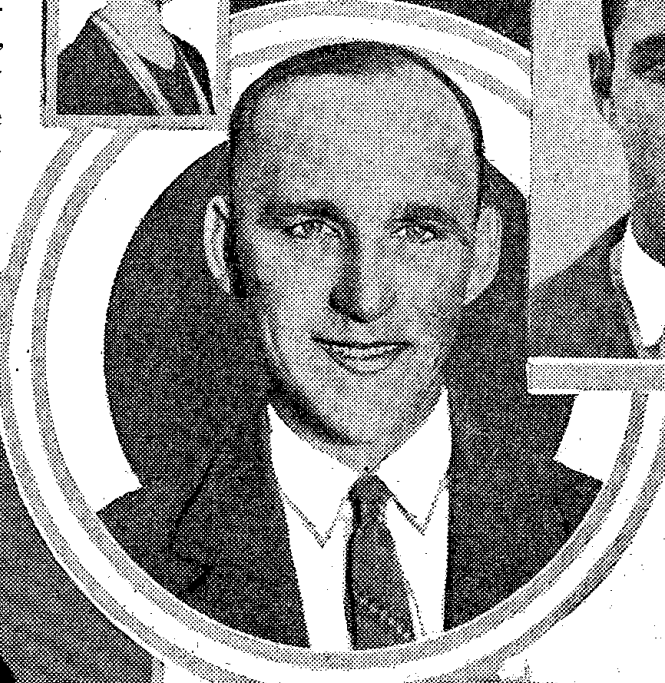
Of course there was a particular need for the rush order and the story of the occasion and the organization are told by the Texas correspondent of the Radio Digest, Mrs. Susan Haymes, as follows:



Here he is, girls, Alfred P. Daniel (top) the good-looking announcer at KPRC. On his lapel you see Edna Adams, "Sweet-heart of the Air" and under his eye is charming Lois Lilley, assistant.



G. E. Zimmerman (left) is the capable supervisor who installed KPRC in the record time of three weeks. He is assisted by Harry Crossman (above) an expert operator.



President Calles of the Republic of Mexico, himself a Radio enthusiast—was the biggest musical event of KPRC's initial broadcast. The weather was admirable and the large outdoor promenade studio was christened with the selections "Over the Waves" and "La Golondrina," played as only native Mexicans can play the numbers so dear to their hearts.

Mayor Oscar F. Holcombe of the city of Houston, was first to apply the slogan of KPRC and briefly told of the fitness of the application to Houston as a port and rail center of prime importance.

Former governor of the state of Texas, W. P. Hobby, now president of the Houston Post-Dispatch, gave the dedicatory address in terms of unmistakable generosity, whereby KPRC entered the field of the air to enlarge the knowledge of her listeners and to widen the horizon of usefulness for the Houston Post-Dispatch.

The Royal Scotch Highlanders band of St. Petersburg, Fla., a bright light of the convention week, furnished a full score of entertainment numbers.

Judd Mortimer Lewis, the poet laureate of the south and children's story teller, gave the kiddies of all ages a much too short sample of some of the "Kiddies Hour" readings. "Uncle Judd's Kiddies Hour" is a daily 7 p. m. feature.

KPRC was built, housed, tested and put on the air in the record time of three weeks—every detail had been completed and all adjustments were made, that spelled absolute success for KPRC from the very beginning. The first program brought acknowledgments from the four corners of the continent. Edmonton, Alberta, Canada; St. Albans Bay, Vermont; Kingston, Jamaica, B. W. I., and Guatamala were among the first to wire of their reception.

KPRC is a standard 500-watt Western Electric, latest type 101-B transmitter complete, and operates on a wave length of 296.9. A valued appurtenance of the operating room is the quartz crystal oscillator, ground to maintain frequency, 1,010 kilocycles, at all times.

KPRC was installed by G. E. Zimmerman who is now supervisor. His Radio career has been wide and varied.

KPRC is admirably located in a suite of four rooms atop the Houston Post-Dispatch newspaper plant, far enough from the heart of a bustling city for ideal Radiocasting. The 135-foot steel towers may be seen from a great distance; at night a white light casts them in bold relief.

The studio construction embodies all the advanced principles in acoustics and arrangement. It is walled with celotex lumber, claimed perfect for broadcasting. Soft drapes in a subdued shade of Radio fleece attains a most attractive background. Heavily piled taupe rugs lessen the footfalls of enthusiastic fans who are cordially welcomed to KPRC.

There is a friendly air about the studio, with its ample seating capacity, wide open windows and hospitable personnel.

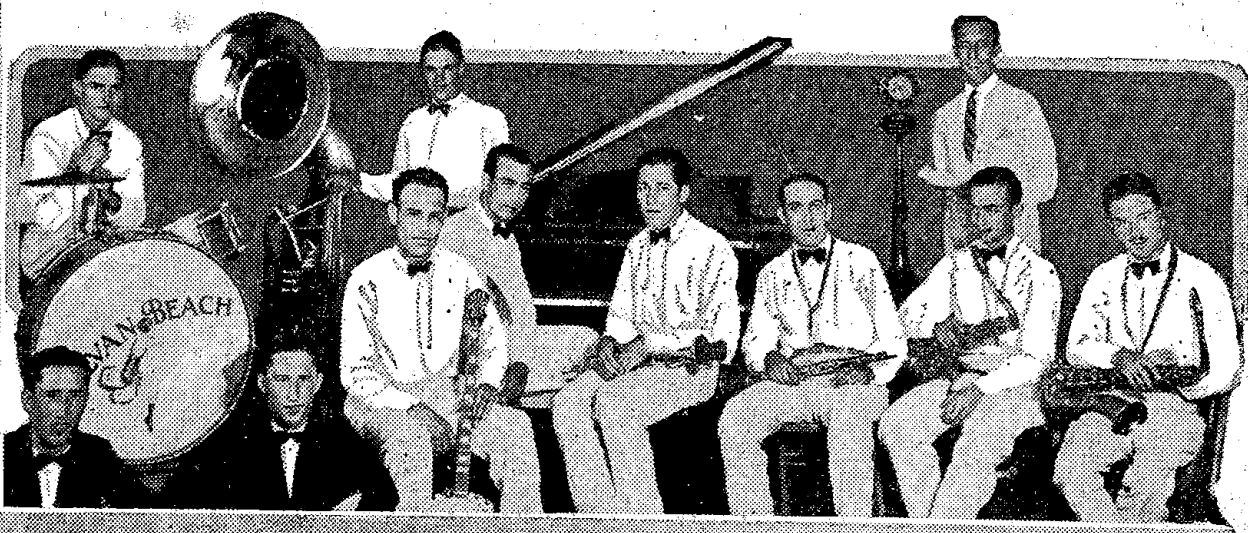
Alfred P. Daniel is announcer and program director and is early being recognized for his clear-cut diction and enunciation. While still a young man, he is an old-timer in Radio. He has earned for this station an enviable position, due to his judgment and tact. He realizes the responsibility of his office, that the station is dedicated to service and the ideals of a great newspaper, and is guided by the further conviction that the privilege of broadcasting carries with it the duty of providing the vast unseen audience with programs that are really worth while hearing.

(Continued on page 10)

"Hello folks, everywhere," were the first words spoken into the air from Station KPRC—Houston, Texas, "Kotton Port Rail Center," the broadcasting station of the Houston Post-Dispatch. At exactly 8 o'clock, central time, on the night of May 9, 1925, KPRC came into being. Its opening was coincident with the beginning of the world convention of Associated Advertising clubs which met in Houston, May 9 to 14. The usual formalities of opening addresses were interspersed with most out-of-the-ordinary talent, for KPRC was brought into existence quickly with a definite purpose—the Houston Post-Dispatch wanted to give to the nations the details of the entire convention program—and success of the very highest order prevailed.

The First Garrison band of Mexico—a messenger of good will, sent to the convention by

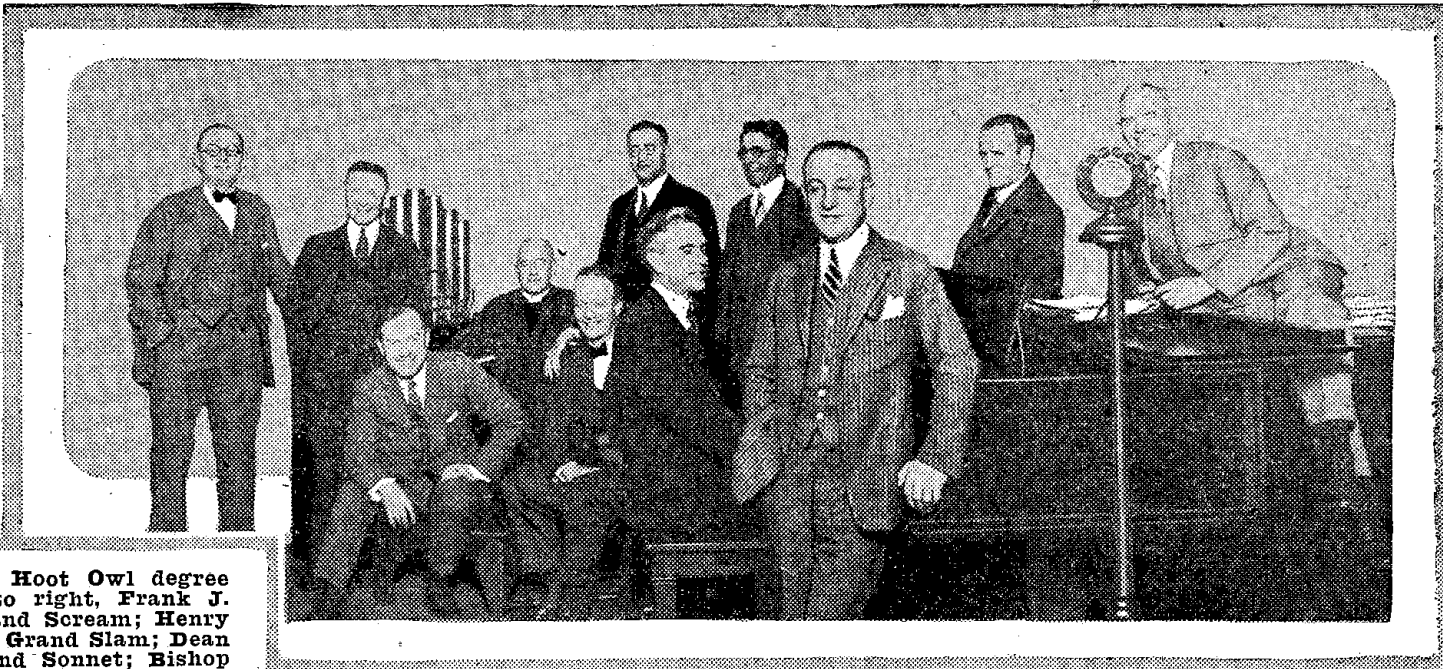
Few artists, American born, have mastered the accordion as well as Miss Virginia Willrich (above, left) at KPRC and with Frank Tilton, the blind pianist, this station has two outstanding instrumentalists. Another big feature is the Sylvan Beach Orchestra (right) of the Fort Houston Playground.



# Hungari Hoot Owls Roost at KGW Portland



Ever see a singing owl? Behold, then, the young lady just above these lines, Miss Kathleen Duffy, sweet caroler of the KGW Hoot Owls.



At right is Hoot Owl degree team—left to right, Frank J. Sardam, Grand Scream; Henry W. Metzger, Grand Slam; Dean Collins, Grand Sonnet; Bishop W. T. Sumner, Grand Sermon; Alan (Punch) Green, Grand Songsmith; Barnett H. Goldstein, Grand Schmoos; Wm. Robinson Boone (seated at piano), Grand Skipano; R. G. Calvert, Grand Skidoo; Chas. F. Berg, Grand Screech; A. C. Dixon, Grand Scratch, and "Tige" Reynolds, Grand Sketch.



### BY THE GRAND QUILLSHOVER

Secretary to the Grand Scream of the Hoot Owls

**T**HE KGW, KEEP Growing Wiser Order of Hoot Owls' "Hungari"!!

These magic words create such a furore 'way out west in Portland, Oregon, that their first mention causes strong men to weep with joy and makes the youngest of infants stop their crying and laugh with little cooings of happiness. For do not the Hoot Owls, that fun radiating, gloom-chasing, sunshine-distributing group at KGW, the Oregonian at Portland, Oregon, accomplish just these very things when they get their microphone on the air at their annual Hungari given the first Friday of every New Year? Emphatically—they do!

The inception of the "KGW, KEEP GROWING WISER" order of Hoot Owls at the Oregonian station of Portland, was accomplished 'way back . . . le' see, yes, guess it was too—'way back in the spring of 1923 A. D. My! how tempus sure does fleets. What's that? Why A. D. means "After Dick," of course. Alright, alright, I'll expoundulate. Yu'see A. D. means "After Dick," "After Dick," means "After Dick Haller," and all that means "After Dick Haller had taken charge of KGW, and had thought up his little scheme of having an order of Hoot Owls." Sabe?

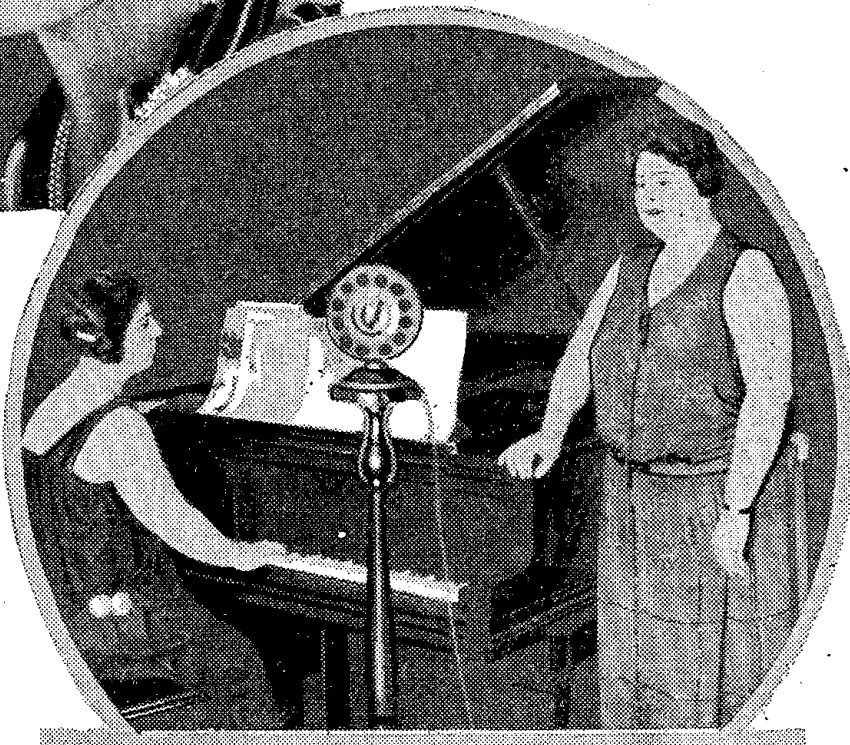
Now, getting down to a serious definition of the purpose and aims of the KGW order of Hoot Owls, we find that this order was organized in the spring of 1923 by R. V. (Dick) Haller, director of KGW, for the express purpose of providing a galaxy of clean, whole-hearted fun for Radio listeners. With this one idea in mind, a group of men who could accomplish these ends were recruited from the business element of Portland; care being exercised in demanding that each member of the degree team be a jolly good fellow and a really good sport. Such a group of men was enrolled as the official degree team of the newly-formed Keep Growing Wiser order of Hoot Owls, and at their first conference (Continued on page 26)

**A** PEPPY New York newspaper man, feeling that the great metropolis could be trusted to continue without him, decided to go West. So he bought a ticket for Portland, Oregon. He never regretted his decision. He speedily found himself annexed to the Oregonian and since 1923 has been director of that newspaper's broadcasting station, KGW. Now R. V. (Dick) Haller—for 'tis none other than—wouldn't give one solitary hoot for all the effete in the Knickerbocker kingdom. No, he has other uses for his hoots. He is the Grand Gazaboo and Hootmeister Extraordinary of the Keep Growing Wiser Order of Hoot Owls.

This is one of the most prominent and exclusive (you have to qualify as a KGW listener before you can join) Radio clubs west of the Mississippi river. During a lucid interval the Grand Quillshover of the order was persuaded to disclose the secrets of the order in a special article which begins on this page.

Enigma, the Hoot Owl Mystery Maid, is unmasked and her face with the mask removed is shown to the right. However, her name was still a mystery at the time these lines were written, for that was one secret the Grand Quillshover guarded jealously up to the time of the Hungari.

Left to right, above, are, William and Dick. "William" is sometimes known as "Sweet William" but Dick's other name is Haller. Both are important in the process of joining the famous Hoot Owls congregation at KGW. "Enigma," right, unmasked. Do you know her name?



Good for a dreamy ballad or those wicked blues, Helen Nordstrom Boehr (above), sings them all for the Hooters with Miss Ruth Mead assisting at the piano. And a nestful of Owlets (left) who help at KGW, Portland, Ore.

## STATIONS' SIGNALS BIGGEST OBSTACLE

MOST OF INTERFERENCE  
DUE TO CONGESTION

Bureau of Standards Makes Public  
Analysis of Main Causes of Im-  
perfect Reception

WASHINGTON.—The greatest obstacle to perfect Radio reception is broadcasting station interference, according to an analysis just made public by the bureau of standards. The second greatest obstacle is atmospheric interference, while fading is third.

The analysis of the bureau was of the results of a series of observations covering a period of one year, from August, 1922, to July, 1923. Cooperating with the bureau in the tests were 100 voluntary observers who made approximately 8,500 observations on the signals of KDKA, East Pittsburgh.

The analysis showed the following relative magnitude of obstacles to reception: No obstacles, 32.4 per cent; other broadcasting stations, 25.7 per cent; atmospheric, 15.7 per cent; fading, 12.2 per cent.

Since there has been a big increase in the number of broadcasting stations since the observations were taken, it is believed that station interference for 1925 would show a much higher percentage.

### Distance Not a Gauge

A theory which is given credence by the analysis is that signals from distant stations are often of greater intensity than signals from stations of similar power, but located comparatively near the observer.

The data in question showed that there is a sharp drop in the intensity of station signals for the first 75 miles. Between 75 and 125 miles there is a slight increase in signal strength, while between 125 and 175 miles there is another sharp drop. Between 175 and up to 450 miles there is a steady and gradual increase in signal strength.

The analysis shows that the strength of atmospheric for the period studied were greatest in September, and least in February. Fading was greatest in October and least in February.

## CONTEST DECIDES SLOGAN FOR KFAB

"Home Sweet Home Station" Is  
Motto Selected by Lincoln,  
Neb., Broadcaster

LINCOLN, Neb.—"The Home Sweet Home Station" is the slogan selected as the winner from a total of 142,636 replies received to Station KFAB's request broadcast in connection with the station's first birthday party. Dick Stone of Gillette, Wyoming, submitted the winning slogan and was awarded the grand prize of the contest, a Buick Standard Six.

During the two weeks that followed the birthday program, 13,909 telegrams, 2,639 long distance telephone calls and 126,088 cards and letters were received at the station.

### Send Aviation Talks

WHB, the Sweeney Automotive and Electrical school, has recently inaugurated a series of aviation talks. These are given every Thursday evening at 7:30, central time, and are given by Mr. Harry C. Wimer, who is well known in aeronautical circles and who is the chief instructor in the new aviation department in the Sweeney school.

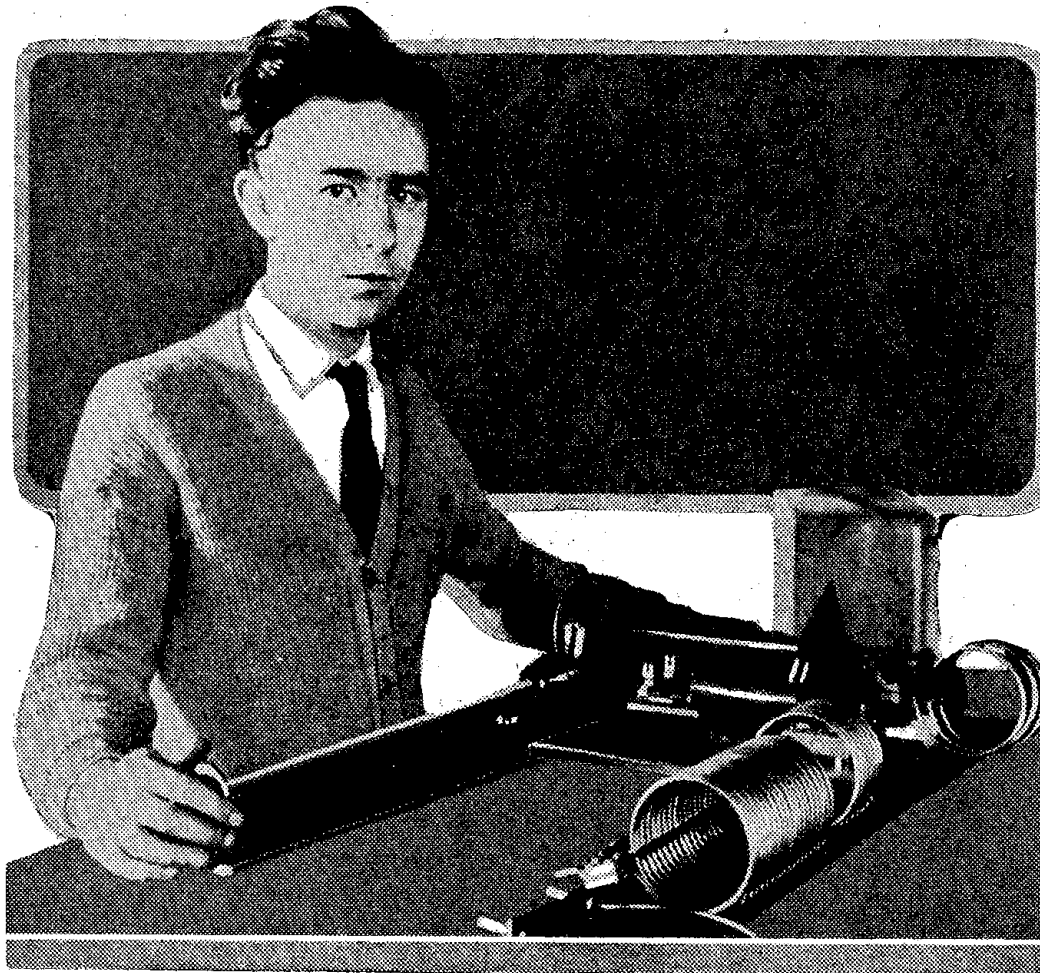
### Butte Has Big Club

BUTTE, Mont.—Although not having a broadcaster in or near the city, Butte has one of the largest, if not the largest, Radio clubs in the United States.

