

How to Recognize Foreign Stations

# Radio Digest

EVERY  
WEEK

PROGRAMS  
**Illustrated**

TEN  
CENTS

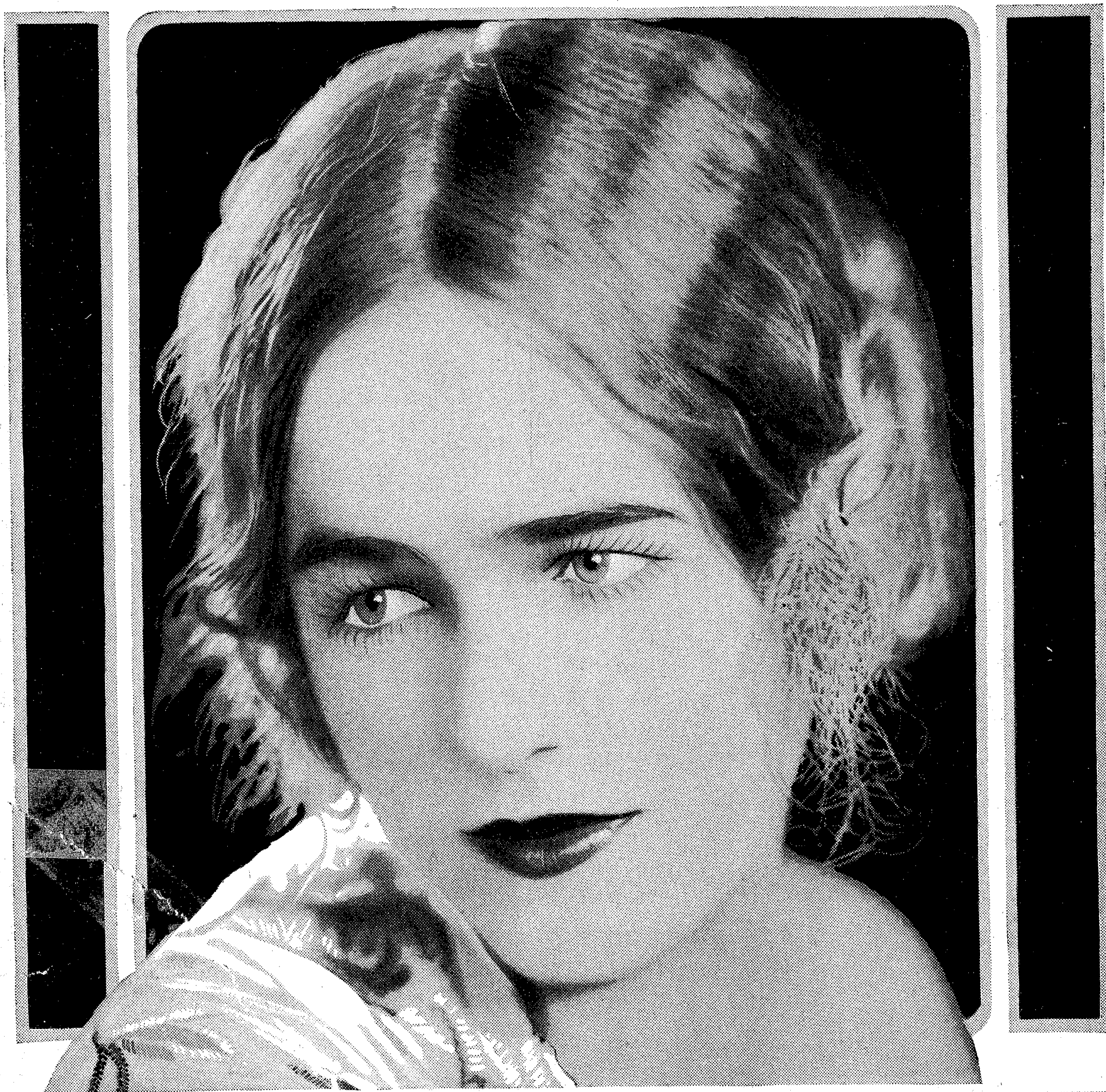
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Vol. XVI

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JANUARY 23, 1926

No. 3



*European Wave Lengths and Complete Time Schedules; Basketball and Other Sports; Zingaro Conquers White Plains via Radio; Picking Up Pikes Peak; ABC of Radio*

## UNIVERSITY SERIES REOPENS OVER KDKA

ENROLLMENT IN CLASSES  
LARGE DURING WINTER

Courses in Public Speaking and Science  
Subjects Will Be Offered  
Radio Audience

PITTSBURGH.—The winter Radio session of the University of Pittsburgh studio of the Westinghouse station KDKA recently opened with a greatly increased enrollment and a greater interest manifested in this form of Radio endeavor.

The two new series of talks are given Tuesday evenings on "Public Speaking" and Wednesday evenings which are reserved for scientific discourses. The Radio campus of the University of Pittsburgh now extends over four continents, and while no credit is given for the courses, the correspondence records indicate that thousands of the Radio audience are supplanting the Radio talks by study and reading, many taking advantage of the publications which are issued in connection with the other courses.

### Information Available

The broadcasts are sent out over station KDKA from 8:15 to 8:30 p. m., eastern time, on Monday, Tuesday, Wednesday and Friday evenings. Monthly programs and other information regarding the courses are distributed by the Radio manager, University of Pittsburgh.

The series on public speaking is being broadcast as follows: Tuesday, January 26, "Methods of Preparation"; Tuesday, February 2, "Effective Speech Style"; Tuesday, February 9, "Conversational Delivery."

"Chemistry and Human Progress" is the general subject of the new science series and will be given as follows: Wednesday, January 27, "Dyes as a Civilizing Factor," A. Lowy; Wednesday, February 3, "Explosives and Human Progress," Gebhard Stegeman; Wednesday, February 10, "Speeding Up That Process" (chemical catalysts), C. J. Engelder; Wednesday, February 17, "Where Will Chemistry Lead Us?" A. Silverman.

### Start Two New Courses in Appreciation of Literature

BOSTON.—With the completion of the two courses in the psychology of understanding people and backgrounds of English literature, Westinghouse Station WBZ, is now broadcasting two new educational courses under the auspices of the university extension division of the Massachusetts department of education. The new courses consist of a series of lectures broadcast weekly on Tuesday and Friday evenings at 7:30 o'clock, eastern time.

The individual topics for the coming lecture follows: January 26, The new satire: humorous criticism of American life in drama, in fiction and the magazines. February 2, Amy Lowell, 1874-1925; an appreciation and estimate. February 9, Epic moved and tabloid novel; the case of each. February 16, Columnists and literature; the contribution of living newspaper poets and humorists. February 23, The "Great American Novel"; the most distinguished aspirants for the crown.

Appreciation in music is the subject of the course broadcast on Friday evenings by John O'Shea, teacher, critic and director of music of the Boston school department.

### WTIC Begins Second Part Wesleyan Professor Series

HARTFORD, Conn.—On January 20, WTIC began the second half of its series of talks by Wesleyan professors. All of the future talks are to be given at 9 p. m., eastern time. In this series, the various phases of taxation, public speaking, poetry, drama and governments are discussed.

The idea of broadcasting educational talks has been received kindly and WTIC's "Air College" has become very popular. The talks to be given in the second course are as follows:

Jan. 27, "Mathematics—What's It For?" Prof. B. H. Camp; Feb. 3, "Life Insurance: The High Spots," Prof. B. H. Camp; Feb. 11, 7:35 p. m., "United States Form of Government," Prof. L. W. Lancaster; Feb. 17, "The Governments of Great Britain and France," Prof. L. W. Lancaster; Feb. 24, "The Governments of Germany, Russia and the Newer States," Prof. L. W. Lancaster; March 3, "The Why of Income Tax," Prof. K. M. Williamson; March 10, "Cooperation—Its Place in Agriculture," Prof. Fossum; March 24, "Life in an English University," Prof. W. E. Peck; March 31, "Public Speaking for the Business Man," Prof. W. E. Peck; April 7, "The Western Reserve of Connecticut," Prof. W. E. Peck; April 14, "Latin—Then and Now," Prof. K. P. Harrington; April 21, "Modern American Poetry," Prof. Snow; April 28,

### WHAT IS OUR COVER MISS THINKING OF?

DO you wonder what the demure little lady on the Radio Digest cover might be thinking of as she gazes so wistfully into the distance?

First let us present you to Miss Candace Holmes, dramatic soprano of Radio Station WBZ, Springfield, Mass. It may be of interest to you to know that WBZ is one of the best heard stations by our cousins across the sea. And as the time approaches for the thrilling tests and the long call from America to European shores, it is quite reasonable to suppose that Miss Holmes imagines she sees the chalk cliffs of the English coast. Beyond is the home of a baron or a prince or maybe just a nice English boy listening in at some five, six or eight "valve" set. And she is singing, and he hears her and he wonders, wonders—

Well, who can guess the thoughts of a maid when she is dreamily gazing into the distance, as does our Miss Candace Holmes on the cover that you have in your hand?

"Modern English Drama," Prof. H. E. Woodbridge; May 5, "The French Mind as Seen Through French Literature," Prof. T. W. Bussom; May 12, "Automobile Fuels," Prof. C. R. Hoover.

### ANNOUNCER READS GOSPEL IN PULPIT

Milton J. Cross, of Station WJZ,  
Almost Gives Call Letters Upon  
Finishing Scriptures

NEW YORK.—Honors of all kinds are heaped upon the heads of the nations' announcers, but Milton J. Cross, WJZ's singing announcer, appears to have been the only one to have been asked to take an active part in a church service.

Dr. Karl Reiland, the rector of St. George's church, whose vespers Station WJZ, here, broadcasts every Sunday afternoon, has always held the broadcasters in high esteem, and often offers prayers for their welfare. Recently the Rev. Dr. Reiland asked Milton J. Cross to come to the pulpit and read the gospel, which invitation was accepted, and the announcer read the scripture not only to the Radio audience but to the congregation assembled in the church.

When questioned about the unique experience, Mr. Cross replied: "Oh, it wasn't so hard, but when I was through I almost slipped and said, 'this is Station WJZ.'"

### WJZ Has 14-Hour Schedule

NEW YORK.—The high power station of WJZ here is operating almost continuously from 10 o'clock in the morning until midnight daily, according to the latest schedule of programs released.

## CONTENTS

Radio Digest, Illustrated, Volume XVI, Number 3, published Chicago, Illinois, January 23, 1926. Published weekly by Radio Digest Publishing Co., (Incorporated), 510 N. Dearborn Street, Chicago, Illinois. Subscription rates yearly, Five Dollars; Foreign Postage One Dollar additional; single copies Ten Cents. Entered as second class matter at the post office at Chicago, Illinois, under the Act of March 3, 1879.

All the Live News of Radio.....	1 to 11
Foreign Broadcasters Who Will Take Part in International Tests.....	4 and 5
Brave Pikes Peak Snows to Thrill Radio Listeners.....	6
Radio Breaks Shepherd's Silent Nights.....	7
Basketball and Other Sport News.....	10
Women's Page; Index to Women's Programs.....	11 and 12
Advance Programs for the Week.....	13 to 21
Editorials, Indi-Gest and Condensed by Dielectric.....	22
A B C Fundamentals for Everybody, Part III—How the Sound Is Put on the Air, by Milo Gurney.....	23
Operating and Trouble Shooting for the Owner of a Stewart-Warner Receiver.....	25
Unitrola: Single Dial Phonograph Receiver, Part II—Assembly of Apparatus, by Carl Patterson.....	27
Potentiometers Control R.F.....	29
Questions and Answers.....	30
Directory of Radiophone Broadcasting Stations, Part V (Revised).....	31

## Looking Ahead

Through the little door to the orchestra pit in a Naples theater a small Italian boy squeezed himself to a place where he could listen and learn. The little door led to a great future and the fame of N. De Rubertis, leader of the Kansas City Little Symphony orchestra, heard over WDAF each week. Read about it in the next Radio Digest.

"Toot! Too-oo-oot! . . . Waugh-ee-e! Oink! Oink. Hee! Haw! Haw! Haw!" When these sounds come over the air from WFDM, Beaumont, Tex., it's the real thing. Among the regular properties at this station are a genuine locomotive, a live pig and a Missouri mockingbird. Pictures and story next week.

Agricultural science by air for progressive farmers who cannot leave their farms is one of the features of the Michigan Agricultural college station, WKAR, at Lansing, Mich. This state Radio station also performs other valuable service for its citizens. Details with pictures in the next Radio Digest.

"A Voice in the Radio Assembly of Cities and States" is the mission set for WBAL by President Herbert A. Wagner of the light and power company which sponsors this recently arrived representative from Baltimore. It may be young, but it has a lusty voice. A page of exceptionally interesting pictures of artists appearing at WBAL in next Saturday's Radio Digest.

Milo Gurney, known as "King Miloplex," a recognized authority on Radio, will continue his interesting series on the A B C Fundamentals for Everybody by describing how the sound reaches the receiver and will give a simple explanation of tuning in in Radio Digest next week.

The Day-Fan 5-tube, single control receiver will be the next feature of the Radio Digest's operating and trouble shooting series. The home builders and even owners of other sets may profit by reading the article next week.

Carl Patterson will give the instructions for wiring the Unitrola, single dial receiver for your phonograph cabinet, in next week's issue of the Radio Digest. This little 12" by 16" 5-tube receiver has struck a popular note.

### Newsstands Don't Always Have One Left

WHEN YOU WANT

# Radio Digest

YOU WANT IT!

