

How to Confirm Foreign Reception

# Radio Digest

EVERY  
WEEK

PROGRAMS  
**Illustrated**

TEN  
CENTS

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

Vol. XVI

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JANUARY 30, 1926

No. 4



*"Ghost Viol" Brings Fame; Strange Sounds Come from KFDM; Baltimore Waited Long; College Sent to Farmers; Women's Programs; Raytheon B Eliminator; Radio ABC's*

# PLAN BRINGS FARM STATISTICS TO LIFE

## AGRICULTURISTS TO BENEFIT BY RADIO SERVICE

### Government Will Shortly Conceive "Uncle Bert" and "Fifty Farm Flashes" for Broadcasters' Use

WASHINGTON.—The vast fund of popular and scientific agricultural information that originates on the farms and in the laboratories of the United States department of agriculture will soon be tapped in a new place.

This is the announcement made by Sam Pickard, chief of the newly created Radio service in the department. Steps will be taken immediately, he said, to furnish a variety of agricultural program material to commercial broadcasting stations serving farmer audiences.

Much of the material furnished by the Radio service will be prepared for presentation in a radically different manner than the present almost universal practice of reading manuscripts. Broadcasting stations cooperating will be asked to provide personalities who have unmistakable qualifications to voice the information and material which in most cases will be presented in popular style and in the form of dialogue or questions and answers.

### "Uncle Bert" Is New Feature

"Uncle Bert," the garden expert, one of Mr. Pickard's phantom characters, will entertain and instruct the boys and girls of the "Radio Order of Junior Gardeners" with nature-study information. Some of the juniors themselves will be heard over the microphone as they ask questions of Uncle Bert.

"Fifty Farm Flashes" will soon be offered as a regular feature on the air. The "flashes" will consist of interesting current information sought by farmers through several thousand letters received each week by the department.

Other special feature programs are under consideration, among which are the "Housekeeper's Half Hour" and the "National Farm School." In the latter the farm will be considered as the student's laboratory. Timely lecture courses which dovetail with the daily farm work will be developed, and laboratory assignments will be made which necessitate putting into practice the subject matter taught. These will be supplemented with a file of bulletins dealing with the subject matter broadcast.

# FORT WORTH ADOPTS DALLAS SILENT NIGHT

## New Arrangement Will Aid Texas Fans to Hunt Distance

FORT WORTH, Texas.—In order that the North Texas listeners could enjoy one silent night each week, WBAP, the Star-Telegram and Record-Telegram station here, and WFAA, the Dallas News and Dallas Journal station, have adopted a schedule whereby neither of these broadcasters are on the air after 6:30 p. m., Central time, Wednesday nights. Previous to this arrangement, WBAP was silent on Saturday night and Wednesday was WFAA's silent period. The Star-Telegram and Record-Telegram station is now operating Saturday night on its regular schedule and Sunday from 9:30 to 11 p. m.

Under the new arrangement, the Texas hotel orchestra, which was formerly heard each Wednesday night over WBAP from 7:30 to 11 p. m. Central time, is now on the air at the same time Sunday night, and the "Sunflower Girl," the headliner of the station, who used to thrill the Radio audience on Wednesday evenings between 11 and 12 o'clock, now entertains Saturday night from 9:30 to 11 o'clock. Under the new schedule, the Truth society meets at 10 o'clock on Saturday, Sunday and Monday evenings.

# Gets Clicquot Club Sleigh Bells, Then Looks for Snow

NEW YORK.—The realistic sleigh bells which have announced the arrival of the "Clicquot Club Eskimos" at WEAf each week recently sent a New Jersey listener bounding out of the house to witness the snowfall which had so suddenly come. Sleigh bells to the contrary notwithstanding, the street was as clear as on a July evening and the mystery was not solved until the close of the "Eskimos" program, when the sleigh bells were heard again.

### Give Lighthouses Receivers

PARIS.—As the result of an article in the Paris daily "Matin," a sum of money has been raised by public subscription for presenting lonely lighthouses along the wild coast of Brittany with Radio receiving sets.

# CLAIMS RADIO WILL USE POWER OF SUN



Dr. Henry Marcuse, professor of astronomy and applied forces at the University of Berlin, predicts that the day is coming when airplanes will carry passengers any distance by means of power received by Radio from great sun machines. Dr. Marcuse is now in this country after a trip through Japan.

# MISS EDNA HOPPER IS OUR COVER GIRL

ON the cover of Radio Digest this week is Miss Edna Hopper, the original "Matinee Girl" whose voice was heard over Radio Station, WOR, New York.

The picture tells the story. Miss Hopper is one of those kind of girls that men always wish they knew better. After they have seen her picture they make a mental date with her—to see her on the stage from some place near the "bald-headed" row. It is the same way if they hear her through the microphone.

"Now we want a girl who is a regular man's girl," said the picture editor, when it came to selecting a girl for a winning cover for this issue. "We want a girl with a flash in her eye and smile on her lips."

He pounced on this picture of Edna Hopper the moment he saw it. Was he satisfied? He was.

# KYW's Hawaiian Swede Is Back with New Repertoire

CHICAGO.—Cy Berg, the "Hawaiian Swede" and president of the I. O. O. S. Y. S. L. I. is back at KYW, to exploit a lot of new things to the Radio fans, who tune in the Congress carnivals at midnight each Saturday.

For those who are not acquainted with the long string of symbols above mentioned, it all means "International Order of Sky Yumpers, Snuse Chewers and Lutefish Inhalers."

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# Looking Ahead

When he told the Londoners it wasn't "Gonna Rain No Mo'," Wendell Hall, American Radio artist and composer of the song with that theme, struck fire. Some wrote him it was the most terrible crime ever committed against the English language, but the most of them like it. Mr. Hall tells about it in the next issue of the Radio Digest.

Wilda Wilson Church, dean of the Radio play directors at KGO, San Francisco, tells interesting incidents and some of the problems peculiar to Radio play production in the next issue of Radio Digest. She had always wanted to be an actress but did not find her real forte until she took hold of the art of making audible but invisible players entertaining.

"I come from a little town called Newport, N. H., where the sun shines on both sides of the street," says Billy B. Van to Radio audiences throughout the country, to whom he is known as the "Sunshine Man." He relates some of his humorous and scintillating philosophy in the next Radio Digest.

Flowers are blooming and birds are singing; all is summertime at WGHB, Clearwater, Florida. This new station is helping to voice the praises of the rediscovered "Flowerland," where is located the oldest city in the United States. All about WGHB in the next issue of the Radio Digest.

The Fundamental Principles of the Detector and how it functions will be described by Milo Gurney in next week's issue of the Radio Digest.

The Erla Circloid Five Will Be the Receiver Reviewed in next week's operating and trouble shooting article and will provide many general hints that will help the average listener in.

George Walters, Who Opens a New Series on the construction of B current power supplies in this issue, will next week describe the chemical rectifier type.

# Newsstands Don't Always Have One Left

WHEN YOU WANT

# Radio Digest

YOU WANT IT!

BE SURE OF YOUR WEEKLY COPY BY SUBSCRIBING NOW

# SEND IN THE BLANK TODAY

Publisher Radio Digest,  
510 N. Dearborn St.,  
Chicago, Illinois.

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

Name .....

Address .....

City..... State.....

# NEWS BRIEFS FROM THE BROADCASTERS

## MERRY GANG OF PAUL ASH INVADES STUDIO OF WLS

### WBAL Broadcasts New Baltimore Organ—Learn How to Write Short Story at KGO

Paul Ash and his merry, music-mad gang invaded the studio of WLS, Chicago, recently, took the microphone out of the hands of the announcer, put all the staff artists out of the station and between 11 and 12 midnight played havoc with the ether. They were so enthusiastically received that the musical director, despite their rough tactics, has invited them to come again.

The mammoth organ recently installed in the concert hall of the Peabody Conservatory of Music at Baltimore by the munificent bequest of the late James Wilson Leakin, may now be enjoyed by Radio fans through WBAL. Every Monday and Thursday between 7:30 and 8 p. m. Eastern time well-known organists of the city will play this fine instrument.

How to write a short story will be explained briefly over KGO, Oakland, Monday night, February 1, at 9:30 p. m. Pacific time, by Rebecca N. Porter, extension division, University of California expert. She will be heard on the regular educational program of the station. Four other speakers will also appear before the microphone.

The old-fashioned flute came into prominence recently when James A. Biggs broadcast a program of flute solos from station WJZ. Mr. Biggs is well known in New York city through his afternoon concerts last year in Old Trinity church.

On Thursday evening, February 4, at 11 p. m. Eastern time, the closing hour of dance music which nightly features the program of WEAf will be furnished by Vincent Lopez and his orchestra direct from the Casa Lopez, New York city. The Radio audience of WEAf was treated to a rare surprise a few weeks ago when Lopez and his orchestra rendered a special arrangement of Tschalkowsky's "1812 Overture."

The Syracuse university provides the 7:45 p. m. Eastern time program at WGY, Schenectady, every Thursday evening. WGY and WFBL, Syracuse, have a special hook-up for this purpose.

# Sport Broadcasts

**Basketball**  
Saturday, January 30  
KFMQ (299.8m-1000kc) University of Kansas-Centenary college, 7:30 p. m., Central time.

**Monday, February 1**  
WOI (270m-1110kc) Ames, Iowa; Nebraska-Ames, 7:15 p. m., Central time.

**Friday, February 5**  
KFMQ (299.8m-1000kc) University of Arkansas-University of Texas, 7:30 p. m., Central time.

**Boxing**  
Friday, February 5  
WOI (270m-1110kc) Notre Dame-Ames, 7:30 p. m., Central time.

**Wrestling**  
Thursday, February 4  
WOI (270m-1110kc) Oklahoma-Ames, 7:15 p. m., Central time.

**Hockey**  
Tuesday, February 2  
WBZ (333.1m-900kc) Boston Bruins-St. Patricks, 8 p. m., Eastern time.

# Station Changes

KFQA, St. Louis, formerly operating on 50 watts, will now cooperate with the "Voice of St. Louis" and broadcast through KMOX, although still using its own call. KMOX has shifted wave lengths so that both KFQA and KMOX will now use 250 meters.

The Walla Walla broadcaster has increased from 50 to 500 watts. While still retaining the old wave of 256 meters, it will use the new call KOWW.

KFNF, Shenandoah, will use a new wave of 263 meters. The old wave of this station was 266.

A California station has moved, but not to Florida, however. KFNC, Upland, is now in San Bernardino, Calif.

# CONFIRMATION FREE TO ALL FANS

## STILL TIME TO WIN OVERSEAS CONTEST

### GOLD AWARDS AND FAME FOR BEST RECEPTION

Radio Digest to Give \$100.00 to Fans Most Successful in Getting Foreign Stations

CHICAGO.—From all evidence, Radio fans throughout the United States and Canada, are vying for the \$100 in Gold Awards and the national fame that will be given by the Radio Digest to those persons who are most successful in receiving European and South American programs during the International tests between January 24 to 30. Hundred of letters are being received by this magazine asking for further information concerning the awards.

#### No strings Attached

There are no strings attached to rules governing the Gold Award contest or the gaining of country-wide prominence through the publishing of the names and pictures of the listeners getting the best daily results. But for those who have not been informed, or those who do not understand the stipulations of the Radio Digest International test week contests, we are again giving the rules under which they will be conducted.

In the Gold Award contest the prizes are six in number: first, \$50; second, \$25; third, \$10; fourth, fifth and sixth, each, \$5. In the event of ties, a prize identical in every respect with that tied for will be awarded each tying contestant. The contest is open to every listener in the United States and Canada.

The editor of the Radio Digest, Hon. Frank W. Elliott, president of the National Association of Broadcasters, and E. A. Beane, federal supervisor of Radio, will act as judges of the reports and select the winner.

#### Rules of Reception Contest

1. The contest opened Sunday, January 24, 1926 and will close at midnight of Thursday, February 4. All reports must be received by the Chicago offices of Radio Digest by that time to be considered.

2. The reports will be judged upon four points: First, the fullest and most accurate description of programs received; second, the highest number of stations received; third, the greatest distance covered; fourth, the best and NEATEST report.

3. The report must include the name of the manufacturer and the style or type number of manufactured sets used by listeners. If a homemade or "kit" set is employed, the names of the manufacturers of the principal parts or the kit must be included. If headphones or loud speaker were used, the name of the maker must be given.

4. The finale note to remember is that the reception contest is only for the first five nights of the tests, from Sunday to Thursday inclusive, and reception of European and South American stations ONLY are to be reported.

#### Not Too Late to Try

As this issue of the Radio Digest will be on the newsstands and in the homes of the subscribers before the tests are completed, it is not too late for the ether fans to participate in the contests. A large staff of Radio Digest observers scattered over the country with most sensitive receivers are reviewing the tests, but because of their professional ratings will not participate in the contests. Their reports will make complete information available to fans regardless of locality.

To those listeners who get the best reception reports and notify the Radio Digest, will go national recognition. This magazine will release information daily to the press at large on the results of the overseas trials. Besides the newspaper publicity the successful fans will be given, the victors in the contests will be pictured in future issues of the Radio Digest.

#### What to Telegraph

Fans living in the Eastern sections of the continent are directed to write or telegraph PREPAID to the New York city offices of Radio Digest, located at 247 Park avenue. Those in the Middle west and western states or western provinces of Canada, should write or telegraph PREPAID to the Chicago offices at 510 North Dearborn street. Information will be telegraphed COLLECT, unless the inquiring listener makes it plain that the information is to come by mail.

In order that the name of a listener be given to the press of the country as a successful receiver, the telegram must contain a short sketch of the program received, the call letters of the station heard, the local time received, the approximate

## TO WINNERS OF OVERSEAS TESTS



No, no, not the girl, F'evens sake. If it was, crystal sets would be reporting Koenig-wusterhausen and Radio-Paris. But Miss Dorothy Knapp, famous American beauty, now featured in Earl Carroll's Vanities, is holding the two silver trophies to be awarded in the Freed-Eisemann Radio corporation international reception contests.

## EXPERTS WILL AID CHECK OF FOREIGN CALL

Furnish Blank for Use

Listening Outposts and Correspondents Preparing Accurate Programs to Verify Reports

What foreign stations have you heard? What ones will you hear before the International Radio Week tests are concluded? Are you sure you heard foreign stations? How do you know?

In order to assist in confirming foreign station receptions, the Radio Digest is presenting this issue a confirmation blank (at bottom of this page) for the use of listeners in getting actual certified endorsement of their achievements.

The blank need not be clipped from Radio Digest. All that is necessary is to present the same information as requested on the blank. However, arrangement of the information similar to the blank will assist in checking the receptions.

#### Trained Listeners Check Europe

As this issue goes to press, a score of trained listeners, every one of them an expert, is checking the programs broadcast by the European and South American stations. The reports of these expert listeners, not the pre-arranged programs, which so far have proven inaccurate in many points, will be the basis for making confirmations. Radio Digest's foreign staff is also busying itself in collecting data on the actual programs broadcast. The data of the foreign correspondents, together with the reports of the special listening outposts, will make an absolutely correct set of programs, by which every suspected reception, submitted by fans, can be checked.

The confirmation service of Radio Digest is separate and distinct from the Gold Award contest, details of which are given in column one on this page.

#### How Fans Can Verify

Rough checking of programs can be made on the basis of wave length to which dials were set, together with the table presented last week showing the wave lengths of the principal foreign stations. Not all of these are participating. Definitely, with the reports of stations so far received and the announcement of the Radio week committee to judge from, the following stations are on the air:

Wave Length	Station and Power
1600	5XX, Daventry, Eng., 25,000 watts
496	2BD, Aberdeen, Scot., 1,500 watts
485	Munich, Ger., 4,000 watts
461	OTW, "Radio-Wein," Vienna, Aus., 5,000 watts
446	Stuttgart, Ger., 4,000 watts
410	MS, Munster, Ger., 1,500 watts
392½	HA, Hamburg, Ger., 4,000 watts
386	6BM, Bournemouth, Eng., 1,500 watts
380	OAX, Lima, Peru, 1,500 watts
375	LOX, Buenos Aires, Arg., 1,500 watts
373	EAJ7, Madrid, Spain, 6,000 watts
368	Prague, Czecho-Sla., 5,000 watts
363½	2LO, London, Eng., 3,000 watts
352½	5WA, Cardiff, Wales, 1,500 watts
300	LOW, Buenos Aires, Arg., 1,500 watts
263	SBR, Brussels, Belg., 1,500 watts

Listeners wishing further to identify stations where a foreign language is spoken should refer to last week's issue of the Radio Digest, pages 4 and 5. Here was told how various foreign stations announce themselves.

## Minnesota Legionnaires Put On Spectacular Radio Revue

MINNEAPOLIS, Minn.—"Back to Paris," a spectacular radio revue, was presented by the Minnesota department of the American Legion and Legion Auxiliary from WCCO, the Gold Medal station, January 22, for which both the St. Paul and Minneapolis studios were used.

The revue was the most pretentious Legion program ever broadcast and the number of persons required for the cast necessitated the facilities of both studios. The spectacle depicted the trip of the Minnesota Legionnaires and their families to Paris for the Legion convention which will be held in 1927.

meter wave length, and the address of the foreign test nights (Sunday to Thursday, listener inclusive) and you may bring national credit to your community. Send telegrams any one of the five

**INTERNATIONAL RECEPTION CONFIRMATION BLANK**

The following blank may be used by readers of Radio Digest to report Foreign station reception. Confirmation will be made by Radio Digest when these blanks are accompanied by self-addressed and stamped return envelope.

Exact Time Heard	Brief Description of What Was Heard. Confine to Few Words	Call Letters If Heard	Meters or Kilocycles

If insufficient space is provided in above blank for your log (or you do not wish to mutilate your copy of Radio Digest), give this same information, in a similar form, on any paper available.

## DeRubertis Began Career with "Ghost Viol"

**REAL** Mystery Crept in Through Little Door Beneath Stage of Old San Carlos Theater, Naples, and Haunted Orchestra Pit. Phantom Fiddle Wailed Accompaniment to Bass Viol Until Leader Investigated and Removed the Mask, All of Which Led to the Successful Career of N. DeRubertis, Leader of Little Symphony Orchestra, Kansas City, Heard Over WDAF.

By H. P. BROWN

**T**HERE was a mystery in the orchestra pit of the San Carlos theater at Naples, and everybody knows that the proper place for mysteries in a theater is on the stage above the pit. The tip of the left ear of the august director trembled as it positively detected the vibration of a bass viol when he saw with his own eyes that the professor in charge of the only bass viol in the pit had removed his bow and was silently sawing the air ready for the next slash at the strings.

But the director was not the only one who had heard the weird tone coming from the ghost fiddle. Other members of the orchestra spoke about it and so the director knew that his ears were not playing tricks. One day during a rehearsal when the presence of the unseen viol was particularly noticeable the director suddenly halted the music and began a determined investigation.

A small boy was discovered crouching in the tiny doorway that led under the stage.

Here was the motive force but where was the instrument, for it must have taken a big one—too big to conceal—to produce the note of the big bass viol? When the boy found he was neither to be scolded nor punished he confessed that he was the player of the ghost fiddle and his fiddle was the door panel against which he had rubbed his rosined fingers. The friction produced sounds which the boy had practiced until he was able to faithfully mimic the notes of the bass viol behind which he had hidden. It seemed incredible but the boy proved his statement by demonstrating how he had made the ghost fiddle groan.

The director was overwhelmed with astonishment and when he learned that the boy had, through the assistance of a brother who played in the orchestra, spent his hours listening and watching the musicians he declared that such pluck and ambition should be fittingly rewarded.

Thus it happened that the little, dark door



When the Kansas City Little Symphony orchestra was called upon to broadcast from Radio Station WDAF it became a matter of careful study and testing on the part of the conductor, N. De Rubertis (left) and the concert master, Luigi Bussolari, to select music best suited for the microphone. The resultant concert on January 8 proved that they had chosen wisely. Mr. De Rubertis is shown in single portrait above. Other concerts from this orchestra will be heard for months to come from WDAF.

beneath the old San Carlos theater in Naples opened up to a golden path for the little black-eyed Neapolitan who later became famous as the conductor of the Kansas City Little Symphony orchestra—Mr. N. De Rubertis. The boy was taken under the personal tutelage of the director and proved that he was a "natural born musician." When it came time for him to try his wings and leave the home nest he sailed for America.

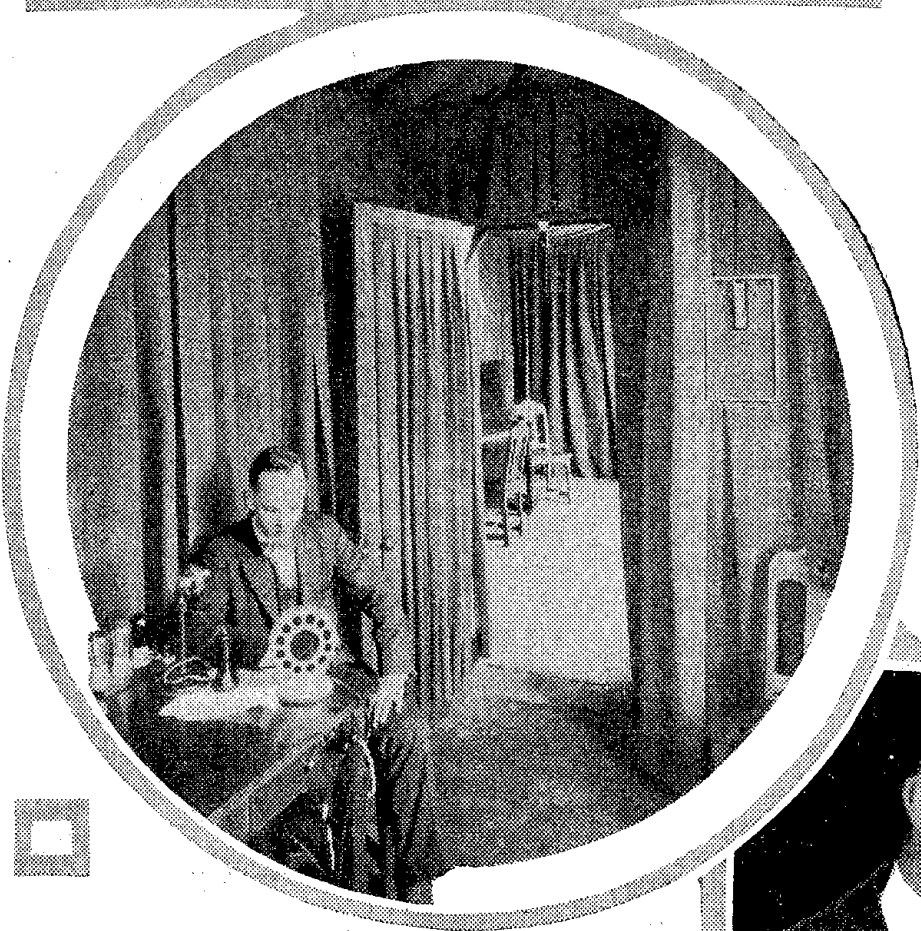
\* \*

**A**ND, strangely, the haunting melodies from the deep-throated bass viol charmed him most of all the instruments in the orchestra. He soon was established in his favorite place behind the big viol in the Manhattan Opera orchestra. From there he found an opportunity to open a studio in Montreal where his fame continued to grow. Eight years ago there was a new impulse toward musical culture in Kansas City and De Rubertis was called to that progressive city to aid in the movement.

About him there assembled a small group of musicians who specialized in chamber music. They played for the love of playing, meeting at various times in the respective homes of the members. A little social hour and then they would unbox their instruments and the young De Rubertis would marshal them through the sonatas, operatic selections, classics of the masters and sometimes a patriotic selection. The better families considered it a privilege to be invited to these musical soirees. The group added one artist after

(Continued on page 26)

# WKAR Broadcasts Farm Science to Nation



**MICHIGAN State College**  
*Presents Regular Courses for Benefit of Farmers in Every State. Credits Allowed for Listeners. Sports and Dance Programs Are Also Furnished to Michigan Fans.*

Lecture room (left) where farm study courses are broadcast. James B. Hasselman (below) general announcer and supervisor of Station WKAR. Sometimes Miss Margaret Foote (in circle) furnishes song as interlude between lectures. James Gamble (right) is the program director and prevents the professors from monopolizing the mike at the Michigan "Aggie" Radio station.

Michigan but in neighboring states. It saw the need of extending its sphere of the agricultural college. And Radio Station WKAR went on the air.

\* \* \*



**I**T TOOK the agricultural science to Mr. Nichols' home and the homes of the countless other farmers who were plunged head over heels in the business of making a living out of their lands in the face of unexpected difficulties. WKAR became the "Farm School of the Air." Lecture courses were arranged for broadcasting. Actual, practical problems that had been analyzed in the college laboratories by the experts were presented and answered according to established rules. Stock breeding, feeding and economic marketing were—and continue to be—subjects of lectures similar to the lectures given to the young bucks taking the courses on the campus.



**M**ORTIMER C. NICHOLS is one of the hardest working men in the state of Michigan. From the time of the first spring plowing until the last of the season's crops are garnered he is on the jump. He has three farms in the vicinity of Hastings in the middle western section of the state. He is up before daylight every day and off in his battered old flivver from the town home to the farm that needs him most for the day.

Mr. Nichols' course in engineering at the state university in Ann Arbor did not make a farmer of him. The farm idea came after he had given the engineering business a thorough try-out with the Illinois Central in Chicago. The monotony of office hours, confinement indoors, a stated salary income, regardless of effort, irked him. He hungered for acres. So he bought a farm near the old homestead.

It was hard sledding at first. Somehow the stock did not do well and the weather failed him with crops and then he found that agriculture nowadays is a science, requiring a scientific education as a specialized line.

He was married, had children and he had to keep going. He didn't have time to attend the very excellent agricultural college established by the state at the capital in Lansing—"East Lansing," as it has been more recently called.

So the state saw the predicament of Mr. Nichols. It may not have seen Mr. Nichols, personally, but saw his case as it existed in many thousands of other instances not only in

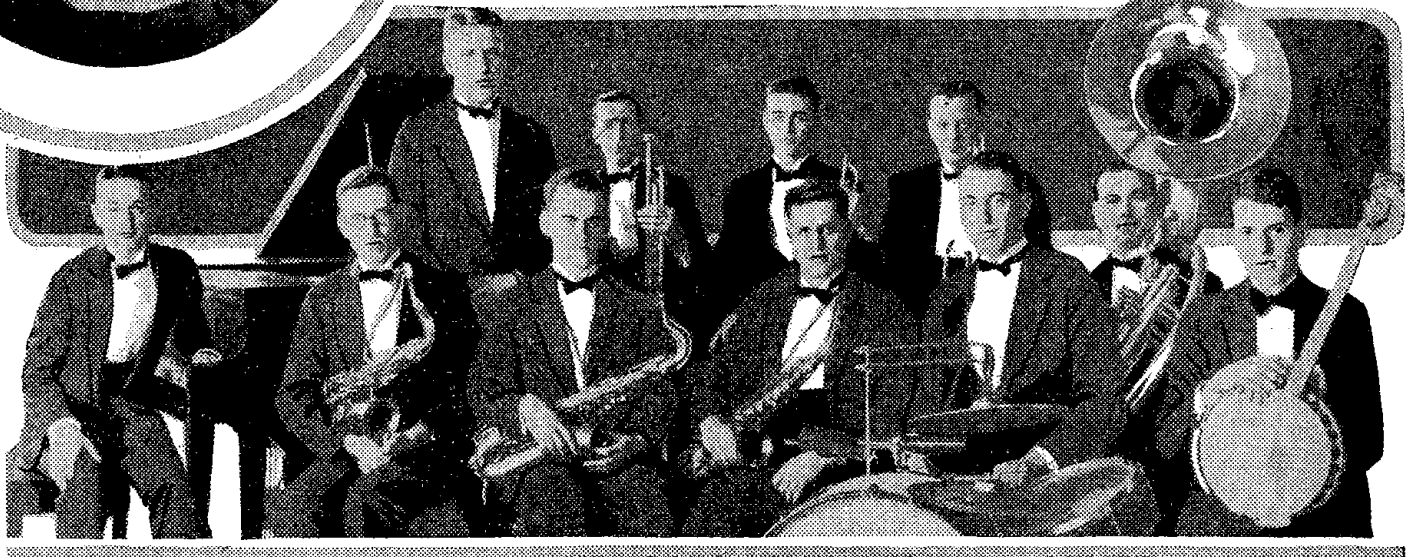


Soil conditions for most appropriate planting were described.