## FIVE WILL RESPOND TO NAME "EUGENE"

CINCINNATI, Ohio.—One can nearly always find "Eugene" at Station WKRC, here, and one will be lucky if five young men do not answer a call for him. The secret of this strange phenomena is that there are five "Eugenes" permanently located with the studio and on its programs. To avoid confusion they are known as "number one," "number two," and so on down the line. The five "Eugenes" on the studio payroll are: Eugene Mittendorf, studio director; Eugene Perazzo, musical director; Eugene Schmidt, tenor soloist; Eugene Wesselman and Eugene Huber, operators.

## CLAIMS PRIVACY IN TRANSMISSION



Radio stations may become nearly as confidential as telephone lines if the projected invention shown above with its inventor, Winfield W. Salisbury, student at the University of Iowa, is successful. He has succeeded in oscillating the shortest known amateur waves. He uses a dial with 10,000 graduations, one of which will tune out his short waves.

## NEW YORK AQUARIUM TO GIVE NEW SERIES

Miss Ida M. Mellen Will Talk Over  
Station WJZ

NEW YORK.—The New York aquarium announces that the long and popular series of Radio talks given from Station WJZ, on alternate Fridays since June 1925, by Miss Ida M. Mellen, assistant to the director of the aquarium, will be repeated during 1926, in response to many requests.

This time Miss Mellen will be heard on occasional Wednesday evenings in the New York Zoological society series, Station WJZ, beginning with two talks in February—one on the New York aquarium and its denizens, and one of goldfishes and the care of fishes in captivity. These will be followed by 10 other talks on fishes, succeeding subjects being whales and porpoises, sea birds at the aquarium, seals, etc.

## British Notes

A novelty item soon to be broadcast from all British stations will afford amateur detectives a chance to shine. The plot is based on a murder supposed to occur in an apartment house in West London. Listeners will be asked to furnish the best explanation of the mystery, and to send their solutions to the British Broadcasting company. The fan whose attempt most closely approximates the actual solution, will win \$500. All contestants must donate 25 cents to charity. The first broadcast deals with the murder and an arrest; the trial is to be broadcast five days later.

What does it feel like to drive a subway train? British listeners will shortly hear the experiences of a driver employed on the London Underground railway, and he will try to convey an impression of his daily life rushing to and fro in the bowels of the earth.

English stations heralded in the New Year with two hours of dance music. From midnight on December 31 to 2 a. m. on January 1, the dance music at the Albert hall, the largest hall in the country, was relayed to 2LO and 5XX.

The London county council is to follow the example of the House of Lords by installing earphones to improve the hearing in the council chamber. A phone will be provided for every member of the council, and a number of phones will be installed in the press gallery.

### Is Northernmost Radio Station

OSLO.—The northernmost Radio station (code) in the world at present, it is stated, is that at Longyear-city on the island of Spitzbergen. The station is situated on the shore of Advent Bay, its geographical position being 78 degrees 20 minutes north.

## RADIO TELEPATHY TRY IS COMPLETE FAILURE

British Attempt to Send Thoughts  
Fails to Work Out

LONDON, Eng.—Mental telepathy by Radio which was tried out by the British Broadcasting company here, was a complete failure according to reports received after the test.

Eight subjects, men and women, were locked in a room and told to concentrate upon what subject the millions of fans throughout the country were thinking about. The announcer informed the "guessers" that the first subject was a letter of the alphabet. The letter happened to be "K."

One of those in the locked room guessed "K" as the letter after three trials. This was the nearest that anyone of them came to the solution.

## Radio Brings Isolated Miners News of World

Sections Remote from Telegraph  
Kept Informed

SPOKANE, Wash.—Several hundred miners, situated in regions of Idaho remote from the railroads and the telegraph, some of them well up on snow-clad mountains, with the aid of the Radio are as intimately in touch with the news of the world as a man buying the latest edition of a newspaper on a city street, according to Stewart Campbell of Boise, state mine inspector.

"I obtained most of my immediate information about the ball games and other happenings for the last 18 days of a tour of Montana by Radio," said Mr. Campbell while a visitor at Spokane recently.

"The Bunker Hill & Sullivan has a large Radio at the scene of its operation in Deadwood basin, as well as many other mining companies.

"The Radio is a great thing for the isolated mining camps. It brings civilization right into them. The only thing disliked about it by some of the miners is that they can not contradict or get back at it if anything is said that they do not like to agree upon."

### Approve N. S. W. Relay Scheme

WASHINGTON, D. C.—Definite approval has been given to the New South Wales State Radio scheme and inquiries are now being made as to a suitable site for the Sydney and relay stations, the first of which is expected to be at Newcastle. The cost of establishing the central station and six relay stations is estimated at more than \$50,000, but for the present only one relay station is to be established.

With the ordinary receiver having three to five one-quarter ampere tubes, a 90 ampere-hour storage battery is all that is necessary.

## TO SEEK WEATHER'S RELATION TO STATIC

STEWART-WARNER BEGINS  
TO OBSERVE BUGBEAR

Will Note Reception at Twenty Widely  
Scattered Posts—Fading Also  
Will Be Investigated

CHICAGO.—Investigation of "fading" on a scale never before attempted in the United States will be made in mid January at 20 observation stations, it was announced today by J. K. Smith of the Stewart-Warner corporation.

Hitherto such experiments have been carried on in isolated sections of the country between two or at most three stations. The results of such research have been negligible. There is still no explanation of why signals should be stronger in the winter, when static electricity leaps out of one's hair, or sparks out of the rug at one's feet, but weak in summer when there are apparently no static charges in the things about us, according to Mr. Smith.

### Will Plot Radio Reception Against Weather

The Stewart-Warner observation posts will chart readings on selected distant stations every two minutes during the period of the tests. The results will be averaged and plotted on a map similar to that issued by the government weather bureau. It is the belief of the engineers conducting the tests that curves which will make possible a comparison of effects and a search for causes will result. If so, the experiment will be repeated at regular intervals throughout the winter.

"By a comparison of fading and the static curves with those of the U. S. weather map, it may be possible to determine the effect of weather on such phenomena," said Mr. Smith, "By plotting the curves of fading and static in tests on stations of varying wave length, some tangible progress may be made toward discovering what frequencies are best for broadcasting.

## APPOINT JUDGES OF PLAY CONTEST

Silver Trophy to Accompany Cash  
Award to Be Called  
"Hoover Cup"

CHICAGO.—The machinery for conducting the nation-wide contest to secure the best Radio play and improve Radio programs to be held under the joint auspices of the Drama League of America and WLS, the Sears-Roebuck station, here, has been set in motion. Stuart Walker, playwright and producer, has been secured to act as chairman of the Radio play contest committee and Augustus Thomas, the playwright; George Arliss, the actor, and James O'Donnell Bennett, former dramatic critic, now feature writer on the Chicago Tribune, have been selected judges of the contest.

Mr. George Junkin, field secretary of the Drama League, has announced that the silver loving cup to be awarded in addition to the \$500 first prize will be known as the "Hoover Cup," as the secretary of commerce has expressed a keen interest in the contest.

A prize of \$200 will be given for the second best play submitted and \$100 for the third. Any man, woman or child is eligible to compete. According to the rules of the contest, all manuscripts must be received on or before February 1, 1926. The manuscripts are to be sent to WLS, Hotel Sherman, Chicago.

KSD, St. Louis, is to have its own orchestra. This organization will be composed of members of the St. Louis Symphony orchestra and will give concerts every Monday night at 9 p. m. central time.

## RADIO AIDS CASE OF SLEEPING SICKNESS

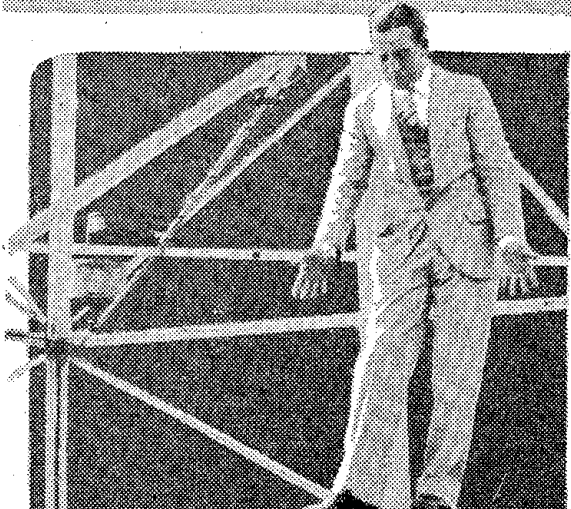
NEW YORK.—John F. Hill, who is broadcasting every Saturday evening from WJZ a series of suggestions for better eyesight, discovered an unusual case of double vision recently, when a young man walked into his office and expressed interest in his weekly Radio talk and asked to have his eyes examined for glasses.

Mr. Hill's examination disclosed the fact that the man's condition was not caused by eyestrain, and, therefore, directed the man to a medical specialist who found him to be suffering from sleeping sickness.



**GALAXY OF STARS ENTERTAIN RADIO FANS THROUGH KFVB MICROPHONE**

**L**IFE for the Radio artist is not a very dull affair. The group to the right is composed of some of those who broadcast through Station KFVB on the Warner Brothers movie lot at Hollywood. Standing, from left to right, Verna Kloess, concert pianist; Frank Stever, baritone; Margaret Lancaster, mezzo-soprano; Billie Dunn, studio accompanist; Bill Blake, lyric tenor; Charlie Wellman, announcer and manager; Ron Wilson, pianist; June Purcell, Radio's Sweetheart; Ben McGlashan, Big Brother of KFVB, and Lee Kent and her Tarapache. Seated, left to right, are Charles Beauchamp, dramatic tenor; LeRoy Kulberg and his uke; Ray Kellogg, violinist, and Bill Hatch, pianist.



"I have below me five stars that can be classed as a constellation," says Charlie Wellman, announcer and manager of KFVB. "But it's a cinch I don't look down on them." Charlie is standing on one of the towers of the Warner Brothers station that was built within 28 days after Jack Warner decided the company should do a little broadcasting. The attractive quintet is composed of (from left to right) Verna Kloess, concert pianist; Lee Kent, who sings quaint songs and plays the tarapache; Billie Dunn, studio accompanist; June Purcell, Radio's Sweetheart, and Margaret Lancaster, mezzo-soprano.

**DRAWS \$25 FINE FOR UNLICENSED SENDING**

**Dayton, Ohio, Man Caught Broadcasting Phonograph Records**

WASHINGTON.—The attention of the department of commerce has been called to a case where punishment was meted out by court to the owner of a broadcasting station which was operated without a license. The offender was Roger M. Daugherty of Dayton, Ohio, who broadcast phonograph records on 340 and 400 meters. He had been on the air about two years and Supervisor Edwards of Detroit and his entire staff had been trying to catch him. They finally located the transmitter and called on Daugherty. The transmitter was cleverly concealed and it was only recently that Daugherty was caught in the act. Daugherty was fined \$25 for the offense. The call signal of SCOF was used by Daugherty.

**Texas Boy Scout Wins Pup For One-Tube DX Record**

SAN ANTONIO, Texas.—Otto Glaeser, Jr., 16 years old, boy scout and Brackenridge high school student, tuned in 42 Radio stations in one hour—18 of them distant ones, with his one tube home-made regenerative receiver. This remarkable performance, which sets a record for this city, won for young Glaeser the September award of the Crosley Radio corporation of Cincinnati. His boy scout honor was his verification. The award is a pedigreed German police puppy from the celebrated Champion Kora von Warnowtal of Green Fair Kennels, Greenwich, Conn. The puppy has been shipped. The Crosley corporation is now conducting a second contest for one tube sets for the best record of distance which will continue until March.

**This Would Insure Home Sweet Home**

**Germany Has List of Severe Regulations for Aerials**

LONDON.—Detailed and severe regulations regarding the purchase of aerials have been introduced in Germany, and a further elaborate set of rules governs their use. Here is just one of the sixteen most important items in the rules: The sag of the aerial wire is to be so adjusted that with contraction through cold and with additional loading by wind, snow and ice, there is a factor of safety of three. The sag is to be calculated for the two following cases: (a) Temperature 23 degrees Fahrenheit with additional loading; (b) Temperature 4 degrees below zero Fahrenheit without additional loading. The additional loading is to be assumed to act in the direction of gravity, per meter, and equal to 130/d in grams per meter, where d is the external diameter in millimeters. A German fan after reading the above should feel like "acting in the direction of gravity by jumping off the roof." The introduction of these rules has caused German experts to prosecute researches toward the evolution of aerial-less receivers. Let's move to Germany!

**Radio to Aid Aviation**

BRUSSELS.—The Belgian government has just signed conventions with the British, French, Luxemburg and Dutch governments ensuring Radio being used as a help to aviation. Radio stations on air routes are divided into two classes: control stations and collaboration stations. The former will keep airplanes constantly informed as to direction of flight, while the latter will help the plane determine its position.

**INDIAN ENTERTAINER GAINS NEW LAURELS**

DENVER.—Chief Evergreen Tree, Pueblo Indian, an expert in the art of wild animal mimicry, today lays claim to new laurels via Radio via KOA. During a recent program the Indian gave a few imitations of wild animals and as a result was confronted with a complaint from Alma, Mich. The writer told him that when the pack of yelping coyotes broke loose over the Radio their pet cat departed and failed to return. "Pretty good," the Indian grunted, "Chief Evergreen Tree, he reason why cats leave home."

**NUTTY CLUB SESSIONS GRANT ALL REQUESTS**

**WBBM Nonsense Starts Off Week With a Smile**

CHICAGO.—Just a little fun and frolic to start the week with a great big smile was the idea that prompted those early hours of nonsense from WBBM, here. And it seems that late-hour listeners like their programs informal. The staff of WBBM, Chicago, works Sunday from twelve midnight until "when" and they are at it until every request is filled. That isn't so easy now since these run well over a thousand each session. A Louisiana member suggests "a little nonsense now and then is relished by the best of men." A membership with Nutty club of WBBM, Chicago, which includes policemen, bootleggers, preachers and college professors, shows that a strong sense of humor is one of the attributes of the broadcast listener.

**Improve Greatly Navy Radio Communication**

**Shore Stations Are Fast Installing Modern Tube Equipment**

WASHINGTON, D. C.—Secretary Wilbur, discussing naval Radio activities during the past year in his annual report to the president, says that Radio communication has improved, especially in connection with aircraft and submarines. "The Radio traffic stations of the shore system are being gradually improved," says Secretary Wilbur. "The obsolete spark apparatus and the obsolescent low-powered arcs are gradually being replaced with modern tube equipment as funds become available." He continues, "the interest of the American Radio Relay league has been enlisted in naval high frequency (short wave) work. An official of the league was placed on active duty and detailed to the fleet to conduct extensive short wave tests afloat during the recent Hawaiian maneuvers and cruise to Australia and New Zealand. These tests have already given valuable results, and large amounts of traffic have been moved by means of this apparatus."

**FEW BROADCASTERS SUBDUCE HARMONICS**

**REQUEST INSTALLATION OF GOOD SUPPRESSORS**

**But 47 Stations Have Been Equipped with Apparatus to Prevent Sending Stray Offshoots**

Noise, noise, noise! Broadcasting stations heterodyning with one another, radiating one or several harmonics, their harmonics heterodyning with one another. That's what the Radio supervisors and the department of commerce are seeking to eliminate by the limitation of broadcasters and the strict supervision and inspection of those stations allowed to broadcast.

As a part in this general scheme, broadcasters have been advised to equip themselves with "harmonic suppressors" of recommended type. Harmonic suppressors prevent stations from sending out stray offshoots of their program on waves other than that for which they are licensed. So much for explanation. Up to December 1, which is the date the last government report was made, only 47 of this country's 500 stations had so equipped themselves. Of course, there may be stations which do not radiate harmonics, or their harmonics may be so slight as not to require a suppressor. In that event, the Radio supervisors or listeners can hardly complain.

**"Honor Roll" Is Listed**

Nevertheless, the following "honor roll" lists broadcasting stations which, up to December 1, had been equipped with approved harmonic suppressing devices. KDKA, East Pittsburgh; KFDM, Beaumont, Tex.; KFJF, Oklahoma, Okla.; KOE, State College, N. M.; KPRC, Houston, Tex.; KTHS, Hot Springs, Ark.; KWWG, Brownsville, Tex.; WABX, Mount Clemens, Mich.; WAHG, Richmond Hill, N. Y.; WAPI, Auburn, Ala.; WBAL, Baltimore, Md.; WBAP, Fort Worth, Tex.; WBAX, Wilkes-Barre, Pa.; WBBR, Rossville, N. Y.; WBDC, Grand Rapids, Mich.; WCAB, Pittsburgh; WCAP, Washington, D. C.; WCAR, San Antonio, Tex.; WCAU, Philadelphia; WCX, Pontiac, Mich.; WEAJ, New York; WEBK, Grand Rapids, Mich.; WFAA, Dallas, Tex.; WFDF, Flint, Mich.; WFI, Philadelphia; WGBS, New York, N. Y.; WGBU, Fulford-by-the-Sea, Fla.; WHAP, New York; WHAR, Atlantic City; WJAD, Waco, Tex.; WJR, Pontiac, Mich.; WKAR, East Lansing, Mich.; WLW, Harrison, Ohio; WLWL, New York; WOAI, San Antonio, Tex.; WOR, Newark; WPG, Atlantic City; WRC, Washington, D. C.; WRNY, New York; WRR, Dallas, Tex.; WRVA, Richmond, Va.; WSAI, Mason, Ohio; WSE, Atlanta; WSM, Nashville, Tenn.; WSMB, New Orleans; WTAM, Cleveland; WWJ, Detroit. The above list and additional stations will be repeated from time to time.

**London Festival Ends**

LONDON, Eng.—The festival week of the British Broadcasting company, in celebration of its third birthday, has just concluded.

# RELAY PROGRAM OF KFI ACROSS NATION

## POSSIBLE FOR MORE THAN 6,000,000 TO HEAR

### Six Stations Rebroadcast Program from Los Angeles in Preparation for International Tests

LOS ANGELES. — Transcontinental rebroadcasting of a Radio program that was relayed on short wave length to Europe and Australia, covering an area in which it might have been heard by an audience of between 6,000,000 and 7,000,000 persons, was accomplished recently by seven stations located at strategic points throughout the United States, with the aid of the high-powered European stations.

The program originated at Station KFI of this city and was picked up by KCA, Denver, and relayed to five other stations in the East and Middle West—KFKX, Hastings, Neb.; WOC, Davenport, Iowa; WGY, Schenectady, N. Y.; KMA, Shenandoah, Iowa, and WHAZ, Troy, N. Y.

#### Announcer Hears Voice

All six of the relaying stations were heard in certain localities, and in one instance a Los Angeles man tuned in on one of the eastern relays and, putting the loud speaker to the mouthpiece of a telephone, enabled the announcer at KFI to hear his own voice returning from the East.

The program continued for three hours without a break and operators of the Los Angeles station complimented the operators of the other six stations upon the skill with which they modulated the program as it was received and rebroadcast.

## "OHM," THE RADIO DOG

(Continued from page 5)

Time Story Hour, sat on the wire smiling to himself very much satisfied over his success in escaping from the Sandman he heard some Mudder below calling Her Little One.

"Wake-y up, Wee Lo Foo  
Sun is up, why aren't You?"

It was a sweet Oriental voice in the language of the Celestials. But Ohm, as he was Big Radio Dog (You must excuse me for telling you over and over again because it is necessary) understood Chinese just the same as he would if he had been born and brought up a Pekingese or a Chow. Here was a chance for a Jolly Surprise. He could hear the Mudder trying to get Wee Lo up like this:

"One, two, three  
The Bumble Bee  
Rooster Crows  
And away we go!"