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

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## NEWS BRIEFS FROM THE BROADCASTERS

SOUSA, BAND LEADER, TO  
BROADCAST FROM KGW

"The Federal Eagle" Week's Drama  
at KGO—U. S. Navy Band  
Returns to WRC

John Phillip Sousa, world-famous band director and musician, broadcast a 15-minute talk from KGW, Oregon, recently. Sousa and his band played a short engagement in Portland and during his sojourn in the City of Roses kindly consented to give a brief talk to the KGW Radio audience.

"The Federal Eagle," a drama written for the stage by Katherine Browning Miller, Berkeley, California, playwright, will be broadcast by the KGO players, Thursday evening, January 28, under the direction of Wilda Wilson Church. Nine characters will appear before the microphone in the story; and music will be played by the Arion trio.

The January Navy night, a regular Radio feature of WJZ, New York, and WRC, Washington, will be broadcast January 23 from Washington. The music for this program will be furnished by the United States Navy band, Lieut. Charles Benter directing. The Navy band is now in the Capital for the winter, following its successful tour of the South and West during the fall months.

Saturday, January 23, marks the beginning of the Philharmonic concerts for children from WJZ, New York, and WRC, Washington. These programs will be more or less educational.

"Newport" Carl Bamberger, pianist, gives a pianologue through the Crosley WLW broadcasting station every Wednesday evening at 11:40 p. m. central time.

Samuel R. Guard, lay pastor of the "Little Brown Church in the Vale" which broadcasts every Sunday evening from WLS, Chicago, will give an interesting series of sermons dealing with "Jesus, the Real Man." He will use as a basis for his texts "The Man Nobody Knows," written by Bruce Barton.

The best points of interest in American cities are described in graphic manner by W. H. (Billy) Spears, internationally-known travel authority, who is heard Wednesday evening at 8:15 p. m. central time, from the Stewart-Warner station, WBBM, Chicago. "What to See" is the title of his weekly excursions to the various cities of the United States.

June Lee, comedienne of the air, has migrated to New York city and her peppy blues singing may now be heard from WOR, Newark. She is known in the east as "The Vagabond Singer" because her voice has been heard from so many microphones. Middle-westerners remember her at WQJ.

Blanche Elizabeth Wade, who has been broadcasting a series of children's stories concerning the adventures of Sir Hobgoblin for some time past from WEAJ, New York, has recently extended her Radio audience. Her Friday evening stories are now heard by the Radio audiences of WEAJ, WJAR, WOO, WCAE, WGR, and WEAR from 7:30 to 7:45 p. m. eastern time.

Wednesday night has become Rochester night for WGY. At 6:45 p. m. eastern time the Eastman theater orchestra of Rochester will give a program and at 8:05 o'clock a special program by the combined musical clubs of the University of Rochester will be broadcast from that city in cooperation with Station WHAM.

In order to provide the Radio audience with a greater knowledge of music, the Conservatory of Music, will soon broadcast a series of descriptive talks upon the various phases of music on Tuesday evenings, at 7 o'clock, central time, through the Crosley WLW station in Cincinnati.

Semi-classical music composed when the world's greatest musicians were in their gayest moods will make WSAI a pleasant station to dial for Wednesday evenings at 9 p. m. central time. The Cincinnati Symphony orchestra contributes the artists who will play these popular selections under the supervision of Robert M. Visconti. The popular Blue Grass tenor is the soloist.

By tuning in for WEAJ, WCAP, WJAR, WWJ, WEEI or WGR Friday nights at 9 p. m., eastern time, the Radio fan may become an accomplished harmonica player. These lessons are given during the closing five minutes of the Hohner Harmony hour.

# \$100.00 TO CHAMPION LISTENERS

## ALL IS READY FOR OVERSEA RADIO TRIALS

Cuba, Canada, Mexico and United States Silent One Hour Each Night

Test for North America

Last Two Days of Week Will Have Hour Set Aside for Stations on This Continent

Every broadcaster in Cuba, Mexico, Canada and the United States will be silent for a full hour on January 24, and daily for four days thereafter, according to officials of the fourth annual International Radio Week committee, while three-fourths of the broadcasters in the United States, Canada, Mexico and Cuba will be silent in the same hour on the last two days of the week when broadcasters in North America conduct the first North American distance test.

The test hour each night will begin at 11 o'clock eastern time (or 10 central, 9 mountain and 8 p. m. pacific time), the first test hour being on Sunday, January 24. In the hour preceding this, broadcasters in the United States, Canada, Cuba and Mexico will transmit special programs for the benefit of Radio listeners in foreign countries, extra power being used in many cases. Announcers at American stations will give their call letters in several foreign languages in this first period, 10 to 11 o'clock, eastern time, and listeners will soon grow familiar with the languages used, so that on the entry of the American silence the voices of foreign announcers who will come on the air in special programs for American fans will have a familiar ring.

### How Week Is to Be Divided

On the first night of the tests, Sunday, January 24, British broadcasters will fill the air. Some of the foremost Radio stars of England are scheduled to appear before the microphone in special programs. When it is understood that 11 o'clock in New York is only 8 o'clock in California, it is 4 o'clock the following morning in London and 5 a. m. at Berlin, then American listeners will realize that the foreign stars are inconveniencing themselves considerably in an effort to entertain Yankee listeners.

On the second night of the tests, Monday, January 25, stations scattered throughout Continental Europe will be heard, while on the three following nights both English and Continental stations will be on the air.

Stations OAX of Lima, Peru, and LOX and LOW of Buenos Aires, Argentina, South America, will also be on the air in the International tests, and will broadcast during the first five nights.

### How Fans Must Report Programs

In view of the late hour at which the broadcasters will face the microphones overseas, the Radio Week committee has arranged to receive from the broadcasters overseas who are active, complete logs of their programs. Reception of programs to be wired to Radio Digest or the committee for official verification.

These confirmation programs, as they are styled, will be prepared and edited by the committee and published after the tests are completed. They will also be available after the tests for checking claims of distant reception by Radio fans.

Fans who wish some official recognition of their feats in logging overseas broadcasts should take especial pains to see that their letters outlining the stations heard give the particular number listened to, as well as the exact minute of the reception. The second important point is the enclosure of a return addressed envelope, properly stamped.

### Special Continental Tests Friday

On Friday and Saturday of International Radio Week the plan of broadcasting will be varied. During the customary silent hour, instead of hearing the voices of English, French, German or other foreign announcers, the listeners will have an opportunity of hearing stations on the North American continent that have perhaps never come into the listener's set before.

## Special International Tests TABLE OF CONTENTS

TO AID American and Canadian fans interested in receiving the test programs during International Radio Week, which is from Sunday, January 24, to Saturday, January 30, inclusive, the following special table of contents is given so that any particular data may be found:

Summary of International Radio Week, what it is and all about it, Page 3, first column  
 \$100 Radio Digest Gold Award, for best foreign reception, Page 3, fourth column  
 How to Recognize European Stations, "Greetings World".....Pages 4 and 5  
 London Fails to Get Excited, but cooperation is given.....Page 8, first column  
 Calendar of the Week's Events.....Page 8, second and third columns  
 Fame for Listeners Reporting First Reception in their communities, Page 8, fourth column  
 Principal Foreign Stations, including calls, wave lengths, etc. ....Page 9

## YOU MAY HEAR HER ACROSS SEA



Marjorie Hayward, famous English violinist, who is loved by the music lovers of her native land. It is hoped that the strains created by her genius will be wafted across the Atlantic to us, as she is expected to broadcast during the international tests.

Beginning promptly at 11 p. m. eastern (10 central, 9 mountain, 8 pacific) time on Friday night, January 29, all broadcasters in the United States, Cuba, Mexico and Canada will shut down as usual, except the broadcasters in the Atlantic and eastern time zones. These stations will have the air free for them for fifteen minutes. During this quarter hour it is expected that many Pacific coast listeners will log eastern stations for the first time.

Following the first fifteen-minute period, the eastern stations will shut down, and the broadcasters of the central time zone will occupy the air. At promptly 11:30 p. m. eastern (10:30 central, 9:30 mountain, 8:30 pacific) time, the central time stations will shut down and the mountain time stations will take the air. At 11:45 p. m. eastern (10:45 central, 9:45 mountain, 8:45 pacific) time, the mountain time stations will sign off and Pacific coast broadcasters will take up the programs, occupying the air exclusively for the remaining fifteen minutes of the silent period.

On Saturday, January 30, at the customary silent hour, Canadian stations will have the air free in an all-Canadian period, broadcasting from 11 to 11:15 p. m. eastern (10-10:15 central, 9-9:15 mountain, 8-8:15 pacific) time. The broadcasters in the northern half of the United States will come on the air during the second fifteen minutes of the hour, while

broadcasters in the southern half of the United States will occupy the air during the third quarter of the hour. The fourth quarter of the hour everyone will be silent except broadcasters in Cuba and Mexico, where special programs have been arranged for Canadian listeners.

### Will Resume Programs

Each night, after the conclusion of the International test period, broadcasters regularly scheduled to operate will come on the air in their regular programs, picking up the schedule at 12 midnight, eastern (11 central, 10 mountain or 9 pacific) time.

In view of the fact that many broadcasters in widely separated sections of the country operate on the same wave length, it is more than possible that fans will find it possible to adjust their sets in advance, counting on the wave length adjustment to bring in the desired distant station the minute the local broadcaster on the same wave has become silent.

Special programs are being arranged by the stations who will participate in the North American tests.

Further world-wide communication records were made during the past year by Westinghouse broadcasting stations when KDKA's programs were relayed in South Africa and Australia and heard in Japan.

## GOLD AWARDS FOR WINNERS OF 1926 TESTS

Radio Digest Offers Six Prizes for Best Reception of Foreign Programs

Open to U.S. and Canada

Board of Nationally-Known Radio Leaders to Judge Reports of Listeners In

One hundred dollars in Gold for the best reports on reception of foreign stations during the International Radio Week tests! That is the offer the Radio Digest is making as a contribution to the skill of American and Canadian listeners in picking up programs of Europe and South America between the dates of January 24 and 28, inclusive.

In announcing the contest, the Radio Digest takes another step forward as leader in the art of broadcast reception. The prizes are six in number: first, \$50; second, \$25; third, \$10; fourth, fifth and sixth, each \$5. In the event of tie, a prize identical in every respect with that tied for, will be awarded to each tying contestant.

The contest is open to every listener in Canada and the United States. There are no strings. The rules and basis of judging appear below.

### Well-Known Judges Are Appointed

After carefully looking over the many possible candidates for judges in the Radio Digest International Reception contest, the following board of judges was appointed:

The Editor of Radio Digest, chairman, to represent the broadcast listeners of America and Canada; Hon. Frank W. Elliott, of Palmer School station, WOC, and president of the National Association of Broadcasters, who will represent the broadcasters; and Federal Supervisor of Radio, E. A. Beane, well-known in official Radio circles, to sit as judge and representative of the Radio section of the United States department of commerce.

This board of three judges will view all reports submitted in the contest and will select the winners.

### Rules of Reception Contest

1. The contest opens 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. Reports received after that time will not be admitted to the contest, but will be confirmed as to their authenticity, however.

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 final 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.

### Other Contests Are Announced

Besides winning national recognition as successful in the International Radio Week contest conducted by the Radio Digest, the victors in the contest will be pictured in Radio Digest in future issues of this publication.

Several other contests and prizes have been announced by others interested in International Radio Week.

### Prohibited Wave Lengths

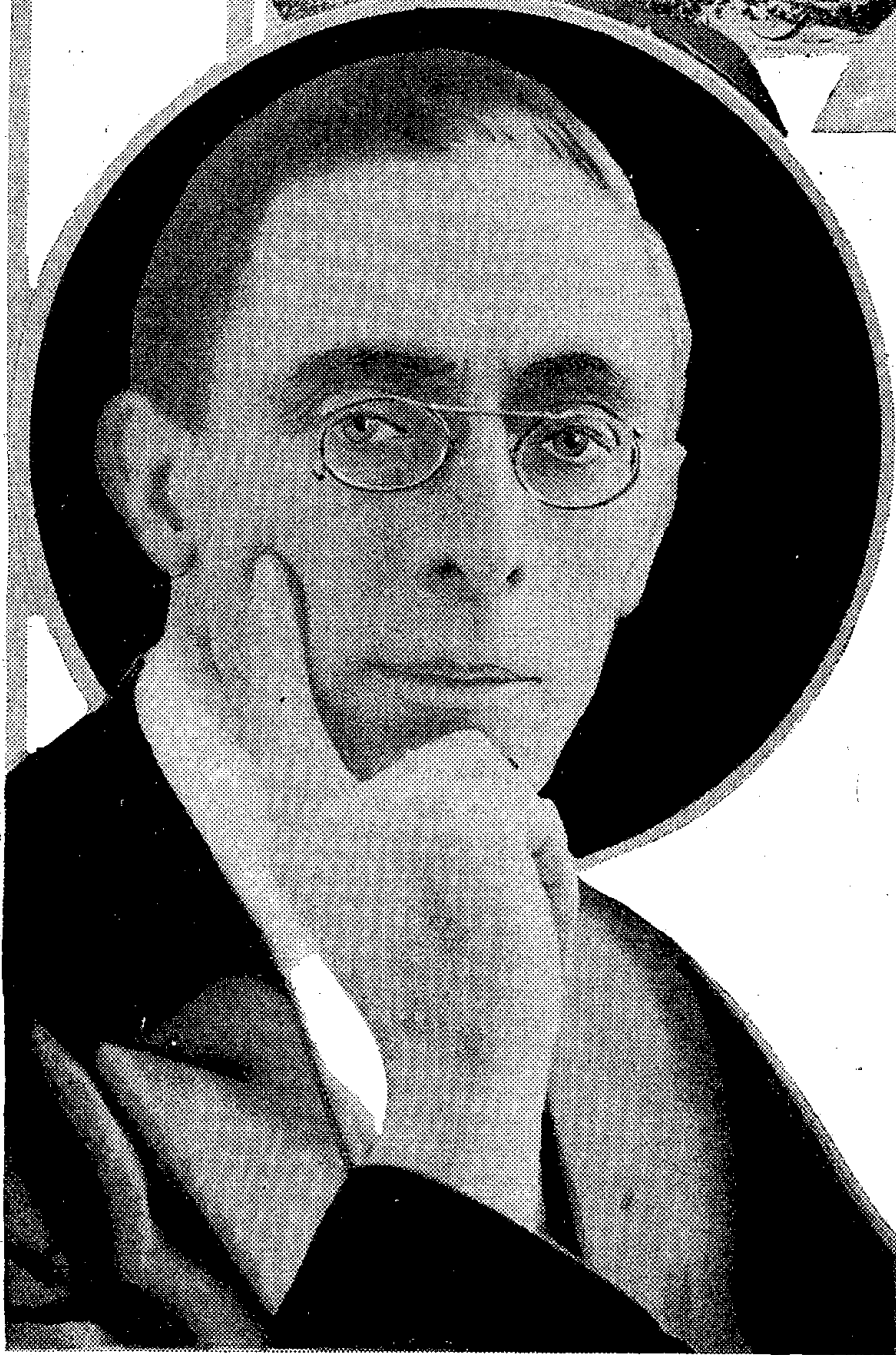
In Germany amateurs are forbidden to transmit on the following wave lengths: 26, 32, 35, 43, 59 and 74, because these have been adopted for commercial purposes.