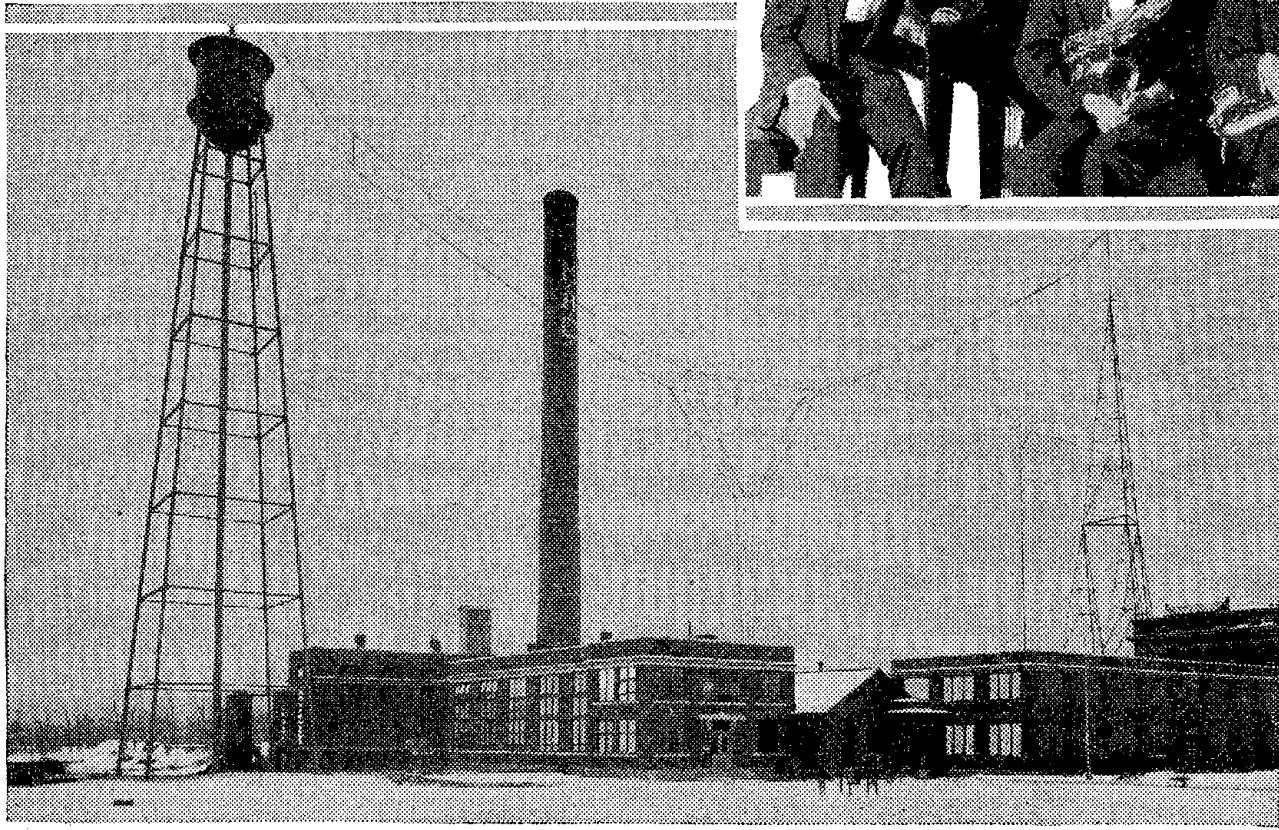
Farmers throughout the region are now gaining their college educations at their own firesides. Questions have been received from practically every state in the union from farmers with their own individual problems.

One individual sends a letter with a pertinent question on a prevalent disease affecting cows, sheep or pigs. The whole countryside hears the answer by one of the

A wintertime glimpse at the towers of WKAR on the campus of the Michigan State College at East Lansing.



Seely's Pastime Players (above) are the pep manufacturers for this 1,000-watt Michigan station.



most skilled veterinarians in the land. Another wants to know about the kinds of poultry to raise most profitably. The professor of the poultry department gives his expert advice to the farmer who is tuning in near the cross-roads five miles from the nearest town. Study credits are allowed listeners who follow lectures with formal correspondence.

But WKAR also has its lighter programs. In the broadcasting of sport events it has won a warm place in the hearts of followers of college athletics. James B. "Jimmie" Hasselman, chairman of the Radio advisory board of WKAR, is one of the first announcers in the country ever to broadcast a running account of a basketball game direct from the gymnasium in which it was played.

At the start of the game Hasselman climbs into a sound-proof booth in the balcony of the college gymnasium. There, with his eyes on the playing floor, he tells his unseen audience just how each play was made, who made it and how (Continued on page 12)

# Baltimore Waited Long to Join Air Chorus

Max Rosenstein, celebrated WBAL violinist (below).



Below are members of the WBAL directing staff, left to right: John Wilbourn, assistant studio manager, tenor; George Bolek, program supervisor; Stanley W. Barnett, studio manager and announcer; Gustav Klemm, conductor of WBAL concert orchestra; Frederick R. Huber, broadcasting director, and James Wilkenson, announcer.



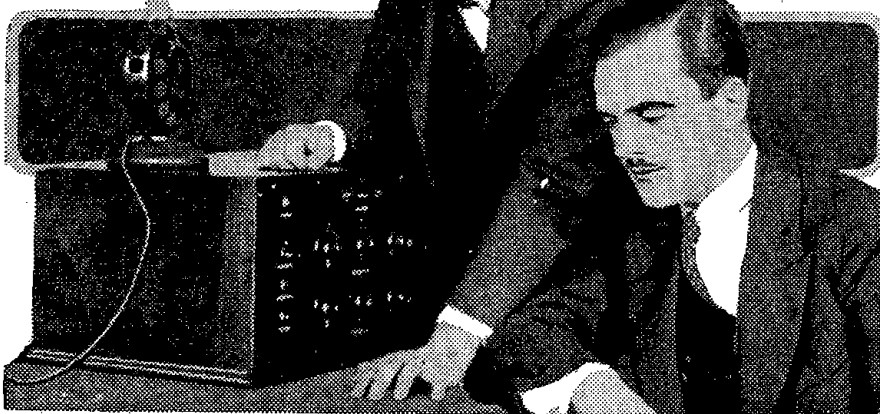
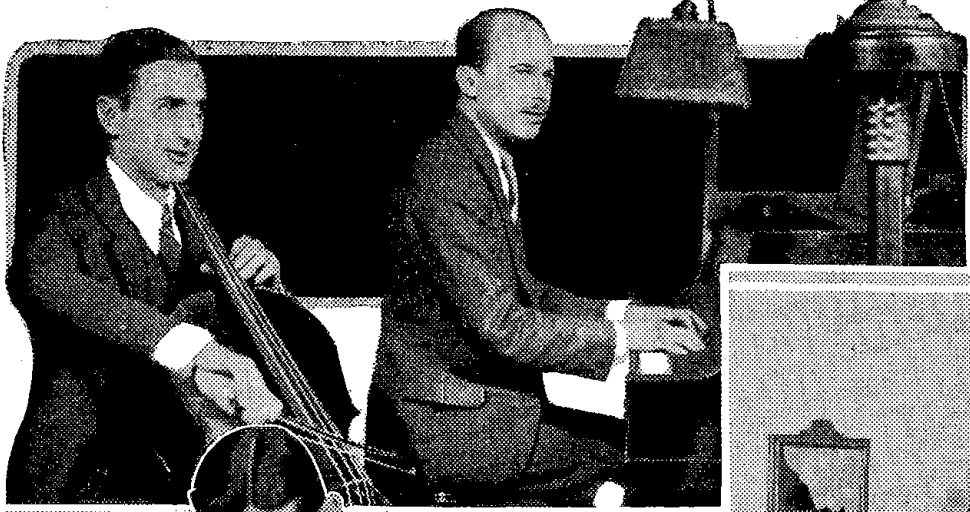
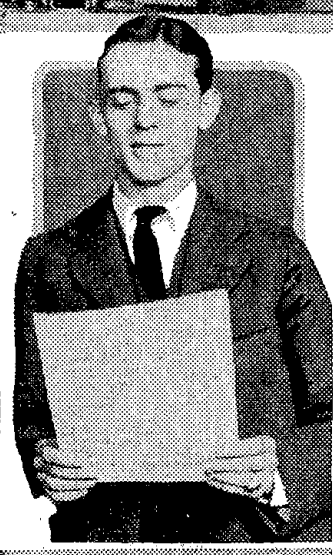
F. R. Huber (right), WBAL station director. Gustav Klemm (at piano, circle) and John Wilbourn, tenor. James Wilkenson, (left), baritone. Lower left, Jules Sims, cellist, and Mr. Klemm. All are WBAL artists.

## MAYOR Jackson Thought the Maryland Port Never Would Get a Real Big Broadcasting Station When Along Came WBAL with 5,000 Watts

FOR SOME unknown reason when young Radio went leaping about the country establishing new broadcasting stations here, hither and yon it seemed to hop right over Baltimore, Maryland. There was a great deal of talk about it among the responsible people of the town. Some of the city fathers approached Mayor Jackson with the intimation that it might be a good idea to establish a municipal station if none of the private concerns seemed inclined to take it up.

Mayor Jackson spent several sleepless nights pondering over what official attitude he should take in the matter. The people were buying receiving sets by the carload. All the other big cities along the Atlantic seaboard had broadcasting stations. Back in the "hinterland" they were introducing themselves in a glowing way that certainly must be stirring up a mighty curiosity among listeners to come, see the sights, hear the music and spend their money in the shops.

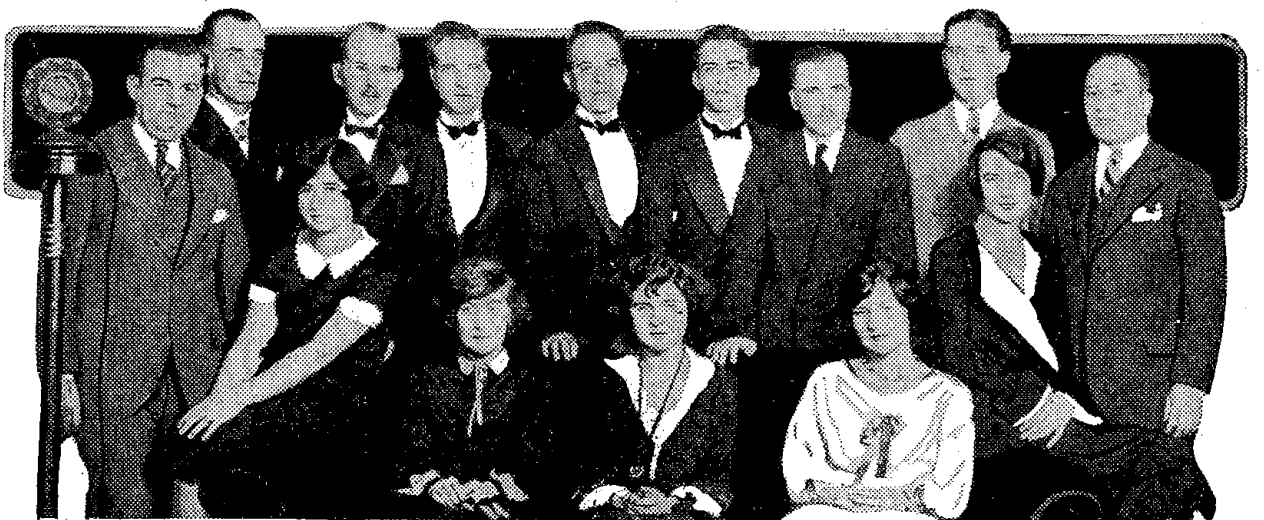
But, what about Baltimore? Only a dark, unremitting silence answered the ether query of the dials all the way back to California's golden shores. However, the seed was there and November last as the world well knows, Baltimore's clarion voice flashed into space, full chested and man-sized, ringing and



At right are James Wilkenson (standing) and Stanley Barnett, the announcing team at WBAL, Baltimore. George Bolek, (below) pianist and assistant program director.

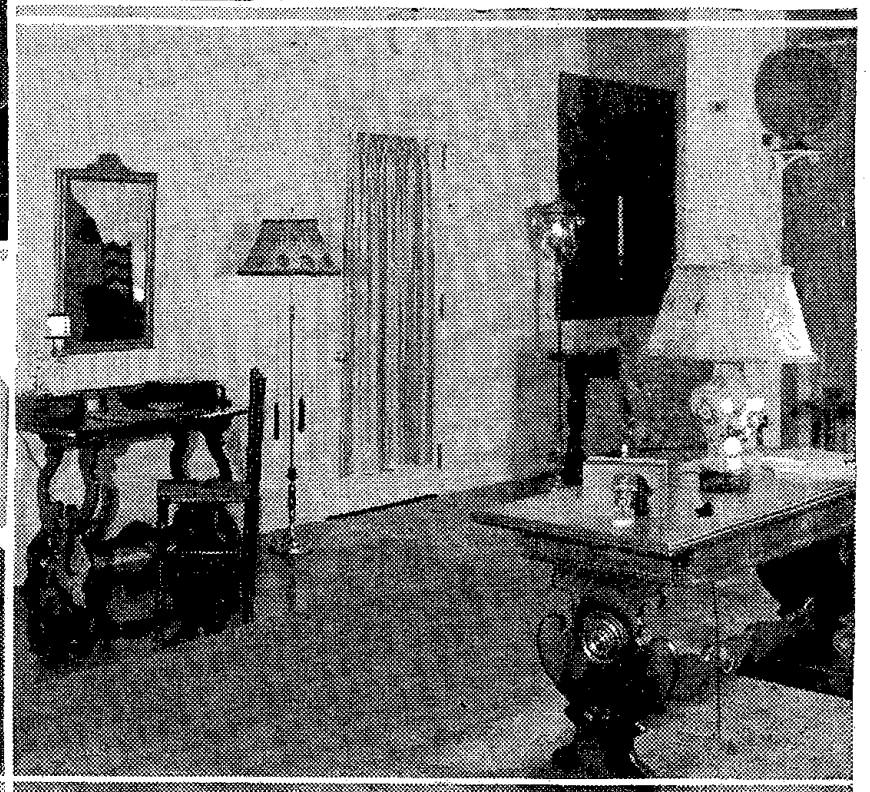


Among the feminine artists are those seated in the group at the right, left to right: Florence Frantz, Audrey Cordero, Vivian Cordero-Friz, Elizabeth Stidman and Charlotte Rodda. After Walter Linthicum, baritone, (left) the first six men are staff artists pictured above. Then come Conner Turner, baritone, and Edward Jandrek, tenor. A glimpse of reception room for artists in picture above group.

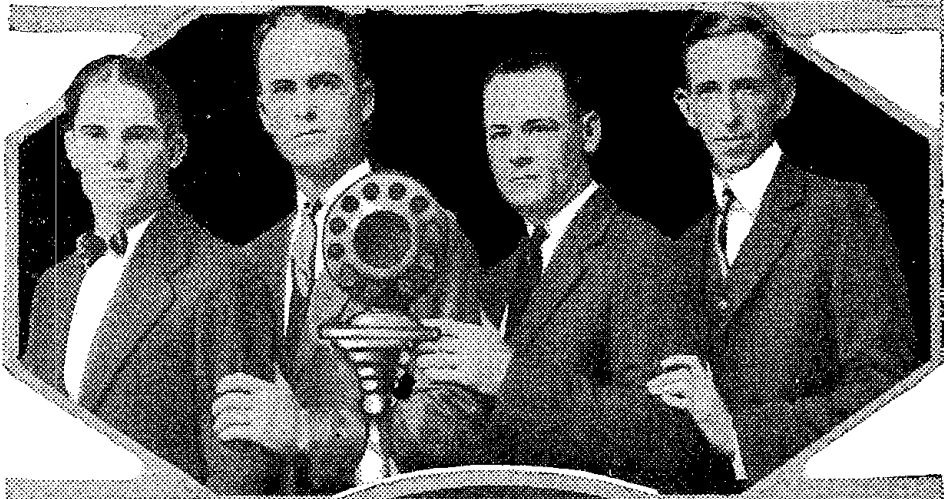
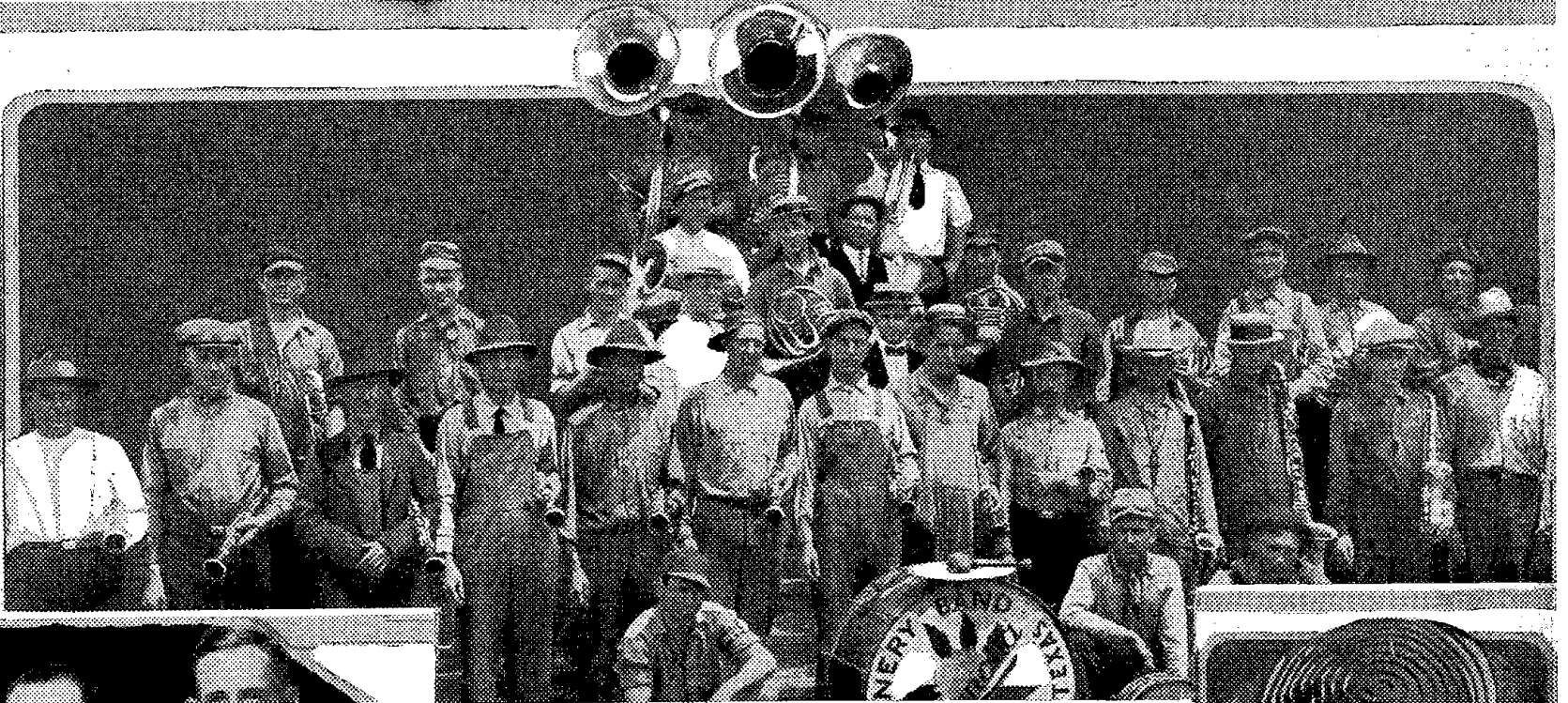


surging its way down the aerials of the nation. A million pencils throughout the land welcomed the announcement of WBAL, Baltimore, on the air and jotted the meter wave length, 375, opposite the figures of the tuning point on the dial gauge.

So Baltimore is on the air—and making up for lost time. Mayor Jackson and Governor Ritchie both helped at the christening and congratulated the proud parents, the Consolidated Gas, Electric Light and Power Company of Baltimore, represented by the president, Herbert A. Wagner. Mr. Wagner promptly dedicated the child to the city of Baltimore with these words: "THE public utility which I represent has taken upon itself, as a public servant, the duty and privilege of providing a superpower broadcasting station for the service of Baltimore and the State of Maryland. Up to this time Baltimore and Maryland have not enjoyed (Continued on page 24)



# All Aboard with "Tootsie" via KFDM Line



**MAGNOLIA Mike** Takes Radio Listeners Over Accomodation Air Route to Beaumont. Fast Time by Caster Oil Clarence. Farmer Perkins Almost Wrecked.



**"T**OOT! TOOT! Here comes "Tootsie" the iron horse of KFDM all the way from Beaumont, Texas, the land of the glorious Magnolians. Clear the dials and flag 'em on Ether Track No. 306.

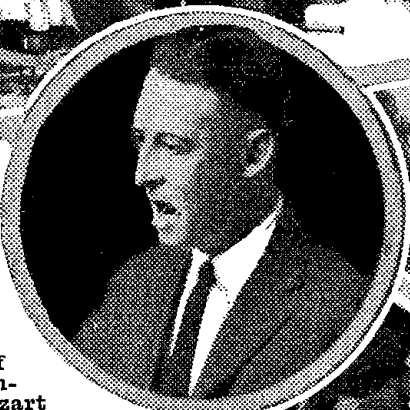
Miss Lillian Richards (upper left) soprano. Magnolia Refinery Band (top). Mrs. Harvey Gilbert (above) soprano. The Scrap Iron quartet (left) and at the piano, Miss Allie Huitte. All among the passengers who help to make the "Tootsie" trip on KFDM a merry one, for they're a merry lot!

Radio listeners who never yet have boarded this famous special have a treat coming. All aboard! Castor Oil Clarence is at the throttle and Magnolia Mike is the conductor in charge of the train. Hold on to your hats and don't stand up!

Folks down Texas way are always flagging "Tootsie" because they like to hear the passengers, the crew and the animals perform. Everybody is classified. The Flappers occupy the front seats in the accommodation coach so they can be handy to the Butch with his melodious song about his wares. They buy gum just to induce him to sing about its mysterious transition when it is placed on one side of the bed on retiring and is found on the opposite side in the morning. They also do a little singing on their own account and dance to the water cooler for "Just a Little Drink."

Then there is Pete the Passenger who knows all the telephone poles by their first names as "Tootsie" whistles and whizzes past them on the Radio route to Beaumont, Tex. Pete the Passenger keeps up a rattling conversation with Farmer Perkins who can't resist letting his attention wander across the aisle to the nifty young bathing beauties taking a trip to the beach. It is obvious that Pete is carrying the heavy side of the dialogue although Farmer Perkins makes his presence unmistakably known. (Continued on page 26)

Below is that galaxy of Magnolian stars which make KFDM such a merry station. Note "Oink" and "Heehawhaw" at extreme left. Magnolia Pete, hiding behind billboard, and his gang swarming over "Tootsie," the iron horse.



There's a sob and a throb when the Mozart artists (above) put their hearts in their violins and all start playing at the same time for the Radio audience of KFDM. They are announced as the "Mozart Violin Choir." Miss Gladys Harned is director. Dick Haynes (right) doesn't expose his tonsils like this all the time. He was caught singing but the mike doesn't happen to show. It's a very modest "Mike."



## WJAZ RAILS HOOVER WITH 'PIRATE' WAVE

### U. S. SEEKS WAY TO SHUT DOWN ZENITH STATION

E. F. McDonald, Jr., "Takes" Canadian Wave While Amused Public Watches Peculiar Controversy

CHICAGO.—Who owns the air, and if the United States owns the ether and can control it, by what official act are American wave lengths reserved for Canadian stations? Why should one station be allowed 166 hours a week on a certain wave length, and then the department of commerce specify that another station use that wave length for but the remaining two hours?

WJAZ, the broadcasting station here, of the Zenith Radio corporation, will soon settle the questions listed above, for WJAZ has gone on the air and "taken" the wave length of 329.5 meters, a wave length unused in the United States. In Canada it is used by seven stations, nearly every one of them remote from this city and outside the sphere of interference.

And the "taking" has not been authorized by the department of commerce, either. The latter, according to Secretary of Commerce Hoover, will show WJAZ what's what in short order.

#### But Will the Department?

But will the department of commerce be able to do what it says it will? There is no Radio law with the exception of that passed in 1922, and that law has many defects now. Wise heads are inclined to believe that the WJAZ controversy has several angles, and that E. F. McDonald, Jr., president of the Zenith Radio corporation, may have much in his favor.

The last dispatches state that the government has launched its litigation against WJAZ for "piracy" of a wave length, first by filing papers demanding forfeiture of the station's license and seizure of its equipment, and second by bringing the Zenith organization into court to show cause why it should not be punished for usurpation of an unauthorized wave length.

Mr. McDonald has laid his cards on the table. He asks for a test case. He is willing to abide by the decisions of that case.

#### McDonald Attacks Hoover Efficiency

Mr. McDonald added further fury to the scorching test case by broadcasting—on 329.5 meters—an attack on the secretary of commerce. The prominent Radio manufacturer claimed that Mr. Hoover had grossly abused his discretionary powers in the regulation of broadcasting.

His point was well taken, for people ask, if Mr. Hoover really has the power claimed since the test case was inaugurated, why did he allow the broadcasting channels to become so congested? Why, asks Mr. McDonald, are there twenty-seven stations broadcasting on one wave length, and on several other wave lengths, but one station on each?

WJAZ, when formerly located on the Edgewater Beach hotel, of Chicago, got off the air when it was found that interference from this station was disturbing public reception. The transmitter was sold but the call letters were retained. WEBH is the old WJAZ set, rebuilt and remodeled.

WJAZ and its fore-running experimental stations, belonging to the Chicago Radio Laboratory, a subsidiary of the Zenith company, are Radio pioneers that have blazed the trail for many broadcasters of today.

#### Can the U. S. Do Anything?

The case, summed up, is simple. Mr. Hoover, although solicited ever since the sale of WJAZ's old set, has not seen fit to give WJAZ a new wave length, or at least one that is acceptable. Therefore, WJAZ has taken one that is not claimed by the United States. Can the United States prosecute WJAZ or its owners?

Being a broadcasting station without a country, what can be done about it?

If Hoover can do anything, the question arises, then why doesn't he close up certain other stations which are known to merely clog up the air with their interfering broadcasts, over-modulated transmitters, rank programs, and obsolete type sets?

The stage is set for much amusement for the Radio public.

### Station WSAI on Air More Than 1,000 Hours Last Year

CINCINNATI.—A check of the programs broadcast by WSAI, here, during 1925 shows that the station was on the air more than 300 days for a total of more than 1,000 broadcasting hours.

WSAI is on the air six nights a week, its average program lasting three hours. Included in the total of broadcasting hours was a 24-hour anniversary and dedication program.