So Big Radio Dog Ohm ripples himself into the lead-in and trickles into Wee Lo Foo's house. Mudder Foo sat on the bed pulling Wee Lo to his feet in his dainty blue embroidered silk pajamas. It was time for the Daily Dozen and they usually took their Exercises by the Voice of the Exercise Man in the Radio. So Mudder Foo tuned in and had the Surprise of her life. This is what they heard:

"Bow Wow! How do you do!  
I'm Ohm, who are You?"

Mudder Foo said, "Well, what in the world was that?" And Wee Lo almost jumped out of his skin as his slanty eyes popped wide open and he gripped his Mudder's hand.

"Don't you know me?" asked Ohm, astonished. "As I said before, I'm Ohm, the Big Radio Dog, Broadcasting During the Lullaby Hour for Bedtime Stories by Dream Daddy and Uncle Bob, and Uncle Walt and Uncle Dutch and Big Buddy and-and from Station USA and a lot more. I thought I'd drop in an s'prise You."

"I regret," said Mudder Woo, "that I must confess never to have had the pleasure, to my best recollection, of seeing you before." (You must always remember that Orientals are very polite when they are well brought up as was Mudder Woo).

"Oh, I beg that you will not let that worry you?" replied Ohm—he was such a Big Radio Dog—"because to tell the honest truth, hope to die cross my heart, nobody else has ever seen me. Big Radio Dogs like me are just to be heard, not seen because we are that different than little children who listen in. We are invisible because we are of two dimensions only."

"I'm so glad," smiled Wee Lo, "and who are all those people like Dleam Dladly and Uncle Blob and—"

"Oh Wow! Who-ee Wow-wowow!" Big Ohm almost split himself for laughing. "Please 'scuse me for laughing but your Oriental diction simply stirs my risibles beyond control. But I'll try not to be rude again."

"Only don't ask me to tell you who ALL of the Story Tellers are because USA now broadcasts from 550 stations and every station has one or two and sometimes more Voices who come through the air to homes where Little Children are, to tell them Stories while they are waiting for the Sandman. And, oh, the children love to

hear them because they write such lovely letters and when the Voices who are the Uncles and the Dream Daddys and the Big Buddys hear from their Little Friends of the Air they are very happy.

"Sometimes they have Parties and the Children are invited to come and see the Voice. Oh, please forgive me for making out that they are just Men. There are lots of Aunties and Story Ladies, too, who tell the most wonderful stories. Sometimes they have me come to broadcast and I bark right out of the cabinet where the tubes are. Want to hear me bark? Bow Wow! That's the way I do it."

"Dear me! I hear Cousin Oswald at Los Angeles calling me right now. Or maybe it is Uncle Remus. No, it's Uncle John, now I know. And after that Val will be waiting for me."

"And I want to thank you Mudder Woo and you, Wee Lo Foo, for the lovely time I have had on this little visit. I just heard a long wave start out from Singapore which I will hop onto when it comes by. Come and see USA some time. Bye-bye."

So, with a flip like lightning, Ohm, the

Big Radio Dog, broadcasting during the Bed Time Hour from Station USA flipped onto another thousand meter wave and was back Home before Dinner Concerts were over.

But this time he was ready for the Sandman. And the Sandman was ready for him.

## KPRC OF TEXAS RANGES

(Continued from page 6)

Henry Crossland is chief operator and was formerly with WCM. Grimes Waller is also an operator and came to KPRC from the Dallas stations, WFAA and WRR.

Needless to say, none of these popular and good-looking young men are married. The writer has yet to find any Radio attaches who are! Thus the output of divinity, chocolate cakes and mash notes still continues.

Miss Lois Lilley is the efficient and decorative studio assistant. She welcomes guests to the studio and makes herself useful as well as ornamental.

It was the good fortune of the writer to be at KPRC for the weekly noonday con-

cert of the "wonder boy"—Frank Tilton, blind pianist of the Houston Post-Dispatch. For more than an hour, he played number that had been requested. Totally blind, this talented young man, with his varied repertoire, his sunny disposition and good humor entered into the spirit of each selection.

KPRC's programs are fitted to the needs of the community it was built to serve; standard time signals from U. S. Naval Observatory at Washington; U. S. weather forecasts; bulletins of agriculture; road bulletins; news items; baseball results; music. On Sundays, Dr. A. Frank Smith, pastor, First Methodist church, conducts services which are broadcast from 10:45 to 12 noon, and also from 7:45 to 9 p. m. On Saturdays, at 7:30 p. m., Rev. Claude L. Jones, has the Universal Bible class.

KPRC has yet another slogan calling attention to its home town, Houston—an inland port, 50 miles from the Gulf of Mexico—"Where 17 Railroads Meet Forty Steamship Lines." KPRC is proud of being representative of the growing metropolis and, incidentally, Houston is mightily proud of KPRC!

# ATWATER KENT RADIO

## "What kind of company makes it?"

EVERY DAY, as the public gets wiser, do you not hear fewer and fewer customers ask; "What's the price of that radio?" and more and more customers ask "What kind of company makes it?"

If you are an Atwater Kent dealer, figuring where you stand at the beginning of this New Year, are you not firmer than ever in your conviction that the stability of your manufacturer is no mean asset?

\* \* \* \* \*

The Atwater Kent dealer knows:

- 1 THAT behind the company with the strongest financial resources of any independent radio manufacturer stands the personal responsibility of a man who for twenty-five years has jealously guarded the quality of every product that bears his name.
- 2 THAT we have built the largest radio factory in the world, and are putting on a large addition this winter,\* because we are thinking of tomorrow's market as well as today's.
- 3 THAT the merchant is backed by a policy that safeguards his profit, and is not tempted to throw his money away on job lots.
- 4 THAT he is handling the Radio which requires minimum service and is therefore insured against needless worry and expense.
- 5 THAT Atwater Kent owners are satisfied with their receiving sets and radio speakers and are always boosting them in making more sales.
- 6 THAT Atwater Kent is the make the greatest number of people intend to buy—or buy next, if they already have unsatisfactory sets. (Four surveys prove this.)

\* This addition covers 153,000 square feet. When it is completed—probably in April—we shall have a fifteen-acre factory. We are also using our old Germantown plant, which covers two acres.

7 THAT the Atwater Kent sales campaign is supported by an unparalleled advertising campaign, reaching, in magazines and newspapers and on billboards, into every corner of the United States and Canada.

8 THAT the new series of concerts by the Atwater Kent Radio Artists—the world's best—specially benefit the Atwater Kent merchant, in increased sales.

\* \* \* \* \*

Nineteen Twenty-five was a wonderful Atwater Kent year. We wish to thank every one of you who helped to make it so.

And please keep in mind that more than ever they'll be asking, "What kind of company makes it?" in 1926.

Hear the Atwater Kent Radio Artists every Sunday evening at 9:15 o'clock (Eastern Standard Time) through stations—

WEAF . . . New York	WFI } . . . Philadelphia
WJAR . . . Providence	WOO } alternating
WEEI . . . Boston	WCAE . . . Pittsburgh
WCAP . . . Washington	WGR . . . Buffalo
WSAI . . . Cincinnati	WOC . . . Davenport
WCCO . . . Minneapolis	WTAG . . . Worcester
WEAR . . . Cleveland	KSD . . . St. Louis
WLIB . . . Chicago	WWJ . . . Detroit

Send for illustrated booklet of Atwater Kent Radio  
ATWATER KENT MFG. COMPANY  
A. Atwater Kent, President  
4708 WISSAHICKON AVE. PHILADELPHIA, PA.



Radio Speaker Model L, \$17      Model 20 Compact, \$80      Radio Speaker Model H, \$22

HER TOPIC AT KDKA IS HOME ECONOMICS



Miss Marie Neff is the pretty young specialist heard over KDKA in charge of the home economics programs of the Stockman and Farmer studio.

BETTY CROCKER TO START NEW SCHOOL

WILL BROADCAST OPENING LESSON JANUARY 29

Housewives May Receive Scientific Training in Cookery and Home Making in Own Kitchens

By Betty Crocker

Have you heard, and do you regularly listen for Betty Crocker's Radio talks? Miss Crocker is nationally known as a home food specialist who is broadcasting from a dozen of the country's largest stations.

WE'RE GOING to have another Radio cooking school. The first lesson will be broadcast on January 29. As with our first school which closed in December, it will be necessary to register for this course.

I have been enjoying a little Christmas vacation the last couple of weeks, but I am going to resume my regular Radio talks on Mondays, Wednesdays, and Fridays, from the stations listed above, on January 18.

Many housewives regret the fact that they have not had the advantage of a scientific training in cooking and home making. Now, due to the Radio, they may receive such training across the sky, with their own kitchens as classrooms.

Besides the Radio talks, we will send printed recipe cards of all the recipes described in the lessons to those registered. In arranging this second school, I have tried to select subjects of interest to every housewife.

Besides these cooking school lessons and the talks which I broadcast every Monday and Wednesday, I am to have the privilege of visiting with you and offering you some of our kitchen tested recipes through the medium of the Radio Digest.

Index to Women's Programs

Table with columns for dates (Saturday, Monday, Tuesday, Wednesday, Thursday, Friday) and radio stations (Eastern, Central, Mountain, Pacific) listing program times and titles.

AUNT JANE IS BOTH PRETTY AND PETITE



Every afternoon, except Saturday and Sunday, you can hear "Aunt Jane," above, at WOC tell how to bake a cake or plant a flower garden.

WJZ PROVIDES TWO HOURS FOR WOMEN

DOUBLE SERVICE AIDS CITY AND FARM DWELLERS

New Experimental Station at Bound Brook, N. J., Has Both Morning and Afternoon Programs

NEW YORK.—The difference in schedules of daily routine followed by housewives of the city and those living out of town made the fact apparent that two women's hours were necessary, after the first test programs were completed at WJZ's new experimental station at Bound Brook, N. J.

The city woman, living in an apartment or small house, aided by electricity, gas and other modern conveniences, is generally through her housework and ready to listen to her Radio set by 10 o'clock.

Add Women's Forum

In order that all could enjoy their service, Station WJZ has inaugurated a second women's hour, named "The Women's Forum," in addition to their morning program.

morning. Thus they miss the Radio "getting-up" exercises, and must get their muscle limbering elsewhere. Credo Harris, of WHAS, Louisville, loves to hike.

Phillips Carlin is a card. We like him as much as Graham McNamee at WEA. Handsome, young, nice disposition and a good future describes him to a tee.

Dropped in to visit Station WHT, Chicago, one night last week, and, just sort of blushing, you know, I will break down and confess that I knew before I went that he would most likely be there.

What deep secret would you like to know about your favorite broadcast star? Drop me a note, girls, and I'll do my best to answer it here. MARCELLA.

up a national exchange of recipes and housekeeping suggestions. We are always glad to work these out and submit them for your approval in the most acceptable form.

We want to make these lessons and talks both interesting and valuable to you, and you can be sure that I will always appreciate any suggestions you care to send me.

SHORT WAVES

By Marcella

The editor moved me over to the women's page this week. He said I was mostly of interest to women, and that was where I belonged.

Jack Little isn't little. He's average in height and build. Yes, that's his real name, although he divided it this last spring with a beautiful lady, who adds the prefix "Mrs."

Star-Telegram, is in double harness, he claims. But he sent me five pounds of wonderful Texas paper shell pecans to keep me quiet on the subject.

"The Merry 'Old Chief," formerly of WDAF, Kansas City Star, and now announcing at WJR, Jewett Radio, Detroit, is very likeable.

Speaking of marriage, as some of us will, I learn that Miss Vee Lawnhurst, popular WEA pianist, will say "I do" soon along with Sylvester B. Morris of New York city.

Don't you wish you were President Coolidge or someone important like that? Imagine, WRC at Washington has a special microphone stand exactly 47 inches in height for the exclusive use of our chief executive.

Radio artists and announcers have to adopt a peculiar schedule of hours. Imagine working from afternoon till midnight or two o'clock every day.

# Photogravures of Your Favorite Artists

## GALLERY OF RADIO STARS

Suitable for Framing or Placing in Your Album

BY SPECIAL arrangement, Radio Digest is able to offer its readers a great opportunity to secure fine photogravures of their favorite Radio stars at practically no cost.

Radio fans will be able now, by this very special offer, to have pictures of their favorite artists and announcers before them when they listen in.

All that is necessary to secure photogravures from the Gallery of Radio Stars is to send the coupon published each week in Radio Digest, accompanied by ten cents to cover the cost of mailing and postage. Where a series of three photogravures is desired, it will only be necessary to send twenty-five cents and three consecutively numbered coupons clipped from Radio Digest.

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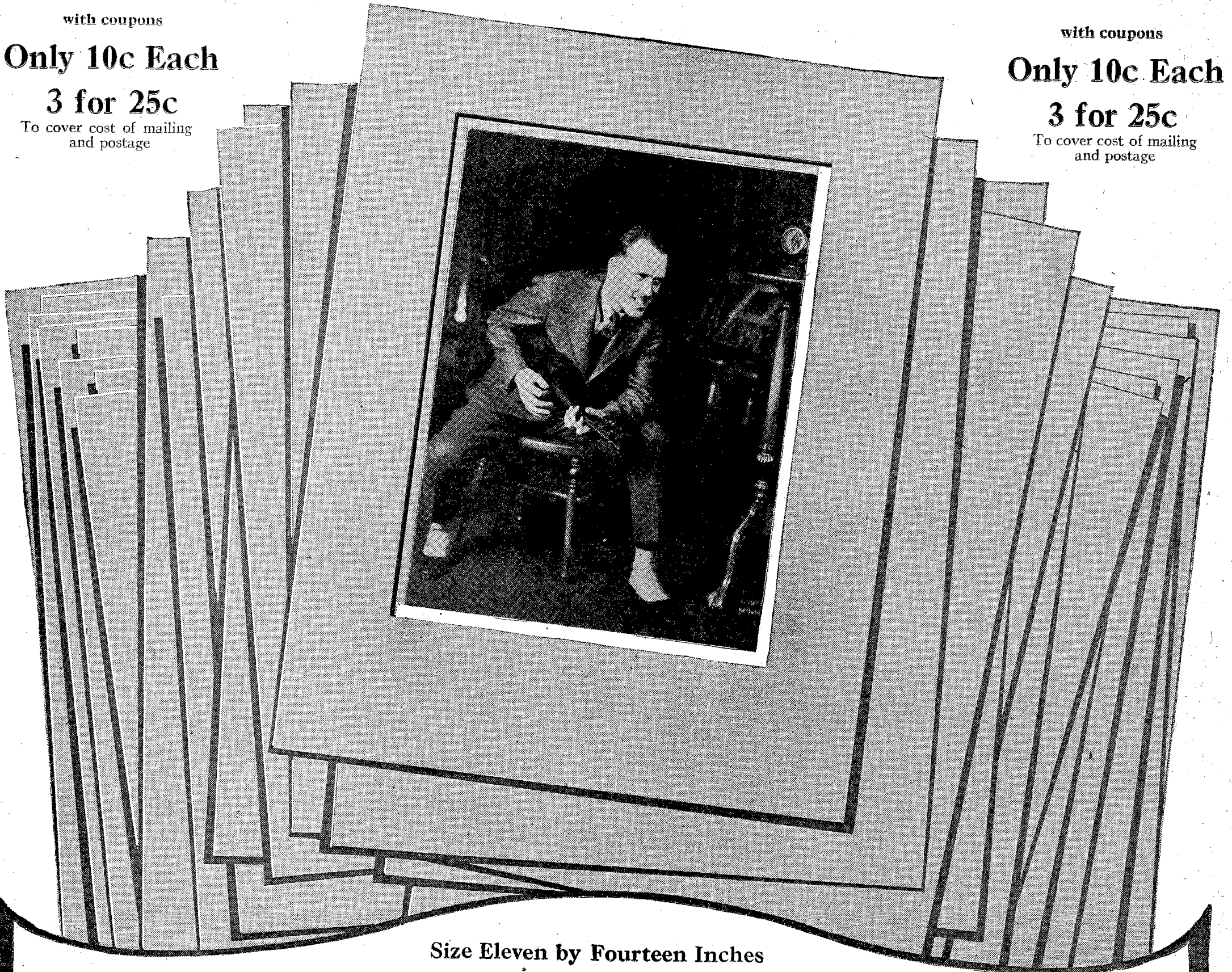
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Size Eleven by Fourteen Inches

### Select Your Favorites from the Gallery of Radio Stars

#### CHECK YOUR CHOICE

- Wendell Hall, king of ukulele ditties
- Graham McNamee, 1925 Gold Cup announcer
- Jack Little, popular wandering balladist
- Paul Small, who won fame through Radio
- Coon-Sanders "Nighthawks" at KYW
- George Hay, 1924 Gold Cup announcer
- Harmony Girls, Edith Carpenter, Grace Ingram
- Ford and Glenn, Lullaby Boys of WLS
- "Roxy" Rothafel of WEAJ chain fame
- The Hired Hand, famous "Substitute Announcer" of WBAF
- Britt and Finch, popular songsters
- Bob Emery, Big Brother of WEEI
- "Bill" W. G. Hay, ex-KFKX, now of WLIB
- Happiness Boys, jovial singers of WEAJ
- Lambdin Kay, "Little Colonel" of WSB
- Leo Fitzpatrick, "Merry Old Chief," WJR
- Henry Field, 1925 Gold Cup runner-up
- Al Carney, organ favorite at WHT
- Aunt Jane, Ladies' adviser at WOC
- Vincent Lopez, No. 1 Pennsylvania orchestra

#### CHECK YOUR CHOICE

- E. L. Tyson, pleasing voice of WWJ
- S. W. Barnett, ex-WOC, now WBAL
- Art Gillham, "The Whispering Pianist"
- Paul Greene, announcer at WSAI, "bridge voice"
- Harry Ehrhart, "Dream Daddy" of WLIT
- Correll and Gosden of "Kinky Kids Parade" fame, at WEBH and other stations
- Norman Brokenshire, popular at WRC, WJZ
- Indiana Male Quartet, popular at WEBH
- Jane Novak, Blues Singer of Twin Cities, WCCO
- Jean Sargent, the original, now at WHT
- Ralph Emerson, popular organist at WLS
- Edna Adams, "Sweetheart of the Air" at KPRC
- Pat Barnes, vaudeville announcer at WHT
- R. V. Haller of KGW Hoot Owls fame
- Henry L. Dixon, ukulele wizard of KYW
- Quin Ryan, WGN's Uncle Walt and sports announcer
- "Willie the Weeper," Ernest Rogers, WSB
- Walter Wilson, "Uncle Bob" of KYW

#### CHECK YOUR CHOICE

- Jack Chapman of Drake hotel repute
- Ray-O-Vac Twins, known country-wide
- Art Linick, KYW's Mrs. Schlagenhauer
- Fred Hamm, of WTAS, now WLIB fame
- Meyer Davis' Le Paradis orchestra of WRC
- "Senator" Schultz, WLW's illiterate comic
- "Uncle John" Daggett of KHJ
- D. R. P. Coats, 1925 Silver Cup announcer
- Gene Rouse, WOAW's popular announcer
- Freda Sanker, WKRC jazz orchestra director
- Irish Ruth Pavey, KOA's invisible stage beauty
- Queen Titania, star of KHJ Fairyland

#### COUPON No. 3.

This coupon entitles the holder to one photogravure selected from the Radio Digest Gallery of Radio Stars when accompanied by ten cents to pay the cost of mailing and postage.

Three consecutively numbered coupons entitles the holder to three photogravures when accompanied by twenty-five cents.

RADIO DIGEST PUBLISHING CO.

If your favorites are not in this list send in a request to have them included in the Gallery of Radio Stars.

















Thursday, January 14

AN EVENING AT HOME WITH THE LISTENER IN IN CENTRAL TIME

8-8:30, The Larkintines, WGR, WOC, WFI, WWJ, WCAE, WCOO, WSAL, WTAG, KSD; 8:30-9, Hire's Voyagers, WEEL, WTAG, WCAE; 9-10, Cliequot Club Eskimos, WEEL, WTAR, WTAG, WFI, WCAE, WSAL, WEAR, WGB, WWC, WCOO, KSD; 10-11, Silvertown Cord orchestra, direction of Joseph Knecht, WEEL, WSAL, WGR, WWJ, WCOO, WOC, WFI, WCAE, WTAR, WTAG, WTAG, KSD; 11-12 m., Vincent Lopez and his orchestra direct from Casa Lopez, WEAR, Cleveland, Ohio (389.4), 11 a. m., home service talk; 11:30, farm talk; 7 p. m., Hotel Stralier concert orchestra, direction, Maurice Spitalny; 8, Larkintine Four, WEAF; 8:30, studio program; 9, Cliequot club, WEAF; 10, Vincent Percy, organist; assisting artists, WEEL, Boston, Mass. (348.6), 7:45 a. m., morning watch from Estey organ studio; 3, Lou Klayman and his orchestra; 6, Dok Eisenburg and his Sinfonians; 6:45, Big Brother club; 7:40, Harvard observatory talk, "Relativity"; 8, Larkintines, WEAF; 8:30, pop concert, WEAF; 9, Cliequot club entertainers, WEAF; 10, Goodrich Zippers.