# "Greetings, World!" Big Radio Test Starts

One of the keenest wits of 2LO, is John Henry (below), scheduled to greet Americans during test week.



H. R. H. the Prince of Wales (center) has been asked to address President Coolidge via air on behalf of Great Britain.



If Americans get any results at all during the International Test Week they will be sure to hear the Orpheans of the Savoy Hotel (below), one of the most famous Radio musical organizations in Great Britain. They have been heard over the air in the United States a number of times.

## DX Fans Begin Logging All Nations Tomorrow Night. British Notables Shown Here Considered Among Those Most Likely to Be Heard. How Foreign Stations Can Be Recognized.

**A**LL SET for the big Derby! The great seven-day International Radio race starts tomorrow night. All DX colts are warned to be at the barrier when the clock strikes the hour set. Although the race is all inclusive, Americans will be most interested in tuning in European stations and probably European stations will be most concerned in trying to pick up the ether waves sent out from this hemisphere.

How is your set working, Mr. DX? Everything all tuned up and ready to tune in? Is every available tube in good working order and hitting 100 per cent? Do the batteries spark pretty and snappy? How about all those fussy connections that sometimes let the little weak waves, all tired out from their long run, perish before they can reach the ear? If you don't know how to do the doctoring yourself it will be worth while to let a regular Radio service man do the job.

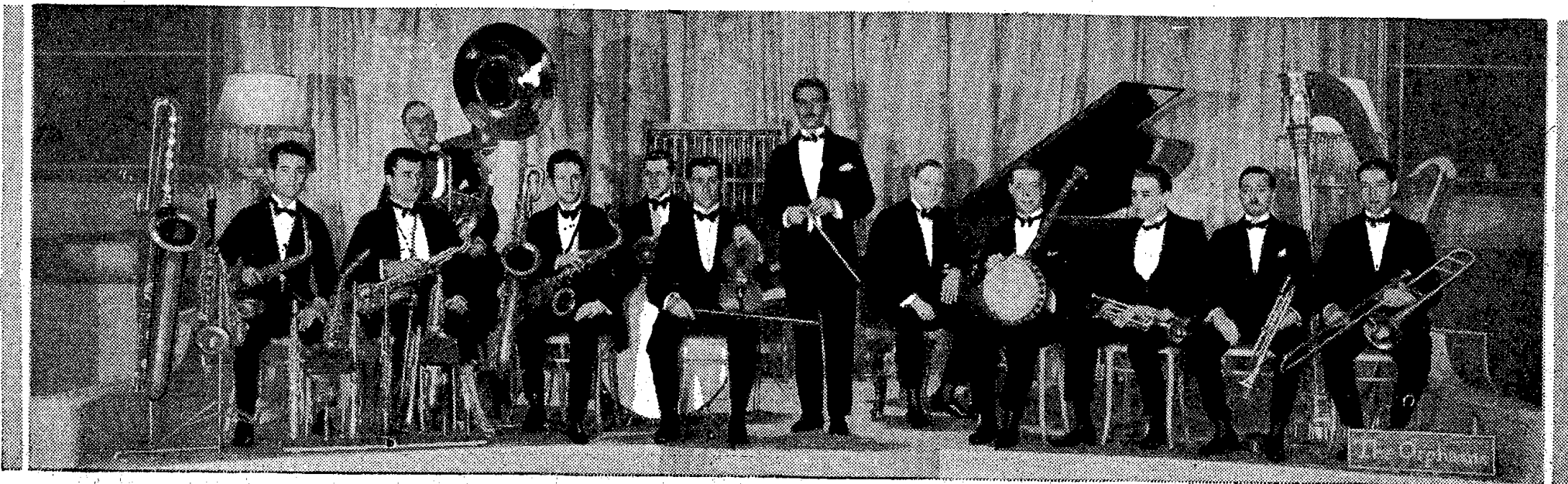
There will be millions of entries in this great race. Old Boy Imagination may work some shabby tricks on well meaning listeners. Everybody expects something better than ever before in the way of reception. The experts seem to encourage that hope—better sets and better transmission. But there must be no bluffing by cribbing from the published programs and reporting that they were heard in full. No, no, no, can't do that this year. The arrangements committee has arranged a trick system of programs. Some of the numbers that will

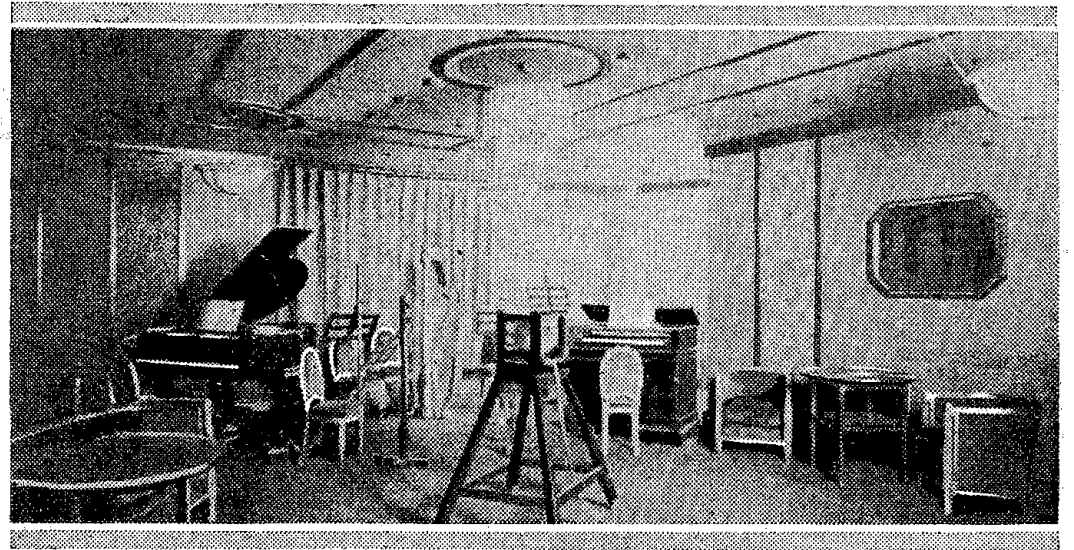
be published most conspicuously will not go on the air at all. So be dead sure that you actually heard what you think you heard before you go broadcasting your success to the neighbors. You may hear a funny little noise like kidding laughter if you're wrong.

Radio Digest, in this issue, aims to give every DX fan the utmost help. It has kept the cables humming for weeks in order to get the programs as much in detail as possible. On page 9, will be found an interesting table. This page should be in front of every amateur who hopes to catch a snatch of song or an announcement from across the water during the coming week.

**A**NALOGOUS waves between American and European stations are given. This will help you to find the European station you are seeking, provided it is within the limits of the American waves, that is from 200 to 545 meters. For example, you live in the middle west and you wish to find the London station, 2LO; you find that 2LO has a wave length of 365 meters. On your dials you find that the Kansas City station, WDAF, has 365.6 meters. A hair's difference and you will be tuned for the London station, if other conditions do not prevent. You will probably hear 2LO even at 365.6 meters.

In the same manner you may be able to get Barcelona (Radio-Catalana) on 460 meters which is close to WCAE, Pittsburgh, broadcasting at 461.3 meters. Or you might get Koenigsberg on 463, or FPPT, Paris, on 458 meters.





**Radio-Belgique Popular Abroad**

**R**ADIO-BELGIQUE of Brussels on a 263-meter wave length and operating with one and one-half kilowatts of power, is one of the European stations most counted upon for American reception during the International Test week. This point on the dials is near WMAK, Lockport, N. Y., 265.5 meters; or WBCN, Chicago, and KFNF, Shenandoah, Iowa, both on 266 meters. It is one of the liveliest and most enthusiastic of stations in spite of severe handicaps in the way of heavy taxes both for transmission and reception. Messieurs Huber and Van Soust are the administrators who have made this station popular.

In the picture at left may be seen the wide-spread antenna of Station Radio-Belgique at Brussels, Belgium. This station is capable of generating six kilowatts but operates on one and one-half. The studio of Radio-Belgique is shown above. Note the wide floor space and peculiar arrangement of microphone in the center. Belgians will greet America over the air from this room with special concerts during International Test week.

**L**INKOPING broadcasts on 467 meters, the same as KFI at Los Angeles. Americans who have logged WDWF, at Providence, R. I., on 440.9 meters will find themselves close to Radio-Toulouse, Paris, France, on 441 meters. Then again WEEI of Boston, at 348.6, will be close to "La Petit Parisien" of Paris, with a wave length of 348 or 345 meters.

Parle vous France, soldier? Nobody needs to tell you, then, that if you hear "Allo! Allo! Allo!" calling through your loud speaker that some French announcer is on the air over there. That is the way the French stations sound off—or, rather, on when they start to broadcast. Just sit back in your chair and say again, "So, this is Paris!" It is, unless it should happen to be Belgium. The Brussels station also calls "Allo!"

However, if it should be the Little Parisian you will probably hear the announcer repeat the call in English. Or should it be the FPPT of Paris, you will hear the announcer say "Emissions de l'Ecole Supérieure des Postes et Telegraphes." It has some official connection with the post office and telegraph, so that it has an exclusive advantage in using the telephone lines for distant pick-ups for broadcasting. These include sporting events, theatricals and public speeches.

In Spain the announcer comes on the air like a top sergeant drilling an awkward squad—"Atencion!" (He pronounces it "Aw-tain-thee-own"). They have the call letters EAJ and it is a girl at the mike who announces more often than it is a man. Suppose you are trying to pick up Madrid say again, "So, this is Paris!" It is, unless

at 392 meters (just above WTAM at 389 meters) and everything goes right, you will hear the announcer say "Estacion Radio Iberica" (Ayss-tar-thion Raa-dee-oh Ee-bear-ee-ka). If the International Test could be arranged at an appropriate hour the sounds of a bullfight might be heard, as these affairs are frequently put on the air on a Sunday afternoon.

In Barcelona there are two stations, EAJ1 and EAJ13. The first is called Barcelona and the latter Radio-Catalana. In Bilbao are located EAJ9 and EAJ11. At Cadiz is EAJ3, which opens its hour on the air with the tick of a metronome (tic-tac para syntonizar). We may be fortunate enough to hear the velvety voiced lady who announces at San Sebastian, EAJ8. She clearly enunciates every syllable and frequently the identification is repeated in French and English.

German stations go on the air with a variety of signals. Hamburg, Breslau and Munster proclaim their aerial presence with gongs. These gongs are also rung between the various numbers on the programs. Munster sends out the letters MS in code. The announcers call "Achtung!" (Awk-tung!) or "Haa-low!" This is followed by the name of the town.

**B**ERLIN can be picked up on three wave lengths—if your dial is big enough. The 505-meter length, however, is the one most likely to be heard by listeners in America. This is not far below KLX, Oakland, Calif., or WIP and WOO of Philadelphia, who are all on 508.2 meters. Koenigswusterhausen is claimed to be the first broadcasting station in the world. The date given for the first broadcast concert is June 19, 1920. The history of broadcast in America, disproves this claim, however, as there were two stations going here previous to 1920.

We have small hope of hearing anything from Austria as the Radio has not been developed there so extensively as it has in other European countries. The two principal stations are Vienna and Graz. The former comes on the air with the code signals for V (...—...—) followed by the announcer's call "Hallo! Hallo! Hier Radio-Wien auf Welle 530 meters." Graz announces similarly except it uses the code for RV (...—...—).