## McDONALD ANSWERS CHARGES OF PIRACY

ANSWERING the charges made by the department of commerce and the public press, E. F. McDonald, Jr., president of the Zenith Radio corporation, of Chicago, herewith gives his statement of the whole affair:



E. F. McDonald, Jr.

"My attention has been called to articles appearing in the public press, from which it appears that the United States government is about to institute some sort of legal proceedings against Zenith Radio corporation, of which I am president, with the idea of punishing the corporation or certain of its employees for operating its broadcasting station, WHAZ, for more than two hours per week,

the time allotted to it by the secretary of commerce.

"If the government does take some action it will not be a surprise to us as we notified the government authorities that we intended to go on the air for the purpose of making a test case in order to determine whether or not there is such thing as freedom of the air.

#### Hoover Abuses Discretionary Powers

"Before doing this we made every effort to obtain from the secretary of commerce some fair and reasonable division of time. I spent weeks in Washington with my attorney, Irving Herriott, pointing out the various channels that were open. All our efforts met with failure.

The department even arbitrarily refused to permit us to use a wave length that another station enjoyed and offered to us. We feel that not only we, one of the pioneers in Radio broadcasting, but scores of other stations have been discriminated against.

"The secretary of commerce claims to have wide discretionary powers in the division of time between the broadcasting stations. I question whether or not he has such discretion, but if he has, I wish to state that in my opinion he is abusing this discretionary power, not only in our case, but in many others, to the detriment to the public and the Radio industry.

"The present chaos and congestion in the air which makes it almost impossible for the listener with the average Radio set of limited selectivity to separate one broadcasting station from the other, is not due to the great number of broadcasting stations in the United States, but is the result of the abuse of the discretionary power which the secretary of commerce claims to have in the division of wave lengths and operating time, and in spite of this chaotic condition for which the secretary of commerce is responsible, he is today asking congress to pass legislation which will confer upon him even broader powers of discretion than those which he now claims to have.

#### Recites Mismanagement of Department

"As a further indication of the extent of this abuse of this alleged discretionary power, I want to point out the fact that the secretary of commerce has licensed twenty-seven broadcasting stations on one particular wave length, yet permits other stations to enjoy an exclusive wave length, with no time limit. It is obvious that twenty-seven stations cannot operate simultaneously, on one wave length, and be heard.

"In our own particular case he has licensed us to operate only two hours each week and has licensed another station to operate on our wave length the remaining 166 hours each week, and even our little two hours is subject to cancellation at the request of the General Electric company.

"The public is justly complaining about the congestion, yet if there were an equal division of time and wave bands, and no favoritism shown, all could be heard and the public would receive real service without interference.

#### Who Shall Have Monopoly?

"In the litigation, which, according to newspaper accounts, the government is about to institute, there will be involved necessarily the right of citizens of this country to use the air and have a fair division of it, but there will also be presented the question, (if the government has this right) shall it regulate in favor of monopoly and against the independent interests and the public generally?

"The Radio public today is fully aware of the fact that certain interests now claim to have what virtually amounts to a monopoly of many exclusive wave bands. In my opinion any institution other than one whose business is to disseminate news should have nothing which approaches an exclusive right to any wave band. News

agencies are in the nature of public utilities, and their use of the air is of vital interest to the public generally. Such broadcasting should necessarily be given preference over music and other entertainment, but I say that none other than such should be given preference.

#### Fights for Principle, Not Gain

"With the idea of settling one of the greatest questions presented by the development of modern science, the Zenith Radio corporation intends to litigate in every way possible the questions involved. We naturally desire a reasonable division of time for our own broadcasting station, but if we can by litigation settle the question of the freedom of the air and a fair and equitable division of time in the interests of the public and the broadcasters is obtained, Zenith will consider its efforts well worth the sacrifice, even though it might itself be unsuccessful in obtaining a reasonable share of the time for its own use.

"Our action has been referred to in the press as 'Piracy of a wave band not in use by any broadcasting station in the United States.' With reference to this I am reminded of the statement by one of the most eminent leaders in England's politics, when, in discussing the land laws of his country, he said, 'What finger wrote the law that made us trespassers in the land of our birth?'

"With apologies to the Honorable David Lloyd George, I say, what finger wrote the law that makes us pirates in the free air of America?"

"In conclusion I wish to state that our position is that we fight for principle rather than for personal gain.

## "Old Hickory" New Whistle Of George Hay at Nashville

NASHVILLE, Tenn.—And now comes "Old Hickory." George Hay has a new steamboat-whistle which is heard regularly from Station WSM, here. The new whistle has been named after Andrew Jackson, whose home town was Nashville. It is properly known as the "Cumberland River Steamboat, Old Hickory."

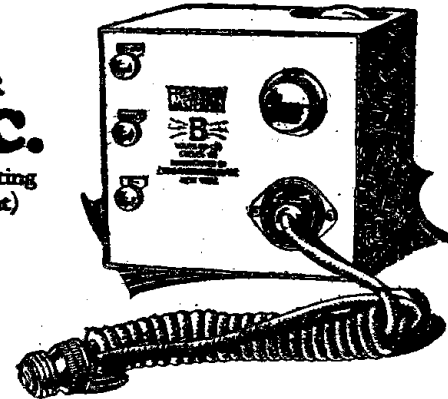
Thousands of the Radio fans will remember Mr. Hay's first whistle, "Hush-puckiny," heard from Station WMC, Memphis, when Mr. Hay was announcer there, and also his "WLS Unlimited Train" whistle he used to give from the Sears-Roebuck station at Chicago.

#### Latvia Has One Station

RIGA, Latvia.—The little Baltic republic of Latvia has one broadcasting station of which it is very proud, at Riga. News is the principal broadcast feature.

**YOU**  
don't need  
"B" Batteries  
if you use the  
**FRESHMAN MASTER "B"**  
Battery Eliminator

FOR  
**A. C.**  
(Alternating  
Current)



SIX INCHES  
SQUARE  
WEIGHS  
7 POUNDS

**This marvelous device absolutely eliminates "B" batteries**

With the Freshman Master "B" Eliminator your set will always be supplied with constant and uniform power. Noiseless in operation; your reception will not be marred by the snap and crackle due to chemical action in "B" batteries.

The list price of the A. C. Model Freshman Master "B" Eliminator is \$20.00. However, a tube is required to rectify the alternating current into the required direct current for radio operation. And, as we desire to furnish the best rectifying tube that is obtainable, in our opinion, Freshman Master "B" Eliminators for alternating current are now furnished with R. C. A. Rectron UX-216-B Tubes.

**FRESHMAN  
MASTER "B"  
ELIMINATOR,  
R. C. A. Rectron  
UX-216-B Tube**

**\$27.50**

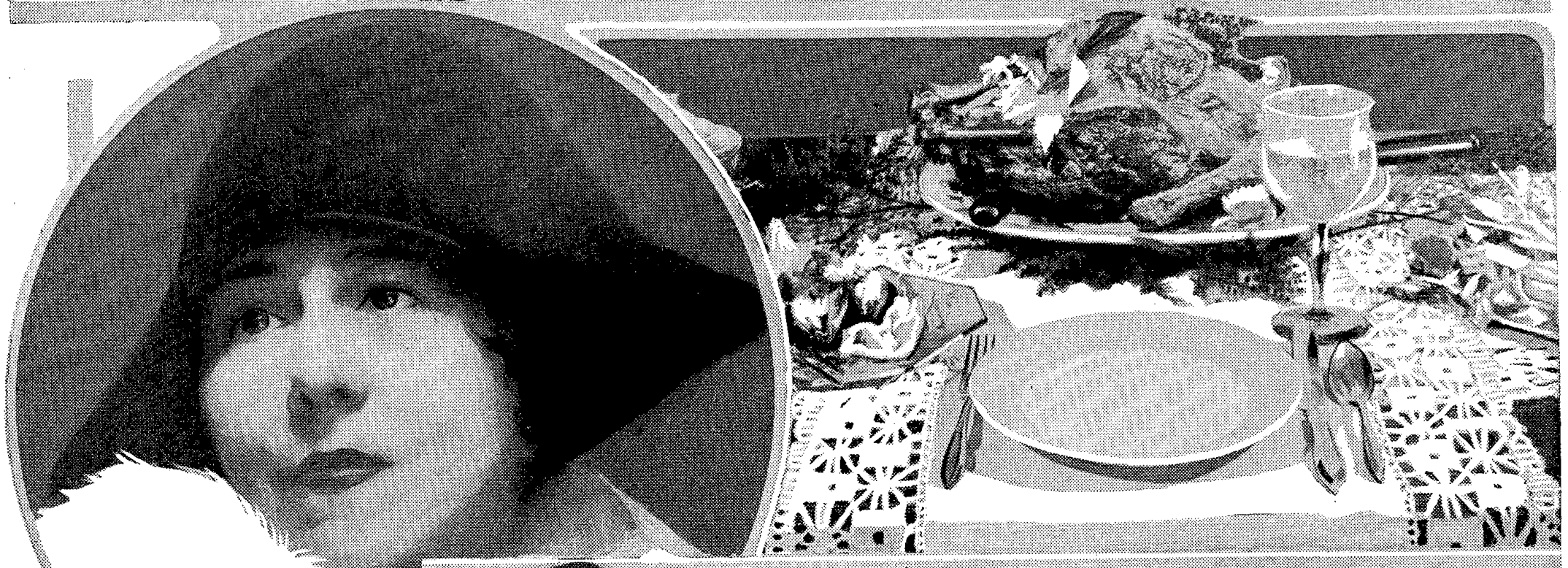
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# Ida Bailey Allen Aids Nation's Housewives



Ida Bailey Allen, above, "The Nation's Home-Builder," in the picture at the right is shown supervising the making of a choice tid-bit in the cozy kitchen in her offices. A "Set-Up" for a king, upper right, is one of the meals and table decorations broadcast over WMCA.

*"We can live without music or books,  
But civilized man cannot live without cooks."*

By J. G. Forrest

IDA BAILEY ALLEN, known as the Nation's Home-Maker, was found in her sunshiny and electrically equipped kitchen testing a recipe for Scotch soda scones, which was sent in by a member of her National Home-Makers club, which she organized last June, and of which she is now president. Each of her members are on their toes submitting their recipes in hopes of winning the monthly prize she offers for the best recipe.

This kitchen, located on the fifteenth floor of an office building overlooking the Hudson river, is quite thrilling. Oh, so compact, and yet it contains the necessities so dear to a woman's heart, such as an electric ice making machine, electric stove, colored dishes, tan kitchen table and chairs, glistening pots and pans, with dainty curtains completing the picture.

The writer was taken into Mrs. Allen's office, a place where her personality is reflected. Cretonne drapes, flowers, a soft rug, a few pictures, books, a few comfortable chairs and a purring cat. Mrs. Allen, who is an attractive looking woman, has created a niche for herself in this busy and hustling world.

### Mother Encouraged Her

When asked what prompted her to become a cooking expert, the mantle of years seemed to drop from her and once again she was a child. Pausing to think of those very happy days, she said, "My mother is to blame for my success. When I was small, it was my delight to dress as a grown-up and parade around in the kitchen, as mother said that eight years was not too young to learn to cook."

"She was everlastingly patient with me. Always encouraging and never fussy if I made a mess out of the kitchen—something I could do very easily. Then, the big event of the week was the night I was allowed to prepare the evening meal and could invite a girl friend for dinner. When I grew older, I preferred to invite the boys, as I was flattered by their praises. I became more absorbed in cooking problems and finally decided to take domestic science courses at college."

"What do you do with your spare time, if you have any?" asked the interviewer.

### Has Little Spare Time

"I have so little spare time," she laughingly replied, "that I must crowd everything into a few hours. I am a real housekeeper and personally direct the



## HIGH SOPRANO NOTE SPLITS BIG WINDOW

M R. and Mrs. Joady Rhodes of Falls City, Oregon, were listening to a KFI program 1,000 miles from Los Angeles, when a large glass window twelve feet from the loud speaker split flawlessly from top to bottom, just as one of the well known Clark Sisters took a high "C." The window was set loosely in the frame, so the settling of the house could not account for the happening. Although the KFI engineers pointed out the fall of the walls of Jericho at the sound of trumpets as a similar case, Mr. Rhodes believes that some settlement should be made, nevertheless.

education of my two children, Ruth Elizabeth, six years old, and Tom, twelve years old. The three of us are great pals and always together.

"At the present time we are studying French and have plenty of fun conversing in the French language. As I am very fond of singing, Tom, who plays the piano quite well, accompanies me while I practice. We go to the opera and take long walks together. After the children go to bed, I read and listen to my Radio."

We then discussed broadcasting, a subject that she was very much interested in. Mrs. Allen broadcasts every Tuesday morning at 11 o'clock from Station WMCA, and has an invisible audience of over 10,000 people. She has gained so many friends during the last six months, they come to her with their problems. And what problems! Who should discipline the children, the mother or father? How to make ends meet on the husband's small salary? A couple are considering getting a divorce. Are they right in doing so? Those are just a few of the many with which she is confronted each week.

## Get Gerhardt Cake Recipe for Asking

Thousands of Housewives Who Have Followed WTIC Instructions for Dessert Write in Praise

HARTFORD, Conn.—To those who write to Station WTIC, here, a recipe for making the famous Elena Gerhardt cake will be sent. Already thousands of housewives have made the delicious dessert, following instructions broadcast through the station, and letters are pouring in in its praise.

Housewives listening to WTIC each Tuesday and Friday noon from 11 a. m. to 12 m, Eastern time have heard a new voice recently, that of Miss Beatrice Bangs, a member of the staff. Miss Bangs has taken charge of the announcing and introducing of all of the participants in the Travelers station daytime programs, which include fashion talks, lessons in professional candy-making, and WTIC's Housewives' Forum.

## "Betsy Ross" Brought Up To Date, Is KPO Feature

SAN FRANCISCO, Cal.—"Betsy Ross" brought up to date, is a regular feature broadcast by Station KPO, here. She appears before the microphone each Wednesday morning with a short sewing lesson. Her work is being followed by thousands of feminine Radio fans throughout northern California. Choosing of colors, materials, styles and other subjects are covered.

Thus Radio finds another use in the home. The little social call had come to an end, as many recipes had to be tested, and the day is far too short for this food authority. Placing one of her cook books in my hand, I departed while she went back to the kitchen and her recipes.

## SHORT WAVES

By Marcella

"Will you please tell me where 'Little' Jack Little will be next week?" seems to be an awfully popular question these days. Last I heard of him, he traveled from the midwest over to New York for two weeks, thence to Buffalo. Then I lost him. However, watch "Headliners Today" in the advance program section and if Radio Digest can locate him, he'll be listed. He's listed this week.

Yes ma'am, Mr. E. L. Tyson of WWJ is just as nice as his pleasing voice would indicate. Have I heard him? My stars, girl friend, that's my business to hear 'em all. Of course I've heard him. In fact I've been to a cabaret with him. Dances nicely, too. Well, he said he wasn't married, and I don't think he is. He's VERY bashful and unassuming, and if I'm not mistaken some brave girl will have to take him by the hand and lead him to the altar.

Now one for the boy friends who WILL write for data. WEAF's "Winnie," otherwise known to listeners as Winifred T. Barr, is off the matrimonial list. Howard Hunter, of the engineering force of the American Telephone and Telegraph company, is the lucky man who bought the diamond.

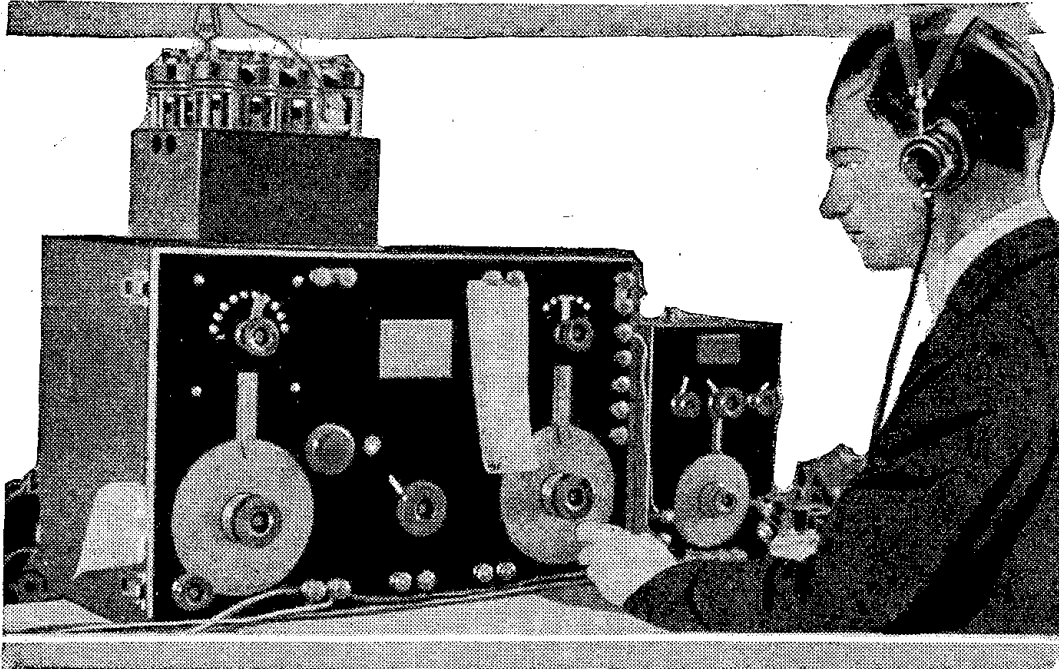
Emily wants to know if Al Carney, the popular organist at WHT, is married, how many children to his credit, how old he is, how tall and how thin. That's quite an order, but I found out. He is a smiling, jovial bachelor, weighing 195 pounds, but well able to do so. His height is less than six feet but not much. He's just 25 years old and lives all by himself in a cozy corner. He remarks that he is just getting his Hudson car all fixed for the spring. There's a wonderful opportunity for somebody.

Much ado about this Hired Hand fellow of the Star-Telegram superstation, WRAP, at Fort Worth, Texas. Now one of my correspondents wants to know if he came from Houston, and what he does over the air. Well, the H. H. is an honest-to-goodness entertaining announcer with original wit. I know of none that can compare with this Texan. He does his turn as "substitute" announcer on Saturday, Sunday and Monday evenings. Speaking of his home city, have heard it unofficially that he escaped from the Indian reservation in Oklahoma, and that his wife is as jealous of him as he is of the rattlesnake skin hat band he wears on his sombrero. Sure, I like him.

Leslie Joy, be it here noted, has returned to the microphone of WEAF, where he is in charge of auditions, announces frequently, and is heard in frequent vocal solos. "Let Joy be unconfined," say I, for he certainly was drawn many scented letters written in purely feminine hands.

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 here. MARCELLA.

### HE'S OFFICIAL WORLD TIMEKEEPER



Paul Sollenberger, an astronomer at the U. S. naval observatory in Washington, D. C., is known as the official timekeeper of the world. When the chronograph shows that the standard clock registers 11:55 a. m., he turns a switch, cutting in the transmitting clock which gives the signal for noon, thereby setting the clocks of the world.

### GENE ROUSE LEAVES WOAW MICROPHONE

#### TWO AND ONE-HALF YEARS WITH OMAHA STATION

Announcer Who Made Expression, "Yes-Sah" Famous on Air, Will Not Forsake Radio Work

By Ned E. Williams

"Yes-sah!"

Listeners of WOAW, the station operated by the Woodmen of the World Insurance company at Omaha, Nebr., will miss this familiar little expression, which has become a by-word in the vocabularies of hundreds of Radio fans through its use at the close of each musical number by Gene Rouse, known as "G. R." to his Radio audience.

That is, unless his successor chooses to adopt it, and Gene swears he is going to copyright the expression, if it is possible.

Because he says he realizes that WOAW could offer him no further advancement in the field of Radio than he has received at its hands, Rouse has resigned his position as chief announcer, which he has held since the inauguration of the station in April, 1923.

#### No Definite Plans for Future

He has announced no definite plans for his future, except that he is determined to not forsake Radio work and that he aspires to a post in a superpower station. Seven years on the stage and eight years in newspaper work equipped "G. R." well for his place as Radio announcer, since nearly all authorities agree that theatrical and journalistic fields are best for the development of Radio workers.

Gene was born in Boulder, Colo., and was educated in the public schools of Denver, where his parents still reside. His first taste of fame followed his offer to bind himself as a slave for a year to anyone who would produce "The Scoop," a playlet written by him.

The production was taken in hand by a New York concern, which refused his offer of a year's servitude, however, stating that the playlet would stand upon its own merits. Which it did.

#### Rouse Began Career at WNAL

Rouse began his career as announcer in 1922 at WNAL, the pioneer Radio station of Omaha, which was established and operated by the Omaha Daily News. It was abandoned a year later, soon after "G. R." went to WOAW.

He landed in third place in the 1925 Radio Digest contest for the most popular announcer, has visited all Radio shows within a 500-mile radius of Omaha and last year spent seven weeks in a 3,000-mile tour of Radio stations in several states.

"I'll be on the air again soon; I have not left it," is the assurance of "G. R." to thousands of his admirers who know him as "the announcer with the heavenly voice," a description coined by Henry Field, now owner of a Radio station at Shenandoah, Iowa.

#### Paraguay Wants Station

WASHINGTON.—Erection of a broadcasting station has been proposed in Paraguay, according to a report made public by the department of commerce. The southern republic is displaying great interest in Radio, and the ministry of war and marine has decided to purchase the necessary equipment for a station.

### WIRES NOT NEEDED TO PICK UP CHIMES

MEMPHIS, Tenn.—Curiosity recently caused the staff of WMC, station of The Commercial Appeal, Memphis, "Down in Dixie," to place a microphone outside the studio window while memorial chimes were being played several hundred yards away.

Response was almost immediate, for messages of congratulation started pouring in, stating that the reception was excellent. And that, too, in spite of the fact that there were many noises from the street four stories below the microphone.

The simple test was made after several letters had been received by WMC stating that the chimes had been dimly heard during regular programs when the studio was supposedly soundproof.

Results of the test seem so good that WMC is seriously considering making the chimes a feature of the regular broadcasting.

### WKAR, LANSING, MICH.

(Continued from page 5)

much of an advantage it gained. Between halves of the game he holds his listeners with a rapid story of the crowds, the bands and other details.

"Jimmie" also goes on the air whenever State college has a home football game. For those events he moves his booth and apparatus to the outdoor stadium press box where he has a clear view of the field.

Dance programs by student orchestras are broadcast Monday, Tuesday, Wednesday and Thursday nights from 8 to 9 o'clock. Other musical programs, including vocal and instrumental numbers, are also presented during the school year.

Two separate broadcasting schools make up the Radio school terms. The first, opening November 2, continues until December 18 and the other is from January 11 to April 2. A new feature added this year is the broadcasting each Monday evening of "Farmerkin" bedtime stories by Mrs. Dora Stockman, editor, and member of the state board of agriculture. Mrs. Stockman's program is given each Monday evening from 7 to 7:15 o'clock, Eastern time. Her stories are especially designed for farm children.

At the same time on the other four broadcasting nights of the week, members of the State college faculty present nature study lectures. From 8 to 9 o'clock Friday evenings an educational program is presented.

The regular Radio school lectures for farmers, held Monday, Tuesday, Wednesday, Thursday and Friday evenings, start at 7:15 o'clock, Eastern time, and continue until 8 o'clock. Five college departments offer instruction in the course which is for a period of twelve weeks.

Enrollment slips are mailed out to listeners and at the end of twelve weeks those "students" are asked to write papers on what they have learned.

EAST LANSING, Mich.—Radio Station WKAR, Michigan State college, has compiled its first formal Radio program made up in magazine form. The new program gives in detail the farm Radio courses which will be broadcast from January 11 to April 2 and which will cover a great variety of subjects. The courses listed are in home economics, animal husbandry, poultry and veterinary medicine, horticulture and gardening, dairy husbandry and farm crops.

## Photogravures of Your Favorite Artists GALLERY of RADIO STARS

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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. Remittance must accompany the coupon. Cash at your risk. Add 5 cents to personal checks for exchange.

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

- 1 Wendell Hall, king of ukulele ditties
- 2 Graham McNamee, 1925 Gold Cup announcer
- 3 Jack Little, popular wandering balladist
- 4 Paul Small, who won fame through Radio
- 5 Coon-Sanders' "Nighthawks" at KYW
- 6 George Hay, 1924 Gold Cup announcer
- 7 Harmony Girls, Edith Carpenter, Grace Ingram
- 8 Ford and Glenn, Lullaby Boys of WLS
- 9 "Roxy" Rothafel of WEA chain fame
- 10 The Hired Hand, famous "Substitute Announcer" of WBAP
- 11 Britt and Finch, popular songsters
- 12 Bob Emery, Big Brother of WEEI
- 13 "Bill" W. G. Hay, ex-KFKX, now of WLIB
- 14 Happiness Boys, jovial singers of WEA
- 15 Lambda Kay, "Little Colonel" of WSB
- 16 Leo Fitzpatrick, "Merry Old Chief," WJR
- 17 Henry Field, 1925 Gold Cup runner-up
- 18 Al Carney, organ favorite at WHT
- 19 Aunt Jane, ladies' adviser at WOC
- 20 Vincent Lopez, No. 1 Pennsylvania orchestra
- 21 E. L. Tyson, pleasing voice at WWJ
- 22 S. W. Barnett, ex-WOC, now WBAL
- 23 Art Gillham, "The Whispering Pianist"
- 24 Paul Greene, announcer at WSAI, "bridge voice"
- 25 Harry Ehrhart, "Dream Daddy" of WLIT
- 26 Correll and Gosden of "Kinky Kids Parade" fame, at WEBH and other stations.
- 27 Norman Brokenshire, popular at WRC, WJZ
- 28 Indiana Male Quartet, popular at WEBH
- 29 Jane Novak, Blues Singer of Twin Cities, WCCO
- 30 Jean Sargent, the original, now at WHT
- 31 Ralph Emerson, popular organist at WLS
- 32 Edna Adams, "Sweetheart of the Air" at KPRC
- 33 Pat Barnes, vaudeville announcer at WHT
- 34 R. V. Haller of KGW Hoot Owls fame
- 35 Henry L. Dixon, ukulele wizard of KYW
- 36 Quin Ryan, WGN's Uncle Walt and sports announcer
- 37 "Willie the Weeper," Ernest Rogers, WSB
- 38 Walter Wilson, "Uncle Bob" of KYW
- 39 Jack Chapman of Drake hotel repute
- 40 Ray-O-Vac Twins, known country-wide
- 41 Art Linick, KYW's Mrs. Schlagenhauer
- 42 Fred Hamm of WTAS, now WLIB, fame
- 43 Meyer Davis' Le Paradis orchestra of WRC
- 44 "Senator Schultz, WLW's illiterate comic
- 45 "Uncle John" Daggett of KHJ
- 46 D. R. P. Coats, 1925 Silver Cup announcer
- 47 Gene Rouse, WOAW's popular announcer
- 48 Freda Sanker, WKRC jazz orchestra director
- 49 Irish Ruth Pavey, KOA's invisible stage beauty
- 50 Queen Titania, star of KHJ Fairyland

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

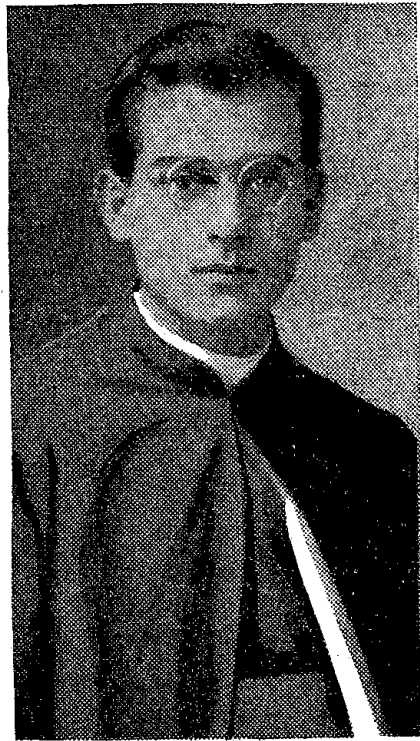
### COUPON No. 6

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.