Central Time Stations
CKY, Winnipeg, Can. (384.4), 10 p. m., dance program, Cliff Menzies and his Collegians.
KFKX, Hastings, Nebr. (288.3), 1 p. m., "Clover Seedling—Some High Points in Successful Culture," John Pieper; 5:30, KDKA dinner concert.
KFMQ, Fayetteville, Ark. (299.8), 8 p. m., "Civic Organizations, Their Development and Opportunity," J. A. Dickey; "The Progress of the American Drama," V. L. Jones; "Dietary Deficiency Diseases: Rickets, Scurvy, Ophthalmia, I. W. Reid; "The Man in the Moon," A. M. Harding; "Cupboards and Tools," D. G. Carter; "The Psychology of the Job," G. C. Craker.
KNFN, Shenandoah, Iowa (266), 7 p. m., concert, Hopkins, Mo.; J. Max Davis director.
KMA, Shenandoah, Iowa (252), 11:30-12:30 p. m., noon-day rural program; May's flower lady, Lina Ferguson; music; talk; Earl E. May; 4-5, talk, G. H. Van Houten; 6-7, program for Garden club of Parsons; 9-11, DeLmonte dramatics, dance orchestra.
KPCO, Houston, Texas (296.6), 12 m. book talk, Julia Ideon; 5:30 p. m., "Uncle Judd's Kiddies" hour; 7:30, Blanchard's dance orchestra; 8:30, studio concert.
KSAC, Manhattan, Kans. (340.7), 9-9:25 a. m., music, inspirational talk, agricultural primer, calisthenics; 9:55-10:25, readings, backyard gossip, question box; Planning today's meals; 12:35-10:45, readings, timely talks, question box; "Are You Maintaining Your Soil Fertility," E. B. Wells; "Opening the Accounts for 1926," L. N. Chapman; 4:30-5, Botany; 6:30-7:30, music; Extension credit course, "Educational Psychology"; Extension course, "Getting Rid of Household

Table with columns: Call, Location, Met., Saturday, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday. Lists various radio stations and their broadcast schedules.

Peats", Lucille O. Rust; "When You a Marketing Go", Pearl Ruby.
KSD, St. Louis, Mo. (545.1), 4 p. m., women's hour, Wednesday club; 6:55, WEAF chain "Good Will" program.
KSO, Clarinda, Iowa (241.8), 12:30-1:15 p. m., farm talk; 7-7:30, band concert; 7:30-9, music.
KTHS, Hot Springs National Park, Ark. (374.8), 12:30-1 p. m., homefolks hour; 9-9:30, chorus, First Presbyterian church, Frances Hardin, director; 9:30-10:15, dance concert, New Arlington hotel orchestra; 10:15-10:50, Mrs. Byrd Rigby, vocalist; 10:30-10:45, dance selections.
KWKH, Shreveport, La. (261), 8-9 p. m., Edythe Crowder.
KYW, Chicago, Ill. (536), 6:30-7 a. m., morning exercises, Paul A. Leonard; 7:30, morning family worship, Y. M. C. A.; 11:35, table talk, Mrs. Anna J. Peterson, Peoples Gas company; 1, noon-day concert; 1-2, luncheon concert, Congress hotel; 4, frolic, Hearst square; 6, dinner music, KDKA; 7:05 bedtime story, Walter Wilson; 7:33, speeches, American Farm Bureau federation; 8-8:20, reading, Rev. C. J. Fern, Loyola university; 8:20-9, musical program, Congress hotel; 9, music hour; 10, evening at home, KYW; 10:40-11:10, Coon-Sanders' Original Nighthawks; 11, insomnia club, Coon-Sanders Original Nighthawks.
WAMD, Minneapolis, Minn. (243.8), 12 n., musical program: Whitey Nightengale, tenor, uke, Mrs. James Barrett, soprano, Norvy Mulligan, tenor and pianist; 6:15 p. m., dinner concert, George Osborn's Hotel Radisson Skyrocks; 7:05, talk; 11, George Osborn's Hotel Radisson Skyrocks.
WBBM, Chicago, Ill. (266), 4-6 p. m., Valentino Inn orchestra; singers: 8:10, Tip trio; Ziegler sisters; Moulou Rouge orchestra; 10-12, Moulou Rouge orchestra; artists and stars.
WBCN, Chicago, Ill. (266), 10-10:30 a. m., Penny Wise, the shopper's ready helper, shopping talk; 7-8, classical hour; Emily Stone, violinist; Ada Mae Stone, accompanist; Lemmyon Amoureux, French tenor; Ethel Eaves Price, soprano; Alice McMahon, contralto; Margaret McArthur, pianist; John Williams, baritone; 10-11 a. m., Elmer Jordan & Co., Owl matinee.
WBCD, Zion, Ill. (344.6), 8 p. m., cornet quartet; Alexander DePew, flutist; L. J. H're, violist; Mrs. G. R. Sparrow, contralto; G. R. Sparrow, tenor; Mary Sweeney, soprano; Theodore Forby, reader; Gladys Taylor, pianist.
WCCO, Minneapolis-St. Paul, Minn. (416.4), 12 m., Donaldson's orchestra; 2 p. m., "Among the Musicians," H. A. Bellows; 2:30, afternoon concert, State theater; 4, readers' club, Eleanor Poehler; 5:30, children's hour; 6:30, talk on farm machinery, Tom Witten; 7, WEAF, Larkintines, Hire's Voyagers, Cliequot club Eskimos, Silvertown Cord orchestra; 10:05, travel talk, National Director Travel bureaus; 10:20, Arnold Frank's St. Paul hotel orchestra.
WFAF, Kansas City, Mo. (365.6), 6-7 p. m., The Tell-Me-a-Story lady; address, Louis Meeker, literary department of the Star; music, The Trianon ensemble, Carl Nordberg's plantation players, Hotel Muehlebach; organ numbers, Ted Moyn, Pantages theater.
WEBB, Chicago, Ill. (370.2), 11:30 a. m., women's half hour; 3-4 p. m., special features; 7, Edgewater Beach Oriole orchestra, dinner concert; special recital; 8-9, Belle Forbes Cutter, recital; Edgewater Beach Oriole orchestra, dance selections; 10, Ruth Buhl Flick, readings; Indiana male quartet; Marie Kelly, dancer; Jack Penwell and Fred Palmiter, special numbers; 12:30 a. m., Florence Behrend, soprano; Ruth Buhl Flick, readings; Belle Forbes Cutter, soprano; Wayne Myers, stories; Kathryn Forbes, soprano.
WENR, Chicago, Ill. (266), 6-7 p. m., dinner concert; Rauland-lyric trio; piano and vocal selections; cello solo; 8-10, popular program; All-American Pioneers; Vic Fredericks; Will Rossiter, Ray Hibbler; Strand Harmonica entertainers; Rose Kutta.
WGES, Oak Park, Ill. (250), 5-7 p. m., Frederick Irving, basso; Rose Glach, soprano; Stenstrom sisters, vocalists; Miles Sullivan players; John Brown, pianist; Wyzenbeck trio; Tiffin theater organ and orchestra; 8-9, Remington Welsh, organist; Richard Dale, baritone; Ruth Kalthoff, mezzo-soprano; Wyzenbeck trio.
WGN, Chicago, (302.8), 11-11:30 a. m., household hints; 11:30-12, discussion of fashions; 12-12:40 p. m., public service period; 12:40-2:30, luncheon concert, Drake concert ensemble and Blackstone string quintet; 2:30-3, Lyon and Healy artist series; 3-3:25, public service period; 3:25-3:30, Port O' Missing Men; 3:30-4:15, tea time music, Marshall Field tea room orchestra; 4:30-5, organ recital, Edward Benedict; 5:30-5:57, Skeezix time; 6:30-7, dinner concert, Drake ensemble. Blackstone string quintet; 8-9, Cliequot Club Eskimos, WEAF; 9-10, Silvertown program, WEAF; 10-11, dance program.
WGST, Atlanta, Ga. (270), 7-8 p. m., Mary Miller Townsell, violinist; "Concerning the Night School", R. S. Howell.
WHAD, Milwaukee, Wis. (275), 11 a. m., pianologue, Andy Mertz; 4 p. m., Mrs. Ferne Medley Hansen, vocalist; I. E. Clayton, baritone; 6:15-7, Bill Benning's Milwaukee Abilene Club orchestra.
WHAS, Louisville, Ky. (399.8), 3-3:30 p. m., concert, Benson trio, Seelbach hotel; 3-3:30, organ recital, Mrs. Myrtle Fuels Zahn, Jr., Atlanta theater; 4-5, musical selections, Harry S. Currie, assisted by Leroy Hobb; readings, choice editorials; 7:30-9, mixed vocal and instrumental concert, auspices of Mrs. John E. Harmon, Jr., Sunday school lesson.
WHB, Kansas City, Mo. (365.6), 2-3 p. m., Sweeney Radio trio; 7-7:45, dinner hour organ music, Morrell Moore; Don Anchors, poet; aviation talk, Harry Wimer; 8-9:30, Kansas City Western Dental college band.
WHO, Des Moines, Iowa (526), 7:30-8 p. m., Raleigh quintet; 8-9, Bankers Life trio; 11-12, Bankers Life Little symphonic orchestra.
WHT, Chicago, Ill. (399.8), 10 a. m., Jean Sargent's program, woman's club, Jelke Good Luck Girl, studio features; 11, specialists from studio; 12 p. m., Al Carney's complimentary organ hour; 1-2, special studio program; 6-7:30, classical program, dinner organ recital; Franklin Hathaway, baritone; Ada May Hathaway, violinist; Edwin Kemp, tenor; Genevieve Barry Burnham, soprano; 7:45-9:15, musical features; 9:30, Jelke entertainers; 7:45-9:15, musical features; 9:30, Jelke entertainers; Howard Sershon, tenor; Rita McFawn, popular songs; 10:10, U. S. L. half hour of dance music; 12, Pat Burns, Ill. (226).
WIBO, Chicago, Ill. (226), 10-11 a. m., shoppers Bureau, Grace Viall Gray; 2-4 p. m., shut-in program; 6-8, dinner concert, Walter Preston; WIBO; Chester Newman, baritone; Helen Snyder, soprano; Harriet Hebert, contralto; 12-2, midnight jamboree.
WJAZ, Chicago, Ill. (322.4), 10 p. m., chimes; Hans Henlot, pianist; Edyth M. Carver, soprano; Lucille Sweetser, pianist; Alice Regina Johnson, pianist; Swedish-American Ladies' quartet.
WLS, Chicago, Ill. (344.6), 12-1 p. m., WLS trio; 6:30, Ralph Emerson, organist; 7, Ford and Glenn's Woodshed theater; 7:20, Ralph Gould trio; 11-3, Theater Press Representatives' Ball.
WLW, Cincinnati, Ohio (422.3), 7:30 a. m., exercises, William Stradman, Y. M. C. A.; 8, morning devotions, auspices of Parkway Y. M. C. A.; 12:05 p. m., organ concert, Mildred Prigge; 12:30, health talk, Dr. Carl Wilzbach; 4, piano recital, Adelaide Apfel and pupils; 7, dinner hour concert, Hotel Gibson, Robert Visconti, director; 7:30, the eyes have it, Dr. C. H. Kaufman; 7:40, Hotel Gibson concert; 10, Doherty Melody boys; 10:40, Irene Downing and Tommy Reynolds; 11, dance music, Castle farm; 11:30, whistling and imitations, Charles Starr; 12:15, Bow-wows with Kay-Nyne and Chief Barker; dance selections, Castle farm.
WMAQ, Chicago, Ill. (447.5), 12:45 p. m., Radio Farm school; 2, shut-in program, 4, Illinois Federation of women's clubs; 4:45, program, pupils, Mrs. R. H. Hawkins; 5:15, Topsy Turvy time; 6, Chicago theater organ recital; 6:30, Hotel LaSalle orchestra; 8, music; 8:30, Chicago Association of Commerce, talk, Dr. Paul J. Gouder; 9, lecture, U. of Chicago; 9:20, musical program; 9:55, University of Chicago chimes.
WMBB, Chicago, Ill. (250), 7-8 p. m., Trianon duo, Frank Carney, tenor; program and talk on finances; 9-11, Trianon orchestra, Dell Lampe, Woodlawn theater orchestra, Armin F. Hand, Cecil and Esther Ward, Tracy and Duncan, Scotty Welsh and Madison Sisters, Tommy Hughes, popular program.
WMC, Memphis, Tenn. (499.7), 7:15 p. m., bedtime stories; 8:30, I. J. Cooper Rubber company's weekly program, Cooper's Hawaiians.
WOAW, Omaha, Nebr. (526), 12:45 p. m., Jaffy's string quintet; 6, classical; 6:15, Hawaiian trio, soloists; 6:50, Randall's Royal Pontentelle orchestra; 9, deluxe



# Radio Digest

## Illustrated

Reg. U. S. Pat. Off. & Dom. of Canada

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Saturday, January 9, 1926

No. 1

## The Pacific Coast vs. European Tests

**B**Y NOW, of course, the objections of the Pacific Radio Trade association to International Week silence periods, may have been answered, but at the time of going to press, this association was reported to have recommended that Pacific coast stations continue to broadcast from 8 to 9 p. m., pacific time, all nights set aside for the tests.

The Pacific Radio dealer organization was inspired by the selfish thought that if the Los Angeles, San Francisco and other coast stations remained silent, the Radio listeners located on the slope would hear nothing, not have a ghost of a show at hearing Europe, and as a result, would condemn their receivers.

Evidence does not sustain this thought. San Francisco and Los Angeles listeners, using in some cases as small as two tube receivers, heard European stations last year during the International Week tests. Portland, Oregon, listeners were equally successful. In addition, the coast fans heard Japanese, Chinese, Hawaiian, New Zealand and Australian broadcasters. This year many of the foreign broadcasters have increased their transmitting power beyond that used in previous tests.

Give the coast fans a chance to listen in, and we'll prove to the Pacific Radio Trade association that the Rocky Mountains do not bar European reception.

What is more, if but as few as three coast stations, after reading this editorial, still go ahead and broadcast to the world when the rest of the U. S., Canadian and Mexican stations remain quiet for the tests, the whole plan will be ruined. Eastern, central, western, southern and coast listeners will hear the Pacific coast broadcasters, and the Pacific coast broadcasters for the most part. It is doubtful if many listeners would be able to get through the west coast barrage.

At any rate, many a listener, tuning in what they thought would be a European station, will find only the Pacific coast and nothing more. This, perhaps, will be learned after the listener has sat patiently through a half hour of music. A wonderful advertisement for the coast stations!

Imagine how peevish you would become upon learning that YOUR European station was located on the Pacific slope. You'd probably arrange to spend your next vacation in California. You'd probably arrange to eat more California oranges, grape fruits and raisins. You probably would NOT!

## It Costs to Broadcast

**B**BROADCASTERS with the idea foremost in their minds of serving the public to the best of their ability, have undertaken a man-size job. The good will and publicity obtained as a result of the broadcasting is worth it, perhaps, but the work and money necessary to accomplish the purpose as near perfect as possible, is tremendous.

Believe it or not? Here are a few figures taken from a report on the year of 1925, at WEA, A. T. and T. station in New York city. WEA may be considered as typical of other large stations.

The station was on the air approximately 245 hours each month, or an average slightly in excess of eight hours each day.

During ONE month 454 features consisting of either individuals or groups appeared before the WEA microphone. Of this 454, almost 300 were classed as "regulars," that is, program features heard each week at a definite time, and over 150 were "occasional" program features.

The monthly average number of individual artists entertaining from WEA was 1,015, or about 34 each day.

Doesn't that sound as if the larger broadcasters had plenty to do? We, the dial twisters, have a difficult time attempting to visualize the immense investment and heavy operating expenses necessary at the microphone end of the entertainment coming through our loud speakers, but perhaps these figures will reveal what is back of the polished panel.

Good broadcasters spend lots of money entertaining and serving the public, and it is our duty to support them with our good will.

## RADIO INDI-GEST

### You Mean "Hearing"

When the old set howls and the air gets blue  
As you twist the dials for an hour or two,  
And the cats all fight and the panthers yell  
As you twist and turn and cuss like—well—  
Then all of a sudden she gives a "plop"  
And Havana, Cuba, comes in like a top,  
Without a whistle and not a squeak,  
And it's the best reception you've had in a week—  
**AIN'T IT A GRAND AND GLORIOUS FEELING?**  
Old King Tutt

### Where Is My Lariat?

Dear Indi: Last night I let Lopin Larry ride the ether range with me and when I rounded up a good Chicago station, he leaned back in a puncher's reverie and said, "Las sumer when I tuk a lode a steers to Chicago I met a gurl who wanted a man frum the grate opun spacus that ansurd my discribshun, but I sed being spliced wid a city gurl wud be to expensiv fur a comon hand and she sed fur her argyment that out side uf bord and rume thats all ther is. An you no Night Hurd I beleevved her cause her close hardly showed any wear."  
THE NIGHT HERD

She was only a cowboy's daughter but I'm sure she knew her ropes.

### Milwaukee Again—Beer Up!

My dear Mr. Indisgust: The herein contained material is guaranteed to be manufactured in compliance with the Federal Child Labor Law.

## Distilled

### BY THE THIRD TROMBONE PLAYER

Wot a show was the Wisconsin Radio Exhibit! Readers of this colyum will pardon me for the late report but I was waiting for the Radio Cricket, "Dielectric," who writes them snappy critickisms in the next colyum. I told the guy months ahead to be here to take in the show and I was down in the Milwaukee Road freight yards every night but he didn't show up.

Gus Schmalzhagen was there. You know Gus was the guy that used to run a filling station on Reed street. He got pinched for giving away a shot of high test with each 5 gals. low test gas. Now he's selling Super Six Radios. A lady bought one and when she got it home she found it was a Silent Six.

They had a broadcasting studio right on the stage. Izzy Einstein appeared in a swell program.

When I was mingling with the crowds being careful not to reveal my identity because some of the boys might have high potential missives of displeasure in their pockets, a crazy man ran thru the crowds hollering, "A horse, a horse, my Radio for a horse!" A dick stopped him and said, "Why the horse?" The guy says, "I want to gallop to Zion City at a speed not exceeding 15 miles an hour and prove to Voliva out of my geography that the world is round!" The dick layed him out and as he dragged him away a bystander remarked, "That lad would come back on foot!"

One exhibitor was selling Radio dictionaries. I sent one to "Dielectric." He sent it back. Says there was too many misspelt words in it and besides he hunted all thru the A's looking for athema and it wasn't in and he knows darn well there is such a word as he used it himself in one of his critickisms.

There was at least a dozen guys selling devices for increasing the range of a receiver. One guy claimed 50%, another 35% and one 15%. I bought them all and stuck them on my Globe Do-or-Die set. On tuning in I could get nothing but local, I went back and kicked to the guys and they said: I increased the range so much that I was getting around the world with it and was getting stations from the place I started from.

### "Oh, How I Miss You Tonight, Tra La"

Graham McNamee should cease to roam—  
Cut out his hours and stay at home.  
He's the best announcer on the air,  
And gee, but we're lonesome when he's not there.  
A. K.

### NEWS GRIEFS FROM THE BROADCASTERS

By Eddie's Son

New York.—Listeners to Station WLWL were given a real treat the other night when the K. K. K. concert orchestra rendered a delightful program.

Miami Beach, Fla.—All Florida has gone wild over the latest song broadcast from WMBF. The song is entitled, "Let's Wander Away to Cal-i-for-nigh-a" and was composed by a prominent Florida real estate man. Stations WGBU, WGHB and WJAX are also featuring the number nightly.

Zion City, Ill.—J. H. DePew made his last announcement for WCBD, here, tonight. He leaves tomorrow for Kansas City to assume his new duties as "Merry Old Chief" at WDAF. Jerry Sullivan of WQJ will succeed Mr. DePew at WCBD.

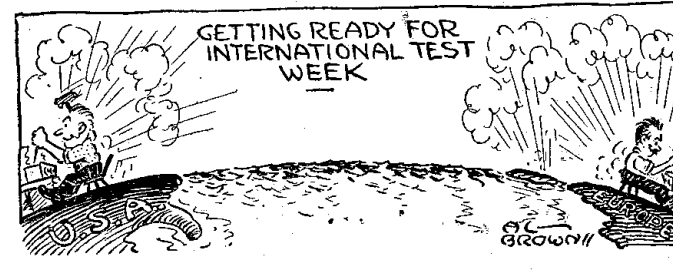
### Add Talents of Dairy Maid

"Louise Maier is the 'Alamito girl' heard from WOAW every Wednesday at 1:10 p. m. She conducts this important health service very efficiently. Miss Maier has had considerable dairy experience."

—From WOAW Radio Bulletin, Omaha, Nebr.

????? Give the calf more rope!

## Giving Him the "Air"



## Condensed

### BY DIELECTRIC

One of the stations put on a special dance number, as announced, for the accommodation of a friend of the announcer who was giving a party. No doubt these dance programs are being used by many who previously depended upon a phonograph to supply the music. When you are in search of programs of popular dance music turn to WEBH, Chicago, while the Oriole orchestra is performing and see if they please you. Maybe I'm wrong.