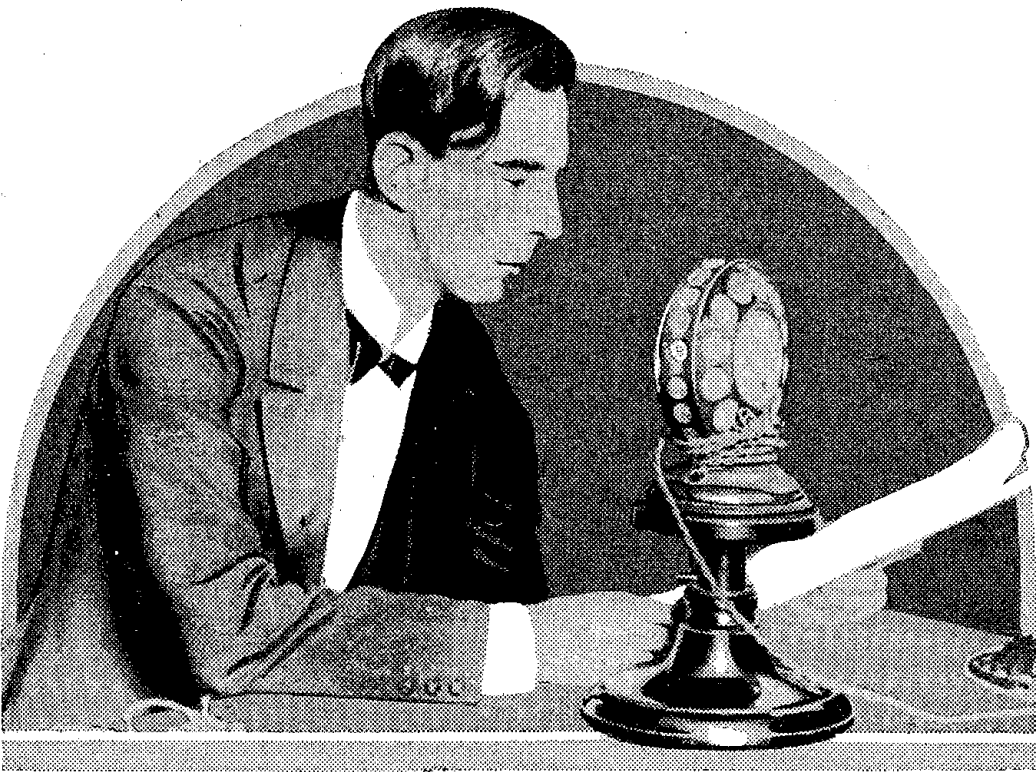
There is very slight chance of the Czecho-Slovakian stations spanning the Atlantic. But if the elements are very kind the Prague-Strasnice may be distinguished by the announcement "Zde Radio-Journal Praha." The conclusion is indicated by the anthem, "Kde, domov muj" or "Pod Tatron se blyska."

If you are trying to get a red glow in your bulbs by tuning in Moscow, you may hear this, "Eto goboryt Moskowskaia Centralnaia Radiotelefonia stantsia imeni Kominterna."

To take the Siberian shivers out of our spines let's turn the dials down to sunny



Close-up view of Marconi microphone (above) being demonstrated in Radio-Belgique studio by the literary director. Note the substantial proportions and sturdy support.



This gentleman (above) writes poetry but he doesn't have to depend on selling it for his living. No, indeed, for he is none other than Prince Wilhelm, the poet prince of Sweden. He has been invited to participate in the International Test and Americans may hear one of his poems via ether. Below is one of the 210 "gangs" that may be heard next week. Robert Hale (extreme left) had just finished a broadcast in the airplane.

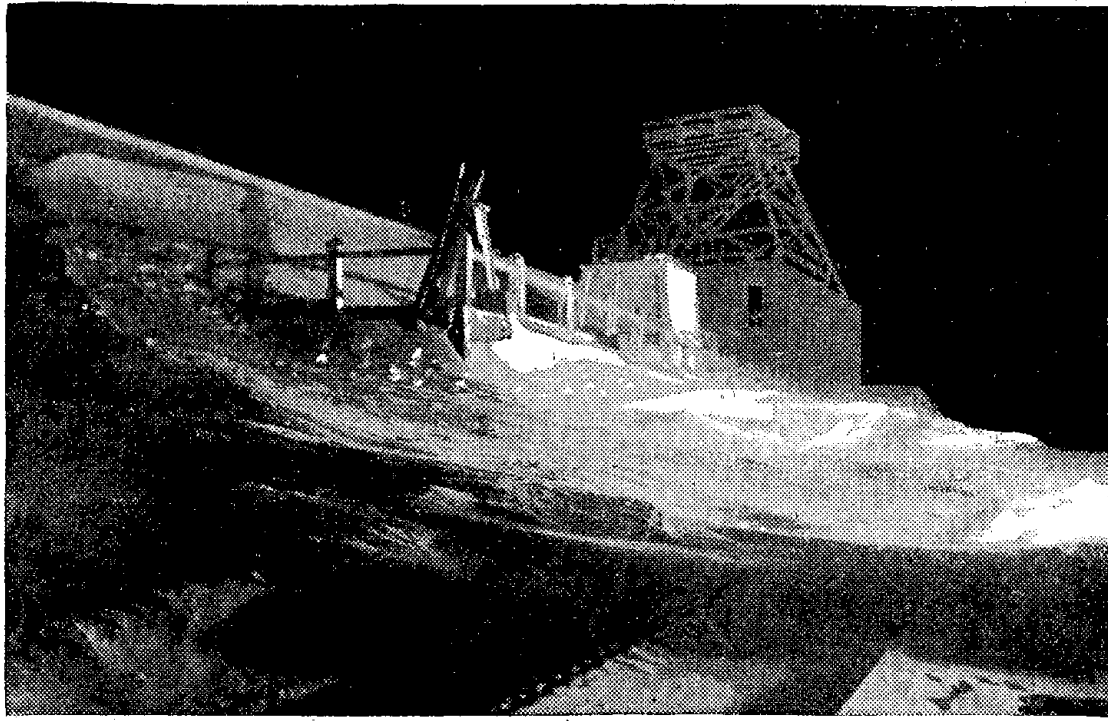
Italy. You will know you are there when you hear a sonorous, ringing feminine voice announcing, "Unione Radiofonica Italiana, Radio-Roma." This station transmits almost with the same strength as Barcelona, and it is quite probable that many American listeners will hear Rome, Italy, over the air during the test week. It also is possible we may hear Radio-Milan from Italy.

In Switzerland, we may possibly hear "Societe Romande" at Lausanne or "Radio-Geneve" from Geneva. Sweden calls "Hallo! Hallo! Radio-Stockholm." Oslo, announces in English. Hilversum is the principal broadcasting station in Holland, and you may hear it coming through the starlight thus: "Hier Het Hilversumsche Omroep. Radio Statie Hilversum." For the benefit of the English neighbors across the channel, the announcer generally adds "Hilversum station calling."

Incidentally DX trotters are advised to dig up some of the principal language dictionaries and concentrate on pronunciations. Yes, sir! International broadcasting is certainly destined to bring about a universal language. You'll agree, after hearing—that is, if you hear—a couple of dozen European announcers describing the last and next numbers.



# Brave Pikes Peak Snows to Thrill Listeners



THESE pictures show progress of Colorado adventurers as they started to climb up famous mountain New Year's Eve for Radio stunt. Lower—plodding up snow banks level with telegraph wires. Center—arrival at Summit House, top of Pikes Peak. At top—structural work where fireworks welcomed New Year—part of house buried in snow. Their experiences were broadcast to Radio listeners throughout nation.

man must carry his share of the necessary accessories and you come again to the telephone line with the snow up to the armpits of the poles and you know that once more you are on the regular road.

Suddenly you discover that the light is fading out of the sky. Soon it will be dark. Your cheeks, numb where they are exposed, and raw where the edges of the goggles have worn through the skin, remind you that they are still capable of sensibilities for the sleet comes dashing with the wind to bite and sting you to the quick.

Darkness and a lowering snowstorm! Thank God for good, staunch companions or your heart would stand still. Death has come to others in these barren heights and it will come again for others—but not for you. You fill your lungs full but you do not relax—not yet. You must push on and upward. At the top there is a house. It will afford shelter and there is chopped wood beneath the drifts near the door.

Twilight settles down. The moon is now clearly defined and the stars are coming through the blue. The party is all together again. There will be no more straggling. But before the last lap you halt for a few minutes to sit on your packs and counsel with each other. The plans are decided. All has gone well. The guide is confident. Two hours—or possibly two and a half—and you will be at the top.

It is already dark beneath the clouds that have

(Continued on page 29)

## Ten Dare Death to Reach 'Top of World' For KFXF

By H. P. BROWN

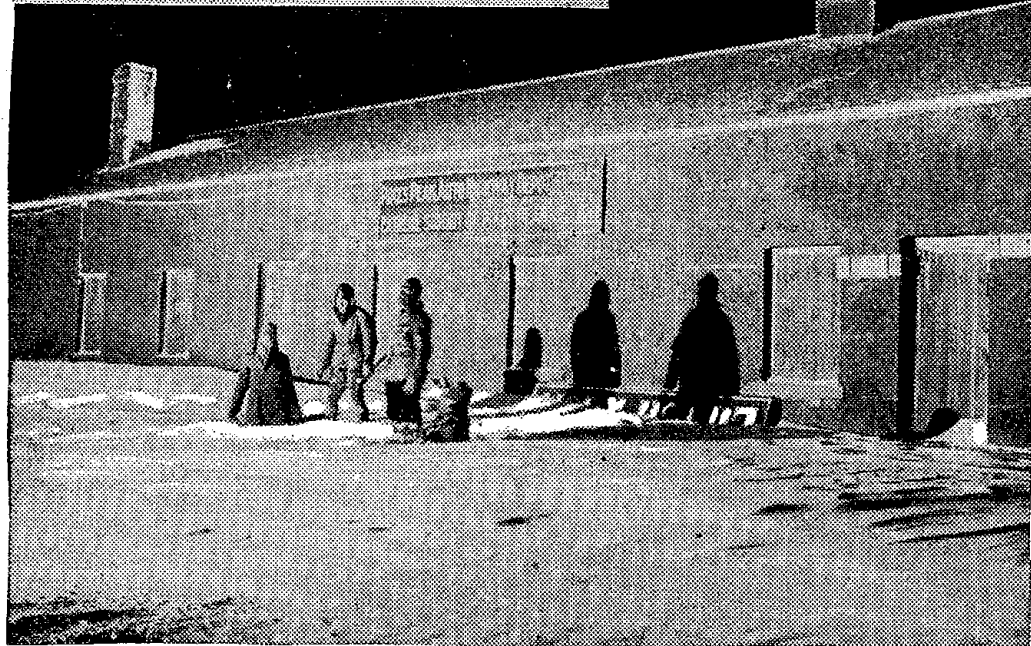
ANOTHER thrill was furnished to Radio listeners last New Year's Eve when a party of ten men ascended the steep and rugged sides of Pikes Peak to set off flares and rockets that made the sober old peak look like Vesuvius on a spree. The scene was visible for 150 miles.

Details of the adventure and descriptions of the scenes were broadcast from the studio of the Pikes Peak Broadcasting company at Colorado Springs under the direction of W. D. Pyle, chief announcer and manager.

Making the cold brow of Pikes Peak before the winter snows have melted is no stroll through Peacock Alley as the writer may very well affirm through personal experience. These men of the Adaman club who climbed the 14,108 feet to the top toiled through the night and a stinging snow storm.

It takes reserve and persistence. Up one incline, a sharp turn and a plodding, dogged push to the next. There is no place to rest. Stand still and you perish for there are no dwellings after you get into the upper fringe of timberland.

Weird winds swirl and screech through the crags and boulders. Ghost trees stretch out forbidding arms all gnarled and twisted in their struggle for foothold on the naked flanks of rock. House high drifts bar the road to all vehicles. One must skirt the



edges of these or crawl like a snake, dragging such supplies of food and blankets as may be needed.

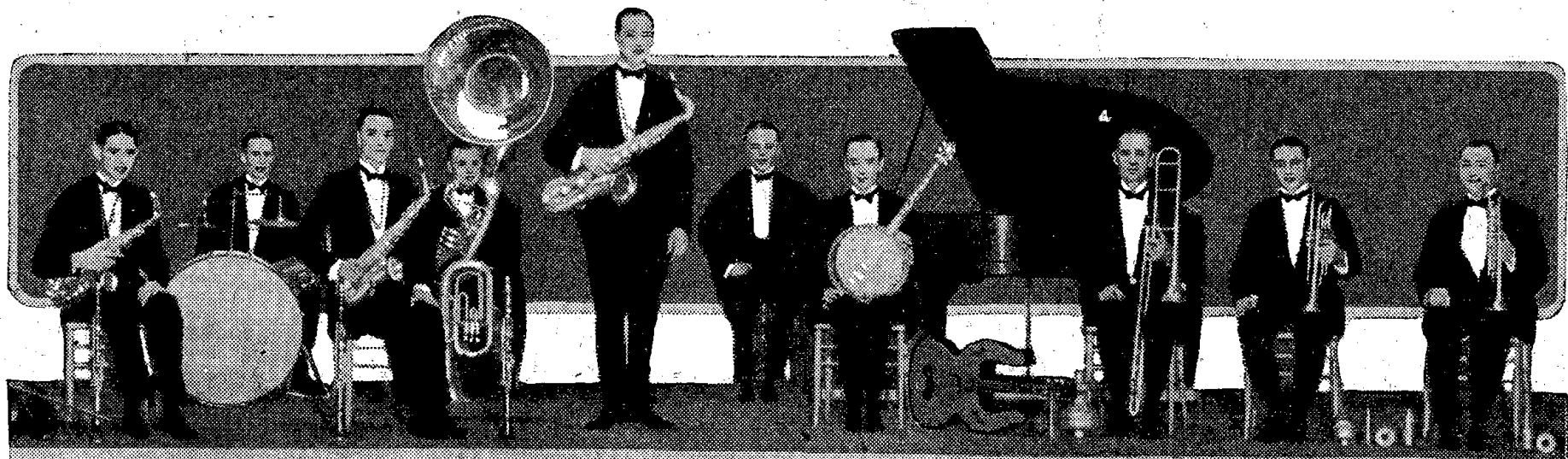
Here the wind has swept the road bare of snow and the gravel cranches under the dragging web as the climber plods along gathering fresh breath for the next battle and the next thousand feet. Here's a short cut where the drift is a help rather than a hindrance. It slopes down covering scrub and by turvy rocks like a smooth and slippery gable to another treadway rooftop 300 yards above.