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# OAX, Lima, Peru, Presents Best Programs



Much credit for the exceptional international test program from Peru is due to the Rev. Father Paulo Chavez Aguilar (above), master of the Metropolitan Basilica and author of many religious works. One of the brightest stars of the Philharmonic Society of Lima, Peru, was Senorita Arrospide de la Flor (center). Antonio Garland was the supervising director of the special program arranged for the week.



"Chiquilla" (little) Elvira Sanchez, 12-year-old Indian girl (above), whose clear childish voice was heard in many homes over the North American continent, sang from OAX, Lima, Peru.

WHILE the ears of the North American continent have been straining toward eastern shores during the great international test week, many aeri-als have been picking up a very pleasing wave from the south.

The particular one referred to is OAX of Lima, Peru, South America, which is on a line almost directly south of Montreal and Philadelphia and about 3,800 miles south of the latter city, approximately the same distance as it is to Edinburgh.

It is doubtful if any station of any country took more elaborate pains to prepare such a universally pleasing series of programs. A spirit of most earnest co-operation was manifest in the letters and cables sent to the supervising committee by Gerald A. Slater, general manager of the Peruvian Broadcasting company at Lima.

Notwithstanding that part of the series will have been already rendered by the time this issue of Radio Digest is on the street, the complete series is published as an example and model of thorough and thoughtful consideration of an important event not only in the history of Radio but in the history of world relationships.

### Sunday, January 24

Himno Nacional del Peru, Banda del Regimiento Guardia Republicana; Palabras de saludo a los oyentes de Estados Unidos, Sr. Andres Dasso, Alcalde de Lima; Himno Nacional de los Estados Unidos, Banda del Regimiento Guardia Republica; Speak de S. E. el Embajador de los Estados Unidos, Mr. Miles, Fohn, dexter; Nocturno No. 2, Borodini, Orquesta "Oax"; Director Mateucci; La Fanciulla Abandonata, Gerdes (per); Pepita Gomez Sanchez, soprano; Yaravi (Cante Indigena), Jose Loyet Peral; Danza de la Flecha (aire nacional), Ojeda, Banda Guardia Republicana; Duo de Quenas, Pantasia Incaica, Guillermo Flores; "Ollanta" (Reminiscencias), Valleri-Orquesta "Oax"; (a) Jubilo, (b) Las Gavotas, lieds compositor Per., Tenor Sr. Carlos Pardo Figueroa, Alfonso de Silva, piano, Sr. Carlos Raygada; Canto Espanol, Osmo, Solo Violoncello, Prof. Amilcare Mateucci; Poesia Moderna de Peru, Alberto Ureta, declamacion por el autor; El Nino de la Palma, Paso Doble, A. Childa.

### Monday, January 25

"El Derecho Internacional y el Radio," Dr. Oscar Miro Quezada (causerie en ingles); Mi Viejo Amor, Cancion Mexicana, Esparza Otero, Soprano Srta. Pepita Gomez Sanchez; Sereña, Widor, Piano Maria Jesus Felises, Harmonium Ines Pauta, Flauta Enrique Fava Ninel, Violin Virgilio Laghi, Violoncello Amilcare Mateucci, Academia Nacional de Musica; Danza de las Brujas, Mc.Dowell, Piano Srta. Marina Vantosse; E Ben o andro lontana, "La Wally," Catalani, Srta. Consuelo Paernio (Piano Sr. Frederico Gerdes); Impresiones de la Tarde, Gerdes, Violin Virgilio Laghi, Piano el autor "Piropos Limenos," Poesias (declamacion). Sr. Andres Aramburu, Director de "Mundial"; "Ollanta," Opera Peruana, Maestro Valleri-Orquesta prano Srta. P. Gomez Sanchez, Contralto Srta. Lucrecia Dora; "El Llanto del Inca," Vals Caracteristico Indigena-Ballon-Orquesta "Oax"; "Ritorna Vincitor," Aida, Verdi; Soprano Srta. Teresa Paz; Vals, Moszkowsky, Piano Srta. Ines Pauta (Academia Nacional de Musica); Polittas Limenas, Camel, C. Freyre (Peruano), Orquesta "Oax."

### Tuesday, January 26

The Plebisite of Tacna and Arica, Short disertation by Ing. Carlos Jimenez Correa; Variaciones, Proch, Soprano Ligera Srta. Valentina Olin, Piano Srta. Rosa Ayarza de Morales Solar; Quenas, Vals indigena, Duncker Lavalle (peruano), Orquesta "Oax"; Perlas del Brasil, Feliciano David, Soprano Srta. Natalia Garland de Cook, Piano Sr. Frederico Gerdes; Granada, Albeniz, Orquesta "Oax"; Legenda, Opera Iris, Mascagni, Srta. Victoria Dien de Sicoli, Orquesta; Sereña de los besos, De Michell, Orquesta "Oax"; Pobre amor, (lied)

Alfonso de Silva (per.), Srta. Natalia Garland de Cook, Piano Sr. Frederico Gerdes; Mal, Melodia R. Hahn, Orquesta "Oax"; Una furtiva lagrima, Do-Mizti, Tenor Mercial Calonge, Piano Srta. Rosa Mercedes Ayarza de Morales Solar; La Gusta en el Arroyo, Valcarcel, Piano Srta. Alicia Cardenas Garcia; A fose lui, Traviata, Srta. Valentina Olin, Piano Srta. Ayarza de Morales Solar, Rusticanela, Fox Cortopazzo, Orquesta "Oax."

### Wednesday, January 27

Polonesa Tragica Fava Ninel, Piano Srta. Maria Ureta del Solar; (a) La Jazminera, (b) El Caballo de Paso Poesias declamadas por su autor brillante poeta laureado Dr. Jose Galvez, (c) La Primera Rosa; Danza Granados, Piano Srta. Enriqueta Arosemena Garland (Conservatorio Padrosa); En el Claustro, Borodine, Orquesta "Oax"; Voges de Primavera, Strauss, Elvira Sanchez Lavalle, (The lark "criollo") Twelve years; Dolor, Melodia tipica del indio peruano ejecutado en "quenas" instrumento primitivo original indios. Sres. Velez y Rey; (a) Yaravi, (b) Cancion popular, Tipicos Aires, Estudiantina de Amateurs, (c) Zana (Aire de tierra) populares criollos, guitarra, canto, piano, (d) Marinera y tondero, del Peru, bandurria y cajon; Cuando el Alma se aduerme, Dona Francisquita, Vives, Tenor Chagues; La Zambita y el Betun, Mariners (Tipico

popular) Orquesta; Poesia Contemporanea del Peru, Dr. Alfredo Gonzales Prada, Declamation; Princesita, Cancion espanola, The lark "criollo," Elvira Sanchez Lavalle; La Peruanita, Paso Doble (Inedito) Original popular compositor espanol Quinto Valverde, Orquesta "Oax."

### Thursday, January 28

"The Problema of Tacna and Arica after the decision of President Coolidge," Short disertacion, by Charles E. Ledgard; Prendi I anel to dono, Bellini, Duo Soprano Srta. Valentina Olin y, Tenor Mercial Calonge; "El Condor Pasa," Preludio, Folk-lorista Alomias Robles, in New York, Orquesta "Oax"; 8 Variaciones sobre un Tema Insico, R. P. Pablo Chavez Aguilar, Maestro de Capilla Basilda de Lima; (a) Qdrie, (b) Santuc, Coro Tres voces mixtas, Paulo Chavez Aguilar, (c) Agui del, Musica Sagrada, Maestro de Capilla de la Basilla, Lima; Nocturno No. 3, Chopin, Piano, Notable Concertista Srta. Mercedes Padrosa de Cabral; Lorley, Danza delle ondin, Catalani Orquesta "Oax"; Preludio y Alegro, Pugnani, Kreisler, Solo Violin Sr. Hector Cabral, Acompañamiento Srta. M. Padrosa de Cabral; Hermanita Tristeza, Cancion Cubana, Lerdo de Tejada, Tenor Chagues; La Lima de hoy que ama el Radio, Short disertation, by Antonio Garland; Es mi amor, Fox-trot de Durand.

## STATION KOA TO WIRE PROGRAM OVER DIVIDE

### Special Patrol Checking Up 300 Miles of Telephone Line

GRAND JUNCTION, Colo.—Few of the thousands of listeners who tune in this city via Station KOA, Denver, on the night of February 5 would care to make the long, hard journey over the main range of the Rockies in midwinter by ski and snowshoe which broadcasting of the Grand Junction program will make necessary.

So that good telephone service from here to the station in Denver will be assured, the telephone company is sending a special patrol along the 300 miles of wire to check up on its insulation. The line is in canyons and mountains practically the entire distance. The patrol will be hazardous on Fremont and Mosquito passes where the wires cross the continental divide at an elevation above 12,000 feet.

This will be the first time a Radio program has been sent across the continental divide by telephone.

## Navy Makes New Record

WASHINGTON.—New distance records are constantly being established by the United States naval laboratory at Bellevue, Md., in its experimental high frequency work. Recently two-way direct communication was established between the Bellevue laboratory and the naval vessel Scorpion in the Mediterranean sea. A 71-meter wave was used.

## Station WGY to Send Special Tests Jan. 30

### Will Use 50,000 Watts of Power in Trials for Distance

SCHENECTADY, N. Y.—From 11 to 11:15 p. m. Eastern time on Friday, January 29, and 11:15 to 11:30 p. m. Saturday, January 30, WGY, General Electric station here, will put on special programs for the benefit of American listeners.

Every night of International Radio Week has been dedicated to special transmission stunts in accordance with the spirit of the week. On Saturday and Sunday nights, January 30 and 31, the superstation of WGY using 50,000 watts of power will be on the air. This transmitter has been idle for some weeks pending the completion of several changes in the outfit. It has never had a real test for distance, because on previous occasions when it was used, atmospheric conditions were not favorable for distant reception.

## WOC Used Many Languages In International Exchanges

With students drawn from all corners of the earth, The Palmer School of Chiropractic, Davenport, Iowa, was able to broadcast announcements from its own Radio Station WOC, in many foreign languages during international test week. In all about fifteen languages were used.

Vocal selections broadcast from the powerful Davenport station were also representative of various European countries.

## STATION WLW GIVES BIRTHDAY PROGRAM

### CELEBRATION MADE PART INTERNATIONAL TESTS

### Powel Crosley, Jr., Gives Address on Broadcasting Development and First Stars Are Heard

CINCINNATI, O.—In addition to its regular schedule of features for the week, the Crosley Radio corporation, arranged a 23-hour program for the international tests to celebrate its fourth anniversary of broadcasting through its WLW station, Wednesday, January 27.

The dedication of the first-remotely-controlled superpower broadcasting station took place last year and it was through that same station that the Radio audience was provided the lengthy program. This station is the fifth one to be owned and operated by Powel Crosley, Jr., who addressed the listeners on the development of the broadcasting art. He spoke at the conclusion of the first part of the concert by the Syrian Temple Shrine band, under the direction of Henry Fillmore.

### WLW's Ten-Thousandth Hour

At the time Mr. Crosley began his talk, it marked the beginning of the ten-thousandth hour of broadcasting through the WLW station. Many innovations were introduced to the air audience during this period and several surprises are in store for future broadcasting programs.

"A radario" was presented by Robert Stayman, who was the first announcer of the Crosley station. It depicted the early days of the studio when it was necessary to quit broadcasting until the whistle of a passing locomotive had finished its piercing screams as the station was located alongside of a railroad track. Artists who were booked on the early programs took part in this review.

### Hear Hand Saw Pioneer

Robert Alter, the first musician to introduce the playing of a Vox Ferro or hand-saw to the Radio audience, played that instrument on this program. In addition, there was a trio, consisting of saw, violin and piano.

The large pipe-organ in the WLW studio was played by several artists during the program. Many orchestral effects were obtained in utilizing the various stops.

William Charles Stoess, studio director, and Louis John Johen, program director, contributed to the program, through the former's violin solo work and the latter's baritone solos. Rosemary Stoess accompanied the artists.

















# ABC Radio Fundamentals for Everybody

## Chapter IV—How Sound Waves Are Received

By Milo Gurney

IT IS obvious that if we are to intercept the Radio waves, which have been thrown into space, a substance must be provided in a form which has a marked affinity for such waves. In addition, there must be a means for converting them into audible frequencies, together with a mechanical arrangement which will make the output understandable.

To meet the first requirement, an antenna, which may be either in the form of an elevated copper wire, or in the

which is termed reflexing. This circuit or process is such that the tube, or tubes is so connected as to do double duty.

In order that the waves may be converted into audible frequencies after interception they must be passed on from the antenna to a tuner, whose function is that of making possible the selection of the station whose program we may desire to listen to and from this tuner on to a detector, or converter, which is a better word. The part taken by the detector is to convert the waves which have reached it in the form of radio frequency to that of audible frequency. As explained in a previous article, they are converted to a frequency which is within the capability of the human ear to hear. As both the tuner and the detector are of more than casual interest and, further, as their method of operation is distinctly novel, each will be given their deserved attention through separate treatment.

The tuner, or station selector, as used in Radio receivers, is not the complex mechanism that many would have you believe. Rather it borders upon the ridiculously simple when viewed as the complete unit. Persons knowing little about the principles involved regarding the design of a tuner, have brought to the gullible purchaser a multiplicity of them, some worthy but most of them an object of pity. Yet each is backed with a promise that included everything which the maker felt would answer your questions and attract another dollar from your pay envelope. Out of this maze of maybe's, three distinct types stand out as being fundamental in conception, and in general use today. They are known as single (figure 11), double (figure 12) and three-circuit (figure 13) as pictured in the drawings shown. Of the three, the double or two-circuit tuner is the type most preferred, and while the three-circuit tuner passed through a wave of popularity in

the early days of Radio, it slowly declined until its name was seldom mentioned in polite Radio circles. Of late, with the advent of a great many circuits using what is known as a stage of radio frequency preceding regeneration, the three-circuit tuner is once more coming to the front, even if it does not now hold a very strong position in the field.

Later on in this series, the advantages of each will be explained, while for the present I shall only use the single-circuit type without variations in order that the layman may not be confused.

Using figure 11 as our example, the Radio waves from all stations which are powerful enough to reach your antenna are passed on and down through a wire from this antenna to a coil within the receiver, and through it to earth. As the transmitting station is also connected to earth, the electrical circuit is thereby completed. Connected to this coil is a

(Continued on page 24)

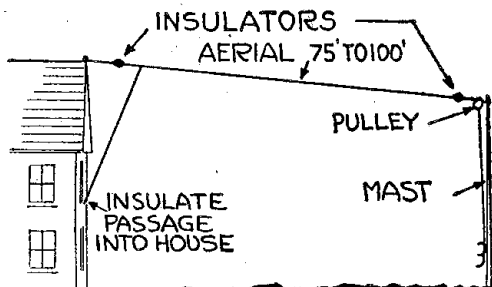


Figure 8

shape of a coil or loop is used (see figures 8, 9 and 10). Each type has its advantages, but coil or loop antennas do not supply nearly as strong signals as do the single wire antennas, placed 30 or 40 feet above earth, and well away from objects which might act as a counterpoise. A counterpoise acts practically the same as a ground, and when antenna is not correctly installed, consists usually of metal roofs or like objects. This result holds true, even though the loop possesses an equal length and size of wire.

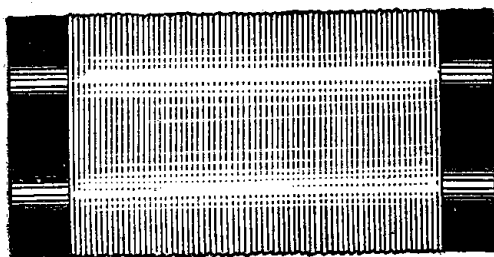


Figure 9

To furnish a definite reason for such varying signal strength would carry my discussion well into the mathematics of Radio, assuredly an angle which would not be of general interest to my readers. It is, however, quite easily proven that within certain limits the distance from the earth at which either type of antenna is placed has a marked influence upon its efficiency as an energy collector, insofar as signal strength is concerned.

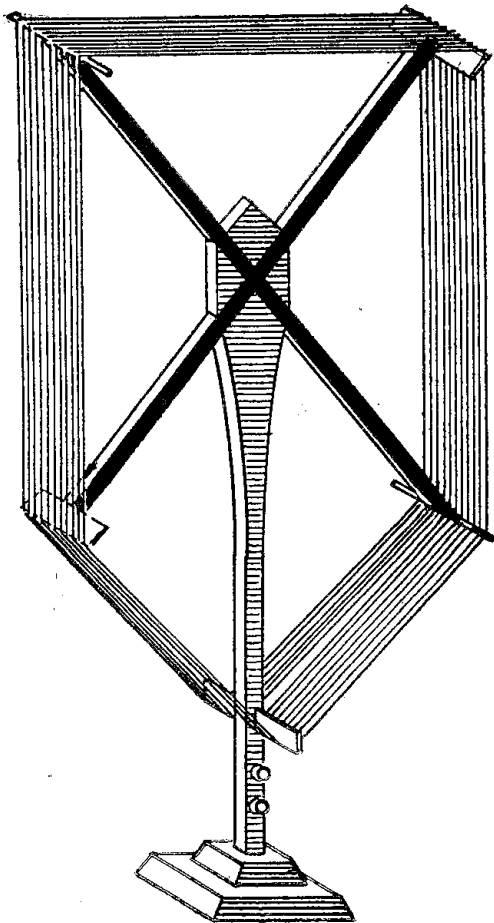


Figure 10

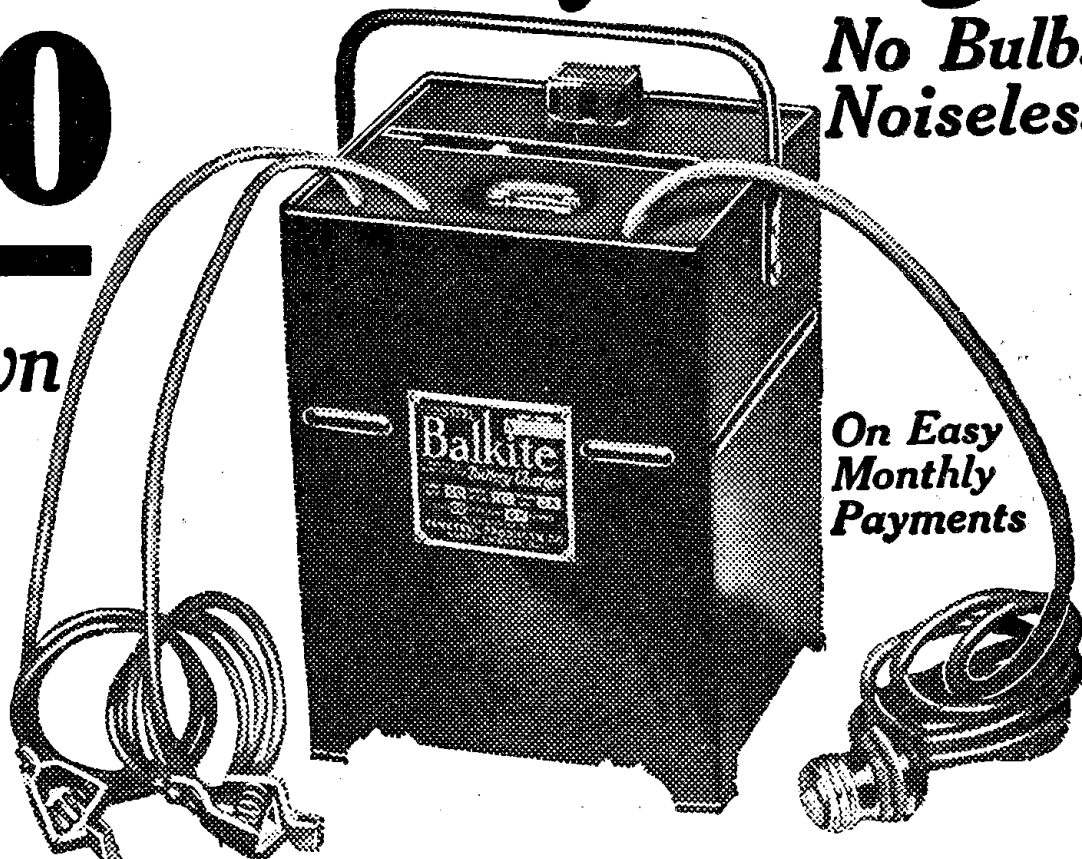
If signal strength was our only concern, then a single wire antenna, or a multiple of such wires, placed in a horizontal plane would undoubtedly be preferred. But very often, because of its directional characteristics, the use of a loop is advisable, if not imperative. In order to compensate for its lack of signal strength, an additional tube is employed in the receiver, or advantage is taken of a wiring process, or circuit arrangement,

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 Enclosed find \$1.00. Ship special advertised Balkite Battery Charger. I am to have 30 days free trial. If I keep the charger, I will pay you \$2.50 monthly. If not satisfied, I am to return the charger within 30 days and you are to refund my money and any express charges I paid.  
 Balkite Battery Charger, No. Y8306NA, \$19.50.

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 Street, R.F.D. or Box No. \_\_\_\_\_  
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 Post Office \_\_\_\_\_ State \_\_\_\_\_

### A B C'S OF RADIO SETS

(Continued from page 23)

mechanical and electrical device which is termed a condenser, shown in figure 11 as that portion of the drawing containing the arrow. It is the shaft of this condenser which passes through the front panel of your receiver and to which the tuning dials are fastened.

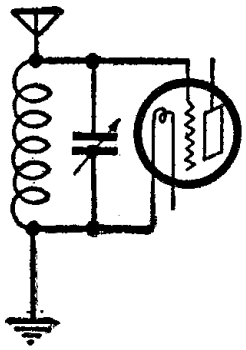


Figure 11

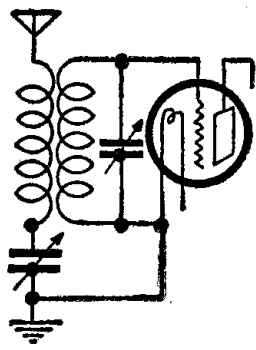


Figure 12

The purpose of this condenser is to so vary its electrical characteristics, by turning the dial, as to allow only the station to which we desire to listen to pass through it and on to the detector or converter. An apt analogy may be cited if we but consider this condenser as an adjustable sieve through which all of the several wave lengths are clamoring to pass through, but which are retarded because the openings have been adjusted by the operator to a degree wherein only the wave suitable to our pleasure can pass. The question may arise in your mind at this point as to why it is that very often, in addition to the waves of the desired station passing through, apparently others also pass, because we can hear other stations, though with a lesser signal strength? As an explanation concerning the cause of this is worthy of a separate article, it shall be deferred until later in this series.

It is then of interest to remember that as both the antenna and the tuning coil within your receiver have an affinity for the interception of Radio waves, and as they are conductively connected, they are therefore not, in their service to you, unlike the electrical current in your home, which is ever a service to the lamps and only awaiting one to turn them on.

Tuning, wherein a loop is used rather than an outside antenna, is identical in

the electrical and mechanical means employed. A condenser is also required, and attached to a coil. An exception is that in place of an antenna being used, the collector agency is represented as a loop, and unless such a loop is converted to a form of antenna, no connection to earth is made.

While this series of articles is directed primarily to those interested in the learning of the Why's and Wherefore's of Radio, my correspondence for a considerable period has indicated that altogether too few experimenters understand how a loop functions as an energy collector. I cannot, therefore, pass the subject without clarifying this much mooted question. Later on the construction of an efficient loop will be outlined together with the reason why.

As a loop receptor has no connection to earth, it is obvious that it does not pass an electrical circuit to earth which returns to the transmitting station. Hence it must rely upon another means. In

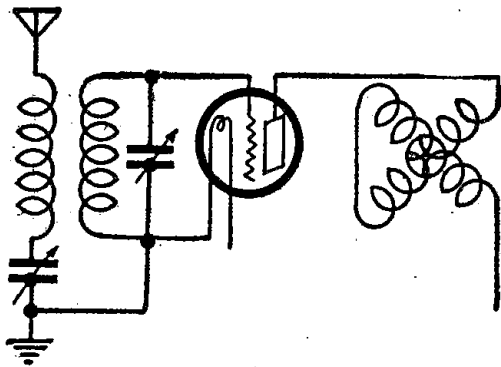


Figure 13

this instance a loop is influenced through being within the field of the electro-magnetic waves which are transmitted, and which permeate the atmosphere. If we should change the electro-magnetic waves to heat, and assume that such heat is being radiated from a radiator, then objects placed near the heat will absorb a portion of it, in direct ratio as the square of the distance and its area. A loop therefore, when placed in the electro-magnetic field of a transmitting station, functions also as an absorber of electro-magnetic waves, which induce a replica of the modulated waves within it.

(In next week's article, Mr. Gurney will explain the fundamentals of the detector, or converter, and how it functions.—Editor's Note.)

### BALTIMORE HAS VOICE

(Continued from page 6)

the advantage of a powerful Radio station and a voice in the Radio assembly of cities and states commensurate with its standing as the home of a great university, the Johns Hopkins, . . . its patronage of the arts, especially music; its rapidly growing importance as a great sea port; the industrial center of the Atlantic coast—the Port of Opportunity and as the newest of the old cities of our great country."

And to prove his sincerity Mr. Wagner added, "It is my privilege to dedicate this new Radio station to Baltimore and Maryland and to the service of their people in such ways as may be found most useful to them. The station is to be known as Baltimore. It will be so designated and referred to in our future announcing and operation. After tonight, the name of the company will not be heard in the announcements of this station, nor is it proposed to commercialize its operation."

The governor and the mayor responded, heartily thanking Mr. Wagner and his company for their generous contribution to the commonwealth.

"Many times since I have been mayor of Baltimore," said Mayor Jackson, "have I been importuned to establish a municipal broadcasting station, and little did I think that when I postponed these matters from time to time that the initiative would be taken by the Consolidated Gas, Electric Light and Power Company of this city."

There are two studios, one large and one small, the larger one being capable of handling a full symphony orchestra. In the reception room there is a loud speaker for the benefit of those visiting the studio.

WBAL is located about 20 miles from the center of Baltimore on a knoll 700 feet above Baltimore mean tide level, and connected by cable to the studio in the Lexington building in Baltimore's business center. It is operating at present at 1,000 watts on a wave length of 375 meters and will so continue until otherwise ordered by the United States department of commerce.

Frederick R. Huber, a distinguished figure in the musical life of Baltimore, is director of broadcasting. Mr. Huber has been manager of the Baltimore symphony orchestra ever since its inception ten years ago, in addition to which he is also managing director of the Lyric theater, Baltimore's largest music hall, and municipal director of music. These various activities have given him a wide experience

in musical affairs and make him one of the most highly qualified of broadcasting directors.

The studio manager is Stanley W. Barnett, who was called to WBAL from WOC, at Davenport, Ia., where he served in a similar capacity. Mr. Barnett has had considerable Radio experience, being familiar with every detail of its operation.

George Bolek, pianist, and Gustav Klemm, composer, are program supervisors. Mr. Bolek is a well-known figure on the concert stage, where he has appeared with many distinguished artists. Mr. Klemm is conductor of the WBAL orchestra which broadcasts twilight concerts every Sunday evening from 6:30 to 7:30 o'clock. Vocalists also are to be included on these orchestral programs.