Do you listen to ukes, and if you do, did you happen to tune in to WADC, Akron, Ohio, one evening recently as the Royal Hawaiian trio was doing its bit to entertain you? Never having had the experience of visiting the Hawaiian Islands, I cannot compare the work of this trio with native players, but surely the dreamy effect of plunking, gliding airs found skilled artists performing in the studio that evening. There is little variety to the melodies produced in that southern clime, yet they fascinate.

A solicitous correspondent to this paper suggested I be presented with a two tube super-hel. Well, it so happens the set I use needs no improving. What IS needed is the annihilation of about three hundred puny, interfering stations, and the separation of the remainder, so a resident of a congested area is not faced with four or five stations trying to occupy the same position on the dials at one time. Did you step into Mexico while the department of education was broadcasting a talk in Spanish from CZE, Mexico City? Neither did I understand the address, but the Puccini number which followed anyone could appreciate. It was well rendered.

Station KTHS, Hot Springs, Ark., is to be congratulated for putting on the air an orchestra program which came through perfectly and left no wish that other numbers had been substituted for any one of them. As we sat back to recall the beauty of the final selection our reverie was broken with the stirring announcement of a bank robbery at Washington, Ark., and Dielectric turned from art to philosophy—why write?

If the broadcasting stations want to put something in the place of soprano solos to enrich their programs, let them secure a good instrumental-trio or quartet. The very highest form of music is that known as chamber music and Station WSAI, Cincinnati, should be commended for the splendid concert arranged in their studio by a stringed quartet of more than average ability. The lady who announced each number was familiar with the music and aided to a more complete understanding by sharing her knowledge with the listeners in, which is indeed a desirable practice.

Jefferson City, Mo., is a city familiar to most Radio listeners however far away their homes, because WOS has broadcast to them for many months and the circumstances surrounding a certain inmate of the penal institution there was nation-wide news. In determining to review a program from this station I was actuated as much by pleasant memories of previous hearings as by duty to cover as many broadcasters as possible. So in listening to an orchestra playing there I was favorably inclined at the outset—and remained so while cold-bloodedly appraising their work. It is the wish to help studio directors that criticism is made, or to aid listeners choose programs, and not to vent spleen under a nom de plume.

# My Experiments With Underground Antennas

## Work of Station 3XR, Hyattsville, Md.

By Dr. J. Harris Rogers

**W**HILE many who have installed the system claim that static is entirely eliminated, I frankly acknowledge that such has not been my experience. Atmospheric disturbances are reduced, and sometimes to a very remarkable degree, depending largely upon the locality and the nature of the soil and the depth of the buried wires. The best results are obtained in moist earth, or when laid in



Dr. Rogers at the lead-in end of one of his static-free aeri-als. Note the hollow tile, through the center of which the underground aerial runs.

fresh water, or when buried to the depth of "water earth." Signal strength increases in proportion to the depth to which these are placed below the surface of the earth, and static correspondingly reduced.

Owing to the directive features, they should be laid in the direction of the sending station; and, consequently, to receive maximum signals from all points of the compass, three or four are necessary. For broadcast reception, 75 to 100 feet of perfectly insulated wire (ignition cable), buried, gives good reception; but better results are obtained with metallic covering—for example, small gas pipes, and still better when the insulated wire is run through the center of 5-inch terra cotta pipes (see photo).

Signals are stronger on elevated antennas, and more amplification is needed on the buried ones, but owing to the reduction of static, the latter is more efficient, especially in localities swept by electrical disturbances.

Very remarkable results are reported from various sections of the country, for both sending and receiving, some claiming that static is entirely eliminated.

Several lengthy papers prepared by Commander A. Hoyt Taylor and Lieutenant A. Crossley have appeared in the Proceedings of the Institute of Radio Engineers, and I herewith quote a few extracts.

"(a) The history of the Navy's connection with ground wire work, based on the Rogers system, has been briefly outlined.

"(b) It has been shown that it is possible to receive very efficiently signals from stations at any wave length, long or short, using submerged or subterranean wires, provided that one or two stages of amplification be used.

"(c) The directivity of the wires has been carefully examined and it has been proven that signals coming at right angles to a given wire pair are excluded, while signals coming parallel to the wire pair are received with maximum intensity.

"(d) The feasibility of utilizing this system with its highly directive and highly selective properties for distant control work has been demonstrated.

"(f) The importance of adequate insulation has been indicated.

"(g) The relative advantage of ground wire reception on short waves lies in the ability of the receiving operators to continue to copy messages through violent storms without danger to themselves and with little or no interruption of traffic. The very great advantage in the suppression of summer strays is noted on all waves but particularly on short ones. The manner of the suppression of strays seems to be not only a reduction in intensity all around, but a remarkable reduction in the frequency of the strays. Although the ground wire system appears in many respects to be aperiodic, the fact that an optimum length of wire exists

for short waves, stands as a hitherto unexplained contradiction.

"(h) Reception in fresh water or wet soil is enormously superior to that of bare wires above or on the surface or in dry soil. As the wire is lowered into water or into wet ground, the signals increase, whereas the strays are reduced. How deep the wires may be buried with advantage is not yet known. . . .

"Summary.—After an historical review of the work of the United States Navy with underground and underwater receiving systems, the author gives data demonstrating the possibility of effective reception on such systems, particularly when using amplifiers.

"These systems are found to be directional toward waves traveling parallel to the length of the wire pair. This directional selectivity, which is marked, is applied in control stations for duplex working.

"For such underground systems, an optimum wire length for best reception is found to be roughly proportional to the wave length (for short waves) and inde-

pendent of the direction of approach of the signal. The existence of this optimum length gives further utilizable selectivity. This length is independent of the nature of the surrounding medium and varies inversely as the capacity per unit length of the wire. The wire in question must be well insulated.

"Reception through violent storms, and suppression of summer strays (particularly at short wave lengths) are found.

"It is found that lowering such wire systems from above ground into wet soil or into water greatly increases the signal strength and diminishes strays.

"Transmission at short wave lengths, over considerable distances, using such systems has been found possible with low power sustained wave transmitters. . . .

"In previous papers, one of the writers has indicated some of the advantages of subterranean receiving system for remote control purposes. Those advantages may be briefly enumerated again here.

"First.—Ground wires have high degree of directivity which can be utilized for shutting out nearby interferences.

"Second.—For short waves they have an optimum wire length which may be utilized to obtain a far higher degree of selectivity than is possible with an ordinary antenna.

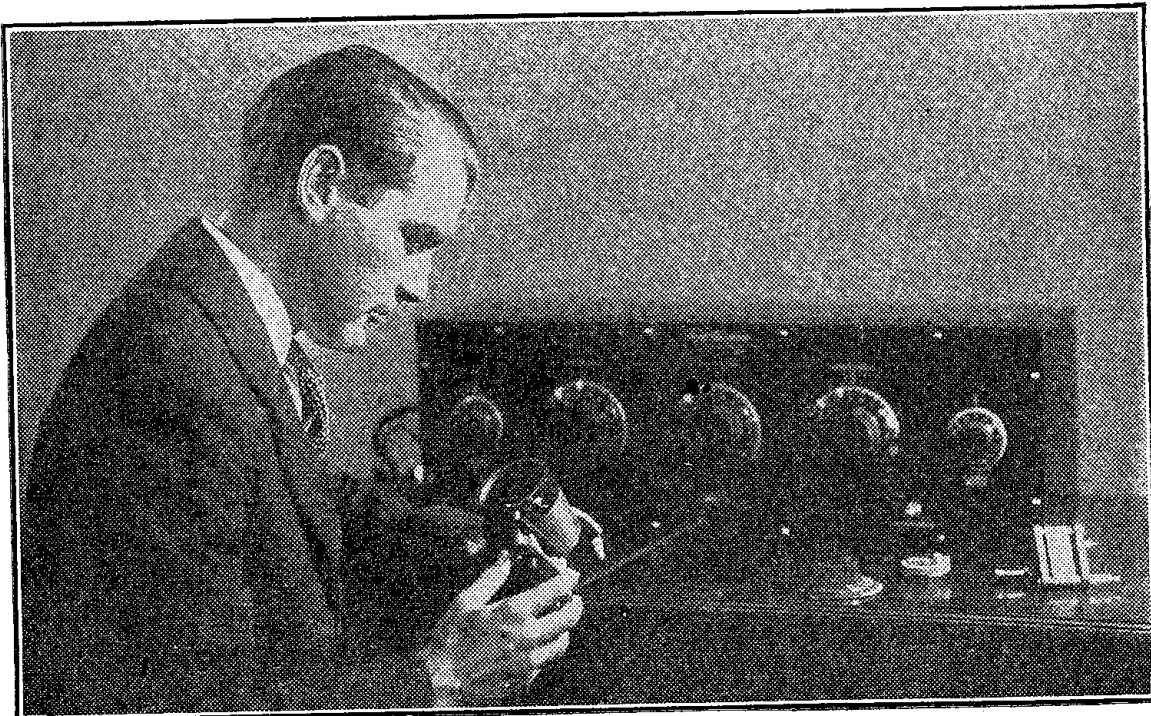
"Third.—Static is entirely eliminated, permitting successful operation without danger to the operators through heavy storms.

"Fourth.—All strays are greatly reduced if it is possible to obtain moist ground for the installation.

"Fifth.—The ground wires lend themselves readily, under proper conditions of installation, to the use of balanced or stray eliminating system. . . .

"The question is brought up concerning the efficiency of the system on short wave lengths when using high amplification. To this we may say that reception on short wave lengths by means of the underground system has never been affected by local static. This statement is based upon tests covering a period of two years, wherein the underground system for short wave lengths has been used through all atmospheric conditions, and at no time have

(Continued on page 24)



# How I Earn \$100.00 a Week as a Radio Expert

A year ago I was mighty blue and discouraged. It seemed to me that I would never be more than a low-paid bank clerk. Of course I had a small increase in salary every now and then, but I knew that pretty soon I would reach my limit and there would be no further advancement for me. What future had I to look forward to? Where would I be in five years? I became restless and discouraged and began to look around for some other opportunity.

It was then that I discovered that the demand is for trained men, that the opportunities are all for men who can do some one thing better than anything else. There were wonderful opportunities for men who were experts or specialists—but I was..... a clerk. How I regretted then that I hadn't prepared myself for some definite career!

### I Wanted to Marry.

The thing that made me more restless at that time than anything else was the fact that Marian and I were—that is, we wanted to be married. But we both knew that we couldn't possibly get along on my small salary. If only there was something I could do that would bring me a larger salary!

It was just about the time that everyone became so interested in radio. Our whole town became radio-mad, and of course what was happening in our town was happening all over the country—all over the world. I managed to save up enough to buy a receiving set and I was never quite so happy as when I was trying to tune in on stations.

The thing fascinated me. Playing with air waves! Bringing melodies and messages out of the sky! I was never so interested in anything before.

Marian was the first to sense the great opportunity. "Why don't you become a radio expert?" she said. "You like it, and I am sure there must be a big demand for men who understand it.

It's a new field and there's plenty of room for wide-awake men."

"But—but I'm not trained!" The thought excited me. To be a radio expert! To find my future in this fascinating new field! "I don't know anything about it, Marian," I said. "I wish I did, though."

"Well, why don't you find out about it," she retorted. "You can't learn about radio just by listening in to the concerts. Why don't you take a course?"

But we found out that most courses were expensive or that they would interfere with my other work. We were about discouraged when I discovered that through the National Radio Institute it is possible to become a radio expert by studying right at home in spare time. I told Marian about it and she was elated. "Send off for information, at once—today!" she exclaimed.

### Advances Quickly to \$100 a Week

I did, and the following day received an important booklet, "Rich Rewards in Radio" telling all about radio opportunities and how to become an expert in any particular phase of the work.

Here was my opportunity at last!

I began to study in all my spare time. It was the most interesting and absorbing study I had ever made. The secret of the radio revealed to me! Day by day, I became more skilled and deft until I was able to take apart receiving sets and put them together again as though I were playing with a toy. It was fun! In a month I was able to take a position as lineman at a bigger salary than I was getting at the bank. This was wonderful experience for me, and I kept right on with my studies. It wasn't long before I qualified for a position as radio engineer at a salary of \$100.00 a week! That is what I am earning now, though I expect to make more soon. It seems to me almost too good to be true, after all those years as

a low-paid clerk in a bank. And Marian, who will soon be my bride, keeps saying, "I told you so!"

As a radio expert I can tell you that there is a tremendous demand for men who can build, sell and install radio sets, who can design, test, repair. Men are needed as engineers and executives, all over the world. The opportunities are limitless, and if you like radio there is no reason why you cannot qualify for one of these positions by studying in your spare time at home as I did.

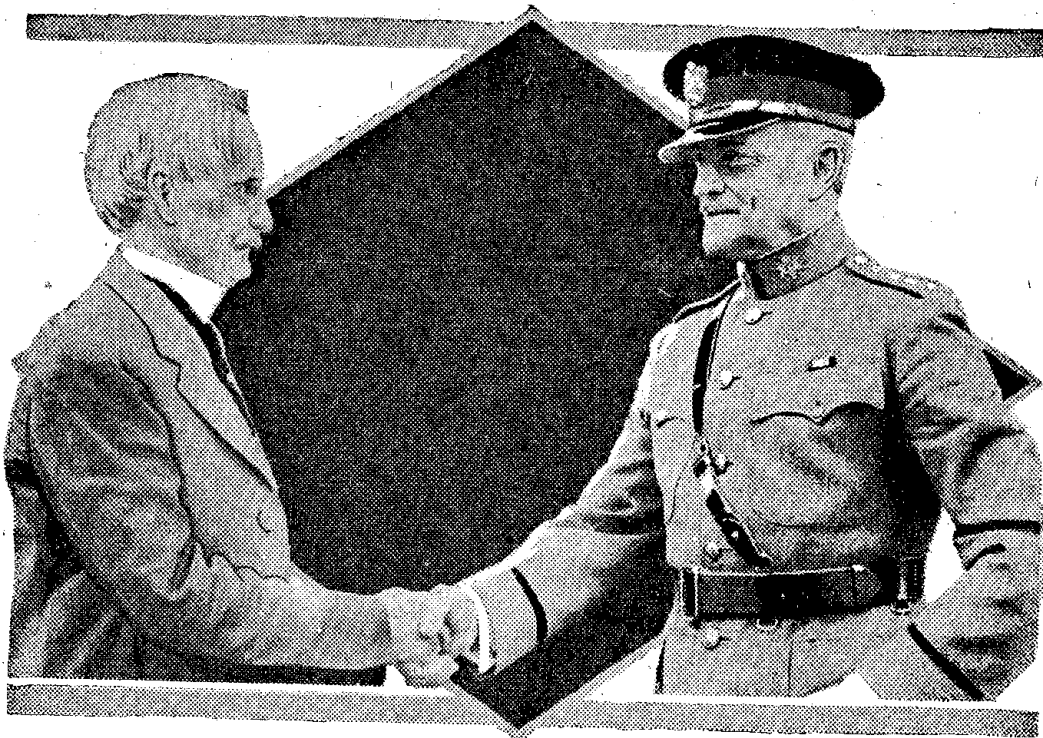
The National Radio Institute offers an absolutely complete course which prepares you for the Government First Class Commercial License and for the bigger-paying jobs in radio. The Director, E. R. Haas, will be glad to send you all details of their marvelous new method of practical instruction, including information concerning the Free Employment Service which secures positions for National Radio Institute graduates. Everyone interested should have this information. It's free, and this coupon will bring it to you. I advise you to send it off today. Radio is a new and interesting field, and it offers you more money than you probably ever dreamed possible!

### Important

Those who mail the coupon at once will also receive details of Special Short Time Reduced Rate. Do it now.

-----  
National Radio Institute, Dept. AV9  
Washington, D. C.  
I am interested in radio and would like to find out whether or not I am suited for a radio career. Please send me, without the slightest obligation, your interesting free book called "Rich Rewards in Radio." Also full details concerning your special Short Time offer.  
Name .....  
Address .....  
City ..... State .....

**"BLACK JACK" VISITS DR. ROGERS**



General Pershing congratulating Dr. Rogers, upon visiting his laboratory.

**UNDERGROUND AERIALS**

(Continued from page 23)

the operators been required to leave the instruments on account of the dangerous effect of local lightning storms.

"The foregoing statements have been verified at Norfolk, Great Lakes, and New Orleans, where many cases were recorded when the regular antenna had to be grounded to prevent damage to the set, and that during this time the underground system was used exclusively to handle all traffic. Stray elimination by the underground system on long wave lengths is not so pronounced as it is on short wave lengths, but by the use of the underground system in conjunction with the balanced system, this trouble is overcome.

"The underground system has excellent directional qualities. Using two wires in the direction of the transmitting station, the maximum signal is obtained; while using two wires which lie in a direction which is at right angles to the transmitting station, the minimum signal is obtained, and in many cases the signal is not heard. It is possible that the operator on watch can, at any time ascertain the approximate direction from which the signals are coming by means of using various combinations of wires. A good stand-by tune, by which the operator can hear all stations, is obtained by the use of two wires at right angles to each other, namely an east-and-south or east-and-north combination, and so on."

**Transmission**

After I demonstrated to the navy that signals from Europe were easily received and that transmission was practical for short distances with wires buried or laid in water. Lieutenant Crossley stated:

"(1) Preliminary experiments on transmission with subterranean wires have shown that transmission with low powers and continuous short waves is possible over considerable distances. The greatest

communicating distance obtained was between Great Lakes and Chicago, a distance of 36 miles (58km.), with 0.8 of an ampere in the underground wires. Interesting possibilities are indicated by these transmission experiments. With specially insulated wires and amplifying receiving sets, much greater distances can undoubtedly be obtained."

The most remarkable development in transmission was achieved during the latter part of the war, when the navy equipped submarines with specific devices according to my patent. With this device submarines were enabled to communicate with each other, whether afloat or submerged.

Just about a year ago I renewed my transmission tests, using three 50-watt tubes, and was enabled to transmit to practically all stations from Canada to South Florida, and from the Atlantic to the Pacific. The greatest distance reached was Toulon, France, station of J. M. Sarazes, F8SM. These tests demonstrated: (1) That fading is eliminated; (2) That while not conclusive, it appears that signal strength is as great during the day as night; (3) That there is no "skip distance"; (4) That communication is steady and reliable; (5) That owing to the directive character; greater distances can reliably be attained with minimum energy.

A hydrometer permits the operator to know the condition of charge that exists within the battery. A full charge will float the graduated tube high, and when the battery is discharged it will sink.

Bare copper wire of No. 18 gauge makes a good connector between instruments, and is sometimes preferable to the harder bus bar.

A loose contact or partly worn out "B" batteries frequently create disturbances that sound exactly like static.



*"These Eveready Batteries are the correct size for your set. With average use they will last you a year or longer"*

"YOU have been one of the many who use 'B' batteries that are too small in capacity for their receivers. That is not economical. It makes you buy 'B' batteries twice as often as necessary. Fit the right size Evereadys to your set and add a 'C' battery,\* if you haven't one, and you'll get the maximum of service at the minimum of cost."

The life of your Eveready "B" Battery depends on its capacity in relation to your set and how much you listen in. We know, through investigation, that the average year-round use of a set is two hours a day. Taking that average we have proved over and over that on sets of one to three tubes the No. 772 Eveready "B" Battery used with a "C" battery will last a year or longer. On sets of four and five tubes, the larger heavy duty Eveready batteries used with a "C" battery will last eight months or more.

The secret of "B" battery satisfaction and economy is —With sets of from 1 to 3 tubes, use Eveready No. 772.

—With sets of 4 or more tubes, use either of the heavy duty batteries, No. 770 or the even longer-lived Eveready Layer-built, No. 486.

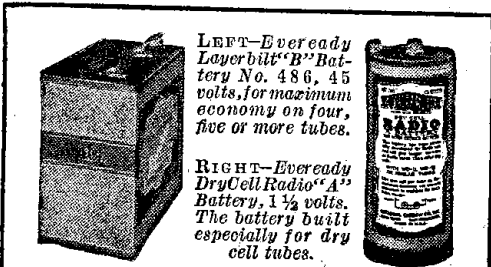
We have prepared for your individual use a new booklet, "Choosing and Using the Right Radio Batteries," which we will be glad to send you upon request. This booklet also tells about the proper battery equipment for use with the new power tubes.

Manufactured and guaranteed by NATIONAL CARBON CO., Inc. New York San Francisco Canadian National Carbon Co., Limited Toronto, Ontario

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For real radio enjoyment tune in the "Eveready Group." Broadcast through stations—

WEAF—New York WFL—Philadelphia WSAI—Cincinnati  
WJAR—Providence WGR—Buffalo WWJ—Detroit  
WEEI—Boston WCAE—Pittsburgh WOC—Davenport  
WTAG—Worcester WCCO—Minneapolis, St. Paul



LEFT—Eveready Layer-built "B" Battery No. 486, 45 volts, for maximum economy on four, five or more tubes.

RIGHT—Eveready DryCell Radio "A" Battery, 1 1/2 volts. The battery built especially for dry cell tubes.

**EVEREADY**  
Radio Batteries  
*—they last longer*

\*NOTE: In addition to the increased life which an Eveready "C" Battery gives to your "B" batteries, it will add a quality of reception unobtainable without it.