\* \* \*

SLIP and you are due for a long roll. Remove your snowshoes and you sink out of sight in a soft, feathery cloud. But you squirm and drag along, pulling yourself up for every



While the reports came in from the ten mountain climbers and their progress on New Year's Eve at Station KFXF, Warner Stone's Columbians (below) furnished the music.



# SIMPLE TO PREPARE MACARONI TO SERVE

## IS FILLING AND NUTRITIOUS FOR ENTIRE HOUSEHOLD

### Betty Crocker Tells How Dishes Should be Prepared to Retain Greatest Food Values

Have you heard, and do you regularly listen for Betty Crocker's Radio talks? Miss Crocker is nationally known as a home food specialist who is broadcasting from a dozen of the country's largest stations. By special arrangement Radio Digest has secured a series of exclusive articles by Miss Crocker dealing with her current Radio talks. These broadcasts are made through WEEI, WEAF, WCAE, WGR, WEAR, WWJ, WDAF, WHT, WFI, KSD, KFI and WCCO, the Gold Medal station at Minneapolis-St. Paul. All of Miss Crocker's recipes and discussions are based upon investigations and work of herself and her assistants in model kitchens.  
—Editor's Note.

By Betty Crocker

**T**HE question of what to have for luncheon or supper is sometimes a puzzling one. Breakfast and dinner menus do not vary a great deal from day to day, except in the kinds of foods served, but the luncheon or supper menu may be entirely different every day of the week. You can plan whatever suits your whim or mood.

However, in planning to suit your fancy, you should also take into consideration your stock in trade; that is the things in the refrigerator or cupboard, because there is no more convenient meal in which to use up left-overs than luncheon or supper. The most satisfactory luncheon or supper menu has one substantial main dish for the youngsters. Furthermore, it should be a dish that may be prepared quickly.

Because of the fact that it fulfills all of the above qualifications, I recommend macaroni and spaghetti. Macaroni and spaghetti are substantial and filling, are nutritious for each member of the family, and not too heavy or rich.

### How to Cook Macaroni

In most cases where macaroni is unpopular I have discovered that the reason is either the use of an inferior macaroni, of poor cooking, or both. Here are the directions for boiling macaroni and spaghetti:

Use at least eight times as much water as macaroni and two teaspoons of salt for every quart of water. With these proportions you can prepare any amount, small or large. Add the salt to the water and have the water boiling rapidly when the macaroni is added. Keep the water boiling all during the cooking. Cook until tender when pierced with a fork, but not so long as to allow the macaroni to get soft and mushy.

Drain in a coarse strainer or colander so that all of the water is drained off. If the water is not boiling when the

(Continued on page 12)

## WHAT FASHION WILL 1926 BRING?



Sally Dee

**W**HAT are we coming to? That is the question of pretty Sally Dee, fashion authority at Denver, who every week forecasts style trends over KOA for an intermountain audience of women and girls. Extremists, she suggests, hint that flapper skirts will go up a notch or two, while their opponents insist there will be no change.

"These are modish conjectures, of course," she points out. "So far as skirts are concerned, we are quite certain they will not be lengthened. It is admitted that milady seeks the bustle effect. This however, will be by means of draperies

which is quite different than the bustle framework worn by our grandmothers. "Straight lines are definitely under taboo. Everything will be flared, as the result of a natural revolution against the tight-fitting frock. Another thing, there is prevailing tendency for reptile skins in place of calves and kids for women's pumps and oxfords."

Miss Next Year will be a decidedly colorful girl in her two-piece dress with its marked feminine effects, according to Miss Dee, who is heard over the General Electric Denver station every Tuesday, Thursday and Friday afternoon.

## SHORT WAVES

By Marcella

Pa will probably have the Radio set all labeled "hands off" this week, on account of the International Week tests, but we don't care if our listening is cramped a bit, for, what do you think? A mere man has dared to write us. He signs himself Cap'n Sparks, and says—oh well I'll let you read his letter:

"Why limit your offer to the girls? There's lots of we members of the bill-paying, battery-buying sex that would like to know about entertainers. Frinstance, what became of the young lady who used to announce at WCAL, Northfield, Minn? She was the one and only pleasing feminine announcer, and she hasn't been heard for many months. Where is she? And why? Don't tell my wife I asked.

"And if you have any queries about WTAM or WEAR entertainers or staff that you'd like answered, ask me. I know 'em and will be glad to pass along any scandal I know. No charge."

Well, after recovering, from the shock, I can tell you, Cap, that the pleasing lady whose voice you adored was Miss Ella Hjertaacs, a fair Swedish beauty, who was a coed at St. Olaf's college, which college owns WCAL at Northfield, Minn. Miss Hjertaacs was graduated and so gave up the "mike" job. Maybe the registrar there could give her address.

I won't tell your wife you asked, because I think you haven't any—just trying to "spoof" me. Well, send along the WTAM-WEAR dirt, I'll disseminate it.

\* \*

That last one was a rather long wave for the style nowadays. But here's a short one. Someone wants to know if the Hired Hand is an announcer or an entertainer. To be perfectly frank, he is neither. "Substitute" announcer is his position, but I have found him both entertaining and good at announcing. Next?

\* \*

Glen Rice, of KFI, Los Angeles, is another nice looking chap. Is he married? Well, I'll have to find out. I do know that he smokes cigars, however, for a listening friend sent him a "permanent" cigar of real tobacco, claimed to be the longest in the world.

\* \*

Lambdin Kay, I reiterate, is a "hard-boiled"—confirmed, in other words—bachelor. Mrs. Tom, and Ernest Rogers, also of WSB, is a bachelor, but not so sure of himself. "Ernie" or "Willie the Weeper" is likewise the man behind "Old King Tut, the Radio Nut." Ernest intimates that he might get married soon, but whether or not he has picked the girl, I can't say.

\* \*

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

## Index to Women's Programs

Saturday, January 23					Tuesday, January 26					Friday, January 29				
Eastern	Central	Mountain	Pacific	6:30 a.m.	Eastern	Central	Mountain	Pacific	6:30 a.m.	Eastern	Central	Mountain	Pacific	6:30 a.m.
KFOA (453.4m-660kc)	Today's recipe.	KFAB (340.7m-880kc)	Home Economics.	11:45	KFOA (453.4m-660kc)	Today's recipe.	KFAB (340.7m-880kc)	Home Economics.	11:45	KFOA (453.4m-660kc)	Today's recipe.	KFAB (340.7m-880kc)	Home Economics.	11:45
KLX (508.2m-590kc)	Women's hour.	WJZ (454.3m-660kc)	Women's hour.	10:45	KLX (508.2m-590kc)	Women's hour.	WJZ (454.3m-660kc)	Women's hour.	10:45	KLX (508.2m-590kc)	Women's hour.	WJZ (454.3m-660kc)	Women's hour.	10:45
KTAB (240m-1250kc)	Women's club notes.	WRC (468.5m-640kc)	Women's hour.	10:45	KTAB (240m-1250kc)	Women's club notes.	WRC (468.5m-640kc)	Women's hour.	10:45	KTAB (240m-1250kc)	Women's club notes.	WRC (468.5m-640kc)	Women's hour.	10:45
9:30 a.m. 8:30 a.m. 7:30 a.m.					9:30 a.m. 8:30 a.m. 7:30 a.m.					9:30 a.m. 8:30 a.m. 7:30 a.m.				
WWJ (352.7m-850kc)	Tonight's dinner.	WWJ (352.7m-850kc)	Tonight's dinner.	10	WWJ (352.7m-850kc)	Tonight's dinner.	WWJ (352.7m-850kc)	Tonight's dinner.	10	WWJ (352.7m-850kc)	Tonight's dinner.	WWJ (352.7m-850kc)	Tonight's dinner.	10
WEAR (389.4m-770kc)	Home service talk.	WQJ (477.5m-670kc)	Better diction. Pictures.	12:30	WEAR (389.4m-770kc)	Home service talk.	WQJ (477.5m-670kc)	Better diction. Pictures.	12:30	WEAR (389.4m-770kc)	Home service talk.	WQJ (477.5m-670kc)	Better diction. Pictures.	12:30
WHT (399.8m-750kc)	Women's club.	WGN (302.8m-990kc)	Household hints. Fashions.	12:35	WHT (399.8m-750kc)	Women's club.	WGN (302.8m-990kc)	Household hints. Fashions.	12:35	WHT (399.8m-750kc)	Women's club.	WGN (302.8m-990kc)	Household hints. Fashions.	12:35
WJZ (454.3m-660kc)	Women's hour.	WQJ (477.5m-670kc)	Better diction. Pictures.	10:45	WJZ (454.3m-660kc)	Women's hour.	WQJ (477.5m-670kc)	Better diction. Pictures.	10:45	WJZ (454.3m-660kc)	Women's hour.	WQJ (477.5m-670kc)	Better diction. Pictures.	10:45
WRC (468.5m-640kc)	Women's hour.	WDAF (365.6m-820kc)	Home service talk, Betty Crocker.	11	WRC (468.5m-640kc)	Women's hour.	WDAF (365.6m-820kc)	Home service talk, Betty Crocker.	11	WRC (468.5m-640kc)	Women's hour.	WDAF (365.6m-820kc)	Home service talk, Betty Crocker.	11
WGN (302.8m-990kc)	Discussion of fashions.	WGN (302.8m-990kc)	Household hints.	11	WGN (302.8m-990kc)	Discussion of fashions.	WGN (302.8m-990kc)	Household hints.	11	WGN (302.8m-990kc)	Discussion of fashions.	WGN (302.8m-990kc)	Household hints.	11
WTAJ (477.5m-670kc)	Table talk.	WDAF (365.6m-820kc)	Home service talk, Betty Crocker.	12	WTAJ (477.5m-670kc)	Table talk.	WDAF (365.6m-820kc)	Home service talk, Betty Crocker.	12	WTAJ (477.5m-670kc)	Table talk.	WDAF (365.6m-820kc)	Home service talk, Betty Crocker.	12
WVTV (477.5m-670kc)	Table talk.	WGN (302.8m-990kc)	Household hints.	12:35	WVTV (477.5m-670kc)	Table talk.	WGN (302.8m-990kc)	Household hints.	12:35	WVTV (477.5m-670kc)	Table talk.	WGN (302.8m-990kc)	Household hints.	12:35
WVTV (477.5m-670kc)	Table talk.	WGN (302.8m-990kc)	Household hints.	12:35	WVTV (477.5m-670kc)	Table talk.	WGN (302.8m-990kc)	Household hints.	12:35	WVTV (477.5m-670kc)	Table talk.	WGN (302.8m-990kc)	Household hints.	12:35
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**BALDWIN PIANO FOR WINNER OF CONTEST**



Mrs. Pauline Dempsey, 3730 Vliet street, Milwaukee, who was pronounced the winner of the "Music in the Home" contest for the best paper submitted, and was awarded a Baldwin built piano by Kesselman O'Driscoll House of Milwaukee, through Station WKAF.

**Women Voters' League Gives Political Series**

Will Broadcast Weekly Talks on Governmental Problems

MINNEAPOLIS.—To stimulate a greater interest in the operations of governmental machinery and national problems, the Minneapolis League of Women Voters has arranged to broadcast a series of twenty weekly talks from the Gold Medal station, WCCO, Saint Paul-Minneapolis.

The eighth talk was given at 2 p. m., central time, Tuesday, January 19, by Mrs. Sumner T. McKnight, president of the league. The talks are being given at the same hour each Tuesday afternoon.

Each week the speaker devotes five minutes to answering questions which listeners have sent in. Among the subjects to be discussed are: "Is Woman Suffrage a Failure?"; "Why Vote?"; "How Can Women Help in Bringing Universal Peace?"; "How Does My Vote Affect the Home?"; "City Government"; "State Government"; "National Government"; "Women in Industry"; "Women in Professional Life"; "The Child at Play"; "The Child at School"; "The Child at Work"; "As a Farmer's Wife, How Can My Vote be Effective?"; "What Is Meant by State Rights?"; "What is the American Constitution?"; "Amending the Constitution."

**Women's Benefit Association Sends Program from WAFD**

PORT HURON, Mich.—Health talks for women, concerts and brief addresses on fraternal organization work, make up the early winter program arranged by the Woman's Benefit association, broadcasting from international headquarters through Station WAFD here.

WAFD has a power of 500 watts and uses a wave length of 275 meters.