Of importance in connection with the work of this station is the operation on a weekly schedule. Mr. Huber has provided that lovers of novelty and music of a lighter character may have their place on the programs each week. Friday has been set aside as "novelty" night and from 9 to 10 o'clock unusual features that will have a distinct appeal to all will be broadcast.

Monday and Thursday nights will be "concert nights". The programs will run from 8 to 10 o'clock; the program from 9 to 10 o'clock Thursday evening will feature members of the WBAL staff. Tuesday will be "ensemble night" when vocal and instrumental quartets, trios and duets will be heard. Sunday, between 6:30 and 7:30 o'clock, there will be "twilight" concerts featuring well-known vocalists and the WBAL orchestra, of which Gustav Klemm is director.

Wednesday and Saturday nights are silent.

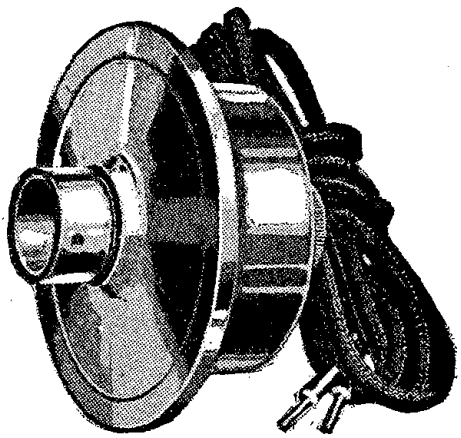
### Headphones Are Delicate

Head phones, when well made, are delicate instruments, and should be handled just as carefully as a fine watch. One should never let them drop, or handle them roughly, any more than one would willingly let a glass tumbler fall on the floor. Though head phones will often stand considerable rough treatment without serious damage, strict adherence to the rules of care outlined here is the best assurance of good reception.

Fading experienced by Radio fans has been traced frequently to sagging aerials that were being swung back and forth by the wind. When the slack was taken up the fading was eliminated.

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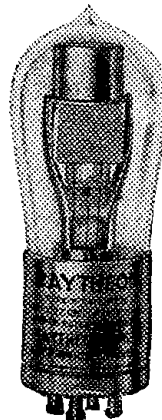
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- All-American Radio Corp., Chicago, Ill.
- Dongan Electric Mfg. Co., Detroit, Mich.
- General Radio Co., Cambridge, Mass.
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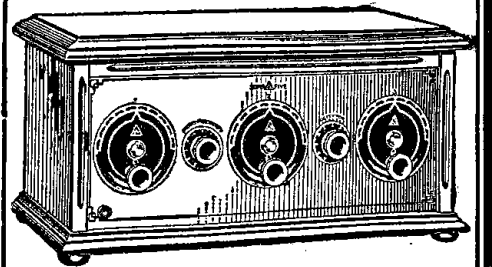
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# SUPER 5



**APEX ELECTRIC MFG. CO.**  
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CHICAGO

PHILHARMONIC TRIO TO SING AT WBZ

Tuesday, February 2

WOL, Ames, Iowa (270m-1100ke), 9 a. m., 'Haying Machinery'... WOI, Chicago, Ill. (217.3m-1390ke), 4:30-7 p. m., Tearnay's Town club... WQJ, Chicago, Ill. (447.5m-670ke), 11-12 m. talk, Mrs. Lillian Russell... WSAI, Cincinnati, Ohio (325.9m-920ke), 5:30 p. m., 'Light music'... WSM, Nashville, Tenn. (282.8m-1060ke), 10 p. m., 'Frolic, Beasley Smith's orchestra studio'...

9 p. m. WEAF (491.5m-610ke), WEEL, WCAP, WWJ, WCCO, WGR, KSD, WSAI, Ipana Troubadours... 7 p. m. WEAF (491.5m-610ke), WEEL, WTAG, WCAP, WWJ, WGN, WJAR, Roxy and his gang... 6 p. m. WSAI (325.9m-920ke) Jack Little, Wendell Hall, Ray O'Vac Twins...

Wednesday, silent night for: CHIC, CNKC, CNRA, CNRC, CNRE, CNRM, CNRR, CNRT, CNRV, KFAU, KFDM, KFEQ, KFKU, KFQG, KFXG, KGO, KLDG, KOB, KTAB, WBAL, WBBR, WCAD, WCBD, WBWB, WFAP, WGBS, WGPC, WGST, WHAR, WHAZ, WIP, WIAD, WIAG, WJWL, WMC, WOAI, WOAW, WOI, WPG, WRC, WROE.

Eastern Time Stations
CKAC, Montreal, Can. (410.7m-730ke), 1:45 p. m., Windsor trio.
CNRO, Ottawa, Can. (434.5m-690ke), 8 p. m., Chateau Laurier concert orchestra; Madame Maud Pouget, soprano; Gladys Ewart, pianist; James McIntyre, violinist; dance orchestra.
WAFD, Port Huron, Mich. (275m-1090ke), 8-10 p. m., studio program; 1-2 a. m., studio program.
WAHG, Richmond Hill, N. Y. (315.6m-950ke), 12:03 p. m., musical program; 7:30, John Schiller's Moonlight Melodists; 8, Rosalie Wolf, soprano; 8:15, Philip A. Fey, tenor; 8:30, Jevva Blix, alto; 8:45, Rosalie Wolf, soprano; 9, Nathan Weinberg, violinist; 9:15, Jevva Blix, alto; 9:30, Evan Davies; 10:03, Raymond Maher, baritone; 10:20, Frank LaPiere's Collegians.

7, orchestra; 7:30, Kennedy Harmony group; 8, Charles and Henry Tobias; 8:15, Charol de Thome, concert pianist.
WGHF, Detroit, Mich. (270m-1100ke), 6 p. m., dinner concert; WGHF Little symphony orchestra; 8, classical concert; Madame Gizi Szanto, pianist.
WGR, Buffalo, N. Y. (319m-940ke), 2:30 p. m., WGR's afternoon program; 6:30, Joe Armbruster's orchestra; 8:30, jointly with WEAF, Davis Saxophone octet; Ipana Troubadours; 10, A. Nusbaum presents a baritone and piano program; 10:30, novelty program, Jack Bishop; 11-1 a. m., supper dance music, Vincent Lopez Hotel Statler dance orchestra, Harold Gieser, director, and Arthur Melgier at the organ.
WGY, Schenectady, N. Y. (379.5m-790ke), 6:30 p. m., children's program; 6:45, dinner program, Eastman theater orchestra; 7:30, 'Book of Knowledge,' program; 8:05, musical program, WHAM.

Central Time Stations
CKY, Winnipeg, Can. (384.4m-780ke), 7:30 p. m., CNRW.
CNRW, Winnipeg, Can. (384.4m-780ke), 7:30 p. m., bedtime story, Aunt Grace; 7:50, Fort Garry hotel orchestra; 8:45, Gladys Senior, harpist; Helen Tennant, soprano; Jean Campbell, reader; Jean Campbell, bagpipe selections; John Barrie, tenor; 10, Fort Garry hotel orchestra; selections, Al Kilgour.
KFAB, Lincoln, Neb. (340.7m-880ke), 10:30 a. m., 'Revelations of a Clothes Closet,' Ella Cushman; 8:05 p. m., 'Factors Affecting the Gasoline Mileage of Automobiles,' C. W. Smith; 'Our Future Beef Supply,' H. J. Gramlich; 8:30-10:30, Belshaw's orchestra; Olive Fletcher, Ruby Teater; Ralph Hall, banjoist; Lincoln guitar orchestra; Slick Merriman.
KFH, Wichita, Kan. (288m-1120ke), 9-10 p. m., National Savings Life Insurance company orchestra.
KFMQ, Fayetteville, Ark. (299.8m-1000ke), 7:30 p. m., university alumni night; talks, music, university glee club, orchestra and band; stunts, student organization.

7, orchestra; 7:30, Kennedy Harmony group; 8, Charles and Henry Tobias; 8:15, Charol de Thome, concert pianist.
WGHF, Detroit, Mich. (270m-1100ke), 6 p. m., dinner concert; WGHF Little symphony orchestra; 8, classical concert; Madame Gizi Szanto, pianist.

Five prominent Memphis musicians comprise the Cortese ensemble which will give classical programs at WMC, each Monday and Thursday night at 8:45 p. m. Central time. Members of the group are: Angelo Cortese, harpist; Joseph Cortese, violinist; John Cortese, flutist; Santa Pappalardo, cellist and Fausto Gaitan, pianist.

p. m., Uncle Judd's kiddies' hour; 7:30, E. W. Rodgers, tenor, and his uke; 8:30, D. O. K. K. fraternal band, V. Kucera, director; 11, Palace theater orchestra, Charles McClain, conductor.
KSAC, Manhattan, Kans. (340.7m-880ke), 9-9:25 a. m., music, inspirational talks, agricultural primer, call-thenos; 9:35-10:25, readings, backyard gossip, question box, planning today's meals; 12:35-1:05 p. m., readings, question box; 'Selection and Care of Breeding Flock,' J. H. McAdams; 'Pruning Apple Trees Before They Bear,' L. C. Williams; 4:30-5, basketball lectures; 6:30-7:30, sports, inventions; Extension credit course, Agricultural Journalism; Extension credit course, 'Planning the Road System,' M. W. Furr; 'Cold Weather Hints for Automobile Operation,' Ray Flagg.
KSD, St. Louis, Mo. (545.1m-550ke), 7 p. m., fur hour; program, Hotel Statler orchestra; 8, Ipana Troubadours, WEAF.
KSO, Clarinda, Ia. (242m-1240ke), 12:30-1:15 p. m., farmer dinner concert; 7-7:30, music; health talk, Dr. F. H. Clark; 7:30-9, First Presbyterian church choir, Mrs. Leo Humphrey, director.
KTHS, Hot Springs National Park, Ark. (374.8m-800ke), 12:30-1 p. m., orchestra; 9-9:45, Pan-American program, Spanish announcement, Leon Numainianoff; 9:45-10, Southern melodies, Lawson Reed; 10-10:15, W. C. Brown, baritone; Arthur Platz, accompanist; 10:15-11, dance frolic, Southern Majestic hotel orchestra; popular vocal numbers, Mrs. Harry A. Jones; 11-11:45, surprise de luxe feature.
KIY, Chicago, Ill. (536m-560ke), 11:35 a. m., table talk, Mrs. Anna J. Peterson; 12 m., Commonwealth Edison company; 1 p. m., Joska De Babary and his orchestra; Coon-Sanders Original Nighthawks; 6-7, dinner music, KDKA, WBZ, KYW, KFKX; 7, bedtime story, Uncle Bob; 7:05, bedtime story, Uncle Bob; 7:30, half hour of music; 8, Congress hotel musicale; 10-12:30 a. m., midnight review; Paul Ash and his orchestra; Coon-Sanders Original Nighthawks; 1, In-somnia club.
WAMD, Minneapolis, Minn. (244m-1230ke), 12 noon, Dorothy Vanesek, soprano; Ted Johnson, violinist; Oscar Westlund, accompanist; 7:10, Rose Schaeftgen, violinist; Edna Weese, soprano; Charles Sandberg, baritone; Don Harris, pianist.
WBBM, Chicago, Ill. (266m-1330ke), 4-6 p. m., Valentine Inn orchestra; artists; 8, string trio; Moulain Rouge orchestra; Sunset quartet; 12-2, artists; Two Jays.
WBCN, Chicago, Ill. (266m-1130ke), 10-10:30 a. m., Penny Wise, the shoppers' ready helper, shopping talk; 7-8, classical hour; Emily Stone, violinist; Ada Mae, tenor; Ethel Eaves Price, soprano; Alice McMahon, Stone, accompanist; Lemmyon Amoureux, French tenor; Ethel Eaves Price, soprano; Alice McMahon, alto; Margaret McArthur, pianist; John Williams, baritone.
WCCO, Minneapolis-St. Paul, Minn. (416.4m-720ke), 10:45 a. m., 'Do You Entertain Easily,' Betty Crocker; 2 p. m., woman's hour; 2:30, afternoon concert; 4, readers' club, Eleanor Poehler; 5:30, children's hour; 7, mid-week church service; 8, program, WEAF, Ipana Troubadours; 9, traffic safety talk, M. R. Bass; 10:05, dance program, Emmet Long's Golden Sheasant orchestra; 11:30, organ recital, Eddie Dunstedter.
WDAF, Kansas City, Mo. (365.6m-820ke), 10:45-11 a. m., Betty Crocker, home service talk; 6-7 p. m., the Tell-a-Story lady; address, Ralph E. Herrick; The Tri-angel ensemble; 8-9, 'Beauty and the Facobin,' WDAF players; 9-10, classical musical program, The Star's string ensemble; 11:45-1 a. m., Plantation players; Eddie Kuhn's orchestra.
WDDO, Chattanooga, Tenn. (256m-1170ke), 6:30-7 p. m., organ music, 'Ivory theater'; 7-8, Hotel Platten orchestra; 8:15, special features and program.
WEBH, Chicago, Ill. (370.2m-810ke), 11:30-12 noon, woman's half hour; 3-4 p. m., special features; 7-8, Orleole orchestra; Emerson Military band; 9-10, Orleole orchestra; 11-12:30, Orleole orchestra; Irene Beasley; Edgewater Beach hotel orchestra.
WFAA, Dallas, Tex. (475.9m-630ke), 12:30-1 p. m., Sears-Roebuck Agricultural Foundation program.
WFES, Oak Park, Ill. (250m-1200ke), 5-7 p. m., basso, pipe organ, tenor; 8-9, orchestra, alto; 11-1, Coyne serenaders, comedian, organ, tenor, piano, orchestra.
WGN, Chicago, Ill. (302.8m-990ke), 10-11 a. m., public service period; 11-11:30, household hints; 12:01-12:30 p. m., Walter Murray; 12:40-2:30, luncheon concert, Drake concert ensemble and Edward Benedict, organist; 2:30-3, Lyon and Healy artists; 3:25-3:30, Port o' Missing Men; 3:30-4:15, tea time music, Marshall Field's tea room orchestra; 4:30-5, organ recital, Edward Benedict, organist; 5:30-5:57, Skeezix time; 6:30-7, dinner concert, Drake concert ensemble and Edward Benedict, organist; 8-9, Hamilton club chorus; 9-10, Roxy and his gang, WEAF; 10-11, dance program.
WHAD, Milwaukee, Wis. (275m-1090ke), 11 a. m., pianologue, Andy Hertel; the Housewife; 4 p. m., 'With the Humorists,' John R. Wolfe; Mr. Marie Weiss, pianist; Linda Herzig, saxophone; 6:15-7, Arthur Richter, organist; 10:30-11:30, popular dance hits, Dexter's Wisconsin and Elger's Creole roof orchestras; 11:30-12:30 a. m., Edmund Fitch, organist.
WHAS, Louisville, Ky. (399.8m-750ke), 1-2 p. m., concert, Barney Rapp's orchestra; 3-3:30, organ recital, Myrtle Fulks Zahn; 4-5, concert, Harry Currie's Music Box; readings; 7:30-9, concert, Royal Peacock orchestra.
WHO, Des Moines, Iowa (526m-570ke), 6:30-7:30 p. m., Reese-Hughes orchestra; 7:30-9, Kate Miller, whistler; Maude Hughes, accompanist; Harry Lewis, popular songs; Leonard Kirkwood, pianist; Four Husketeers; Norman Jackson, Hawaiian guitarist; 9-12, dance program.
WHT, Chicago, Ill. (399.8m-750ke), 10 a. m., women's club, Jean Sargent; Borden's health talk; music; 10:45, home service, Betty Crocker; 11, Drama league talks; 11:15, one-act play; 12 m., organ recital, Al Carney; 6-7:30 p. m., Jean Carson; Peter Forstner; Pauline Peebles; Grayling's string trio; Edwin Kemp, tenor; (238m-1260ke), 7:45-9:15, Alamo orchestra; (399.8m-750ke), 9:30, organ recital, Al Carney; Hickey and Johnson, Hawaiian harmony; Manoloff Russian string quartet; Ray Lawson, tenor; Chez Pierre orchestra; Ruby Rossinia, popular songs; 10:10, Ray-O-Vac entertainment; 12, 'Four Hour League,' Pat Barnes and Al Carney.
WIBO, Chicago, Ill. (266m-1330ke), 10-11 a. m., shoppers' bureau, Grace Villa Gray; 2-4 p. m., popular shut-in program; 6-8, dinner concert, Walter Preston; WIBO trio; Florence Osterman, alto; Christopher Hendra, tenor; Hicky and Johnson, Marie Wright.
WJJD, Mooseheart, Ill. (370.2m-820ke), 4-5 p. m., Mooseheart hour; music, younger children; daily assembly of 1,256 children; faculty talks; 6-7, instrumental hour, Howard L. Peterson playing Geneva organ; Palmer symphonic players; Palmer House Victorians; 8-9, Mooseheart children's hour, music, children of all ages, solos, band, etc.; talk, Matthew P. Adams; 10-11, R. V. Thomas, bass; John Bancel, tenor; 12:30-1:30 a. m., setting-up hour, Garod studio, Palmer House; Palmer House Victorians.
WKAF, Milwaukee, Wis. (261m-1150ke), 10-11 p. m., Campus Skylarks; Harmony duo.
WKAR, Lansing, Mich. (285.5m-1050ke), 7:15-8 p. m., horticultural course, 'Training the Young Fruit Tree,' H. D. Hootman; 'Economy and Efficiency in Spraying,' H. A. Cardinell.
WLIB, Chicago, Ill. (302.8m-990ke), 7-8 p. m., dinner concert; 11-12, popular program; 12-1 a. m., dance program.
WLS, Chicago, Ill. (344.6m-870ke), 12 m., Ford and Glenn; 6 p. m., R. F. D. program; WLS studio trio; 6:40, Ralph Emerson, organist; 7, Ford and Glenn; 7:15, WLS studio trio; 7:45, Rodeheaver's program; 8:15, Ernest Moller, pianist; 8:30, Ford and Glenn; 9, WLS theater; 9:30, Pan Candy Boys trio; 10, Garrett male glee club; 10:40, Goldie Gross, cellist; 11, WLS circus program.
WLM, Cincinnati, Ohio (422.3m-710ke), 7:30 a. m., healthful exercises, William Strickman; 8, morning devotions, auspices of the Parkway C. M. C. A.; 12:05 p. m., musical novelties, Irene Downing, player-

Wednesday, February 3

Headliners Today
Eastern 8:30 p. m. WBZ (383.1m-900ke) Tyrolean ladies' quartet.
Central 7:30 p. m. WHO (526m-570ke) Four Husketeers.
Mountain 6:30 p. m.
Pacific 5:30 p. m.

WGY SUPERPOWER TESTS JANUARY 30-31

Wednesday, February 3

roll artist; 3, Kroger cooking chats, Judith Anderson, shut-in program, directed by William Dunning; 7, concert, Hotel Gibson orchestra, Robert Visconti, director; 7:30, address, representative of the Ohio Farm Bureau federation; 11, "The Boys from Home," Ronald West James Buchanan, popular songs; 11:15, musical news, Johanna Grosse, editor and organist; 11:40, pianists, Newport, Carl Lamberg; 12:45 p. m., Radio Farm school; Chicago Association of Commerce luncheon; 2, shut-in program; 4, recipes, Mrs. E. O. Hiller; 4:30, pupils, Starratt school; 5:15, Georgene Paulkner; 6, Chicago theater organ recital; 6:30, Hotel La Salle orchestra; 8, lecture, Northwestern university; 8:25, birthstones, Fred M. Lund; 8:35, Lester Mather, pianist; 9, Chicago Association of Commerce talk; 9:20, WMAQ players; 9:55, chimes.

Mountain Time Stations

CFAC, Calgary, Can. (435.8m-688kc), 4 p. m., Red Cross address; 8, St. David's society. KFVA, Ogden, Utah (261m-150kc), 4-5 p. m., organ, Paramount theater; 5-6, Ogden Radio dealers' program; 9-10:30, music, Paramount theater; 10:30-12, Ollie Reeves and his orchestra.

Pacific Time Stations

KFI, Los Angeles, Calif. (468.5m-640kc), 5:30-6:30 p. m., popular song matinee; 6, nightly doings; 6:15, KFI's Sealing California; 6:30, vest pocket program; 6:45, Radioteletype; 7-7:20, Nick Harris' detective story; 7:20-8, Al Wesson and his dance orchestra; 8-9, program, Ventura Refining company; Ventura string quartet; 9-10, Pasadena Athletic and Country club quintet; 10-11, Patrick-Marsh dance orchestra, Betty Patrick, soloist.

KOAC, Corvallis, Ore. (280.2m-1070kc), 7:20 p. m., musical selections; 7:30, "Selection of Hats," Gladys Peterson; 7:45-8, "Posture and Relaxation," Doris M. Thornely. KPO, San Francisco, Calif. (428.3m-700kc), 1-2 p. m., Rudy Selzer's Fairmont orchestra; 2:30, matinee program, James Lono's Hawaiian orchestra; 3:30, fashion talk; 5:15-6:15, children's hour stories; 6:40-7, Waldemar Lind and States Restaurant orchestra; 7-7:30, Rudy Selzer's Fairmont hotel orchestra; 8-9, program, Atwater Kent artists; 9-10, dance music, Goodrich Silvertown Cord orchestra; 10-11, Waldemar Lind and States Restaurant orchestra.

Thursday, February 4

Headliners Today

Table with 4 columns: Eastern, Central, Mountain, Pacific. Lists various radio stations and their broadcast times.

Eastern Time Stations

CKAC, Montreal, Can. (410.7m-730kc), 4:45 p. m., Windsor hotel dance orchestra; 7:30, CNRM. CNRM, Montreal, Can. (410.7m-730kc), 8:30 p. m., Viola Benoit, soprano; George Ferguson, tenor; Goldie Bertels Geiger, violinist; "Unknown Canada," C. Price Green.

Central Time Stations

CKY, Winnipeg, Can. (384.4m-780kc), 8:30 p. m., Simpson's hour, Princess Pat's band. KFAB, Lincoln, Neb. (340.7m-880kc), 10:30 a. m., "The New Homemaker," Jane Hinkley; 8:30-10:30 p. m., male glee club, Kearney Normal, Prof. George H. Allen, director.

Mountain Time Stations

WJAZ, Chicago, Ill. (322.4m-930kc), 10 p. m., chimes; Mary Towbin, violin; Emmelinda Sievers, contralto; George E. Krueger, baritone; Harriet Hertz Swyl, soprano; Mary Towbin, violin; 11 p. m., chimes; Emmelinda Sievers, contralto; George E. Krueger, baritone; Harriet Hertz Swyl, soprano; 12 midnight, midnight chimes.

Pacific Time Stations

KWB, Hollywood, Calif. (252m-1190kc), 5-6 p. m., children's hour, Big Brother of KWB; 7-7:30, Mutual Motors joke contest; 8-9, program, John Wright, the Right Tailor; 9-10, Bill Hatch's Oakmont Country club dance orchestra; Frank Stever, baritone; 10-11, Warner Brothers' frolic, direction Charlie Wellman. KGO, Oakland, Calif. (361.2m-830kc), 7:15-7:30 a. m., health training exercises, Hugh Barrett Dobbs; 7:45, pep class; 8:30, "Daily Strength"; 8:45, Mme. Elfrida Wynne, inspirational songs; 11:30-1 p. m., Pacific States Electric company luncheon concert; 3-4, speech; Edna Linkowski, pianist; James Rhea, tenor; Mrs. Bacon, mezzo-soprano; 4-5:30, concert orchestra, Hotel St. Francis, Vinton La Ferrara, conductor; 5:30, Mr. Fix-it; 6-6:55, dinner concert.

4:10, Harold Glenn, whistler; 4:30, White Rose Melody boys; 5:10, Sylvia Schatz, pianist; 8:30, Strickland's orchestra; 9, Piottl, Val and Lloyd; 9:15, Eva Rothenberg, pianologist; 9:30, Judith Roth, soprano; 9:45, Max Heitt, violinist; 10, Ruby Cowan, entertainer; 10:30, Strickland's orchestra. WGHP, Detroit, Mich. (270m-1110kc), 6 p. m., dinner concert, Hotel Tuller; 7, farm program; 8, Dodge Brothers band, Eugene La Barre, conductor; 10, popular program; Skylark dance band; Charlie Mitchell, Wolverine quartet; George Lamb, Mildred Pickard; Everett Fifler, old time fiddler.

WGR, Buffalo, N. Y. (319m-940kc), 2:30 p. m., WGR's afternoon program; 5:30, Vincent Lopez's Hotel Statler dance orchestra, Harold Glesser, director; 8, jointly with WEAH, Larkintines; 9, jointly with WEAH, Cliquot Club Eskimos, Goodrich Silvertown Cord orchestra, Joseph Knecht, director. WGY, Schenectady, N. Y. (379.5m-790kc), 2 p. m., music; talk, "Keeping Little Children Well," Dr. Helen Zillmer; 6:30, dinner program, Ten Eck concert trio; 7:30, book chat, L. L. Hopkins; 7:45, program, WBFL; 9, Royal Salon orchestra hour, WJZ; 10, WGY orchestra, Claude Adams, violinist; Eugene Moses, pianist, and Vina Adams, accompanist; 11:30, organ recital, Stephen E. Boisclair.

WRC, Washington, D. C. (468.5m-640kc), 10 a. m., women's hour, WJZ; 12, organ recital, Homer L. Kitt studios; 1, Hotel Mayflower orchestra; 6, Hotel Hamilton orchestra, Daniel Chwalow, director; 6:45, Smithsonian talk; 7, New Willard Hotel orchestra, Samuel Korman, director; 7:30, Pan-American concert, United States Army band, WJZ; 8:30, Radio-movie presentation, WJZ; 9, Royal Salon orchestra, WJZ, WGY, WCAD; 10, "The Political Situation in Washington Tonight," Frederick William White, WJZ; 10:30, Meyer Davis' "Swanee" orchestra; 11:30-12:30, a. m., organ recital, Otto F. Beck, Crandall's Tivoli theater.

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12:30-1 p. m., orchestra; 9-9:10, accordion novelties, Joe Kuntz; 9:10-9:30, opera group, Eastman hotel ensemble; 9:30-10:15, new Arlington hotel ten-piece orchestra; 10:15-10:45, Mrs. Natalie Aronow, violinist. KYW, Chicago, Ill. (536m-560kc), 11:35 a. m., table talk, Mrs. Anna J. Peterson; 12:05-1, noonday concert, Commonwealth Edison company; 1, Joska DeBarry's orchestra; Coon-Sanders' Original Nighthawks; 2:35-4, afternoon frolic; 6, dinner music, KDKA; 7:05, bedtime story, Uncle Bob; 7:33-7:53, "The Forestry Clubs," A. L. Ford; "More Adventures of Paul Bunyan," E. W. Meeker; 8, "Twenty Minutes of Good Reading," Rev. C. J. Pernin; 8:25-9, musical program; 9, an hour of music, Commonwealth Edison company; 11:15-11:30, evening at home, Coon-Sanders' Original Nighthawks; 1, Insonnia Club.

WMBB, Chicago, Ill. (266m-1330kc), 4-6 p. m., Valentino Inn orchestra; singers; 8-10, Tip trio; Ziegler sisters; Moulin Rouge orchestra; 10-12, Moulin Rouge orchestra; artists and stars. WBCN, Chicago, Ill. (266m-1130kc), 10-10:30 a. m., Penny Wise, the shopper's ready helper, shopping talk; 11-11:30, classical hour; Emily Stone, violinist; Ada Mae Stone, accompanist; Lemmyon Amoureux, French tenor; Ethel Hayes Price, soprano; Alice McMahon, contralto; Margaret McArthur, pianist; John Williams, baritone; 11-1 a. m., Elmer Jordan and company, Old matinee. WCB, Zion, Ill. (344.6m-780kc), 8 p. m., male chorus, trombone quartet; Fred Faassen, organist; Mr. and Mrs. Richard F. Hire, violinists; J. L. Bishop, baritone; Dorothy Bull, soprano; Carey sisters; Arthur Rendall, clarinetist.