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includes complete list of broadcasting stations and general information and facts about our free service division. Our radio engineers will help you solve all your radio problems. Send your name and address on a card or in a letter. We will send catalog FREE.



# OPERATING AND TROUBLE SHOOTING

**OPERATING** and Trouble Shooting, is a Radio Digest feature, the purpose of which is to give practical information on the operation, care and cure of simple troubles in every kind of receiver. Standard Radio receivers of wide distribution and use are studied from the standpoint of instructions for installing and connecting, tuning and operating, and remedying little difficulties. The suggestions below, if executed faithfully, will make winter broadcast listening yield all there is to yield to the reader and give your set a fair chance to show its worth.

## For the Owner of an Apex Super Five Receiver

**SUPER FIVE** is a tuned radio frequency outfit that can well be classed with the "better" group of sets of this type. The designer was plainly both conscientious in his combining of symmetry and efficiency, and knew his business. Frankly, we liked this receiver exceptionally well. No attempt has been made to combine controls and tuning is done with three dials operating independently. The smaller dials are a sensitivity or regeneration control, and a rheostat for the two radio frequency tubes and the detector. This is not a particularly complicated arrangement and the user quickly learns the knack of tuning.

The antenna and ground system to be used with Super Five can be anywhere

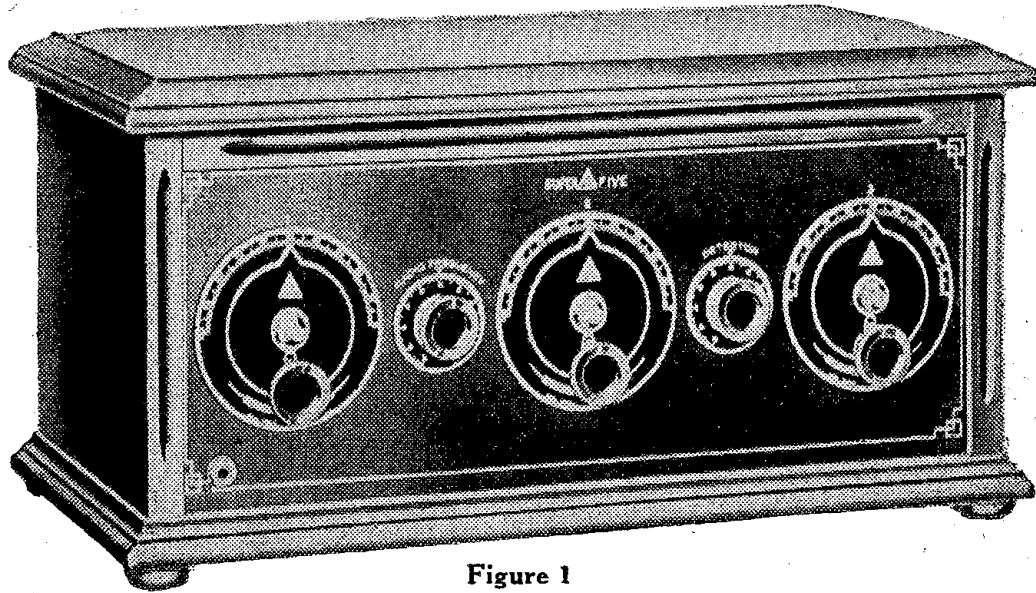


Figure 1

between 35 and 75 feet over all from actual ground connection to furthest end of straightaway wire. Since the average ground lead is about 10 feet, and the average lead-in is about 25 feet, it is recommended that the straightaway between insulators be 40 feet. This aerial installation should be well insulated, as high above surrounding buildings and trees as possible, and at right angles to street car lines, lighting and power lines, etc. The connection to ground should preferably be made to a water pipe with ground clamp. The surface of the pipe should be scraped clear of corrosion all around, for a length of about 2 inches and the clamp applied at this point. The wire from the ground binding post of the set is then secured to the clamp. Two binding posts are found at the rear left corner inside marked ANT. and GND.

A special means, exclusive to the Apex, is provided for making connections to the batteries. Within the set, just to the right of the ANT. and GND. binding posts is a peculiar looking little block with five springs secured around it. Through a large hole in the back of the cabinet you push a bakelite plug connected to a

five wire cable and this plug fits down over the block to make all connections to the set simultaneously. This set was operated on both dry and wet B batteries, several B eliminators and two different A power units. There is nothing peculiar about its circuits that prevents it being used successfully with any of these devices.

If B batteries are used it will be found good policy to use two units of 45 volts each. Among the storage battery units, Prest-O-Lite, World and Hawley are suggested while of all the dry B types, the Eveready number 772 units will be most economical. To the negative terminal of one of the B batteries, connect the yellow covered wire in the cable. The plus terminal of this same B is to be connected by a short wire to the minus of the other B and also to the blue wire in the cable. The plus post of the second B gets the salmon colored covered lead.

The power supply to light the filaments of the tubes may be either a six volt storage battery or one of the A power units on the market. In either case there will be a plus and a minus terminal for the two remaining wires in the cable. The

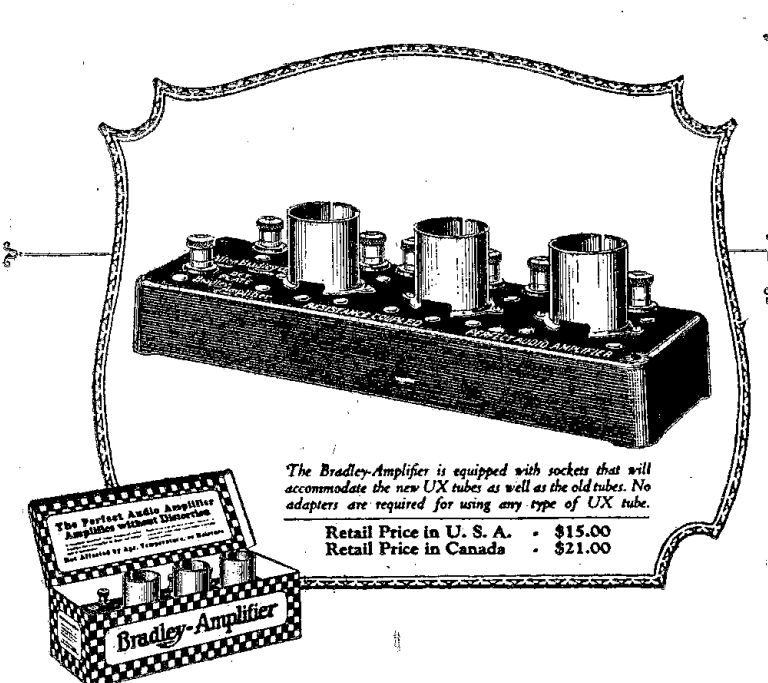
plus post of the battery will be identified by POS., a + sign or a daub of red paint. To this terminal connect the bright red wire of the cable. The second post of the storage battery is, of course, the negative and this gets the green covered wire. The terminals of an A power unit would be connected the same way. If storage batteries are used for both A and B supply, they can be charged without removing cable connections, provided plug is pulled from its pillar in the receiver, which can be done through the hole in the back.

This set may be operated without a C battery as the two C battery binding posts are connected together at the factory. With B battery voltages of 90 or less, the C battery is not absolutely essential, although its use will improve the tone quality, noticeably. It will also decrease your B battery drain, which is equally important. The Eveready C unit is suggested with the "minus" and "plus 4½" posts connected to these corresponding posts within the set. Be sure to remove the wire connecting the C+ and C- binding posts before connecting the C battery. The use of this set without C battery is discouraged by the manufacturers.

The speaker binding posts are located on the base panel, inside, over toward the left and attention is called to the fact that one is plus and the other negative. The speaker terminals at the end of the twin conductor speaker cord are identical in appearance except that one has a red or green tracer thread woven into the insulation. This terminal must go to the + speaker binding post in the set.

Five tubes of the A type are to be used in Super Five. These can now be inserted in the sockets and, for first trial, no particular attention need be paid as to which goes in any particular socket. The filament switch is to be turned to the "On" position and the small dial marked "Detector" turned to the right. All tubes should light up and, with the "Detector" dial at about 80 we are ready to tune this set.

This set is provided with three vernier tuning dials and their settings will be rather close for any given station. Due to the influence of the antenna and ground, (Continued on page 26)



The Heart of the Bradley-Amplifier



Tucked away within the polished bakelite base of the Bradley-Amplifier are six inconspicuous, solid-molded resistance units known as Bradley-units.

The Bradleyunit is the heart of the Bradley-Amplifier because it alone can amplify the incoming tone frequencies without distortion. It replaces the ordinary bulky audio-frequency transformer and eliminates the most frequent cause of distortion in a radio receiver. The Bradleyunit cannot deteriorate or change with age.

## Surprise Your Friends

With The Improved Tone Quality of Your Set

IT IS NOT ENOUGH that a good radio receiver is selective or is able to bring in distant stations. Quality of reproduction is now considered as important as selectivity and sensitivity. Fortunately, the tone quality of your radio set can be quickly improved and perfected without disturbing the existing wiring of the set. All that is necessary is to replace your present audio-transformer amplifier with a Bradley-Amplifier. This compact unit employs no transformers and amplifies all tone frequencies with faithfulness and clarity, and without distortion. It is a mark of distinction to have a radio receiver of fine tone quality and you will surprise your friends with the remarkable improvement in your set that follows the use of a Bradley-Amplifier. It is as easy to install as a B-Battery and usually can be installed within the receiver cabinet. Be sure to try one, tonight.

Ask Your Nearest Radio Dealer for a

**Bradley-Amplifier**  
Resistance-Coupled  
**PERFECT AUDIO AMPLIFIER**

ALLEN-BRADLEY CO.  
290 Greenfield Ave.  
Milwaukee, Wisconsin

Please send me, by return mail, literature on the new Bradley-Amplifier.

Name.....  
Address.....

# JEWELL

NEW

135-C Portable Voltmeter with cords, plug and adapter.

While designed for use with Radiolas Nos. 20, 25, 26 and 28, this Portable Voltmeter, double reading 7.5 and 150 volts, can be used with other sets for checking tubes and batteries.

135-A Voltmeter with special prods in rear.

135-A is for use with Radiolas Nos. 25 and 28. The prods fit into the jacks on the panels of the sets. 0-5 volts for control of tube filaments.

Send for Circular No. 739 describing these two new instruments; also Circular No. 735 describing the Jewell Junior Tube-Checker for checking tubes at home.

JEWELL ELECTRICAL INSTRUMENT CO.

1650 Walnut St., Chicago

"26 Years Making Good Instruments"

### THE APEX SUPER FIVE

(Continued from page 25)

which varies with each installation, dial number 1 will be somewhat different throughout the scale, from the others, but dials 2 and 3 will be practically identical in their settings. There will be slight exceptions to this when adjusted for very maximum sensitivity and range but never more than 1 or 2 degrees difference.

The radio frequency control located between dials 1 and 2, is the vitally important adjustment on this set, as its proper adjustment, in conjunction with the tuning dials, will increase both the volume and selectivity. Super Five is so designed and constructed that it can be made to oscillate at all wave lengths below 500 meters on the average aerial, as any set of the tuned radio frequency type is most sensitive and selective when operated just below the oscillating point for any wave length. The radio frequency control can be left in such a position that set can be made to squeal at any point on the dial but this is to be avoided due to the disturbance caused in neighboring sets.

After a little practice in tuning, you will learn the approximately correct position of the radio frequency control for different positions of the dials and it should be kept at a point just below that at which thumps are heard when the three dials are brought to correct settings and resonance. The lower the wave lengths being tuned, the farther back must the radio frequency control be set. On different antennas, the radio frequency control takes different settings in its relation to dial settings and, if the antenna has extremely high

resistance, the control may not bring receiver up to regeneration on the higher wave lengths. The setting of this control will also change slightly for different B voltages on the pink lead of the cable. If regeneration or squeal cannot be obtained at higher tuning dial settings, increase the voltage between the pink or salmon colored lead and the minus B. Any B voltage up to 135 volts may be used and the higher the voltage the greater the volume and, occasionally, the greater the range. On voltages over 90, a C battery of 6 volts should be used.

When receiver is operating, and tuned exactly to an out-of-town station, vary the blue lead on your B battery as some A tubes require a rather critical B voltage for best results as a detector. Good reception was obtained with voltages down to 16 on this lead but trying several tubes in this socket showed the average best voltage was close to 45. Burn your radio frequency and detector tubes as low as possible, as controlled by the small dial between tuning dials 2 and 3, without loss of signal strength, and try slight readjustments with a distant station tuned in. Once you have determined the lowest (most economical) setting of this control, with full volume, you can leave it there.

**(The Thorola Isodyne, a receiver of wide distribution and usage, will be explained next issue in another "Operating and Trouble Shooting" article.—Editor's Note.)**

Soldered joints in a receiver are better than loops over binding posts because they insure better and more lasting contacts.

### KGW 'HOOT OWLS' HOOT

(Continued from page 7)

decided to hold meetings each Monday and Friday night from 11 o'clock to midnight. This custom was later revised to make the meetings come each Friday night from 10:30 to 12, midnight. This revised schedule has been strictly observed since its inauguration.

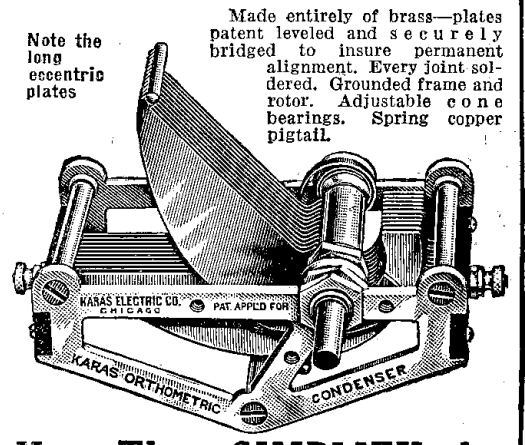
Now for the frolics, themselves! Each Friday night, promptly at 10:30 and without warning, the KGW microphone is switched on the air and a squeaky, tinny, and extremely wierd conglomeration of noises pour out into the air. The wise, initiated listeners will immediately recognize this as originating from the Owlorgan, a form of calliope adopted by the degree team as their official musical instrument. Speaking of music, though, no Hoot Owl meeting is complete without seven or 'steen kinds, in varied and amusing forms. There's always a good, live, peppy jazz band around with a little scintillating syncopation; solos by some good vocalist like "Enigma," the mysterious Hoot Owl Mystery Maid, or Helen Nordstrom Booher, snappy blues singer, or Kathleen Duffy, merry little Irish soprano; the Whiffledophus or, in everyday English, a marimba spanked by Julius Walter, KGW staff pianist; snappy Pantages headliners; or maybe blues songs by Grand Songsmith Alan (Punch) Green, who sings his own original numbers and tickles out an accompaniment on a ukulele that just delights in making music for Hoot Owl listeners. Then there's the educational (Continued on page 29)

## Straight Frequency Line Tuning

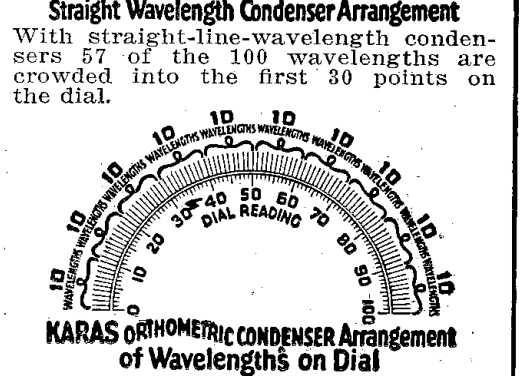
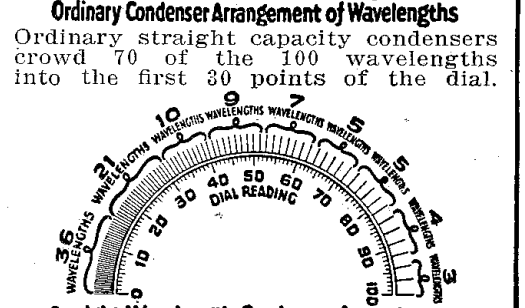
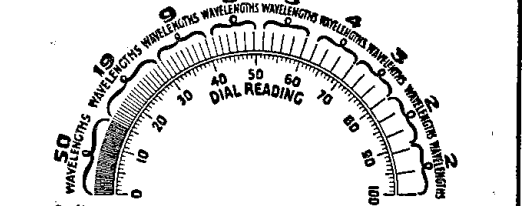
with

# KARAS Orthometric Condensers

Specified for the Prize Winning "Straight-8" Super, described in this issue by Christen and Fournier.



### How They SIMPLIFY the Tuning of Any Radio Set



If your dealer hasn't secured a stock of Karas Condensers

### Order on this Coupon!

Most good dealers everywhere, sell Karas Orthometric Condensers. If your dealer happens to be one who hasn't secured them, we will supply you direct on our 30-day Money-Back Guarantee. Just fill in and mail this coupon at once. Send no money. Pay your postman on delivery.

**SIZES AND PRICES**

23 plate, .0005 mfd.....	\$7.00
17 plate, .00037 mfd.....	6.75
11 plate, .0025 mfd.....	6.50
5 plate, .0000972 mfd.....	6.50

**Karas Electric Co.,**  
4044 N. Rockwell St., Chicago

Please send me.....Karas Orthometric Condensers, size.....at \$.....each. I will pay the postman the list price, plus postage, on delivery. It is understood that I have the privilege of returning these condensers any time within 30 days if they do not prove entirely satisfactory, and you will refund my money at once.

Name.....  
Address.....

Dealer's Name.....  
If you send cash with order, we'll send package postpaid

# The New Radio Book

## HOW TO

**Radio Receivers**  
How to Operate

**How to Make**

**Operate Sets  
Construct Parts  
Improve Reception  
Understand Radio  
Assemble Circuits**

## FREE With One Year's Subscription to Radio Digest

THE greatest assemblage of facts and hints, from actual everyday practice, ever gotten together. Edited by the technical staff of Radio Digest it supplies the demand for a book covering every phase of Radio from a simple explanation of Radio reception to a technical explanation of the different parts of a set which leads to the best reception possible. The sections on selecting and making sets develops the different types of sets and circuits with diagrams to explain same. "How to Operate" gives detailed information on the operation of all the well-known sets. The section of general information contains a complete Radio map and schedule and a section of workshop kinks which save time and money. Now is the time to take advantage of the exceptional offer as listed in the coupon for your convenience.

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Enclosed find five dollars for one year's subscription to Radio Digest including FREE the New 124 Page Radio Book called "Radio Receivers—How to Operate and How to Make."

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This Handy Radio Reference Book Is Yours Today  
Use the Coupon—Mail Today

# ABC Radio Fundamentals for Everybody

## Chapter I—Audio and Wire Telephony

By Milo Gurney

WHILE it has been the writer's pleasure to have compiled a great many articles of a technical or semi-technical nature, which made an appeal only to those interested in the construction of Radio receivers, or the principles involved in their design, he has for a considerable period been requested by literally thousands to answer questions concerning such articles, from the Radio fans of this and other countries. The majority of these have very definitely indicated that altogether too many of such constructors were securing but mediocre results from such receivers as they constructed, because of one of two apparent facts, viz, they were either denied an

truly marvelous as a means for the transference of intelligence that it is justly entitled to command a much clearer understanding of the simple formulas which govern its mode of transmission

of the circuit shown in figure 1, this decided assistance toward greater achievements in the then comparatively new art or science of wireless transmission, both voice and music were transmitted a dis-

over a distance of 11,700 miles, or practically half way around the earth. This distance was so great that a considerable discussion has arisen within the engineering fraternity as to whether the reception from the broadcasting station was received from the East or West, because of the likelihood of error in the measurement of distances to the point of reception. This accomplishment is cited not only to indicate the vast strides toward perfection which have taken place, but to impress upon the reader's mind the importance of learning something relative to the whys and wherefors surrounding this agency which is commanding such universal attention.

Audio telephony, or the process whereby one person may carry on a conversation with another through the medium of the air, is in a large measure very closely related to the methods used not only in our everyday telephone conversations, but also in the transmission and reception of Radiophone telephony, each resembling the other with respect to the passage of energy from the transmitter, or speaker, to the receiver, or listener, which has at its inception been molded, or in the terminology of Radio been modulated, into the form of wave which the listener may identify and understand. This modulation is not visible, but a compounding which is readily recognized by the ear. In no sense could the ear distinguish the modulation of writing, which would, however, be the only means of recognition by the eye.

Figure 2 (page 28) shows the manner in which sound waves pass or travel from the speaker to the listener, the voice of the speaker causing the surrounding air to vibrate, and thereby starting the waves of compression and rarefaction which travel unchanged to the listener's ear.

(Continued on page 28)

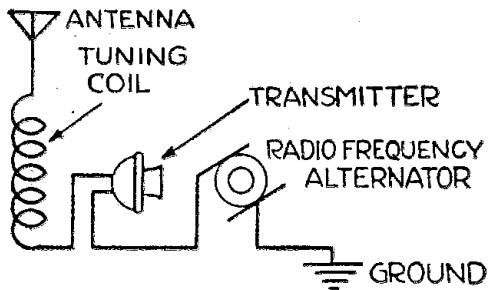


Figure 1

opportunity to study the theory and application of Radiophone telephony, in order that the associated apparatus comprising such receivers might be arranged and correlated in a manner to insure satisfactory results, or, not unlike the Arkansas traveler, who could not discover any logical reason for mending his leaking roof so long as it did not rain, they, too, cared little or nothing about giving any thought or study toward learning just why the wheels went 'round. Just so long as the receiver repeated sound, all was well, and the moment it failed to function, they could "let George fix it" through appealing to the technical editors of Radio magazines.