**TO BE BUXOM TYPE GET STATION WEA F**

NEW YORK.—With the recent beauty contest pointing to the returning popularity of the buxom type of beauty, members of the fair sex who aspire to the 1926 crown of "Miss America" are advised to take the "Tower health exercises," given every morning through WEA F, WE E I and WCAP by Arthur Bagley from the tower of the metropolitan Life Insurance company. A letter recently received from a Boston woman describes how she gained many pounds by taking these morning setting-up exercises. "Boston is full of fat women and skinny men," she declares proudly. "Everyone tells me how fat I'm getting and that makes me so happy. I weigh 130 pounds now and I'm only 5 feet tall."

**FOOLISH QUERIES ASKED BY VISITORS**

It Takes a Wise Lady to Hold Job of Hostess and Answer Many Absurd Questions

LOS ANGELES.—It takes a wise lady to hold the job of station hostess. Margaret Cain, daytime hostess of KFI, finds she has to lie awake at night thinking up answers to questions that visiting listeners innocently fire at her. Try this selection on your think box. They are picked from a morning's taking:

- "How much do your towers weigh?"
- "How can I talk to my folks in Iowa?"
- "On what numbers do you come in on my dials?"
- "Just what is Radio?"
- "Who listens to your station after midnight?"
- "Can you hear New York on your broadcasting set?"
- "How can I connect my telephone with KFI?"
- "What does 'KFI' mean, and why? Whose initials are they?"
- "What's the idea of running a broadcasting station, anyway?"

**TO COOK MACARONI**

(Continued from page 11)

macaroni is added and every minute during the cooking, the pieces will become soft and shapeless and some of the food value will be lost.

Some women have an idea that a macaroni dish requires a considerable time for preparation. Time yourself and you will find that this is not true. In the first place no time is required for preparation such as paring, scraping or shelling. Only fifteen or twenty minutes is required for cooking and it is then ready to serve in any number of ways.

You are sure to like Macaroni Mousse as it is one of our most popular recipes. It is often served at special luncheons, bridge parties and Sunday night suppers. You will find that it is quite nice enough for your most particular guests. However, I hope you will serve it occasionally to your family. Surprise your family some night with a special treat of Macaroni Mousse. Here is the recipe:

One cup uncooked macaroni, broken into inch pieces, one and one-half cups scalding milk, one cup soft bread crumbs, one-fourth cup butter, one red pepper or pimento chopped fine, one tablespoon chopped parsley, one teaspoon chopped onion, one teaspoon salt, one-half cup grated cheese, three eggs.

Method: Add four teaspoons salt to two quarts of water. When boiling rapidly, add macaroni. Boil until tender (15 or 20 minutes). Drain. Prepare sauce as follows: Pour scalding milk over bread crumbs. Add melted butter, pimento, grated cheese and seasonings. Lastly add well-beaten eggs. Pour over the macaroni. Place in buttered baking dish and set dish in pan of boiling water. Bake forty minutes in a moderate oven (350° Fahrenheit).

This may be served with a mushroom or a white sauce. Macaroni Mousse with head lettuce or any green vegetable salad, a beverage and fruit or an ice for dessert makes a delightful luncheon.

**Women's Programs Again in Full Swing After Holidays**

NEW YORK.—With the passing of the holidays, popular features which have characterized the women's programs of WEA F during the past few weeks are again in full swing. Among those who were heard during the first week and their topics were: Florence Smith Vincent, "Women in the News"; Dr. Hugh Grant Rowell of Columbia university, "The Care of Small Children"; Mrs. Rose Berry, "Review of Current Art Exhibitions"; Sumayah Attiyeh, "Modern Conditions in Syria"; Mrs. Julius Silberfeld, "The Jewish Child—Its Relation to the Home"; Dr. Kate Upson Clark, "Can Personality Be Acquired"; Miss Vera Megowen, "May-fair Extension Talk"; Miss Margaret Hessler, "Fruit—Fresh, Canned or Dried"; Elizabeth Timlow, "The Worry Complex"; and Miss Ida B Mellen, "Sea Birds at the Aquarium."

**Schedule 'Woman's Hour' For Fair KYW Listeners**

CHICAGO.—"Woman's Hour" a new Friday feature of Westinghouse Station KYW, here, was inaugurated recently from 4 to 5 p. m., central time, which hour its regular weekly broadcast will be made.

This particular one hour, to be devoted to the interest of women, is being conducted by Miss Mary Casey, program editor of KYW, who also acts as its announcer. On the opening program was found Mrs. Anna J. Peterson, a proper and fitting person, because of her wide acquaintanceship among lady fans.

**Photogravures of Your Favorite Artists GALLERY of RADIO STARS**

Suitable for Framing or Placing in Your Album

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

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

All that is necessary to secure photogravures from the Gallery of Radio Stars is to send the coupon published each week in Radio Digest, accompanied by ten cents to cover the cost of mailing and postage. Where a series of three photogravures is desired, it will only be necessary to send twenty-five cents and three consecutively numbered coupons clipped from Radio Digest. Money order or cash at your risk. Add 5 cents to checks for exchange.

WITH COUPONS Only 10c Each -- 3 for 25c

To cover cost of mailing and postage



Size Eleven by Fourteen Inches

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

- |  |  |
|--|--|
| <p><b>CHECK YOUR CHOICE</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Wendell Hall, king of ukulele ditties</li> <li><input type="checkbox"/> Graham McNamee, 1925 Gold Cup announcer</li> <li><input type="checkbox"/> Jack Little, popular wandering balladist</li> <li><input type="checkbox"/> Paul Small, who won fame through Radio</li> <li><input type="checkbox"/> Coon-Sanders' "Nighthawks" at KYW</li> <li><input type="checkbox"/> George Hay, 1924 Gold Cup announcer</li> <li><input type="checkbox"/> Harmony Girls, Edith Carpenter, Grace Ingram</li> <li><input type="checkbox"/> Ford and Glenn, Lullaby Boys of WLS</li> <li><input type="checkbox"/> "Roxy" Rothafel of WEA F chain fame</li> <li><input type="checkbox"/> The Hired Hand, famous "Substitute Announcer" of WBAP</li> <li><input type="checkbox"/> Britt and Finch, popular songsters</li> <li><input type="checkbox"/> Bob Emery, Big Brother of WE E I</li> <li><input type="checkbox"/> "Bill" W. G. Hay, ex-KFKX, now of WLIB</li> <li><input type="checkbox"/> Happiness Boys, jovial singers of WEA F</li> <li><input type="checkbox"/> Lambdin Kay, "Little Colonel" of WSB</li> <li><input type="checkbox"/> Leo Fitzpatrick, "Merry Old Chief," WJR</li> <li><input type="checkbox"/> Henry Field, 1925 Gold Cup runner-up</li> <li><input type="checkbox"/> Al Carney, organ favorite at WHT</li> <li><input type="checkbox"/> Aunt Jane, Ladies' adviser at WOC</li> <li><input type="checkbox"/> Vincent Lopez, No. 1 Pennsylvania orchestra</li> <li><input type="checkbox"/> E. L. Tyson, pleasing voice at WWJ</li> <li><input type="checkbox"/> S. W. Barnett, ex-WOC, now WBAL</li> <li><input type="checkbox"/> Art Gillham, "The Whispering Pianist"</li> <li><input type="checkbox"/> Paul Greene, announcer at WSAI, "bridge voice"</li> <li><input type="checkbox"/> Harry Ehrhart, "Dream Daddy" of WLIT</li> </ul> | <p><b>CHECK YOUR CHOICE</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Correll and Gosden of "Kinky Kids Parade" fame, at WEBH and other stations</li> <li><input type="checkbox"/> Norman Brokenshire, popular at WRC, WJZ</li> <li><input type="checkbox"/> Indiana Male Quartet, popular at WEBH</li> <li><input type="checkbox"/> Jane Novak, Blues Singer of Twin Cities, WCCO</li> <li><input type="checkbox"/> Jean Sargent, the original, now at WHT</li> <li><input type="checkbox"/> Ralph Emerson, popular organist at WLS</li> <li><input type="checkbox"/> Edna Adams, "Sweetheart of the Air" at KPRC</li> <li><input type="checkbox"/> Pat Barnes, vaudeville announcer at WHT</li> <li><input type="checkbox"/> R. V. Haller of KGW Hoot Owls fame</li> <li><input type="checkbox"/> Henry L. Dixon, ukulele wizard of KYW</li> <li><input type="checkbox"/> Quin Ryan, WGN'S Uncle Walt and sports announcer</li> <li><input type="checkbox"/> "Willie the Weeper," Ernest Rogers, WSB</li> <li><input type="checkbox"/> Walter Wilson, "Uncle Bob" of KYW</li> <li><input type="checkbox"/> Jack Chapman of Drake hotel repute</li> <li><input type="checkbox"/> Ray-O-Vac Twins, known country-wide</li> <li><input type="checkbox"/> Art Linick, KYW's Mrs. Schlagenhauer</li> <li><input type="checkbox"/> Fred Hamm of WTAS, now WLIB, fame</li> <li><input type="checkbox"/> Meyer Davis' Le Paradis orchestra of WRC</li> <li><input type="checkbox"/> "Senator" Schultz, WLW's illiterate comic</li> <li><input type="checkbox"/> "Uncle John" Daggett of KHJ</li> <li><input type="checkbox"/> D. R. P. Coats, 1925 Silver Cup announcer</li> <li><input type="checkbox"/> Gene Rouse, WOAW's popular announcer</li> <li><input type="checkbox"/> Freda Sanker, WKRC jazz orchestra director</li> <li><input type="checkbox"/> Irish Ruth Pavey, KOA's invisible stage beauty</li> <li><input type="checkbox"/> Queen Titania, star of KHJ Fairyland</li> </ul> |
|--|--|

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

**COUPON NO. 5**

This coupon entitles the holder to one photogravure selected from the Radio Digest Gallery of Radio Stars when accompanied by ten cents (money order or cash at your own risk; checks accepted if 5 cents is added for exchange) to pay the cost of mailing and postage. Three consecutively numbered coupons entitle the holder to three photogravures when accompanied by 25 cents. RADIO DIGEST PUBLISHING CO.



# Radio Breaks Silence of Shepherd's Night



The "real gardeens of the flock," writes Zingaro of the two sheep dogs (above). Shep, the black one, has three coyote pelts to his credit. Babe, the pup, has the thrill of his first kill yet to come. "You have one year to live unless you leave the mines and get 12 hours of sunshine each day," said a Pennsylvania doctor to Zingaro (above, right).



## WORLD War Hero Leaves Mines to Fight White Plague, Wins, Then Conquers Loneliness of Sheep Camp in Montana Foothills

old box car. It's a shame ain't it, a guy all shot to pieces like that havin' to bum his way. Maybe he'll get his steam up again here. There comes Forty-nine, now."

Zingaro stumbled his way up the narrow street of the little Montana town. He leaned against a post in front of the drug store and looked off at a snow-capped mountain. The boss of the Hanan sheep ranch came along with a bunch of letters he had just received at the post office and stopped to give the stranger a curious appraising look.

"Excuse my being noseey, but you appear kinda glum, stranger. What's up?"

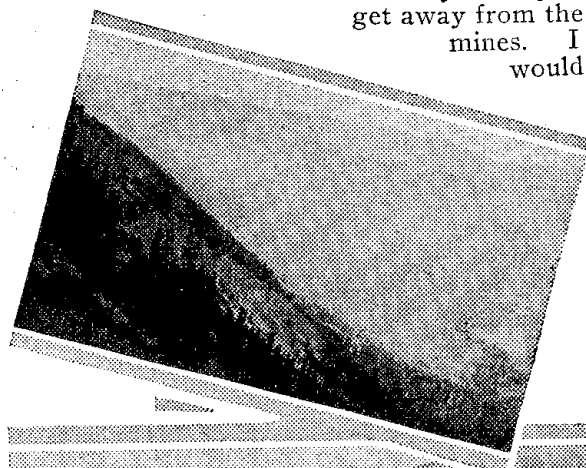
Zingaro said he was hungry and wanted a job. He'd take any kind of a job, so long as he could get twelve hours of sunshine a day and large doses of 100 per cent air.

"I got the job for you, so cheer up. You're goin' to 'tend sheep where you can get all the air and (Continued on page 24)

SOMETIMES even a Radio listener can be the hero of an interesting story. This statement may be questioned and even scorned by a few of our very celebrated personalities who take the air night after night from the leading broadcasting studios of the nation. But we submit to the readers of Radio Digest the life story of the extraordinary listener, sheep herder and Radio fan in the desolate canyons of the Crazy mountains, Mr. "Zingaro of 636, Big Timber, Montana."

Zingaro came out of the world war the stragglng shell of a human being. The murderous artillery and trench life had drained his vitality to the limit. But he sought again to take up the current of his interrupted existence in the coal mines of eastern Pennsylvania. He went down to the black pits to dig for his daily bread, but quickly found the guns and the gas had been too much for him. The dust choked him. His buddy helped him to the receiving ward where a white aproned doctor looked him over critically, wiped a blood fleck from his lips and thumped him on the chest.

"I think you will probably hold out for another year," said the medical man with a long finger slowly digging into the depths of his stubby beard. "You might last another year if you get away from the mines. I would



"So far and no farther," said Shep to the committee of three sent forward to negotiate (above). "Mary had a little lamb," the bedtime story teller was saying at Omaha—so the lambs listened in (in circle). Barney, Zingaro's pony on narrowledge. Flocks in Crazy Mountain foothills (below).

prescribe about twelve hours of sunshine a day mixed with liberal doses of 100 per cent atmosphere."