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## Congress Stages Comedy

OUR Washington correspondent writes that two important facts have been established by the hearings in congress on the Dill and White bills which would give the secretary of commerce additional authority to properly regulate Radio. One is that the Radio industry, the broadcasters, and the general public all favor the general principles of the regulatory measures proposed.

The second fact emphasized is that George M. Cohan has a new and serious rival in the comedy producing field—congress. The hearings have brought out, together with many laughs, the fact that the average congressman does not know enough about Radio to discuss it intelligently, much less legislate toward its regulation.

But we can't expect our senators and representatives to have considerable knowledge concerning such a highly technical subject. And the congressmen admit they haven't, so everyone is happy.

Major Maubourgne, of the U. S. signal corps, at one of the house hearings, was asked a question by Rep. Frank Reed, of Illinois. The major did not understand the question, which was queer and hardly coherent insofar as Radio technicalities are concerned. He informed Representative Reed he did not understand the question.

"Well, you haven't got anything on me," nonchalantly retorted Mr. Reed. "I don't understand it either."

At the senate hearings, Judge Stephen Davis, acting secretary of commerce and Herbert Hoover's right-hand aide on the subject of Radio, was forced to spend one whole morning explaining the difference between a wave length and a band of wave lengths. Then he had another hard one when he told the senators the difference between wave length in meters and frequency in kilocycles.

At the conclusion of one of the hearings in the senate interstate commerce committee, which was discussing the Dill Radio bill, one of the experts representing a Radio company, telegraphed an associate as follows:

"Come to Washington immediately. You are missing one of the best comedies I have seen in a long time." The lack of Radio knowledge on the part of the congressmen, as we have noted, is excusable, but if these same congressmen take it into their heads that the situation calls for large doses of the amendment medicine which they so dearly love to apply to most measures, the Radio bills, badly mutilated and full of holes, may emerge in such a form as to be wholly unacceptable and actually harmful.

Write your senators and representatives to "never mind what it's all about," but vote for the Radio bills as proposed by Senator Dill and Representative White. They are what is wanted by everybody, immediately, not next year.

## Does WIR Spoil Your Reception?

TOO late received to be included as a hint for International Radio Week, comes a communication from a reader who is bothered by interference from a commercial station, WIR, at New Brunswick, N. J.

This plant is a 20,000-watt experimental telegraph station operated on 74 meters, supposedly, by the Radio Corporation of America. The interference from this source is so strong that it spreads clear over the broadcast wave bands, from 200 to 545 meters.

The complaining listener lives in Pittsburgh, a good distance away, but says the interference is still terrible. Even local reception is badly mutilated. Complaints from Ohio also report WIR as interfering.

Interference of this kind is hardly a good thing for the Radio industry. If one must experiment, let the experimental station be so located and so designed as to create a minimum of trouble for the broadcast listeners. Perhaps the experiments could be scheduled at such an hour in the morning as to disturb no one.

Cannot something be done to prevent WIR from crashing all over the ether? If not, it should be closed down. The public must be served. The attention of Supervisor of Radio Batchelor, of the second district, is remanded to this nuisance.

Stop it, Mr. Batchelor!

## RADIO INDI-GEST

### Listenin In

Daddy called me down the cellar  
When Mama was away.  
"Now be sure that you don't tell her  
A single word I say,  
Because I'm not wantin' her to know,  
Or she'll get mad as sin—  
Sh-h-h-h-gonter get a Radio  
An' you can listen in."

My mama's mind runs most to clothes,  
The fashions and the style,  
But when it comes to Radios  
She says they ain't worth while.  
When daddy gets the thing set up,  
An' some speaker wags 'er chin,  
I'll bet a doughnut to a pup  
Ma's first to listen in.

Barney Lee

### Hirsute Harmony

"Trade" and "Mark," the famous "Smith Brothers" are singing every week over WEA. The program is sponsored by the Smith Brothers Cough Drop company. This feature should be broadcast over KOA, Denver, or KPXF, Colorado Springs.

### Dear Little Mother

"When her only daughter reached the mature age of three, she found her offspring had inherited her mother's talent."—From story in WOR Studio News.

### The Third Alarm

When I wake up and stretch, and slowly yawn,  
And marvel at the fleetness of the night  
So quickly overtaken by the dawn,  
I wonder what impetus had their flight.

"There surely must be some mistake," I moan,  
"Why should I be so tired and rum-dumb?"  
Then suddenly I'm mindful I am prone  
To stay up late when programs start to come.

The Night Herd

### Helen Maria!

Dear Indi: Since the institution of microphones in the House of Lords it has been discovered that the most intimate conversations are broadcast through the chamber. Recently the Archbishop of Canterbury (a peer by right of his office) heard another peer speak of him to a neighbor member as, "What a fool this old fossil is." Unless the installation can be tuned down, it is said the peers will demand the removal of the instruments. They insist on their rights to swear in privacy.

FOG.

'S funny, Fog. Really, old topper, m'lord should be elected, doncher know. F'rinstance like our senators. By the time he went through a few campaigns, a good cussing, exquisitely frilled, would fail to jar his monocle. He might not even bluster if he was threatened with becoming the groundwork for a fossil.

### Symphony in Minors

Slim and Red and Spud and me  
Built us a reg'lar station,  
We're gonna broadcast music, too,  
And Slim's school-day oration.

We built it up in Red's hayloft,  
With a seive for mikrofone,  
And padded up the place with quilts  
To perfect our music's tone.

We use a clothesline for the thing  
To send the waves a-bouncin',  
And we're all set to thrill the world,  
With Spud to do the 'nouncin'.

Slim got his mother's roastin' pan  
An' I swiped our wash basin,  
And Red an' Spud each got a pail—  
Tune in and get our station.

Will O. Wisp

### For Peruvian Sheiks

We noticed in the program from OAX, Lima, Peru, that a camel-trot was included. And right away Blooper piped up and wanted to know why they had that in Peru, as they don't have to go eight dances without a drink. But anyway, we hope the graceful dancers we saw in Lima several years ago are not humping over now like our American Charlestoners.

### Gotta Blame "Blooper"

I KNOW OF AN ANNOUNCER  
WHO'S A PEST UPON THE AIR—  
IF I CAN GET A BOUNCER

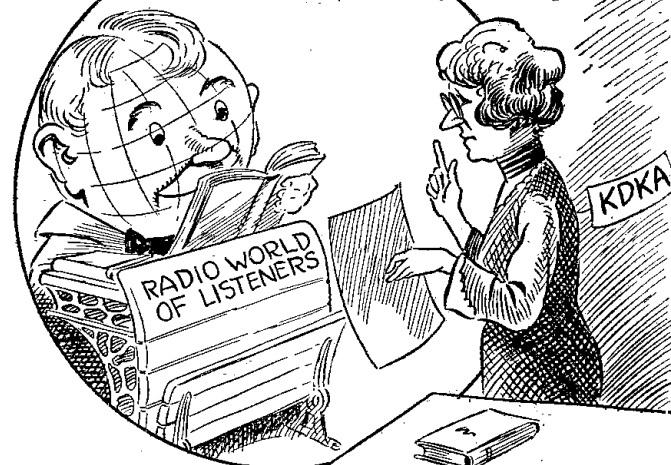
Say Folks, there's a little freckled-faced kid here that does everything from pester us in the morning to pester us at night. He's a good kid, but he'd meddle in H. R. H. Davie Windsor's love affairs or any other trifling matter, if he could, so we have nicknamed him "Blooper." He wanted to help Indi for this issue by writing a poem. He handed the above in and said there were so many things he would do to a pesty announcer he couldn't get them all in one line. Indi wants the worst thing that could be done put in that line. Can you help him out with a suggestion? An autographed heterodyne squeal with a rubber string attached will be sent to the one who submits the best line.

### Your Program's Coming In Fine

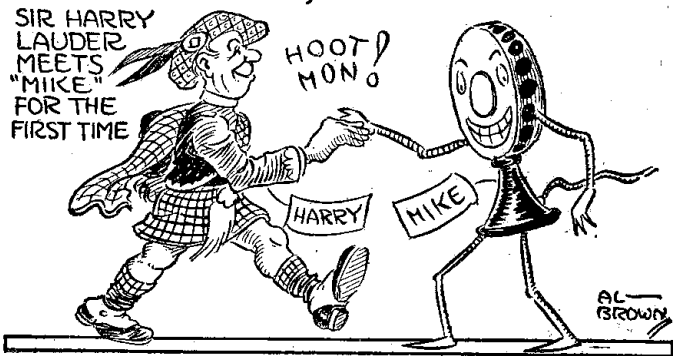
Will one of the chain gangs please sing "The Prisoner's Song?"

## The News of the Week

### KDKA THE EDUCATOR



SIR HARRY LAUDER MEETS "MIKE" FOR THE FIRST TIME



## Condensed

BY DIELECTRIC

Fortunately for Radio listeners one did not have to be a resident of Allentown, Pa., to hear a beautiful number, "Ecstasy," rendered by a string quintet. This number presented through Station WSB, Atlanta, was a feature in the Lion and King program and dedicated to someone in the town mentioned above. Whether the piano was misplaced with reference to the mike, or just played too loud, the result was a prominence which tended to upset an otherwise excellent ensemble. A later feature of considerable interest was provided by carrying listeners about from one to another theater in the city, thereby introducing a variety of acts and musical selections.

That quiet, southern-accented voice of Wendall Hall, set off by his engaging chuckle, has a very competent pair of wings attached—or so it would seem. Not so long ago, he has perfectly at home before a mike in Chicago and more recently we heard him from the studio of KOA, Denver. By the time he reached the latter city several new jokes had come to his mind which he unhesitatingly proffered for our benediction. Some of them received anything but that, while others would make even the stern lines on Bernard Shaw's face relax. Everybody likes his uke-ing.

Let's see how many of the broadcasting stations we can commend for omitting undesired material in their announcing or including such things as the Radio audience deems essential to satisfactory reception. The station to be mentioned at this time is WTAM, operated by the Willard Battery company, Cleveland. Throughout the playing of a dance program at this station there was announced between each number merely the station call, city and selection to follow, amounting to the least interruption one might wish for. There are others to note.

Just as Station WJJD, Mooseheart, Ill., reached that part of an evening program where a native Eskimo was presented, our dials tuned them in. This gentleman of the far north country has succeeded in mastering pianoforte execution in a manner thought improbable for one of his birthplace. The recital was given from the Palmer House, Chicago, and was consistently interesting. Yet the playing of this pianist stood out prominently, due to skill in execution and expression.

Should you hear the Boswell Sisters, from Station WSMB, New Orleans, you will readily understand why they have been retained on the broadcast programs of that station ever since its inception. They are clever performers on their chosen instruments and might fittingly be included in the galaxy of artists' likenesses appearing in this paper. Another observation should be made, which is to the effect that announcing is done slowly, distinctly and pleasantly.

Station WPG, Atlantic City, developed an anniversary program of merit including awarding of prizes to listeners—a customary proceeding—and switching by remote control from the new Elks home at that seashore resort to other points in the city where entertainment was available. Both the participants and listeners spent a lively evening together.

There is one group of songs to which music lovers never tire of listening—the Indian love lyrics. A tenor with good vocal equipment rendered one of these songs before the mike of KFI, Los Angeles. Another feature worthy of comment was the violin playing of Samuel Gardner.



# 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 a Day-Fan Five Receiver

**M**ANY have tried, but few have succeeded, as have the designers of the Day-Fan 5, in producing a Radio receiver of such remarkable simplicity.

Its semi-sloping panel in black and gold, relieved by a housing of hand-rubbed mahogany, in effect accentuates the one dial major tuning control, which is this receiver's outstanding feature. Through slowly turning this dial, and an occasional slight adjustment of the small vernier dials at either side of the major one, we were able to not only separate each of the Chicago stations, but receive satisfactory reception from outside stations, which speaks well for the selectivity of any make of receiver.

In addition to the controls mentioned, two additional controls are provided at the opposite lower corners of the panel,

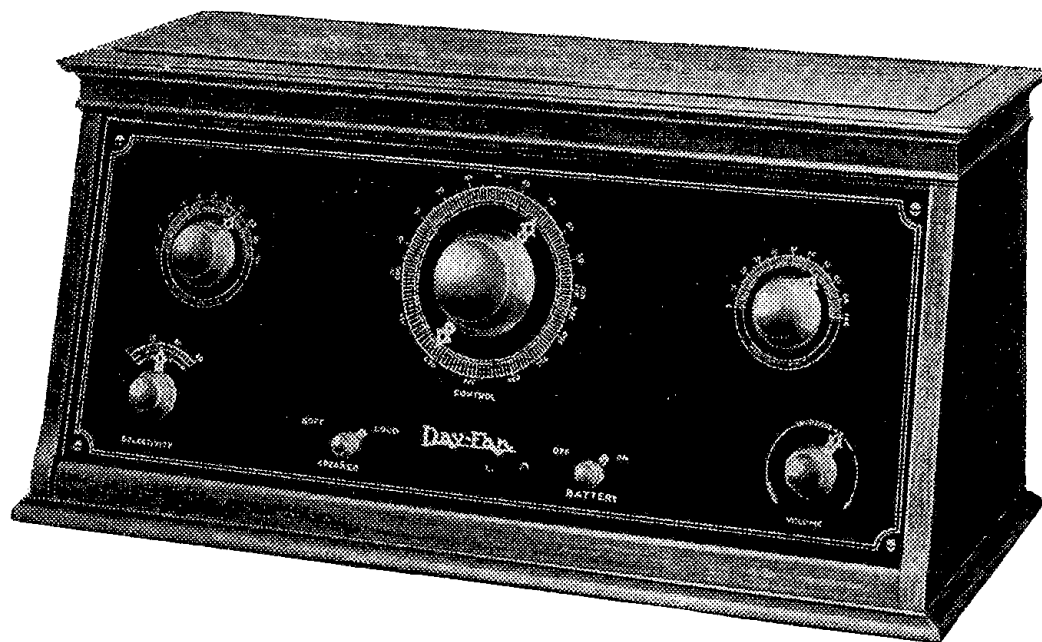


Figure 1

which function as aids for additional selectivity, and the regulation of volume. This completes the panel assembly with the exception of a centrally located battery switch of neat design, which is used to either turn on or off the set.

The interior assembly of parts, together with the evidence of careful workmanship, is in keeping with that which one expects from manufacturers of repute, the total receiver expressing the thought of keeping well abreast of Radio's rapid advancement.

### Antenna and Ground

As the construction of an efficient antenna and ground are of vital importance, our experience with the Day-Fan indicated that the antenna should be number 14 single strand copper wire, from 80 to 100 feet in length, and placed as high above ground as possible. Care should be taken to insure it being well insulated from, and not touching, any surrounding objects. The lead-in wire from the antenna to the receiver should be number 18 rubber covered wire and securely soldered.

If this is impossible, your next choice

may be an equal length of rubber covered number 18 copper wire, strung along the picture moulding of an upstairs room, or located in an attic.

The ground connection should be as short as possible, the size of wire used to be the same as for the antenna, while it need not be insulated. Run this wire from the receiver as direct as possible to a cold water pipe, to which it should be fastened by means of a ground clamp, purchasable in all electric or Radio supply stores. If such a clamp is not available, it is then permissible to file or scrape a portion of the pipe and to wrap approximately two feet of the bare ground wire tightly around the cleaned portion of the pipe. When completed cover this wrapping well with ordinary tin foil, and over it and the wire fastened to the pipe place a wrapping of tape.

Should no cold water pipe be available, a galvanized iron pipe about six feet long, to which the ground wire has been secured in the same manner as outlined for fastening to a cold water pipe, may be used. This should be driven its full length into moist earth.

As no receiver is any better than its weakest link, it is of importance that only proven accessories should be used. Look well then to the quality of the tubes, batteries and loud speaker which you purchase. Price is not a criterion of goodness, while reputation is.

### Accessories

You will require five 201-A or 301-A type tubes, two 45-volt B dry batteries, the heavy duty type being preferred, and one 6-volt wet storage A battery, for this receiver. In addition a suitable loud speaker will, no doubt, be required.

In purchasing the A wet battery, as well

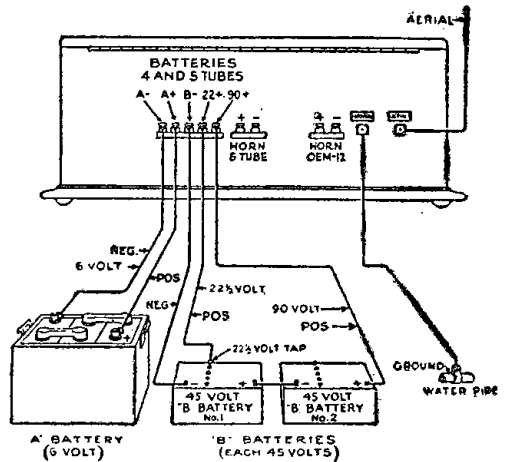


Figure 2

as the B dry batteries, secure your dealer's assurance that they are fresh and fully charged. A fully charged wet storage battery should indicate a hydrometer reading between 1275 and 1300, while a 45-volt dry B battery should test with a reliable voltmeter 38 volts or better, in order to be of value.

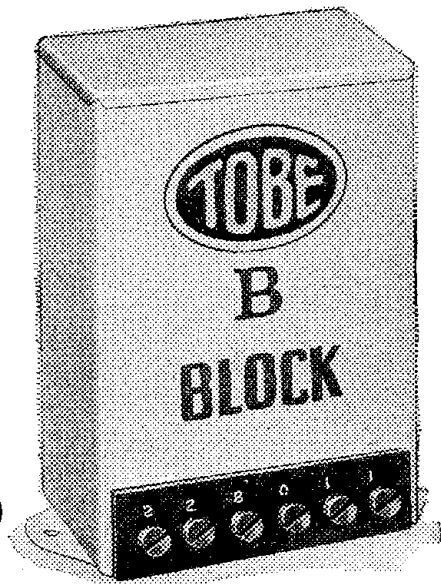
### Connecting the Receiver

Before attempting to connect the batteries and antenna and ground, carefully read the instructions which come with the receiver. The actual making of these connections has been made extremely easy as a 5-wire cable for making the connections to the batteries is furnished and properly connected with the terminals of the receiver. One then has but to place

(Continued on page 26)

## The TOBE "B" BLOCK

An essential part of the hum-less B-eliminator



Price \$11.00

**C**ONTAINS in one compact silvered metal case the three filter and two by-pass condensers required for the Raytheon "B" Eliminator;—one 8 mfd., two 2 mfd., two 1 mfd. Saves \$2.50 in cost of parts—saves space—saves wiring. Approved by the Raytheon Mfg. Company for use with its Raytheon tube. See pages 27 and 28, this issue of RADIO DIGEST.

Ask Your Dealer for "The Better Condensers"

A new TOBE "B" Block is also available with one 8 mfd. and two 2 mfd. condensers for filters in power amplifiers and other types of plate supply work.

Price, \$9.50

### THE TOBE DEUTSCHMANN HIGH-VOLTAGE BI-PASS CONDENSERS ARE NOW AVAILABLE

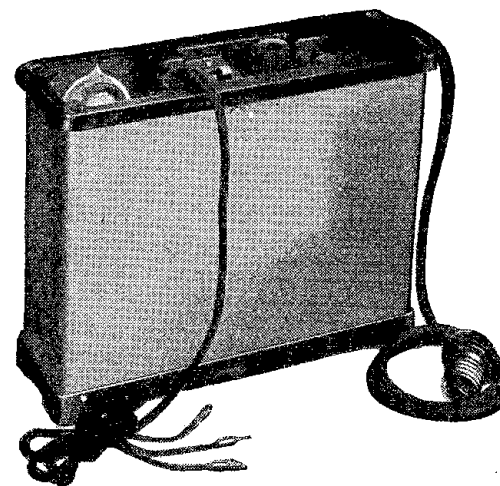
Prices: 0.1 mfd., \$0.60 0.5 mfd., \$0.75  
0.25 mfd., .70 1.0 mfd., .90  
2.0 mfd., \$1.75

These condensers are mounted in the standard TOBE shielded metal cases, with silvered finish and are designed for all usual radio by-pass uses and for ordinary "B" eliminators.

The TOBE model high-voltage filter condenser is also announced at our former prices. Each of these is individually tested and stamped with date of test. Accuracy guaranteed within 5 percent of rating. For use where the very best parts are desired, as in power amplifiers and "B" eliminators, for power tubes and for experimental work.

Write us for circuit diagrams of all types of "B" battery eliminators

**TOBE DEUTSCHMANN COMPANY**  
Cornhill, Boston, Mass., U. S. A.



The Acme B-Eliminator, shown to left, is made in two types:

Type E-1, (110 volts 60 cycle), \$50 (Type E-1 uses Raytheon Tube)  
Type E-2, (110 volts, D. C.), \$20

For those who want to make their own:

Acme B-4 Transformer.....\$7  
Acme B-2 30 henry Choke...\$5

## Acme B-Eliminator gives—

Greater Distance, Greater Volume and Better Quality With no noise—no hum—no distortion

**T**HE big job in finding a method of hooking up house electric current to replace "B" batteries in radio sets has not been to eliminate the hum. That was easy. The problem was to discover a way of overcoming the distortion.

Now, after two years of experimental and research work, we have won. The Acme B-Eliminator has no noise, no hum, no distortion.

You can guess the result. No "B" batteries to quit cold when you need them most. You get permanent reception, better reception, and higher voltage that is constant.

ACME APPARATUS COMPANY  
Dept. N11  
37 Osborn Street Cambridge, Mass.

**ACME**  
~for amplification

There is nothing to wear out. The first cost is the last—and the current consumed is trifling.

The new Acme B-Eliminator is highly effective on any set from 2 to 10 tubes. Detector voltage is 0 to 70. See it at authorized Acme dealers.

Those who prefer to assemble the Acme B-Eliminator themselves can easily do so by following a few simple instructions. Send 25 cents with the coupon below and we will furnish you with an actual size wiring diagram together with a copy of our booklet, "Amplification without Distortion" which contains all necessary instructions.

-----  
Acme Apparatus Company,  
Dept. N11, 37 Osborn St., Cambridge, Mass.  
Enclosed find 25 cents, stamps or coin, for actual size wiring diagram for construction of Acme B-Eliminator, and copy of "Amplification without Distortion."  
Name.....  
Street.....  
City..... State.....

**OPERATING DAY-FAN 5**

(Continued from page 25)

the set well away from radiators or metal objects, which have contacts with the earth, and attach the free ends of the cable to the batteries as indicated in figure 2. The plus, or positive, terminal of the A battery is marked + or painted red.

Place the 6-volt storage battery as

2. Turn the center dial all the way to the left and then all the way to the right, which will line up the tuning condensers.
3. Set the large center dial at the number shown on the wave length calibration chart, sent with the receiver, for the station which you desire to hear.
4. Turn the speaker switch to the loud position.
5. Turn the selectivity dial from right to left until maximum volume is secured.

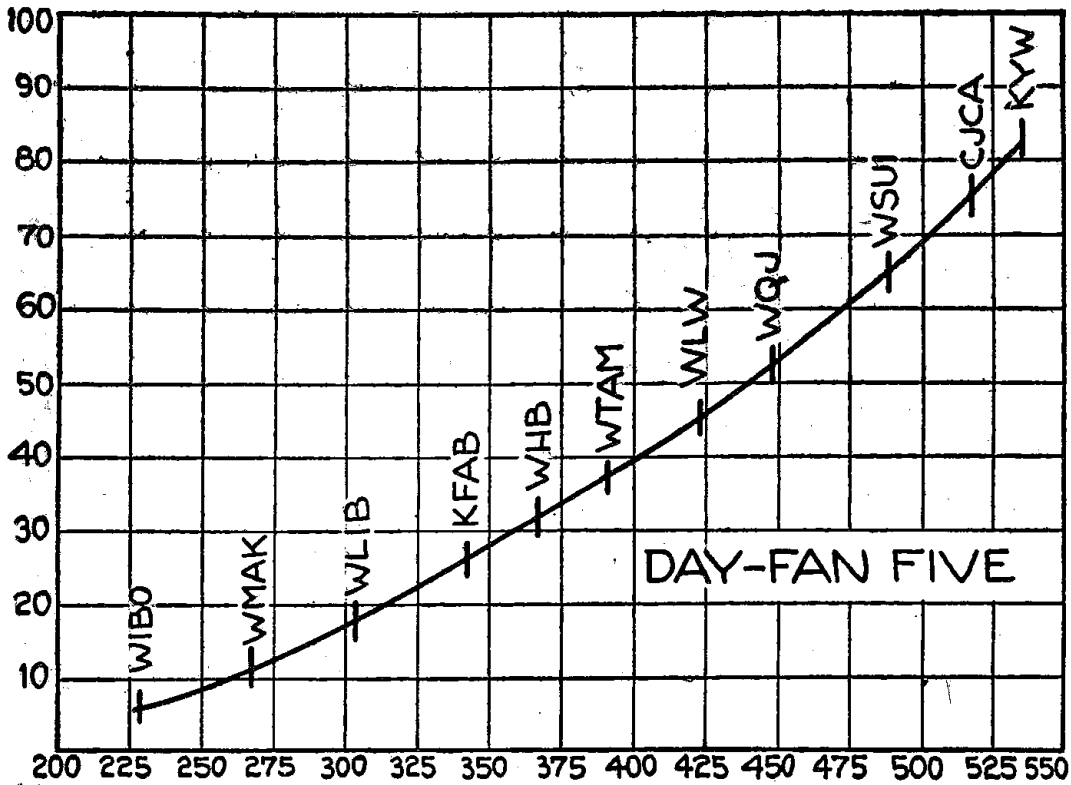


Figure 3

close to the receiver as is possible, yet convenient for charging if you have a battery charger. Rubber covered wire for the connecting of this battery to the receiver should not be smaller than number 16 if the battery location does not exceed six feet from the receiver. If of greater distance, up to ten feet, then a number 14 wire should be used.

It is also advisable to place the dry B batteries convenient to the receiver and at no greater distance than that of the A battery. The connecting wires from the B battery must also be well insulated, although the size may be smaller, though not less than number 18 gauge.

A booklet is included with the Day-Fan 5, in which is a wave length calibration chart, which enables the operator to instantly locate the station desired. This is arranged so that the indicating numerals coincide with the dial reading, and presents a most helpful aid to the novice.

After connecting the receiver, insert the tubes in their sockets, and turn on the battery or loud speaker switch, then proceed as follows:

1. Set the pointers marked "Selectivity" and "Volume" so that they are vertical.

6. Turn the volume control well over to the right and then slowly back to the left until the tone and volume is such as to please you.

7. If the volume is still too loud, turn the speaker switch from loud to soft.

8. Once a station is tuned in, slight adjustments of the dials to the right and left of the large dial will clear up the signal.

9. Slight adjustments of the "Selectivity" dial will materially assist in the tuning in of stations which are otherwise hard to separate from interfering ones.

**Tuning Chart**

As an additional assistance in operating this receiver, and also as indicating our method of checking the claim of the manufacturer relative to one being able to set the main control dial in accordance with their wave length calibration chart, we produce in figure 3 a graph chart of wave lengths against dial settings.

The check was made covering the reception of twelve typical stations which were broadcasting from 244 to 536 meters, and it is surprising to note from this chart how closely it adheres to the manufacturer's claim.