Obviously, this attitude was fundamentally wrong, and yet I am most grateful to the vast majority who made appeals for help to me, as it furnished, through their letters of inquiry, an opportunity to secure a most comprehensive study of that which the public desires in Radio receptors. They were of incalculable value toward more simplified design, together with a most interesting expose of the pitfalls which should be avoided when writing construction articles in order that the builders may be assured of greater satisfaction.

Radiophone telephony is, seriously, so

NEARLY three years ago, just another new "Whiz Bang" circuit pest darkened our editorial door, and before we could offer him the usual courtesy of being thrown out, he had sold us the idea that like Rome, his circuit had not been built in a day. We signed for three "how to make" articles—we published twenty-three. Eight thousand fans built it, and over twelve thousand fans inquired about it. Then he finally confessed.

All of which is but a preface toward re-introducing to you Milo Gurney—the Mystery Man—King Miloplex, familiarly known as King, which he admits is correct outside of his home. Mr. Gurney begins with this issue a series of fourteen articles upon "Radio Simplified," each interesting, instructive and replete with simple explanations which all may understand. You'll have to read this series. He's just as good as ever.



Milo Gurney

and reception. With this thought in mind, it will be the author's purpose in this series of articles to simplify the complex technicalities of Radio as the engineer approaches it, through explaining by the use of analogies which are within the experience of all laymen—each a counterpart of the public's every-day life, each detail surrounding the methods employed, and the apparatus required, both for the transmitting station as well as the receiver; to attempt to lift the veil of uncanny mystery which appears so broad and overshadowing in its effect as to frighten the tyro into the belief that only from years of study and experience can one hope to comprehend, in even a small measure, just what it is all about.

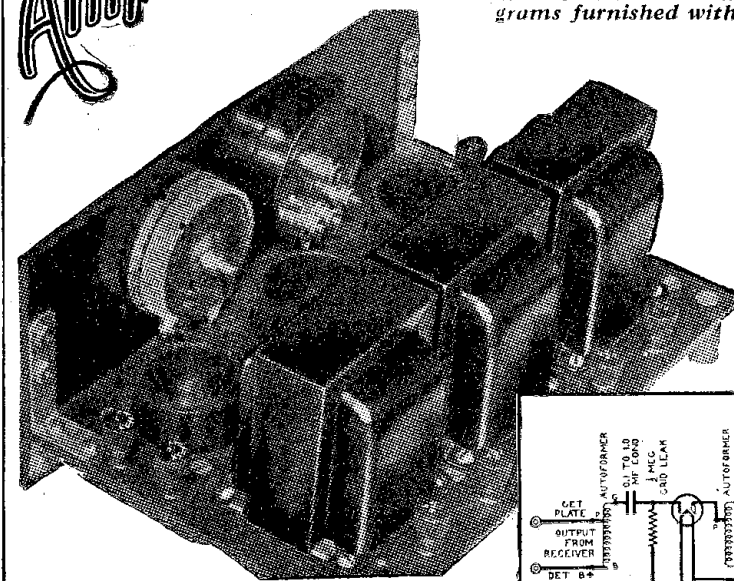
Less than 18 years ago, following the invention of the Alexanderson alternator, an installation, using a part

tance of 12 miles, and shortly thereafter to the then phenomenal distance of close to 200 miles, while today the transmission of both voice and music has been verified

# 4 Big Improvements in Amplification!

- 1 Full amplification of those bass notes hitherto largely "lost".
- 2 Greater clarity on all notes.
- 3 Improved reception of distant programs.
- 4 Better volume control.

A Thordarson Autoformer Amplifier built in accordance with instructions and diagrams furnished with each instrument.



### fans!

Send for our new interesting bulletins on Autoformer amplification. They contain hook-ups and complete directions.

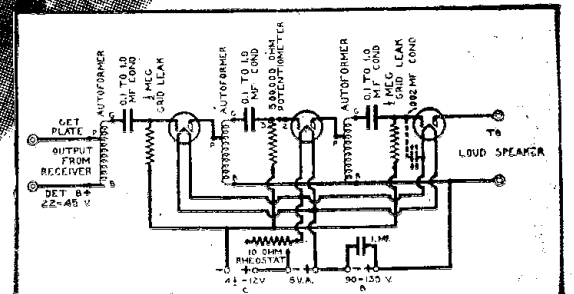
No note is too low—no note is too high—to be fully amplified by Thordarson Autoformers. Autoformers are all frequency amplifiers—they amplify with even magnitude ALL notes within range of the human ear. Developed, perfected and built only by Thordarson.

THIS latest Thordarson development—the Autoformer—utilizes for the benefit of your radio set, the same principle used in the line amplifiers adopted by the more recent high-powered broadcasting stations. The excellent tone quality of these stations—due to perfect amplification—offers proof of Autoformer effectiveness.

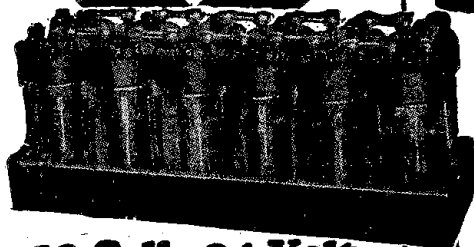
Autoformer amplification is for those who seek the finest reproduction of programs to be had. May be used with any set in place of regular audio transformer hook-up. Full directions, with diagrams, supplied with each instrument. Autoformers are \$5 each.

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# You save 50%

### Approved!

Listed as Standard by Leading Authorities including Radio News Laboratories, Popular Science Institute of Standards, Popular Radio Laboratories, Radio Broadcast Laboratories, Radio in the Home and Fax, Inc.

WORLD "A" Batteries are famous for their guaranteed quality and service. Backed by years of successful manufacture—thousands of satisfied users. Built of finest materials possible to obtain from raw material producers of national reputation. Equipped with solid rubber one-piece containers, an insurance against acid, leakage and breakage. You save fifty per cent and get a



### 2-Yr. Guarantee Bond in Writing

with each Radio "A" and Auto Battery. WORLD Battery owners "tell their friends." That's our best proof of performance and is chiefly responsible for the tremendous growth of the Company. Compare these prices—then send your order in TODAY.

Solid Rubber Case Radio Batteries		Solid Rubber Case Auto Batteries	
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6-Volt, 120-Amperes . . .	13.25	6-Volt, 13-Plate . . .	13.25
6-Volt, 140-Amperes . . .	14.00	12-Volt, 7-Plate . . .	16.00

### SEND NO MONEY!

Just state battery wanted and we will ship day order is received, by Express, C. O. D., subject to your examination, on arrival. FREE "B" Battery is included.

**EXTRA OFFER**—Five per cent discount for cash in full with order. Buy NOW and get a guaranteed battery at fifty per cent saving to you.

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1219 S. Wabash Ave., Dept. 48 Chicago

# World Batteries for Radio

### HOW SOUND WAVES COMPRESS AIR

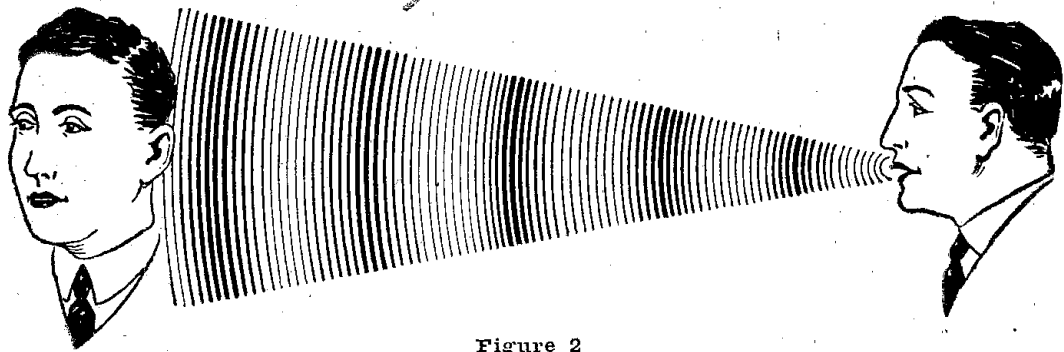


Figure 2

### ABC'S OF RADIO SETS

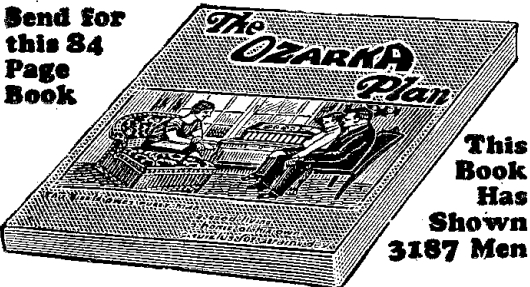
(Continued from page 27)

where they in turn create rapidly varying vibrations upon the listener's ear drums in synchronism with the modulated sound wave received, which are shown as continually expanding spheres. The amplitude, or width of the band, is portrayed by the shaded portions in the drawing.

In wire telephony a like condition obtains, with the exception that the sound vibrations are carried through the wires electrically. In, or during, this procedure a continuous direct current of electricity is continually passing through the transmitter and receiver of the telephones being used, thus replacing the air medium as used in audio telephony or voice conversation. During this continual travel of direct current, so long as it is not modulated, both the transmitter of the telephone and the receiver will remain silent. When, however, a voice or other sound is made which strikes against the diaphragm of the transmitter, it in turn causes the diaphragm to vibrate and in doing so the resultant varied to-and-fro motion compresses also at varying degrees a mass of tiny carbon granules held within a container directly back of the transmitter diaphragm and through which the above-mentioned direct current of electricity is also traveling. This alternate varying compression of the granules increases or decreases the resistance of this mass, which in turn retards the free flow of the direct current and establishes a fluctuating or pulsating current which follows the connected wires of the two telephones unchanged, creating a varying pull and release upon the diaphragm of the receiver, which is an exact reproduction of the vibrations which were originally started at the transmitter, thus causing the listener to hear a repetition of the speaker's voice. The pulsating current thus created being and constituting the molding or modulation of the original sound, it is obvious that we have not changed the basic principles as used for person-to-person conversation, but have taken advantage of the wire and its associated electrical current as the medium for the transference of sound. It should be clearly understood that in wire telephony it is an electric current rather than the sound itself which flows through the wires, and it is this current, modulated to our requirements, actuating purely mechanical devices, which are capable of reproducing the wave form of the sound in the manner shown through figures 1 and 2.

While wire telephony has become so common that it is now not even given passing notice, but is accepted as a medium which has always been existent, I would be unfair did I not mention that to this day vast armies of scientists are continually employed for the sole purpose of continually bettering the results of voice communication by telephone, and it would not be surprising, because of this

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intensive study, to read an announcement, within a very short time, to the effect that overseas telephony is now available to those desiring to take advantage of it.

(In next week's article Mr. Gurney will take up the inter-relation of Radio to the fundamentals of voice communication, explaining in his interesting manner the mystery which surrounds this latest of scientific wonders.—Editor's note.)

### RADIO RULES GEORGIA

(Continued from page 4)

simple matter. We had the local Russian garrisons bottled up; the passes are few and, passing over the topmost heights of the wild Caucasus, are easy to defend, provided one can prevent the Russians using the railway line.

"It so happened that the party to whom we had, in September, 1924, confided the all important task of blowing up these bridges, failed in its attempt and was surprised and dispersed by a Red detachment. There was another of our forces within striking distance, but we who led the movement were not able to warn it in time. They got our order to march on the bridges just too late; when they got there they found the Russians had rushed armored trains and troop convoys to the place and held it in such strength that with the means at our disposal an attack was hopeless.

#### Bridge Lost the War

"That lost us the war. Otherwise, we could have stood our ground till our brethren from Adzerbadjan, who were being secretly armed and equipped by the Turks, could have joined up with us."

The lesson has not been lost, and when next the fiery cross is sent round the Caucasus valleys to summon the Georgians to arms, Radio will not be wanting.

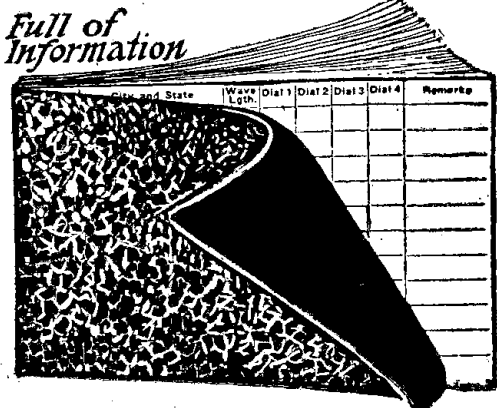
In the meantime Radio is already there, keeping the spirits of the people tense, helping to prepare for the next rising, a powerful, invisible enemy of Russian rule, present everywhere, seen nowhere.

The Georgian Provisional government, with the president, M. Jordiana, at its head, took refuge in Paris, where it still exists and, thanks to Radio, keeps in constant touch with its people.

Unlike many others, the Georgian government, in its hurried and enforced exit

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from its native land, was able to take with it abundant sinews of war. These shiploads of wealth were duly saved; cash, manganese, gold and silver ware, the treasure of the Georgian churches. The cash supplied the means for the September rising. The manganese was sold here in Constantinople, and with part of the proceeds, in the beginning of 1925, a powerful Radio transmission set was bought, with a large number of receiving sets.

These were packed in forty cases and smuggled across the frontier on donkeys' and mules' backs with the connivance of the Turkish officials. The station works "somewhere" in the lonely hills, in a place known to but a few of the leaders, and carefully watched over by faithful picked tribesmen so that no Russian ever gets near it.

#### Leaders Own Receivers

Receiving sets are owned by the principal leaders in their mountain fastnesses, and two of them are in the city of Batoum, carefully concealed. In some ways one of these is the most important, for it supplies a daily news service to Georgia's only free newspaper. This sheet, depending entirely on this clandestine Radio for its news, is published daily in secret, and, despite all attempts of the "Cheka," the Russian secret political police, to check it, is distributed throughout the country, and can be bought by those in the know, under the very nose of the Russian policemen in the streets of Batoum.

Thus does Radio keep alive the flame of independence and patriotism throughout Georgia.

The headquarters of the Georgian movement are, as stated, in Paris, where by a curious anomaly, since France has recognized the Soviet government, the members of the Georgian Provisional government are still on the regular diplomatic list. But it would obviously be a breach of diplomatic etiquette on the part of France to allow one of her sending stations to be used for the purposes of the Georgian leaders, so the actual transmission is done via Constantinople.

Up till now the transmission station used has been that of Osmanie, just outside of Constantinople. This station is shortly to be renovated and will be greatly increased in efficiency. The new station will have two alternators of 25 kilowatts each.

The transmission station in Georgia, the purpose of which is to keep the members of the Georgian government in Paris

informed of everything that goes on in the country, is of 30 kilowatts.

#### Paris Hears from Georgia

Constantinople relays the messages received, which are eventually picked up in Paris. A special code is used, so that the messages are not easily decipherable.

The Russians have long suspected the existence of this secret Radio organization and have made the most strenuous efforts to locate it, but so far in vain. They have tried to counteract its effect by broadcasting Red propaganda from their Tiflis station, but this has been singularly ineffective, for the good reason that almost the only people in Georgia who have receiving sets are the leaders of the independence movement who are, of course, quite impervious to the Tiflis propaganda.

The code messages received by the Georgian central station are, if they are meant for publication to the people, relayed "in clear" to the secret receiving stations.

### To Keep Your Cabinet New

Modern Radio cabinets are made with the same care and finish as fine furniture, and just as much pains should be used in cleaning and polishing them, if their original beauty is to be preserved. It is only necessary to follow a few simple rules in order to keep cabinets in the best of condition, according to experts of the Crosley cabinet factory.

Before polishing a cabinet, the dust should first be wiped off with a piece of cheesecloth. A mixture of equal parts of benzine and paraffin oil should then be applied, with a clean piece of cheesecloth. Finally, all traces of the oil should be thoroughly polished away. Regular rubbing with oil in this way will not only preserve the finish of the cabinet, but actually improve it in the course of time.

Scratches accidentally made through the finish, in such a way as to expose the natural color of the wood, may be covered up by the use of a little mahogany or walnut stain (according to the finish of the cabinet). After the scratched or rubbed part has been stained, a thin coat of shellac should be applied to it. This should be allowed to dry thoroughly, and another thin coat of shellac applied. After the second coat has thoroughly dried, the whole cabinet should be carefully polished, as outlined above.

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## CROSLEY

Powel Crosley, Junior has always done the unexpected.

His Announcement of December 26th

was no exception to that rule.

## RADIO

# Straight-8: Outside Aerial Tuned R.F. Super

## Part IV—Adjusting and Operating

By A. Christen and Jacques Fournier

MANY readers who have built super-heterodynes before are apt to go into the operation of Straight-8 with too much confidence for best results. As was stated at the beginning of the series, this receiver is peculiar in many ways and there are several important points to adjust before the maximum can be gotten out of it. First of all, however, we will get this outfit hooked up with its accessories and then the symptoms observed will direct the corrective measures.

Considering the set from the front, the antenna lead-in connects to the first binding post at the left, while the connection from ground goes to the second post. The positive terminal of a 6-volt storage battery is then connected to the third binding post, its negative terminal to the fourth. Now insert all tubes in their sockets, eight "A" tubes being used. Turn all rheostats over toward the right and note whether all tubes light up and whether rheostats give proper control of brilliancy. The rheostat at the left end should vary the brightness of tube 2, that in the center should vary tubes 3, 4, and 5, while that at the right should control tube 6.

### Connecting Batteries

Then connect the negative post of a B battery unit to the fifth binding post and its plus 45 to the sixth. Its plus should also be connected to the negative of another B unit and the plus 45 of this second B goes to the seventh post. An Eveready 4½-volt C battery is then placed to the right of socket 7 and the first Meloformer, with its minus post toward the rear. The flexible lead from the F terminal of the Meloformer goes to minus while the plus 4½ clip goes to the flexible lead connected to the front left post of socket 7. The flexible wire mentioned at the end of operation 15 goes to the minus terminal of a C battery of either 4½, 7½ or 9 volts while the plus end of this C goes to the flexible wire of operation 16. There is room for these last named C units under the sub base just to right of bracket.

A loud speaker can now be plugged into either jack in lower left corner and tuning tried. The rheostat at left is turned practically all the way to right, as is that at the center. The rheostat at the right is turned to point about straight upward. The potentiometer at right is turned to point straight upward also. On the original model the dials are found to be in resonance about 10 figures apart. When that at the left reads 30, the other reads 40 at maximum tuning of a station. Yours will vary from this slightly but not much.

### Corrective Measures

At this point there may be any one of four things wrong. The left potentiometer may be advanced too far to the right, the right potentiometer may be too far over, the left and center rheostats may not be far enough over, or the feedback within the set may be reversed. Try different settings of the rheostats and even the position where tube is full on. The right potentiometer, if turned too far to right, will develop a loud roar in the speaker as, in that position, it permits the three intermediate tubes to go into oscillation. A setting just to left of the roar or loud hiss point is that of maximum sensitivity.

You can readily determine whether the feedback around tube number 2 is correct by dampening the forefinger and touching the grid post of socket 2. There should be a "pluck" in the speaker as your finger touches and, more important,

another when the finger is removed. If, with the left rheostat turned clear to right, this cannot be heard it will be necessary to reverse the connections of coil L5. These connections were covered by operation 19 so refer to that and connect the leads from socket 2 and the Victoreen coil just the opposite, as regards inner and outer end, to description. It all depends on how you wound and mounted this coil.

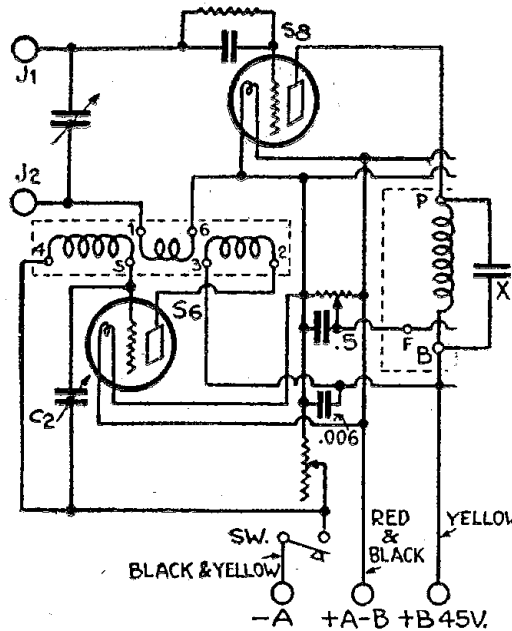
With tube 2 oscillating well, we can now proceed to the next point. Due to the fact that 2 is oscillating and tube 1

22½-volt clip on the second B battery unit which gives 67 volts between that point and minus on the first B unit.