Disheartened and sick as he was, the vet had faced death too often to give up. So he liquidated his few assets and shook the coal dust of Pennsylvania from his old hobnailed brogans.

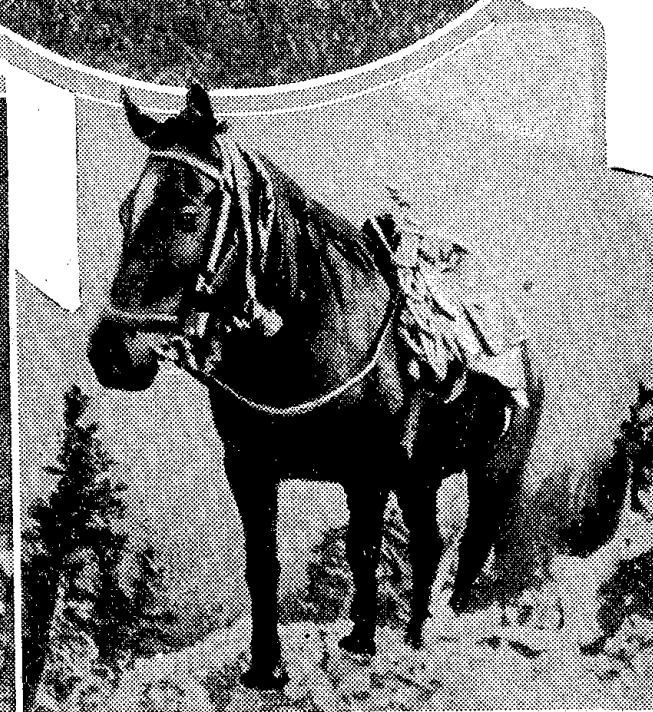
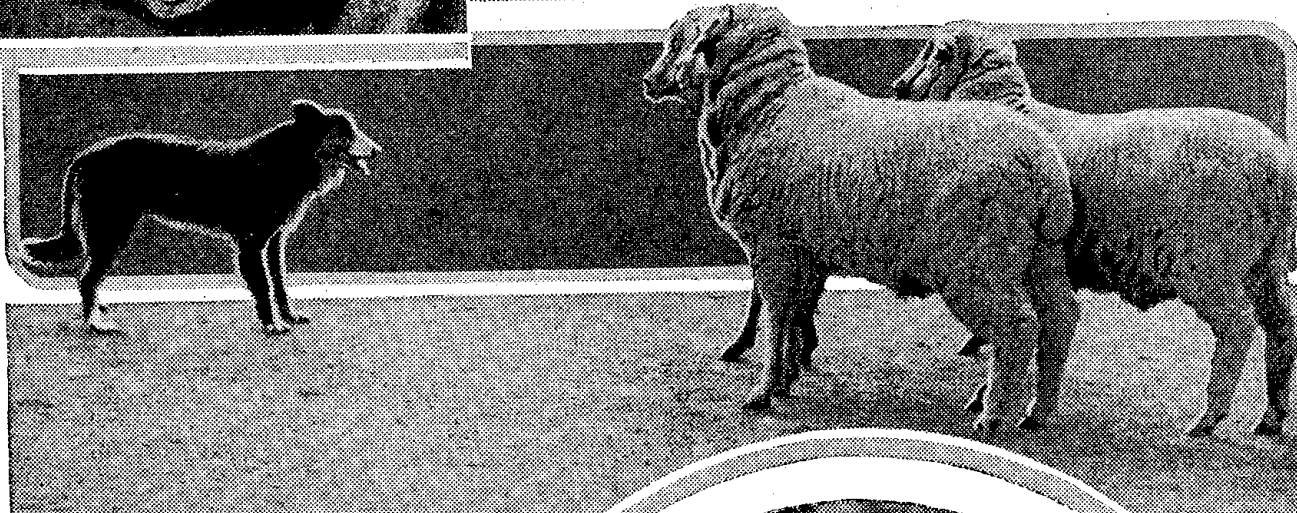
CONDUCTOR Flanagan had held the freight for a half hour on the siding at Big Timber waiting to the Northcoast Limited to

pass. He was fingering the tissue paper orders when Tony, the head brakeman, jumped down from a gondola beside him.

"That lunker bozo in the box car got off," said Tony.

"You didn't make him, did you?" asked Flanagan.

"No, he never knew we was wise to his being in the



# FAME AWAITS HE WHO GETS FOREIGN CALL

### First to Get Stations Each Night to Be Nationally Known

### Daily Reports to Press

### Radio Digest Has Experts Scattered over Country to Provide Fans with Latest Information

Every minute of the International tests will be reviewed by a large staff of Radio Digest observers scattered over the country and listening in with the most sensitive types of receivers. The reports of these observers, who will not enter the contests because of their professional rating, will be available to American and Canadian fans who wish to obtain any information concerning the International broadcasts, etc.

Fans in the eastern half of the country are directed to write or telegraph PREPAID to the New York city offices of Radio Digest, located at 247 Park avenue, New York city. Fans in the Middle West and western states or western provinces of Canada are directed to write or telegraph PREPAID to the Chicago offices of Radio Digest, located at 510 North Dearborn street, Chicago, Ill.

No matter which office is communicated with, information will be telegraphed COLLECT, unless the inquiring listener-in makes it plain that the information is to come by mail. The latter method, however, is not recommended on account of the short span of time occupied by the tests.

#### First Reception Report

The fan who is sure he has received foreign stations FIRST in his locality, should immediately telegraph PREPAID to the closest Radio Digest office, New York or Chicago. The Radio Digest will release information to the press at large concerning these first receptions.

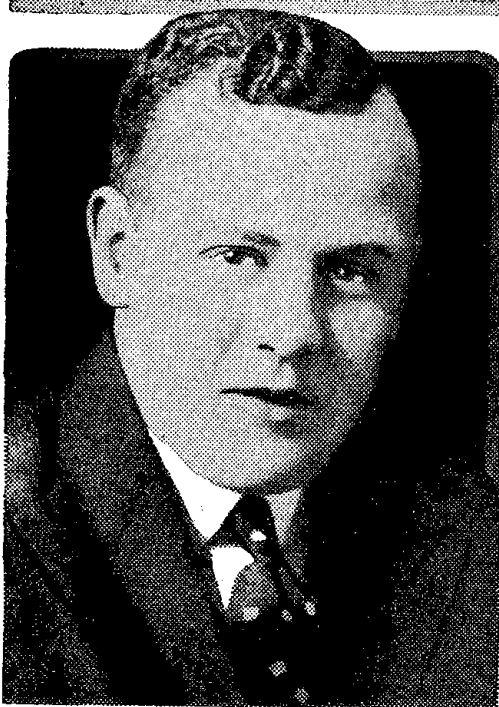
Telegrams must contain a short sketch of the program received, the call letters of the station heard, the local time received, the approximate meters wave length, and the address of the listener.

If satisfied that the sender of the telegram was first to receive a foreign station in his or her town or locality, after having checked the details against the bona fide data in the offices of the Radio Digest, this publication will make nationwide release of the information, giving credit to the successful listener.

Inasmuch as tens of thousands of listeners will no doubt take advantage of this means of receiving credit for their work, it is emphasized that telegrams must be sent PREPAID. No COLLECT telegrams will be received.

Who will get the credit in your community? Send the telegrams any one of the five foreign test nights (SUNDAY, MONDAY, TUESDAY, WEDNESDAY or THURSDAY). Press reports will be issued each night.

## Europe's Jazz King



### Official International Tests CALENDAR OF EVENTS

THE following official calendar of events has been announced by the International Radio Week committee for the tests beginning on Sunday night, January 24, and ending on Saturday night, January 30:

**Sunday to Thursday, inclusive:** From 11 to 12 p. m. eastern time, 10 to 11 p. m. central time, 9 to 10 p. m. mountain time and 8 to 9 p. m. pacific time, silence will be observed by American, Canadian, Mexican and Cuban broadcasters. High power stations in England, Continental Europe and South America will be on the air. Details on page 8.

**Friday:** Beginning at 11 p. m. eastern, 10 p. m. central, 9 p. m. mountain and 8 p. m. pacific time, and continuing for the first quarter of the hour, broadcasters in the atlantic and eastern time bands will be on the air while others remain silent. The second quarter of the hour will be occupied by central time band stations while all others remain silent. The third quarter of the hour will be used for sending by mountain time band broadcasters while all others remain silent. The fourth and remaining quarter hour will be given over to broadcasts from stations in the pacific time band while all others remain silent.

**Saturday:** Beginning at 11 p. m. eastern, 10 p. m. central, 9 p. m. mountain and 8 p. m. pacific time, and continuing for the first quarter of the hour, Canadian broadcasters have the air. The second quarter of the hour broadcasters in northern United States will be on. The third quarter of the hour, southern United States stations broadcast. The fourth and remaining quarter hour will be given over to stations in Cuba and Mexico. Only one of the groups will be on the air during any one quarter hour.

### British Notes

For an hour's broadcasting from 2LO, London, Chaliapin, the world-famous Russian basso, received a fee of \$5,250, which is the highest fee ever paid a single artist for broadcasting, eclipsing the previous record of Mme. Tetravzini by \$250.

As illustrating Radio's influence in Britain, a lecturer, broadcasting on architecture, expressed his willingness to describe Southwark cathedral at 11 o'clock on a certain day. One thousand people were there to meet him.

One result of the British postmaster general's successful prosecution of an unlicensed listener has been the taking out of hundreds of Radio licenses throughout England in a brief time.

The first step towards the installation of broadcasting facilities at Britain's universities has taken form in the opening of a new studio of the British Broadcasting company at Oxford. The Oxford studio can only transmit via 2LO, with which it is linked up by land line. There is no high power station at Oxford. For 5XX to broadcast the Oxford program necessitates a double relay, Oxford-London and London-Daventry.

### Frankfort, Germany, Builds New High-Powered Station

FRANKFORT, Germany.—A new high power broadcasting station will be ready here in February. This station will operate with the same power capacity as Konigwusterhausen and Munich, 10 kilowatts, and will be a vast improvement on the present Frankfort station.

Frankfort has at present 65,000 listeners and the number is steadily increasing, the programs being constantly improved. Opera is broadcast once a week from the Opera House, and concerts are transmitted regularly from the Saalbau.

### Wins \$50 for KMA Slogan

SHENANDOAH, Iowa.—Walt Adams of Omaha, Nebraska, is the winner of a \$50 prize for submitting the slogan, "Keeps Millions Advised," to station KMA, May Seed company here. The contest brought forth over 4,000 slogans. The second prize slogan was "The Nursery and Seed Station in the Heart of a Nation."

### Station Changes

An additional call has been given WDWF, Cranston, R. I. When the Lincoln studios at Providence are used, the call letters WLSI will distinguish it from the original station. Anchorage, Alaska, has a new broadcaster, KFQD, 227 meters, 100 watts.

It is rumored that a new Florida station, WCOA, will open this month in Pensacola. This broadcaster will be called the City of Pensacola and will use 222 meters, 500 watts.

The following stations were deleted last month: KFRM, Fort Sill, Okla.; WCUW, Worcester, Mass.; KFUM, Colorado Springs, Colo.; WEBT, Dayton, Ohio; WJD, Granville, Ohio; WTAT, Boston, Mass.; KFYE, Waterloo, Iowa; WCAH, Columbus, Ohio; KFBC, Tacoma, Wash.; WLAX, Greencastle, Ind.; KFJ, Breckenridge, Minn.; KFJX, Cedar Falls, Iowa; WTG, Manhattan, Kan.; KFGC, Baton Rouge, La.; KFRY, State College, N. M.; WOAC, Lima, Ohio; KFWP, Brownsville, Tex.; WHBY, West DePere, Wis.; WHBR, Cincinnati, Ohio; KFVU, Eureka, Calif.; WGBQ, Menomonee, Wis.; KGB, Tacoma, Wash.; WOCG, Sycamore, Ill.; WPDQ, Buffalo, N. Y.; WHAG, Cincinnati, Ohio; WLB, Minneapolis, Minn.; KWUC, Lemars, Iowa; KDFM, Cleveland, Ohio; WCBG, Pascagoula, Miss.

### Two New Announcers Heard For First Time Over WEA F

NEW YORK.—The discerning listeners of WEA F have heard for the last few weeks the voices of two new announcers.

The first of these new announcers is Ralph Wentworth of Englewood, N. J., who is announcing for his first time. Mr. Wentworth is a native of the West, but upon being discharged from the army located in New York city, in order to further his musical education. He has played in musical comedies and on a leading vaudeville circuit in addition to frequent church, solo and recital appearances.

The second announcer who joined the WEA F organization recently is Archie Coates, of New York city. He also is announcing for the first time in his career. Previous to his connection with WEA F, Mr. Coates was assistant music critic of one of New York's leading daily papers. He is the author of a book of verse.

The photograph at the left is of no other than Jack Hylton, himself, who is considered the "Jazz King" of England and Europe. Below he is standing with his orchestra, one of the most famous outside of the United States. It is probable that they will be featured during the tests.



# LONDON AIR FANS FAIL TO GET THRILLED

### England and Continental Europe Refuse to Be Excited About Overseas Tests

### Will Read About It Later

### Although Stations Bending Every Effort to Make Trials Success, Listeners Retain Composure

By A. C. Blackall  
(London Special Correspondence)

LONDON, England.—Despite the furore in America over the International Radio Week reception tests, London and Continental Europe refuse to get excited. In fact, London, Paris and Berlin still wonder what it's all about. The smaller cities in England and Europe haven't even started wondering.