**KFDM "TOOTSIE LINE"**

(Continued from page 7)

Suddenly the loud speaker trembles and almost falls off the stand. What's the matter? Gracious sakes! Can it be a wreck?

"Oink! Waugheee-er-ooof!" Tootsie rears back on her haunches, such as they are. Lubricating Luke and the Claim Agent make a dash for the door. A general medley, amounting almost to a melee follows. Farmer Perkins and the Bathing Beauties get all mixed up and the Flappers and Pete the Passenger tumble out of the Accommodation coach. Just as they are about to emerge on what is expected to be a gory scene a resounding "Hee! Haw! Haw!" comes chortling through the circuit.

WHERE HAVE you heard that voice before? A Missouri mockingbird? Yes sir! No, maybe 'bout it either! And the first strange sound you heard which started all the commotion and stopped the locomotion was kerzactly what you thought you heard—a real live porker!

And don't you ever think "Tootsie" is a fake either. Magnolia Mike sent us an actual photograph of everybody that takes this trip, only there wasn't quite room enough to include "Mrs. Tootsie," as Pete the Passenger called the Accommodation car. Some listeners have written into the station differing with Pete on the precedence of this relationship, whether the Accommodation or "Tootsie" was the "Mrs." You say "There she comes" when you see her coming 'round the curve, meaning the engine. But then, again, suppose it is a mail train, argues Pete.

However, "Tootsie," and all on board finally steam into Beaumont and find the Magnolious Refinery band waiting at the station wearing their starch collars and gold cuff links in their dresser drawers, which is home and has no reference to underwear. And the band with its "squeaky shoes" and all that plays a welcome fit for Old Home Week. They clamber aboard, being accompanied by three lady passengers and five other men.

Magnolia Mike then gives Castor Oil

Clarence the high ball and "Tootsie" is away again. Four of the five new passengers are discovered to be the Scrap Iron Quartet and they begin to call the stations in a way that makes all the passengers want to keep on riding.

Miss Allie Mae Huitte, one of the accompanying passengers, then unpacks a baby grand from her vanity case and with sweet winged notes assists Miss Richards to waft her voice down to the South American coast. Mrs. Harvey Gilbert also sings to prove that "Tootsie" can carry more than one great singer at a time. While Magnolia Mike is clearing his throat for further announcements, Dick Haynes (for 'tis none other) suddenly bursts forth in song and "Tootsie" rumbles along with scarcely a sound from her iron shod heels clicking against the rail ends. The grand finale of this very enjoyable trip comes with a classical thrill from the ten violins of the "Mozart Violin Choir" under the direction of Miss Gladys Harned.

Here we are, at the end of the line—Magnolia Refining Station. Everybody out. Do not forget your parcels.

**GHOST VIOL WINS FAME**

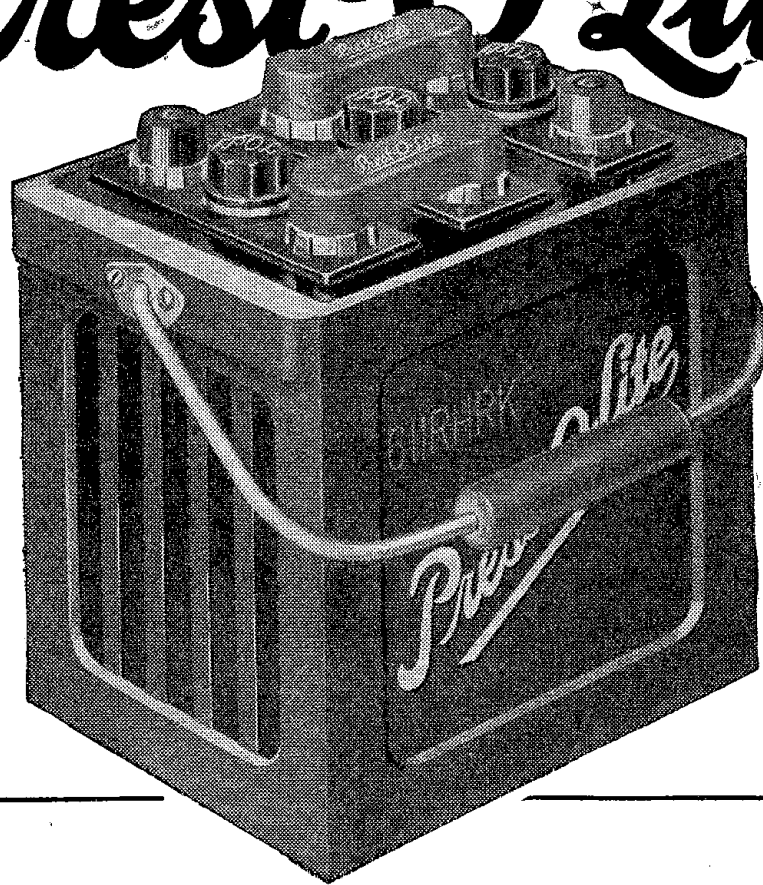
(Continued from page 4)

another and soon the musicians' club became known as the "Kansas City Little Symphony Orchestra."

Their fame spread to other cities and other states. They traveled and the municipality recognized their importance to the fame and acclaim of Kansas City. They were adopted as a city institution. Their numbers increased until, when occasion requires, there are sixty members now in the ensemble.

Two weeks ago they began a series of concerts for Radio listeners through Station WDAF of the Kansas City Star. The orchestra seems to speak the personality of its leader and with Luigi Bussolari, the concert master, these two sons of a land of song and sunshine have come together to bring the happiness of their inheritance directly into the homes of hundreds of thousands of this new land of opportunity.

**Prest-O-Lite**



There are many improvements in the new **Prest-O-Lite Battery**

IN THIS new battery you'll find all the good points and high quality that have made Prest-O-Lite an un-failing aid to better radio. And in addition there are many important refinements and improvements that make it the most attractive, most convenient battery you can buy.

This new battery has a beautiful stippled finish hard rubber case that blends with any furnishings. The case is molded in one piece, giving sturdy, leak-proof strength.

To make the battery convenient to carry, the handle has been given a comfortable rubber grip.

The oversize terminal nuts on the binding posts are easy to turn and insure perfect contacts.

Novel rubber insulators completely cover the tops and sides of the cell connectors, preserving the original fine finished appearance at all times and giving protection against accidental short circuits.

No effort has been spared to make this a battery you will be proud to own. Yet, like the rest of the Prest-O-Lite line, it is priced to offer you the biggest value of the day. Ask your dealer to show you this battery and the Prest-O-Lite Chart that helps you select the right battery for your set. Or write Indianapolis for a copy of our interesting handbook on radio storage batteries and how to charge them.

**THE PREST-O-LITE CO., Inc., INDIANAPOLIS, IND.**  
New York San Francisco

In Canada: Prest-O-Lite Company of Canada, Ltd., Toronto, Ont.

# Construction of B Current Power Supplies

## Part I—The Acme-Raytheon Type

By George Walters

WHEN the vacuum tube first came into use for Radio work through the inventive genius of Dr. De Forest it was but natural that flashlight cells should be the source of plate current as the current drain was small and the cells were compact. It was but natural also that the makers of flashlight cells would, sooner or later, combine the rows and rows of cells required into compact units such as the Eveready 766. These are familiar to every Radio fan boasting more than a crystal set and have been in use for a number of years. Almost equally familiar is the storage B battery with its rows of small glass jars and quiet operation. Both of these energy sources is technically just about perfect for the purpose of supplying the plates of vacuum tubes. The current is pure direct current, without hum or ripple, and fairly constant in the matter of pressure or voltage. The only objection to the battery supply from the fan's point of view is that, in the case of the dry cell type, there must be occasional renewal and, in the case of storage cells, the necessity of recharging at frequent intervals.

The Radio public has long desired some means of obtaining current for A power, B power, and even C power, from the lighting system. Civilization has brought us so many conveniences, so many devices to relieve us of responsibility and work, that even the slight task of replacing batteries, or charging them, seems objectionable. Neither is very hard work, nor very difficult, but the phonograph needs no such responsibility, nor does the mechanical refrigerator. Realizing the demand for a power unit to supply these voltages in pure direct current form, engineers by the hundred have been seeking the solution. The result is that we suddenly have scores of B battery eliminators, a few A battery eliminators and even one or two C battery power supplies.

**The Problem and Its Solution**

The problem to be solved, and some of

the difficulties encountered, can be run over briefly so that the reader will understand, to some extent, the solutions to be presented here. In the first place, about 90% of the country having electric light current available receives what is known as alternating current at 60 cycles. This means that the current in the wires changes its direction of travel 120 times per second. It flows first toward one end, then toward the other, completing one cycle, then repeats this performance at the rate of 60 times each second. Now a Radio set requires current traveling in one direction only, without variation or change of quantity.

It is not particularly hard to change alternating current into direct current. This process is known as rectification and

it is used as one of the two duties of the detector in your Radio. The chief difficulty has been to find a device that would be low in cost yet capable of supplying sufficient current for a set of seven to nine tubes. As the current comes out of any of the several devices finally found it has what is called "ripple." This is present in the form of surges occurring at the rate of 120 per second or one for each alternation of the original lighting current.

The second big problem was the elimination of this ripple, just as bad for a Radio set as the original "hum" of alter-

nating current. The collection of apparatus required to take this out is called a "filter" and it comprises one or more large coils of wire on iron cores and several large fixed condensers able to hold up under high voltages. The action of the large coils is to choke back any sudden changes of voltage and make everything come through evenly, hence their name of "chokes." The condensers tend to momentarily store the choked back surge and release the excess during the following lull. Between the two of them they accomplish this and the output

(Continued on page 28)

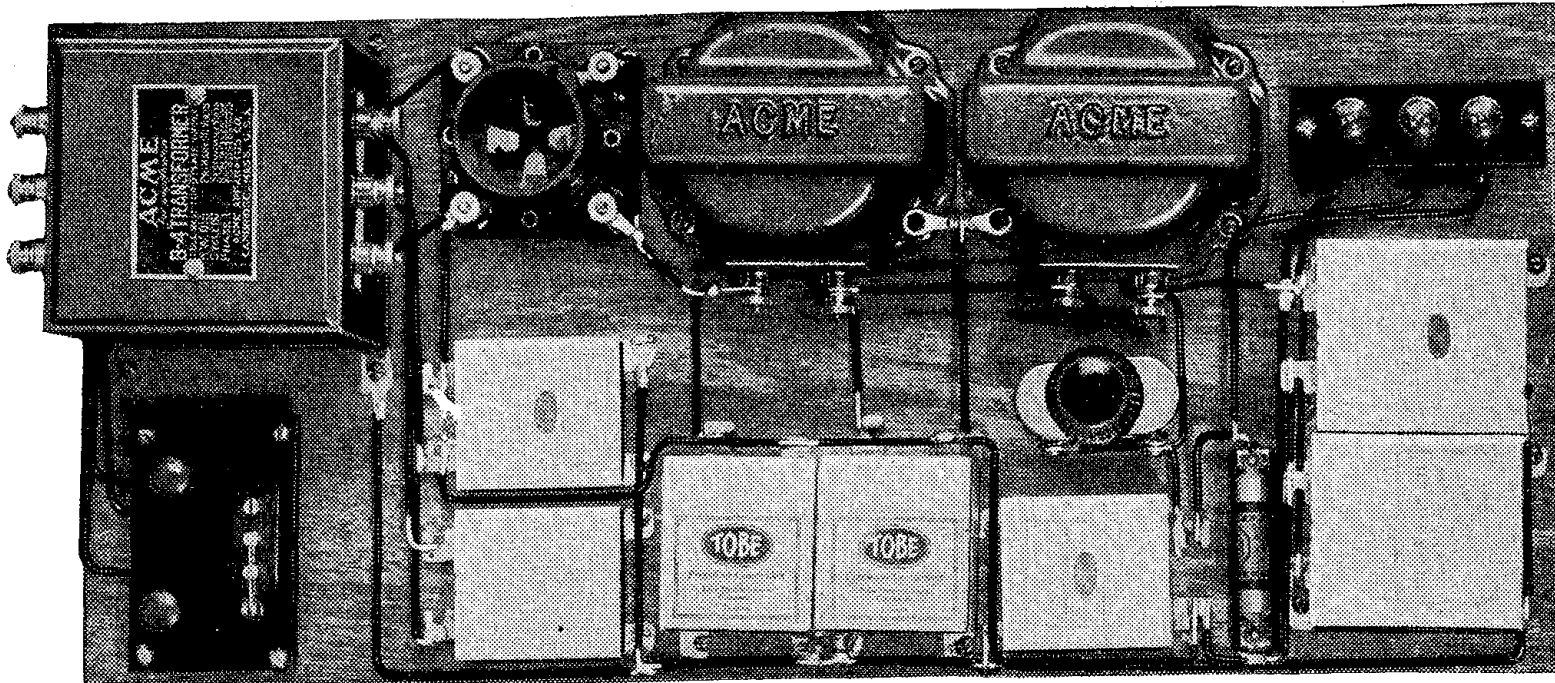
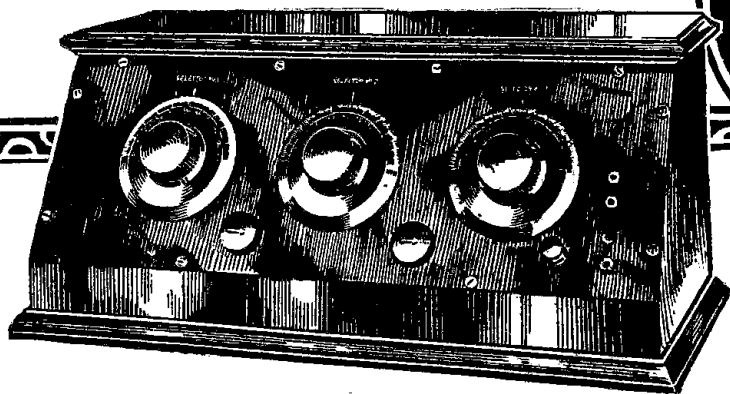


Figure 1

# CHELSEA

Super-Five

\$50



## A Fine Radio Value

Chelsea offers superior performing features only found in much higher priced Receivers. Sweet, clear tone, greater volume and good selectivity. Provided with beautiful mahogany finish cabinet with over-size dials for easy tuning. Dust-proof, fool-proof inside panel, hand-soldered connections and many other quality features.

Will You Hear the Big Victor Programs, or the other Headliners of 1926?

Write for these Folders.



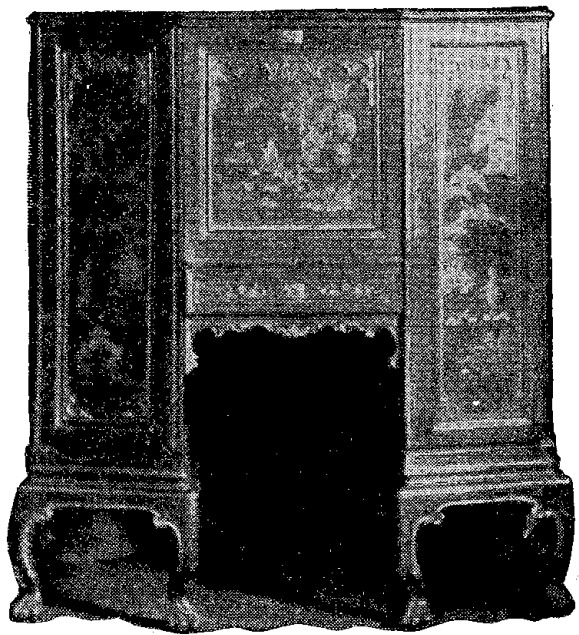
Ask Your Dealer to Demonstrate

CHELSEA RADIO CO., Chelsea, Mass.

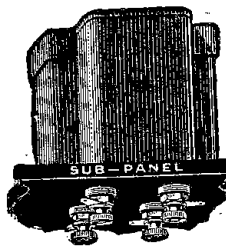
# THORDARSON

Super TRANSFORMERS  
Standard on majority of quality sets

In sets priced as high as \$2000 you'll find Thordarsons!



Is your radio set lacking in clearness and volume? To give it a tone quality comparable with that of the finest receiving instruments, replace the present audio frequency transformers with Thordarsons. Your dealer carries Thordarsons, identical with those used by nearly fifty leading manufacturers whose sets are priced as high as two thousand dollars each. Follow the lead of the leaders—amplify with Thordarsons. Write for interesting literature.



**Types and Prices**

Thordarson Super Audio Frequency Transformers, sub-panel or top mounting type: 2-1, \$5; 3 1/2-1, \$4; 6-1, \$4.50. Thordarson Power Amplifying Transformers, \$13 pair. Thordarson Interstage Power Amplifying Transformers, \$8 each. Thordarson Auto-formers, \$5 each. All Thordarsons are unconditionally guaranteed. If dealer cannot supply, order from us.

THORDARSON ELECTRIC MANUFACTURING CO.  
WORLD'S OLDEST AND LARGEST EXCLUSIVE TRANSFORMER MAKERS  
Chicago, U.S.A.

- ZENITH
  - KENNEDY
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  - Planstich
  - Howard
  - Thermodyne
  - OZARKA
  - Deresnadyne
  - ADLER-ROYAL
  - MURDOCK
  - MU-RAD
  - Valleytone
  - LEICH
  - Silver-Marshall
  - GLOBE
  - Newport
  - BUCKINGHAM
  - MUNN-LONDON
  - KUSTOMBI
  - many others use Thordarsons
- Also choice of the MacMillan Arctic Expedition

**RAYTHEON-ACME B CURRENT UNIT**

List of Parts		
1 Acme B4 Transformer	Acme Apparatus Co., Cambridge, Mass.	\$ 7.00
2 Acme B2 Choke Coils	Acme Apparatus Co., Cambridge, Mass.	10.00
1 Raytheon Tube	Raytheon Mfg. Co., Cambridge, Mass.	6.00
2 Tobe 4 mfd. Condensers	Tobe Deutschmann Co., Boston, Mass.	7.50
2 Tobe 2 mfd. Condensers	Tobe Deutschmann Co., Boston, Mass.	3.50
2 Tobe .1 mfd. Condensers	Tobe Deutschmann Co., Boston, Mass.	1.40
1 Tobe .5 mfd. Condenser	Tobe Deutschmann Co., Boston, Mass.	.90
1 Cler-a-tone Tube Socket	Benjamin Elec. Mfg. Co., Chicago, Ill.	1.00
1 Bradleyohm No. 10	Allen-Bradley Co., Milwaukee, Wis.	2.00
1 Bradleyunit 10,000 ohms	Allen-Bradley Co., Milwaukee, Wis.	.75
1 Daven Mounting No. 50	Daven Radio Corp., Newark, N. J.	.35
1 Muter S. P. D. T. Switch	Leslie F. Muter Co., Chicago, Ill.	.30
5 Ensign Binding Posts	H. H. Eby Mfg. Co., Philadelphia	.75
1 Baseboard 7 1/2" by 17 1/2"	Local lumber yard	.50
2 Scraps Bakelite (see article)	Local Radio dealer	.50
Miscellaneous, such as screws, pillars, wire, etc.		2.00
<b>Total cost .....</b>		<b>\$44.45</b>

**RAYTHEON ELIMINATOR**  
(Continued from page 27)

is close enough to perfectly pure unvarying direct current for practical use. There are at this time four feasible types of rectifying devices, the chemical type, the heated filament tube, the no-filament tube and the Tungar bulb. Several different B current power supply

the apparatus, and a choke, of which two are needed, which is rated at 30 henries inductance. These are sturdily built power units in strong protecting cases and clearly marked. On the primary winding there is a tap so that either the tap or the end terminal may be used to give either the higher output voltage of 150 to 180 or the lower voltage of 90. By means of the S. P. D. T. switch, either

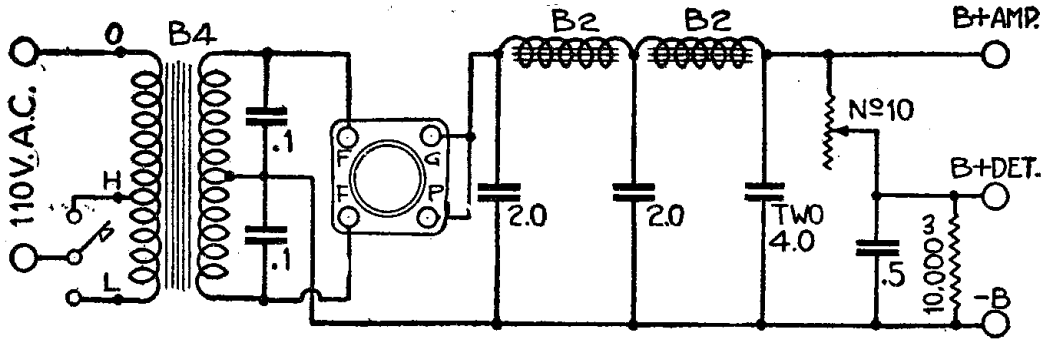


Figure 2

units will be presented in these articles and that which is shown in this article is the one containing the no-filament tube. This rectifier is called the Raytheon tube; it is at present the most popular variety, and it will supply plenty of current for sets up to at least ten tubes, at any required voltages up to 180 volts.

**Choice of Parts**

For use with the Raytheon tube, the Acme Apparatus company has developed a transformer to raise the voltage sufficiently to give 180 volts at the output after deducting some for slight losses in

voltage may be readily had, but ordinarily this will be set once for the particular set it is used with, and left.

Tobe Deutschmann has developed a set of high voltage condensers of comparatively high capacity for use in B eliminators which are, by now, rather well distributed. If you cannot get them locally, write direct to the manufacturer at Cornhill, Boston, Mass. In the Allen-Bradley line of resistances, both fixed and variable, we find two items exactly suited to use in this unit, the number 10 Bradleyohm which is variable from 10,000 to 100,000 ohms and the Bradleyunit which

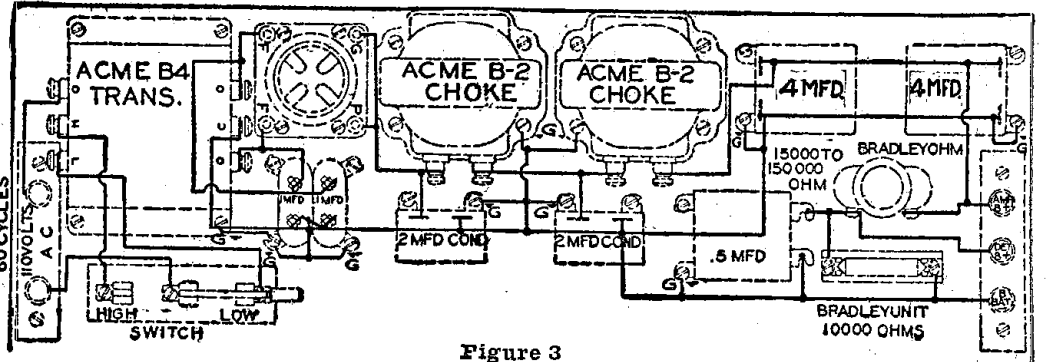


Figure 3

is a cartridge of the value of 10,000 ohms resistance. When getting the Eby Ensign binding posts, choose two plain ones for connection to the electric light "twisted pair" and one minus B, one plus B 45 and one plus 90.

With the photograph, the schematic, and the picture wiring diagram you cannot go wrong. The baseboard has been

these are not handy, you can build up pillars from old dry cell terminal nuts slipped over the long wood screws. In operating this device there are a couple of points to remember. When adjusting the Bradleyohm for best detector voltage keep the hand well away from all wiring as this unit has a most unpleasant kick if you get a shock. If you want to throw

**C BATTERY VOLTAGES WITH RAYTHEON ELIMINATOR**

NUMBER OF TUBES	C-Battery Voltage for Number of Tubes Used High Voltage Tap								C-Battery Voltage for Number of Tubes Used Low Voltage Tap							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Type of Tube:																
UV 201-A or C 301-A.....			19	16.5	15	12	10.5	9	10.5	9	7.5	6	4.5	3	1.5	1.5
UV 199 or C 299.....							21		18	15	13.5	12	10.5	7.5	6.0	4.5
201-A plus one UX or CX 112.....		19	16.5	15	13.5	12	10.5	9	7.5	6	6	4.5	3	1.5	1.5	
UV 199 plus one UX or CX 220.....							21	18	13.5	12	10.5	7.5	6	6	4.5	
C 299.....																
CX 112 or UX 112.....	19	16.5	13.5	12	12	9	7.5	6	9	7.5	6	4.5	3	1.5		
CX 220 or UX 220.....			21	15	12	10.5	7.5		15	12	7.5	6	3	1.5		

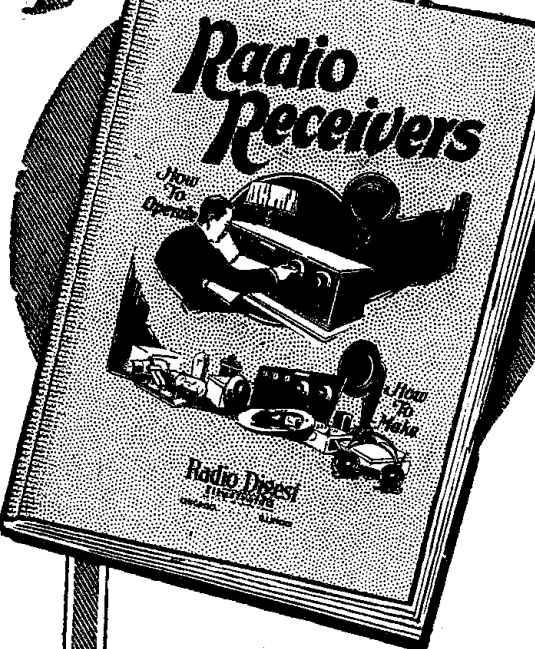
made 17 1/2 inches long so that you can put the whole thing in an 18-inch cabinet if you prefer to. An 18-inch panel can easily be screwed to the front edge of the baseboard; the edge close to which we have placed the transformer, socket and chokes is considered the rear. Should you place this device in a cabinet, you can put the three output binding posts, the S. P. D. T. switch and the Bradleyohm on the panel and bring the 110-volt cord in through a hole in the back of cabinet to the binding posts shown.

The small pieces of bakelite are held up away from the baseboard with short pillars about 1/4 inch in height but if

the switch it would be much better to turn off the current at the light socket, although the switch can be thrown to either high, low or off position if a little care is used.

(Continued on page 30)

**The New Radio Book HOW TO**



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

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. Starts at the beginning with simple explanation of Radio reception, with technical explanations of the different parts and leads right on to the more advanced instruction. A complete handbook serving as a ready reference in the Radio field. It gives suggestions on parts and sets which will prove to be a money saver. Blue prints and diagrams are essentially an important part of this book. Special chapter is devoted on "How to Operate," which gives detailed information on the operation of many well known sets.

A general information is vital to the knowledge of anyone interested in Radio. It gives a complete list of all broadcasting stations with a colored map showing their location. The workshop kinks will save you time and money. Now is the time to take advantage of this exceptional offer. **Mail coupon today!**

**RADIO DIGEST**, 510 N. Dearborn Street, Chicago, Illinois.

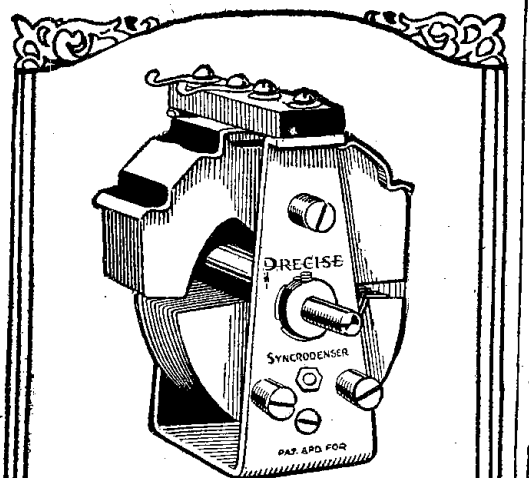
Enclosed find \$5.00 for one year's subscription to Radio Digest. The new Radio Book, "Radio Receivers," will be mailed FREE, postage prepaid. This offer only good on subscriptions sent directly to this office, not through agents or agencies.