The chief point about this set is its selectivity and, as you now have it, there should be sharpness of tuning sufficient to suit anyone. Either of the first two oscillation control measures mentioned above, namely separating the coils or removing turns, will help, but, for selectivity, the better corrective measure is to either separate the coils on the sub base further or remove turns from the 10-turn

eter and to left variable condenser rotor. You will get harmonics on very nearby stations; that is unavoidable when within 10 or 12 miles of them. However, if you are out in the great open spaces instead of the Rogers Park or Edgewater districts of Chicago, these will not be found. Don't be afraid to experiment with this outfit, it has in its circuit and principle the last word known at this time in the way of both range and selectivity on a super. Due, though, to variations in tubes, your winding and mounting of the coils, your location and antenna intallation, we cannot give you every exact detail for perfection. We have endeavored, in this chapter, to cover the remedies for the only two possible sources of "grief" we could find or think of but you may be able to improve your own assembly a great deal by some simple little change that did not happen to be necessary on ours.

### IMPORTANT GRAND PRIX SUPER CORRECTION



set, but up between the base of the Multiformer and the under side of the sub base or shelf, didn't show in the photographs and is easily overlooked in actual study of the set itself.

The technical editor and Mr. McDonald offer their sincere apologies for the worry and difficulties this may have caused you. We are all human, though, and will err at times. Part of figure 7 is shown here with the missing capacity connected in as condenser X.

IMMEDIATELY upon completion of the articles relative to Grand Prix eight tube super-heterodyne we began receiving reports that it was O. K. in every respect except selectivity. At first we thought it might be that a few had built without sufficient care or had substituted parts, as the original was exceptionally sharp. The set as built by Mr. McDonald has been checked time and again against the diagrams and articles and the fault has finally come to light.

If you will refer to figure 7, in the November 7 issue, you will note that the plate of the first tube connects to the first P terminal of the Multiformer unit and the first B connects to plus 45. No other connections are shown to those terminals. There should have been a fixed condenser of .0005 mfd. capacity connected across P and B to sharply tune this first coil. It is in McDonald's

is a sensitive R.F. amplifier, you may find at first that it is difficult to keep 1 from oscillating or being too regenerative. When the left potentiometer is clear around at left, it should stop this, with increase of regeneration and sensitivity as it is turned to right. Should this potentiometer not afford sufficient control, three remedies are possible. As mounted beneath the baseboard, the 25-turn primary is ¼ inch from the double coil. By altering your mounting arrangement, and bending the bracket slightly, you can move this coil further away from the double coil. Of course you are limited as to how far you can separate them but when experimenting with this point we found a distance of 1½ inches could be secured.

A further corrective measure is to cut down the number of turns on the single 25-turn coil to about 20, by removing turns from the inside. This will also have the effect of making the tuning sharper. If this method does not appeal to you, or you find the tuning plenty sharp already, disconnect the + terminal of the first Victoreen unit (that under socket 2) from the B+90 wire to which it is now soldered, and put in another binding post at rear edge of sub base for this + terminal of the Victoreen. From the B battery run a wire to this post giving 67 volts; that is, connect the wire to the

antenna coil. Try cutting these out, from the center, two at a time but do not go any further than taking off 4 turns.

Various values of C battery may well be tried in the tuned R.F. stage which is tube 1. This is the C battery connected to the center terminal of left potentiometer.

### Play Jazz in a week

Advertisement for Buescher Saxophone featuring a saxophone image and text: "on your Buescher Saxophone. You can do it—easy. 3 lessons free with each new instrument give you a quick start. Practicing is fun because you learn so fast. And it will make you popular, in demand, the center of attraction everywhere you go. Always a hit. Even if you have failed with some other instrument, you can learn the simplified Buescher Saxophone. Don't delay. Get into the big fun. Any instrument sent for 6 days' free trial. Easy terms if you decide to buy. Write now for beautiful, free literature. Address: Buescher Band Instrument Co. (1-2 1/2) 1222 Buescher Block Elkhart, Indiana"

### KGW 'HOOT OWLS' HOOT

(Continued from page 26) department which, headed by Professor Sedative P. Seidletz of Grand Scream, presents some humorous little skit each week. Besides, there's patter and jokes and whatnots to intersperse musical offerings, thus making up a highly versatile and diversified program.

Webster's unabridged doesn't offer any definition of the word, but an interview with the chief of Hoot Owls, Charles F. Berg, the Grand Screech, brought out the fact that a Hungari is nothing more or less than a celebration of each birthday of the Hoot Owl order. Friday, January 8, was observed as the end of their third year of existence, and in view of the fact that they're still alive and kicking BIG, there were plenty doin's at the big banquet and model Hoot Owl frolic held at the Multnomah hotel.

Places for about several hundred and forty 'leven guests were provided for in the main ballroom, but every plate was applied for before the slower ones even awoke to the fact that there was to be a Hungari. Those that couldn't get to go, though, tuned their sets to KGW and heard the whole business—from the drinking of Owl soup to the patter and comical sayings by the Grand Scream, Frank Sardam.

Advertisement for Radio Institute of America featuring a book titled "How to pass U.S. Govt. Radio Examination" and a price of 60c. Text includes: "PASS the U. S. Government Commercial or Amateur Radio License examination! This book will help you do it! Send sixty cents in stamps or coin for your copy—postage prepaid to any point in the U. S., Canada or Mexico. For a short time only 60c. RADIO INSTITUTE OF AMERICA 328A Broadway New York City"

Advertisement for Nightingale radio featuring an image of the radio and text: "Nightingale THE UTMOST IN RADIO. DISTANCE, volume, purity of tone—all are at your command in unstinted measure when you make the Nightingale Six, the companion of your evening hours. With the golden tube contacts, straight line wave condensers and other special features of the Guthrie Songbird Line, the Nightingale Six represents supreme radio value housed in cabinets of strikingly rich and appropriate design and finish. Two stages of tuned radio frequency amplification, detector and three stages of transformer coupled audio frequency amplification afford a volume three times greater than can be secured with a five tube set. Complete manufacture in our own shops give us control over every feature that is vital to your satisfaction. See the Nightingale dealer for any one of our several cabinet models or write to THE GUTHRIE COMPANY, Grafton, Ohio Builders of the famous Songbird Line."

Advertisement for 22½ Volt battery featuring an image of the battery and text: "22½ Volt un-acid everlasting rechargeable 'B' STORAGE BATTERY \$2.95 Includes Chemical. 45 volts, \$5.25; 90 volts, \$10.00; 112½ volts, \$12.50; 135 volts, \$14.75; 157½ volts, \$16.80. Truly the biggest buy today. Easily charged on any current including 32-volt systems. Any special detector plate voltage had. Tested and approved by leading authorities such as Popular Radio laboratories. Over 3 years sold on a non-red tape 30-day trial offer with complete refund if not thoroughly satisfied. Further guaranteed 2 years. Knock-down kits at great savings. Complete 'Hawley' 'B' battery charger, \$2.75. Sample cell, 35c. Order direct—send no money—simply pay the expressman cost on delivery. Or write for my free literature, testimonials and guarantee. Same Day shipments. B. Hawley Smith, 317 Washington Ave., Danbury, Conn."

Advertisement for Kane Antennae Co. featuring text: "Gets Everything But Noise! Read this convincing letter from a man who has 'listened and marveled': 'Kane Antennae Co., 76 Dantest, Montreal, Can., Nov. 27, 1925. Gentlemen: I am using a Freed Eisemann NR 5 Neutrodyne, and there is no comparison in the present reception of the set with the Kane Antennae as with the old 75 feet single wire. It has eliminated all power induction and cuts out static, oscillating sets, and stations are coming in 100% closer and clearer than before. I am getting low wave stations which I could not get before on account of power-house motor transformers running daily. People are inquiring every day about this outfit and many of them are going on the roof to copy it. Yours very truly, JOS. RICHARD.' Most outside aerials are not over-particular about the variety of noises they send down to your set with the station waves. But now you do not have to put up with these disagreeable noises. The KANE ANTENNAE entirely eliminates all power noises, such as leaky transformers, generators, motor hums, Delco Plants, etc. Dr. Gehrig of Oakland, Cal., says it has improved his reception fully 60%. Power noises cause more trouble than all other forms of radio interference. Get rid of them NOW by ordering a KANE ANTENNAE. Get Facts Now About the Kane Antennae! We will send you working drawing with instructions for erecting this wonderful Antennae for a dollar bill (a check will do). If, after looking over the drawing, you decide you would rather have a factory-built Antennae, than build one yourself, we will take back the drawing and allow you full purchase price on an order for an Antennae. The Special Kane Antennae for Radiola Super-Het's..... \$ 6.50 The Regular Kane Antennae for all other sets that use a ground connection..... 13.00 Working drawing with instructions for erecting..... 1.00 (Stamps not accepted) Postpaid to any part of the United States or sent C. O. D. when 25% of price accompanies order. THE KANE ANTENNAE CO. Dept. 823-T, 3343 W. Monroe St. Chicago, Ill."

# Questions and Answers

## Oscillation Control for Walters Set

HMB, Toronto, Can.

We have had the pleasure of building the five tube receiver described by Mr. Walters in your issues of April 25, May 2 and May 9, and it is the best we have tackled yet out of a great many. We have sold two of them and customers would not trade for any other. We have an order for two, for the Toronto fire department, but before building them want to know if there is some way of preventing this set from going into oscillation so readily, so control will be not quite so delicate.

A.—You will note from study of the circuit that the two R.F. plate returns come together, after passing through their individual primaries, and before going to the plus 90 binding post. Between the point where they join, and the point where they connect with the audio returns and the plus 90 binding post, insert a C-R-L variable resistance of 200,000 ohms. This is made by Central Radio Laboratories of Milwaukee, Wis. With the R.F. tubes turned up bright you can bring the set up to maximum regeneration at any wave length.

## Grand Prix Audio Transformers

RTL, Buffalo, N. Y.

In the list of parts required for Grand Prix you call for two Precise transformers but do not state their ratio. I purchased two No. 480 audio transformers, the ratio of each being 5 to 1. Kindly advise if this set needs two 5 to 1 transformers or if one should be 2½ to 1. Also where should each be mounted in the set.

A.—The Precise No. 480 audio transformers were to be a 5 to 1, to be placed at right end under shelf and a 2½ to 1, to be placed between sockets 6 and 7. Credit us with an over-sight as we were so careful to get the circuit and wiring and placing of holes correct that it didn't occur that the placing of transformers might not be clear.

## Fireside Data

HRN, Washington, D. C.

Please inform me at once of the values of the bypass and fixed condensers as shown by number in your Fireside receiver.

A.—We must advise that you plainly have not read the series on this set as the placing of all condensers was given. However, as given in the diagram, they are as follows: C-5 is .001 mfd., C-6 is 0.5 mfd., C-7 is 0.5 mfd., C-8 is 0.5 mfd., C-9 is 0.5 mfd. and C-10 is 1.0 mfd.

## Traveler Panel Layout

GAR, Sandusky, Ohio.

In the doughnut coil set described by John G. Ryan there are two Cutler-Hammer rheostats, one of 15 ohms, the other 30 ohms. Can find no statement as to their position, that is, which goes at left and which at right.

In trying to put on the Dialog dials, I find the center dial interferes with the rheostats. What is the matter? The dials sent by Wainart are slightly over 4 inches in diameter. Are these the ones specified?

## CLASSIFIED ADVERTISEMENTS

### BOOKS

**KELLER'S RADIO CALL BOOK.** Official; authentic, completely revised every 2 months. All Broadcasting Stations of U. S. and Canada; wave lengths, etc.; log pages; valuable articles. Subscription \$1.00 year (6 issues). Single copies 25c (coin). KELLER PUBLISHING CO., (Dept. 6), ST. PAUL, MINN.

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## DIRECTIONS FOR REQUESTING INFORMATION

The Questions and Answers department offers service to Radio Digest subscribers without charge and, to those not subscribers, the same service with a charge of 50c for each letter requiring up to three answers or diagrams. We feel that this policy is necessary for the protection and best interests of our regular readers, as the volume of correspondence to this department has increased to such an extent that it is almost impossible to give our subscribers' letters adequate attention nor a complete answer. To those who have long been newsstand readers this may, at first, seem an injustice but a little thought on the matter will show that this is the only possible solution of what has been, to the technical department, a very perplexing and difficult problem. We ask that the following suggestions be read carefully before writing:

1—Search carefully the back issues which you have, as the point in question has probably been covered several times before.

2—The book, "Radio Receivers," given free with each yearly subscription (when received by Radio Digest direct with full remittance of \$5), contains the answers to the majority of the questions asked. If you have this book, go through it thoroughly and it is probable that you will find the solution of your problem.

3—Letters for this department should be kept separate from all correspondence to other departments and on other subjects.

4—Questions should be written on one side of paper only and each sheet should bear the sender's name and address. All letters should be accompanied by a self-addressed stamped envelope of standard business size.

5—Unsigned (or anonymous) letters cannot be answered, either in

Radio Digest or by letter, nor can those without address.

6—No comparative statements on advertised apparatus will be given except as to efficiency in some particular circuit.

7—Drawing diagrams on a separate sheet of paper will save time and enable us to give all questions more attention.

8—Write each question as a separate paragraph.

9—Keep a copy of your letter and diagrams, to which we can refer without re-drawing.

10—The names and addresses of the writers of letters published will not be released except with the writer's permission.

11—We want to be of assistance to you in your difficulties, but are sometimes limited because of the length and time required for the proper consideration of the questions asked. Therefore, please make your letters brief.

A.—We are at a loss to understand how the dials on the variable condensers in this receiver could in any manner interfere with the operation of the rheostat knobs. We have checked figure 3, the panel layout drawing, against the set itself and can find nothing wrong.

## ADVANCE PROGRAMS

(Continued from page 21)

**Pacific Time Stations**  
KFI, Los Angeles, Calif. (467), 5:30-6 p. m., Examiner matinee; 6, nightly doings; 6:15, KFI's

Seeing California; 6:30, vest pocket program; 6:45, Radiatorial period; 7-8, Examiner hour; 8-9, Aeolian residence pipe organ, Dan McFarland, organist; 9-9:30, Eleanor Holden, soprano; Bud Gore and uke; 9:30-10, Mutual Motors mirth contest; 10-11, program arranged by Maude Fenlon Bollman.

KFOA, Seattle, Wash. (454.3), 12:30-1:30 p. m., program; 4-5:15, Wm. F. Hoffman's orchestra; today's

recipe; 6-6:45, Hoffman concert orchestra; 6:45-8:15, program; 8:30-10, Times studio program  
KFON, Long Beach, Calif. (232.4), 4:30-5 p. m., amusement bulletin; 6-6:30, organ recital, Brayton's theater; 6:30-7, Captain's inn orchestra from Seal Beach; 8-9, Press-Telegram program; 10-12, Long Beach Elks No. 888 midnight frolic.  
KFWB, Hollywood, Calif. (252), 7-7:10 p. m., announcements; 7:10, safety first talk, Officer E. C. Brown; 7:20, Jack Boaz, fishing scout; 7:30, Eye-ologue, Dr. Herbert S. Marshall; 7:40, microphone brevities; 8-9, program John Wright, the right tailor; Raquel Nieto, coloratura soprano; Ohio de Verdi trio; California Blue Boys; 9-10, Jack Smith's dance orchestra; 10-11, Warner Brothers frolic, direction Charlie Wellman.  
KGO, Oakland, Calif. (361.2), 3-4 p. m., short program, Pacific Coast Music review; Mrs. George Kruger, pianist; Irene Ashworth, Lillian Acheson; Sara Linden, violinist; book review; 6-6:55, dinner concert, Sherman, Clay & company.  
KGW, Portland, Ore. (481.5), 10:30 a. m., shopping guide; 12:30-1:30 p. m., Rose city trio; 8-7, dinner concert; 8-9, concert; 9-10:30, concert, Sherman, Clay and company duo; 10:30-12, Hoot Owls.  
KHJ, Los Angeles, Calif. (405.2), 6-6:30 p. m., Leighton's Arcade cafeteria orchestra; Jack Cronshaw, leader; 6:30-7:30, history story, Prof. Hertzog; Radio kiddies hour with Richard Headrick and Viola Von, screen juveniles; 7:30, "Romance of Santa Fe trail," Gladys De Witt; 8-10, program, Western Auto Supply company; 10-11, Don Clark's Billmore hotel dance orchestra.  
KMTR, Hollywood, Calif. (238), 5-6 p. m., home hour with Mammy Simmons with pupils of Paul Gerson studio; 7, "Color Photography," Chas. W. Beam; 7:30, "Wonders of Nature," Prof. Alfred Cookman; 8-10, The Turner orchestra, direction Loren Powell; 10-11, Starr Piano company studio.  
KNX, Hollywood, Calif. (336.9), 5:30-6:15 p. m., Wuritzer pipe organ studio; Town Tattler; 6:15, travel talk, W. F. Adler; 6:30-7, Atwater Kent concert orchestra; 7-7:30, popular program; 7:30-8, program, Eastern Outfitting company; 8-9, West Coast theater; 9-10, Order of Optimists, Donuts; 10-11, program, John A. Vaughn corporation; 11-12, Ray West's Coconut Grove dance orchestra Ambassador hotel.  
KOAC, Corvallis, Ore. (280.2), 7:20 p. m., musical selections; 7:30, "Significance of the Community Movement in Oregon," Dr. Hector Macpherson; 7:45, "Don'ts for the Auto Driver," Prof. W. J. Gilmore; 7:55, "Practical Books on Building and Remodeling a House," Bertha E. Hesse; 8:05-9, musical program.  
KTAB, Oakland, Calif. (240), 9-9:30 a. m., prayer service; Rev. E. L. Spaulding; 8-10, program, Bremer.  
KWSC, Pullman, Wash. (348.6), 7:30-9 p. m., Cougar Co-Ed orchestra; Ruth Faulkner, pianist; Gladys Wiren, violinist; Fay Norris, banjoist; Dorothy Sturgis, saxophonist; drums, Edna Daw; special piano numbers, F. C. Butterfield; "Physics of Everyday Life, No. 2," Dr. R. O. Hutchinson; "General Accounting, No. 2," H. J. Behn; "Preparing for 1926 Crops," Leonard Hegnauer.

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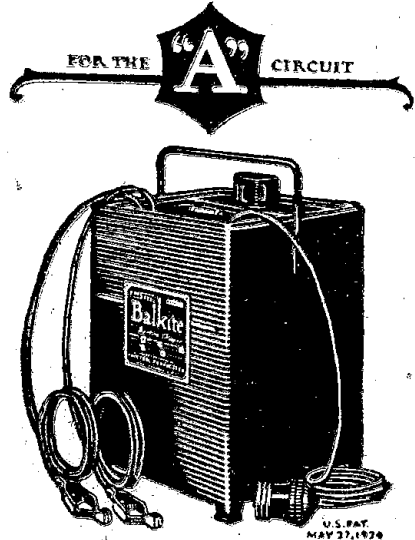
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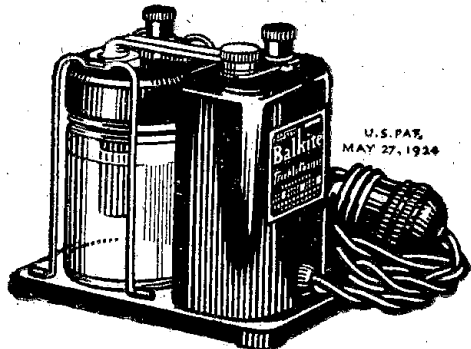
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## Balkite Trickle Charger

May be connected to any 6 volt radio "A" battery of 30 ampere hour capacity or more and left permanently on charge. Used in this manner it converts your "A" battery into a permanent "A" power unit that operates from the light socket and automatically furnishes full current to the "A" circuit at all times.

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When used as a trickle charger, as an added convenience, some owners add a switch which cuts out the charger during operation. Switches of this type also turn on Balkite "B" when the set is turned on, thus providing an entirely automatic current supply for both circuits.

Size 5 1/2 in. long, 2 1/4 in. wide, 5 in. high. May be put in the usual dry cell compartment. Charging rate .4 to .5 amperes. Current consumption 1/10¢ per hour. Operates from 110-120 AC 60 cycle current. Special model for 50 cycles.

Price \$10  
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Balkite Radio Power Units simplify and improve radio reception. They reduce the amount of attention you must give your set. With their use your current supply is always exactly what is required for each circuit.

The popular Balkite Battery Charger is entirely noiseless. It can be used while the set is in operation.

The Balkite Trickle Charger converts your "A" battery into a permanent "A" power unit that supplies full "A" current at all times from the light socket.

Balkite "B" eliminates "B" batteries entirely and supplies plate current from the light socket. Balkite "B" for sets of 6 tubes or less. Balkite "B" II for sets of 6 tubes or more.

An ideal installation is a Trickle Charger and "A" battery, and Balkite "B." This enables you to operate your set entirely from the light socket.

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# FANSTEEL Balkite Radio Power Units



## Balkite "B"

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A new model, designed to serve any set requiring not more than 20 milliamperes at 90 volts—practically all sets of 5 tubes or less, and most 6 tube sets. Size 8 1/2 in. long, 8 in. high, 3 1/4 in. wide. Occupies about same space as 45 volt dry "B" battery. Operates from 110-120 AC 60 cycle current. Special model for 50 cycles.

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