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1-30-26



**For EVERY Radio Set**

THE PRECISE SYNCRO-DENSOMETER will improve your receiver, and we call the attention of the SET BUILDERS to the following reasons found only in PRECISE Super-efficient condensers.

Rugged brass frame, nickel plated and polished, one piece Bakelite insulation placed outside the electrostatic field. Both rotor and stator plates are made from brass and gold plated, special clock bearings and two bronze contacts are used. Condensers are designed for mounting on panel or sub panel. Each instrument is matched within limits previously unheard of for commercial condensers.

The straight-line frequency characteristics from 0 to 50 on the dial assures remarkable efficiency in reducing interference between low wave length stations. And the straight-line capacity from 50 to 100 on the dial leave the high wave length stations at their actual separation, thus eliminating the congestion on the upper end of the dial readings encountered when using S.L.F. characteristics throughout.

PRECISE SYNCRODENSOMETERS were the original. INSIST on PRECISE and accept no substitute.

.0005 mfd.—only \$4.50  
.00035 mfd.—only \$4.00

Write for additional data and literature on our complete line of transformers.

**Precise Manufacturing Corporation**  
256 Mill St. Rochester, N. Y.

Canadian Distributors  
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**FOR CLEAR, QUIET "B" POWER**



**WORLD RADIO Storage "B" Battery**

12 Cells 24 Volts Lasts Indefinitely—Pays for Itself

Economy and performance unheard of before. Recharged at a negligible cost. Delivers unflinching power that is clear, pure and quiet. Approved and listed as Standard by leading Radio Authorities, including Pop. Radio Laboratories, Pop. Sci. Inst. Standards, Radio News Lab. Lefax, Inc., and other important institutions. Equipped with Solid Rubber Cases, an insurance against acid and leakage. Extra heavy glass jars. Heavy rugged plates. Order yours today!

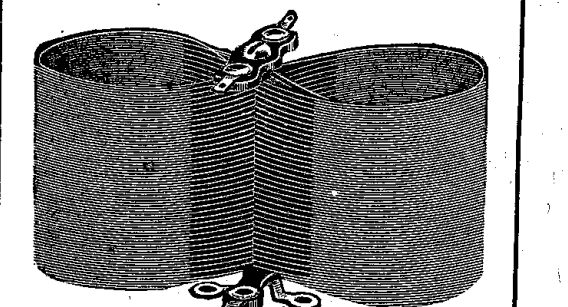
**SEND NO MONEY** Just state number of batteries wanted and we will ship day order received. Extra offer: 4 batteries in series (36 volts), \$11.50. Pay expressman after examining batteries. 5 per cent discount for cash with order. Mail your order now!

**WORLD BATTERY COMPANY**  
1219 So. Wabash Ave., Dept. 76 Chicago, Ill.  
Makers of the Famous World Radio "A" Storage Battery  
Prices: 6-volt, 100 Amp. \$11.25; 120 Amp. \$13.25; 150 Amp. \$14.00.  
All equipped with Solid Rubber Cases.

**World STORAGE BATTERIES**

Set your Radio Dial at 210 meters for the new 1000 watt World Storage Battery Station, WSBG, Chicago. Watch for announcements.

**NEW and BETTER**



**Sharper Tuning—More Volume More Distance**

The Bodine Twin-Eight Radio Frequency Transformer is the first coil that combines a very limited Magnetic field with tremendously high amplification. It has extremely low resistance due to almost complete absence of dielectric in the field of coil. Compact, easy to assemble into your set.

**BODINE TWIN-EIGHT R.F. TRANSFORMER**

Order from your dealer, or direct, Price \$9.00 per set of 3 matched coils, or \$3.00 each.

Bodine Basket weave loops are unequalled for selectivity, efficiency and beauty. Models for all sets. Write for folder.

**BODINE ELECTRIC CO.**  
2260 W. Ohio St. Chicago, Ill.

# Unitrola: Single Dial Phonograph Receiver

## Part III—Complete Wiring Instructions

By Carl Patterson

**T**HE WIRING of Unitrola must be handled a little differently than is usually the case, due to its peculiar design and the slope of the panel. Front panel and baseboard are handled separately for part of the wiring and then the two are secured together for the last few connections. We will take up the front panel first.

1. Connect the upper terminals of both

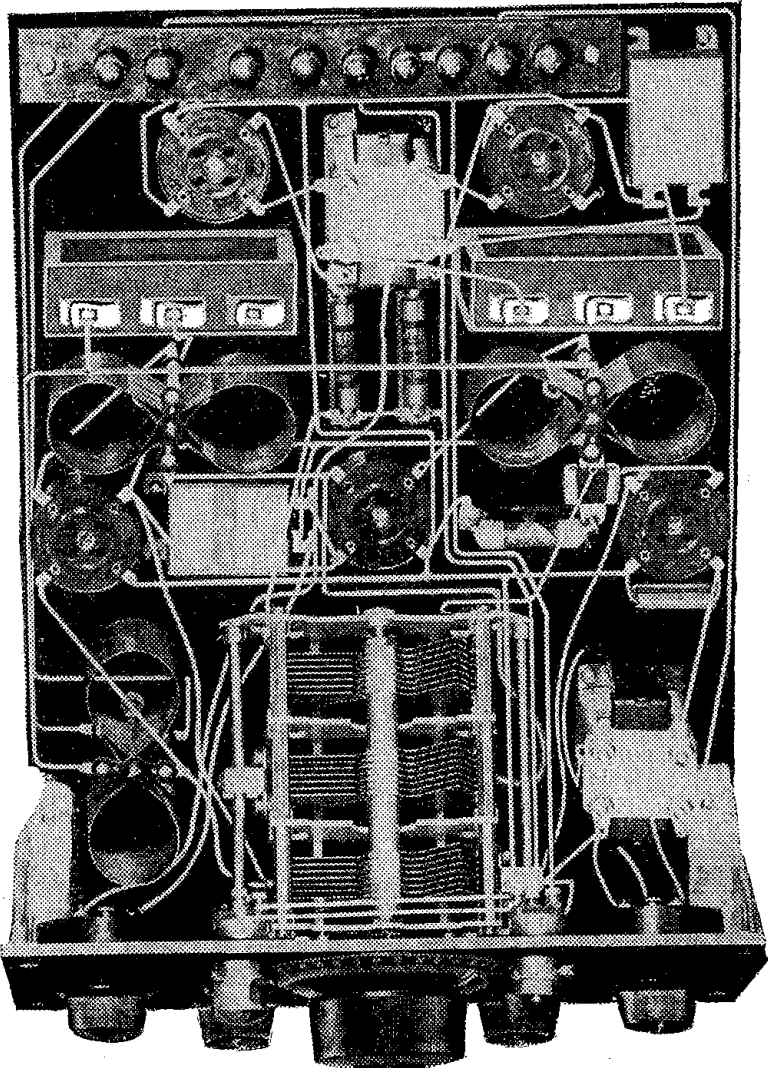


Figure 5

rheostats together and continue the wire up around the variable condenser to the right to the number 2 terminal on the Pilot Switch.

2. Connect the number 3 terminal on Pilot Switch to the number 1 terminal on the Dialite.

3. Connect the number 2 terminal on Pilot Switch to the number 2 terminal on the Dialite.

4. Attach a 4-inch piece of flexible wire to number 3 post on C-R-L unit at right. Attach a 3-inch piece to the number 1 terminal and a 13-inch piece to the number 2 terminal.

5. Going now to the C-R-L unit at left of panel, attach a 14-inch piece of flexible wire to the left terminal and an 8-inch piece to right terminal.

6. Connect one end of a 10-inch piece of flexible wire to lower post on each rheostat.

7. Considering the socket at left edge of baseboard as number 1, that in center as 2, that at right edge as 3, that in rear

wire put in previously under operation 7.

9. Now connect F minus on socket 2 with F plus on socket 1. A short wire is then put in from F minus on socket 2 to rear lug on .5 condenser.

10. A long wire is now put in from POS B post on audio transformer in front right corner, back along edge of baseboard to rear edge, then to left to B DET plus binding post on strip.

14. The fixed condenser of .00025 mfd. capacity is then connected between G post on Bodine coil behind socket 3 and the right end of Daven mounting.

15. The B terminal of Bodine coil behind socket 1 is now connected to B terminal of coil behind socket 3. A short lead is run straight forward from this wire to the front connecting lug on .5 bypass condenser between sockets 1 and 2.

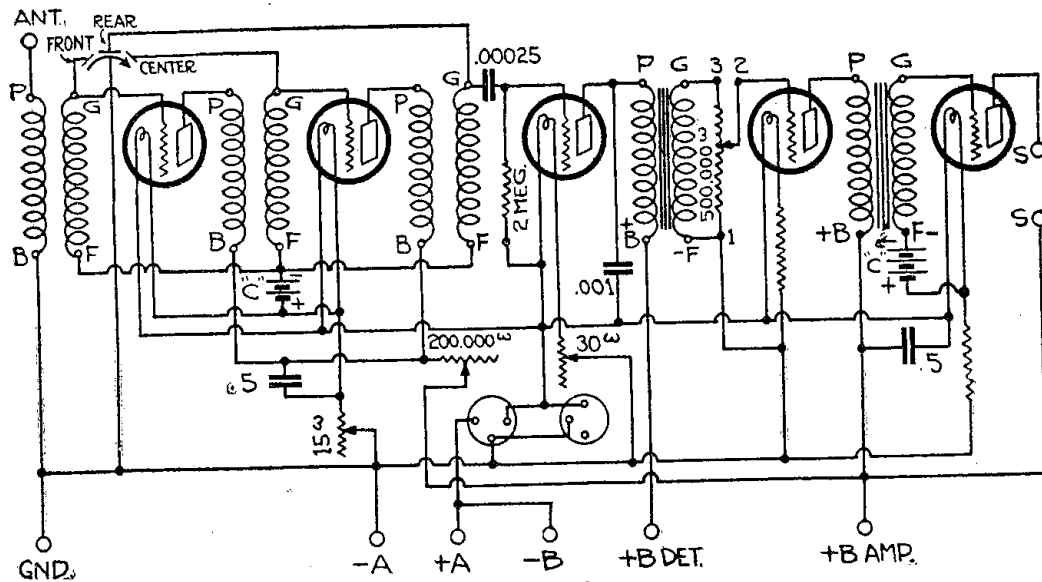


Figure 6

11. The Plate terminal on that same audio transformer is now connected to P post on socket 3. The fixed condenser of .001 mfd. capacity is then connected from the P post on that socket to the F plus post on the same socket (see photograph).

12. Connect G terminal of socket 3 to right end of Daven mounting to its left.

13. Then connect left end of Daven mounting to F plus post on socket 2.

16. Now connect P post on socket 1 with P lug on Bodine coil behind it. Then connect P post socket 2 with P lug on Bodine coil behind socket 3.

17. Considering now the Bodine coil in front left corner of baseboard, connect its B lug to GND binding post on rear strip. This wire will pass to left under coil, then along left edge of baseboard. The P lug (Continued on page 30)

For Alternating Current **\$32**



### The FORD Buzzless "B" Eliminator

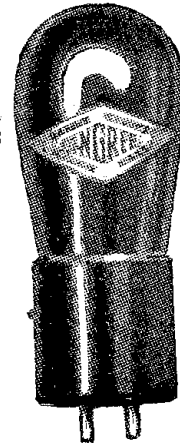
Supplies any radio set with a steady and uniform flow of current from the light socket without noise or hum.

**Five Day Free Trial**  
Any reliable dealer will install a Ford "B" Eliminator on a five day free trial.  
Write for Free Booklet

**FORD RADIO & MICA CORP.**  
111 Bleecker St., New York

## TUBE SERVICE

Your set is no better than your poorest tube. They must be uniform



**Pingree Tube Characteristics**

- Plate Impedance 8500 — 10,000 ohms.
- Amplification factor 8-9.
- Filament consumption .25 amp.
- Filament voltage 5.0 volts.
- Plate voltage 16v-90v.

**A-TYPE \$2.00 PROTECTION**

Each tube is tested rigidly on a Super-radio Dynamometer before shipment.

**TRIAL OFFER**  
Try these tubes 10 days at our expense. If they are not what we claim, we will gladly refund your money.

**PINGREE RADIO SERVICE, Inc.**  
170 Summer Street Boston, Mass.  
DEALER INQUIRIES SOLICITED



**NO-BAT-TRY**

### Electric Radio Receiver

Operates direct from light socket on A. C. or D. C. house current.

**ENTIRELY WITHOUT BATTERIES  
NO CHEMICALS  
NO ELIMINATORS**

**"Reception as You Want It—When You Want It"**  
Unequaled for Distance and Selectivity  
Unexcelled Tone Quality

**BATTERYLESS RADIO CORP.**  
116 West 65th Street NEW YORK CITY

### Old Tubes Made Good As New



**\$3.65**

**Why Pay More?**

For fine tone quality, volume, and distance, your tubes MUST be in perfect condition.

**MACK RECONDITIONER**  
"THE CURE FOR RUN-DOWN TUBES"

**Money-Back Guarantee**  
Money cheerfully refunded if desired results fail. But we are sure you will find the Mack Reconditioner pays for itself in one evening. Many making good money restoring friends' and neighbors' old tubes. You cannot lose! Act quick on this special short-time introductory price. Sent Postpaid with full directions on receipt of \$3.65 (\$3.85 in Canada and foreign countries). Model No. 5, \$5.50 (\$5.75 in Canada and foreign countries). Be sure to state Model No. wanted. Our guarantee refund price protects you. Send now.

718 Cass St. **MACK LABORATORIES** Chicago, Ill.



# Radiophone Broadcasting Stations

## Corrected Every Week—Part VI

Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location
<p><b>United States Stations by Wave Lengths</b></p> <p>202.6 1,480 500 KFXX Big Bear Lk., Cal. 20 WEHS Evanston, Ill. 10 WBS Elizabeth, N. J.</p> <p>205.4 1,460 50 KFVD San Pedro, Cal. 10 KFXY Logan, Utah 50 KFXY Flagstaff, Ariz. 10 KFYF Oxnard, Calif. 30 WGBR Providence, R. I., ptb. 100 WFRL Brooklyn, N. Y. 150 WIBX Utica, N. Y.</p> <p>206.8 1,450 500 KFWM Oakland, Calif. 20 WABW Wooster, Ohio 50 WJBA Joliet, Ill.</p> <p>208.2 1,441 250 KNRC H'wood, Calif.</p> <p>209.7 1,430 100 KDZB Baker's d., Cal. 5 KFVU Eureka, Cal. 100 KFXC Santa Maria, Cal. 500 WBNY New York, N. Y. 100 WCWS Providence, R. I. 5 WIBM New Bedford, Mass. 500 WKBK New York, N. Y. 1,000 WSBC Chicago, Ill.</p> <p>211.1 1,420 50 KFWS S. Berdine, Cal. 250 KFWD Avalon, Calif. 100 WJBQ Lewisburg, Pa.</p> <p>212.6 1,410 5 KFVW Portland, Ore. 15 WMAW Wash'ton, D. C. 500 WGLR 'h'm'd H., N. Y.</p> <p>214.2 1,400 250 KFVW St. Louis, Mo. 15 KFXX Okla. City, Ok. 150 WGLS Joliet, Ill. 100 WKBK Joliet, Ill.</p> <p>215.7 1,390 50 KFQW N. Bend, Wash. 50 KFVU Oakland, Calif. 10 KFVJ Colorado (Pt.), 50 WBBZ (Portable) 50 WHBL Logansport, Ind. 50 WIBJ (Portable) 10 WIBM (Portable) 100 WKBG Ch'go, Ill. (Pt.)</p> <p>217.3 1,380 100 WPRC Harrisburg, Pa. 250 WRST Bay Shore, N. Y. 50 KFAF San Jose, Calif. 100 KFQU Alma, Cal. 500 WFKB Chicago, Ill. 5,000 WOK Chicago, Ill.</p> <p>218.8 1,370 10 KFJC Junet'n Cty., Kan. 50 KFVW Olympia, Wash. 10 KFVH Manhattan, Kan. 10 WHBU Anderson, Ind. 50 WBI Flushing, N. Y. 250 WJBI Red Bank, N. J. 50 WJBP Buffalo, N. Y.</p> <p>220 1,360 50 KFVU Oakland, Cal. 500 KFVU S'n Fr'nco, Cal. 5 KJBS San Fran'co, Cal. 100 WIBW Logansport, Ind. 500 WQAA Parkesb'g, Pa.</p> <p>222 1,350 50 WBBW Norfolk, Va. 100 WBES Takoma Pk., Md. 20 WHBD Bellef'taine, O. 100 WHBF Rock Island, Ill. 100 WHBH Culver, Ind. 100 WIBC St. Pet's b'g, Fla. 50 WBS Elkens Park, Pa. 20 WIBU Poynette, Wis.</p> <p>224 1,340 100 KFBL Everette, Wash. 10 KFQP Iowa City, Ia. 100 KFUR Ogden, Utah 50 KFVS 'C'pe Gir'd'u, Mo. 10 WBBR Monmouth, Ill. 10 WJBG Charlotte, N. C. 50 WKAY Lancia, N. H. 250 WODA Paterson, N. J. 100 WRAF Laporte, Ind.</p> <p>226 1,330 10 KFQG Boone, Iowa 10 KFVU Juneau, Alaska 10 KFVZ Kirksville, Mo. 50 KFOD Burlingame, Cal. 20 KFOD David City, Neb. 250 KFQZ Hollyw'd, Calif. 50 WAGM Ro'l O'k, Mich. 1,500 WBBM Chicago, Ill. 150 WDAD Nashville, Tenn. 100 WBL U. S. (Portable) 100 WBBM U. S. (Portable) 100 WBBM Harrisburg, Ill. 20 WBE Seymour, Ind. 1,000 WBO Chicago, Ill.</p> <p>227 1,320 100 KFQD Anchor'ge, Alas. 50 KFVW Welcome, Minn. 100 KFAM Beaumont, Tex. 100 WDBK Cleveland, Ohio 500 WOVV Ft. Wayne, Ind.</p> <p>229 1,310 200 KFVU Rockford, Ill. 500 KMMJ Clay C'r, Nebr. 50 KPCC Pasadena, Calif. 10 WAIT Taunton, Mass. 100 WBL Richmond, Va. 50 WCBM Baltimore, Md. 50 WDBJ Roanoke, Va. 10 WGBR Marshf'd, Wis. 250 WSAJ Grove City, Pa. 100 WSAW Allentown, Pa.</p> <p>231 1,300 5 KDLR Devils Lk., N. D. 5 KFAN Moscow, Idaho 10 KFVU Min'polis, Minn. 5 KFOT Wichita, Kans. 500 KFPR Los Angeles, Cal. 500 KQP Portland, Ore. 500 KQW San Jose, Calif. 500 KUT Austin, Tex. 100 WBRF W'kes-Ba'e, Pa. 50 WCLO Camp Lake, Wis. 20 WBBG Harrisburg, Pa. 10 WHBK Ellsworth, Me. 10 WIZ Montom'y, Ala. 100 WKBE Webster, Mass. 50 WTAX Streator, Ill.</p> <p>233 1,290 10 KFEY Kellogg, Idaho 50 KFON Long Beach, Cal. 10 WDBZ Kingston, N. Y. 50 WBBM Ch'go, Ill. (ptb.) 50 WHBQ Memphis, Tenn. 10 WJBD Ashland, Wis. 10 WJBK Ypsilanti, Mich. 50 WOKO New York, N. Y.</p>																								

### Canadian Stations by Wave Lengths

247.8 1,210	75	CFKC	Therold, Ont.
267.7 1,120	20	CFMK	Kingston, Ont.
	500	CFRC	Kingston, Ont.
	20	CFYC	New Wstmr., B. C.
291.1 1,030	20	CFXC	New Wstmr., B. C.
	500	CJYC	Toronto, Ont.
	500	CJVA	Moncton, Can.
	500	CNRV	Vancouver, B. C.
312.3 960	50	CFYV	Charlton, P. E. I.
329.5 910	500	CFCT	Victoria, B. C.
	500	CFCC	Saskatoon, Sask.
	200	CHUC	Saskatoon, Sask.
	500	CJGJ	London, Ont.
	250	CJWC	Saskatoon, Sask.
	5,000	CKCW	Brkn. Jct., Ont.
	500	CNRS	Saskatoon, Sask.
340.7 880	10	CHCS	Hamilton, Ont.
	50	CKOK	Hamilton, Ont.
356.9 840	500	CFGA	Toronto, Ont.
	500	CHIC	Toronto, Ont.
	500	CHNC	Toronto, Ont.
	250	CHSC	Unity, Sask.
	500	CJCB	Toronto, Ont.
	500	CJCD	Toronto, Ont.
	500	CJSE	Toronto, Ont.
	500	CKCL	Toronto, Ont.
	500	CKCA	Toronto, Ont.
	500	CNRJ	Toronto, Ont.
384.4 780	500	CKY	Winnipeg, Man.
	500	CNRW	Winnipeg, Man.
410.7 730	1,650	CFGF	Montreal, Que.
	10	CFCD	Vancouver, B. C.
	850	CHYC	Montreal, Que.
	500	CJCK	Burnaby, B. C.
	1,200	CKAC	Montreal, Que.
	750	CKCD	Vancouver, B. C.
	50	CKFC	Vancouver, B. C.
	1,000	CNRM	Montreal, Que.
434.5 690	500	CFAC	Calgary, Alta.
	1,800	CFCC	Calgary, Alta.
	750	CHCM	Calgary, Alta.
	250	CHXC	Ottawa, Ont.
	100	CKCO	Ottawa, Ont.
	750	CNRG	Calgary, Alta.
	500	CNRO	Ottawa, Ont.
476 640	1,000	CKCK	Regina, Sask.
	1,000	CNRH	Regina, Sask.
483.6 620	500	CFCU	Hamilton, Ont.
499.7 600	250	CFCH	Iroquois, Ont.
516.9 580	100	CFCK	Edmonton, Alta.
	500	CJCA	Edmonton, Alta.
	500	CNRE	Edmonton, Alta.

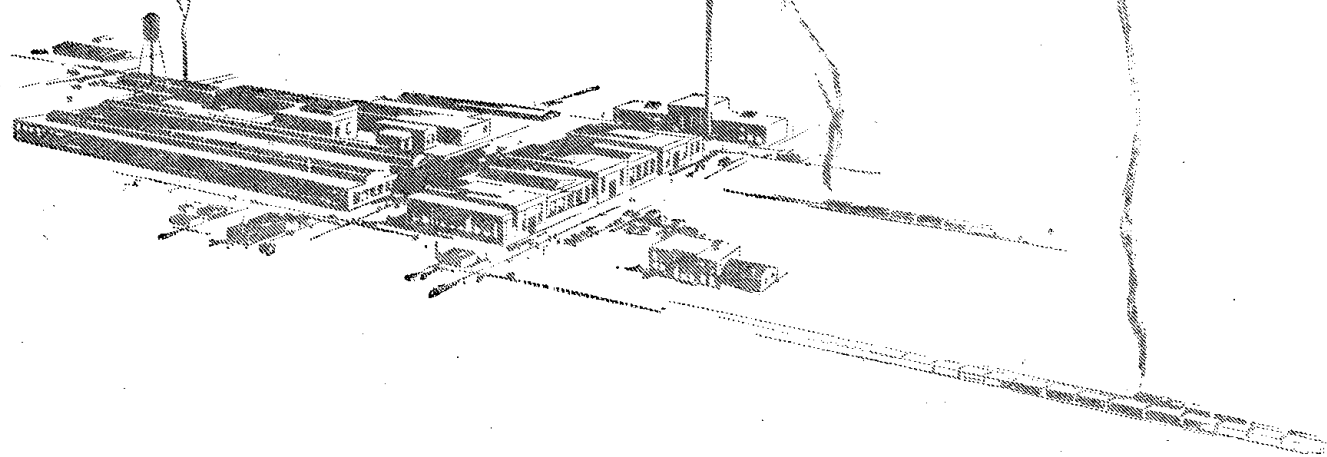
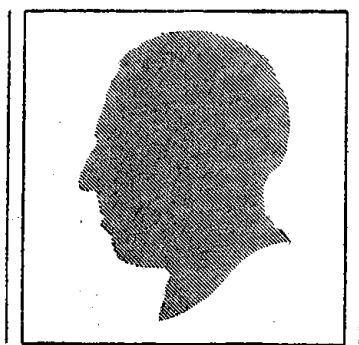
### Cuban Stations by Wave Lengths

200 1,500	20	5AZ	Mantanazs
	10	6HS	Santa Clara
	20	6YR	Camaguey
210 1,430	10	2RM	Havana
225 1,333	10	6DW	Santa Clara
	10	7AZ	Camaguey
	15	8FU	Santiago
	20	8JQ	Santiago
230 1,304	20	2TW	Havana
235 1,277	10	2AB	Havana
	10	2AR	Havana
	20	7BY	Camaguey
240 1,250	20	8AZ	Santiago
250 1,200	50	Q2LC	Havana
	10	6GR	Santa Clara
	10	6JQ	Santa Clara
	100	8BY	Santiago
255 1,176	15	2BB	Havana
260 1,153	200	6BY	Santa Clara
265 1,132	10	2UF	Havana
270 1,110	20	2JP	Havana
275 1,090	5	1AZ	Havana
	5	2JL	Havana
280 1,070	20	2MG	Havana
295 1,016	100	2HP	Havana
300 1,000	100	20L	Havana
310 967	100	2RK	Havana
315 952	100	2BY	Havana
320 937	10	2CX	Havana
338 890	4,000	6KW	Tinneu
350 857	10	2CG	Havana
	500	7SR	Elia
355 845	400	2EP	Havana
360 833	100	2OK	Havana
	10	5EV	Colon
400 750	500	PWX	Havana

### Mexican Stations by Wave Lengths

260 1,153	CFY	Oaxaca, Mex.
265 1,130	CYA	Mexico City, Mex.
310 967	CYS	Mexico City, Mex.
	CZF	Chih'ua City, Mex.
325 923	CYH	Mexico City, Mex.
333 900	CYX	Mexico City, Mex.
350 857	CZE	Mexico City, Mex.
380 790	CYB	Mexico City, Mex.
400 750	CYZ	Mexico City, Mex.
480 625	CYL	Mexico City, Mex.

# POWEL CROSLEY JR.



## INDUSTRIALIST *Pioneer Radio Builder*

At a time when products of his manufacturing genius were already known to millions, Powel Crosley, Jr., boldly diverted his energies to the development of radio reception, then scarcely known beyond the laboratory walls.

Pioneering both in engineering trends and manufacturing practices, Mr. Crosley has been a vital factor in making radio and broadcasting as much a part of American life as motion pictures and the motor car.

There is scarcely a milestone in the development of popular radio on which his shadow has not been the first to fall. And his announcement of December 26th concerned a milestone that dwarfed all others in its importance—*four entirely new radio receiving sets*:

The Crosley 4-29 (4-tube) .....\$29.00  
 The Crosley 5-38 (5-tube) ..... 38.00  
 The Crosley R.F.L.-60 (5-tube) 60.00  
 The Crosley R.F.L.-75 (5-tube) 75.00

*These are now being demonstrated by Crosley dealers and will be completely described in a forthcoming issue.*