Europe generally is far behind the United States and Canada in Radio interest. So the special international tests prove no exception.

American and Canadian stations attempting to send their programs to Europe during the test periods set aside for this, will find but a very small audience attempting to dial them in. In the first place, the fans would necessarily have to listen in between three and five o'clock in the morning to hear the "special" programs. In the second place, English listeners expect their stations to do the listening for them. If the stations hear America or Canada loud enough to rebroadcast them, and do so, even that will not excite England or France.

### Will Read About It Later

The fact is, English and other European Radio fans will be more than content to read the account of the reception and the possible rebroadcasts in their morning daily papers at breakfast time. But take it from one who knows the Englishman, the latter in reading his newspaper will be far more interested in news of Indian uprisings, Australian affairs of state, shipping and commerce items, and the latest status of the heart of David Windsor—His Royal Highness, the Prince of Wales.

English Radio is satisfactory without worrying about the bally programs from North America. The French have their attention on the Dreuses. The Germans are busy rebuilding their economic and moral structure. The Russian have all they need to worry over. Italy is kept busy watching King Victor Emmanuel and Mussolini.

Therefore, the international tests, as far as enthusiasm is concerned, are apt to be more or less lop-sided.

### Europe Extends Complete Cooperation

Europe, however, is bending every effort to make the venture a success. As in the past two years, artists of the highest calibre are agreeing to make their appearance at the various studios at about the time the milkman is scheduled to deliver milk.

The best Europe has to offer will be on the air for Americans and Canadians to receive. Perhaps the artists may seem a little sleepy, but considering the fact that the broadcasting in Europe is being done around five and six o'clock in the morning European time, North American listeners should have no cause for complaint.

The plans are laid. Everything is prepared. A wonderful week is in store for the American and Canadian distance-loving listeners. But Europe will not get the same thrill the other side of the Atlantic ocean experiences.

# FOREIGN STATIONS MAKING TESTS

## ENGLAND WILL HAVE FIVE BROADCASTERS SENDING PROGRAMS

### America Should Get Some of Greatest Broadcasts Ever Placed on Air

### Lend Talent for Event

### British Broadcasting Company Giving Full Cooperation in Making Tests Greatest in History

LONDON.—Five of the great English broadcasting stations will participate in the international broadcasts to be held during the coming week, and America should be entertained with the greatest talent the British Isles can muster for the event. The British Broadcasting company has entered into the overseas tests with enthusiasm and have lent the fullest cooperation of which their great organization is capable.

The English stations which will endeavor to bridge the Atlantic through the ether are London 2LO, 365m.; Manchester 2LY, 377.5m.; Newcastle 5NG, 326m.; Daventry 5XX, 588m, and Cardiff, Wales, 5WA, 353m.

The British Broadcasting company has been working on the preparation of programs for the tests and will undoubtedly be heard in many sections of this country. It has been announced that the greatest number of recognized artists to take part in any one enterprise or endeavor in the history of the Islands will appear before the microphones of the five stations.

### Harry Lauder Makes First Appearance at Microphone

LONDON.—Sir Harry Lauder, the world-famous Scottish comedian, has at last overcome his overpowering shyness to radio audiences, and made his first broadcast before the "mike" at 2LO. For half an hour Sir Harry sang all the most popular songs in his repertoire, and although these pieces have been heard by millions; no one audience of such vast proportions has ever before listened to his voice.

### Cuba Makes Plans

TUINUCA, Cuba.—Cuban broadcasting stations are making special plans for cooperation in the international Radio broadcasting tests, according to Frank H. Jones of Station 6KW, and chairman for Cuba of the International Radio Week committee.

Announcements will be in Spanish and English from practically every station on the air in these special tests, with increased power possible from a number of the more important broadcasters. Cuban stations will also observe the silent hour from 11 to 12 o'clock each night when all American and Canadian stations will be off the air.

### Peru Has Great Program

LIMA, Peru.—Station OAX, here, is making one of the most pretentious preparations for the international test week exchange of programs of any of the broadcasters taking part. The station has just been overhauled for the experiments and an increase made in the power rating of the transmitter. During the tests it will broadcast on 380 meters.

## 2LO TO OPEN TESTS WITH ORGAN MUSIC

ALTHOUGH the detailed programs arranged by 2LO were mainly tentative at the time this issue of the Radio Digest went to press, it was practically definitely decided that the famous English station would open its participation in the international broadcast exchanges at 4 o'clock Monday morning (11 o'clock, eastern time, and 10 o'clock, central time) with a recital from Sheperd's Bush Empire London organ.

### Programs of Paris Not So Varied as America's

Radio entertainment in lands beyond the sea is not near so varied as in most any large American city. As an illustration, here is an announcement of Radio programs for Paris:

"Eiffel Tower (Wave length 2,750 meters). 6:15 p. m. concert; weather reports and signals at the usual hour.

"Radio Paris (Wave length 1,750 meters). 12:30 p. m., concert; 1:45 and 1:50 p. m., news bulletin and exchange rates; 4:30 p. m., exchange rates; 4:45 p. m., concert; 5:45 p. m., news bulletins and exchange rates; 8:15 p. m., medical bulletin; 8:30 p. m. news bulletins and exchange rates; 8:45 p. m., Italian music festival.

"Ecole Superieure (Wave length 458 meters). 3 p. m., concert; 8 p. m., scientific bulletin; 8:30 p. m., Italian gala, opera "Rigoletto" from the Grand theater, Geneva, performed in honor of the League of Nations.

"Petit Parisien (Wave length 345 meters). 9:15 p. m., popular scientific lecture, "What is Life," by Prof. R. Dubois."

### New Ingenius Radio Device Records Talks Permanently

LONDON, Eng.—A remarkable new device for the permanent recording of all radio messages, or of certain business messages only, has just been perfected here. It is known as the "Telegraphone."

The apparatus comprises a small, mica-faced box rather similar in appearance to the dictaphone. Upon making or receiving a radio call a button is pressed when the ordinary receiver is taken up and the operator proceeds in the ordinary way. Upon concluding it is merely necessary to press another button, pick up a small pair of earphones, and listen to the complete conversation.

It is unnecessary for the machine to be near the receiver at all, the actual apparatus, if necessary, being stored in a cupboard.

### More German Listeners

The number of broadcast listeners is increasing in Germany at the rate of nearly 50,000 a month. The total figure is now well above a million and it is expected that the stimulus of the international tests will greatly increase this figure.

### Radio Prevents Study

So much enthusiasm has been aroused in Tokio by broadcasting that school pupils have neglected their studies in order to listen, especially in the evenings when they ought to do their lessons. In view of this the authorities have decided to forbid them to listen during their evening studies.

LONDON.—The Dutch Hussars are conducting experiments to determine how far it is possible to make use of Radio in cavalry maneuvers. A set is attached to the pommel of the saddle, and with this the rider starts out.

## To Publish Test Programs Later

NEW YORK.—At the last moment it was decided by the International Radio Week committee to withhold programs of the principal European stations participating in the international tests. It was decided to publish the test programs the day after their broadcast in the daily papers of the country. This plan puts all the listeners in on their metal and prevents false claims for reception. It was the consensus of opinion of the International Radio Week committee that the advance foreign schedule be published only after the test was made. Too many valuable prizes and too much honor is at stake to have reception reports unduly or accidentally influenced.

Radio Digest, in publishing a time table for foreign programs, is giving the listener in the tools to work with in pulling in the foreign stations. The wave length, kilocycles, frequency, location of station and their powers are furnished. The best way to be sure that you are going to hear is to tune in the desired station according to the information given in the table.

Reception can be verified by the confirmation programs that will be published in Radio Digest after the tests are concluded. To make your record official and beyond all doubt and credence, wire Radio Digest for official confirmation at the time of reception.

## PRINCIPAL FOREIGN STATIONS

Wave Length (Approximate) Meters	Kilocycles Frequency	Call Letters (If Used) Location and Power Available
1600	(187.5)	5XX, Daventry, England, 25,000 watts.....
1300	(231)	AFT, Koenigswusterhausen, Ger., 10,000 watts.....
546	(550)	....., Budapest, Hungary, 2,000 watts.....
515	(582)	....., Zurich, Switzerland, 1,000 watts.....
505	(595)	HFF, "Voxhaus," Berlin, Germany, 4,000 watts....
496	(605)	2BD, Aberdeen, Scotland, 1,500 watts.....
485	(618)	....., Munich, Germany, 4,000 watts.....
477½	(628)	5IT, Birmingham, England, 1,500 watts.....
461	(650)	....., "Radio-Wien," Vienna, Austria, 5,000 watts.
446	(673)	....., Stuttgart, Germany, 4,000 watts.....
443	(677)	PTT, Toulouse, France, 2,000 watts.....
440	(682)	2BE, Belfast, Ireland, 1,500 watts.....
434	(691)	....., Prague, Czecho-Slovakia, 5,000 watts.....
422	(711)	5SC, Glasgow, Scotland, 1,500 watts.....
418	(718)	1RO, Rome, Italy, 3,000 watts.....
410	(732)	MS, Munster, Germany, 1,500 watts.....
404½	(742)	5NO, Newcastle, England, 1,500 watts.....
392½	(765)	HA, Hamburg, Germany, 4,000 watts.....
386	(777)	6BM, Bournemouth, England, 1,500 watts.....
382	(785)	....., Oslo, Norway, 1,500 watts.....
380	(790)	OAX, Lima, Peru, 1,500 watts.....
378	(794)	2ZY, Manchester, England, 1,500 watts.....
375	(800)	LOX, Buenos Aires, Argentine, 1,500 watts.....
373	(805)	EJ7, Madrid, Spain, 6,000 watts.....
363½	(825)	2LO, London, England, 3,000 watts.....
358	(838)	....., Petit Parisien, Paris, 500 watts.....
352½	(851)	5WA, Cardiff, Wales, 1,500 watts.....
324	(926)	EJ1, Barcelona, Spain, 2,000 watts.....
320	(937)	2MI, Milan, Italy, 2,000 watts.....
300	(1000)	LOW, Buenos Aires, Argentine, 1,500 watts.....
263	(1140)	SBR, Brussels, Belgium, 1,500 watts.....

## AMERICAN STATIONS IN WAVE LENGTH ORDER

Meters Call	Meters Call	Meters Call	Meters Call	Meters Call	Meters Call
217.3 WOK	275 WHAR	305.9 WJAR	356.9 CKNC	405.2 WOR	468.5 WCAP
226 WBBM	275 WORD	309.1 KDKA	361.2 KGO	406 WBAR	468.5 WRC
226 WIBO	275.3 WJAS	315.6 KFDM	361.2 WHN	410.7 CKAC	475.9 WBAP
240 KFVE	278 KOIL	315.6 WAHG	365.6 WDAF	416.4 WCCO	475.9 WTIC
240 KTAB	278 WCAU	315.6 WGBS	365.6 WHB	421 KIAF	475.9 WFAA
240 WOAX	278 WGBU	319 WGR	370.2 WEBH	422.3 WLW	480 CYL
246 WBAL	278 WOQ	319 WSMB	370.2 WJJD	422.3 WKRC	483.6 WOC
250 WGBS	280.2 WNAC	322.4 KOA	374.8 KTHS	428.3 WSB	483.6 WSUI
250 WMBB	282.8 WOAN	322.4 WJAZ	379.5 WGY	428.3 KPO	491.5 KGW
252 KFWE	282.8 WSM	325.9 WSAI	379.5 WHAZ	434.5 CNRO	491.5 WBAF
252 WGCP	285.5 WKAR	333.1 WBZ	384.4 CKY	434.5 NAA	499.7 WMC
265.6 WMAK	285.5 WRBO	336.9 KNX	384.4 KJR	434.5 CFCN	508.2 KLX
266 KFNF	288.3 KFKX	337 KFMX	384.4 WMBF	435 AT9	508.2 WIP
266 WBCN	288.3 WLWL	340.7 KFAB	389.4 WEAR	440.9 KLDS	508.2 WOO
266 WGHB	293.9 KTBI	340.7 WKAQ	389.4 WTAM	440.9 WDWL	516.9 CJA
268 WTAG	293.9 WBAO	340.7 WMCB	394.5 WFI	440.9 WOS	516.9 WCX
270 WGHP	296.9 KPRC	344.6 WCB	394.5 WLIT	447.5 WMAQ	516.9 WJR
272.6 WBBR	299.8 KFMQ	344.6 WLS	394.5 WOAI	447.5 WQJ	526 WYO
273 KWKH	299.8 KSL	348.6 KOB	399.8 WHAS	454.3 KFOA	526 WNYC
272.6 WBBJ	299.8 WPG	348.6 KWSC	399.8 WHT	454.3 WJZ	526 WOAW
272.6 WFBH	302.8 WGN	348.6 WEEI	400 PWX	455 KTW	535.4 KYW
273 WRW	302.8 WLIB	350 CZE	405.2 KHJ	461.3 WCAE	545.1 KPFO
275 WHAD	305.9 KTCL	352.7 WWJ	405.2 WJY	467 KFI	545.1 KSD

TO LOCATE FOREIGN STATIONS ON YOUR DIALS.—By comparing the wave with the wave lengths of familiar American and Canadian stations previously logged, station dial settings may be arrived at. The "American Stations in Wave Length Order" will be found of assistance in tuning in similar European stations of the same wave length.

# RADIO BILLS CAUSE OF OPEN CONFLICTS

## LITTLE OPPOSITION RAISED IN HOUSE COMMITTEE

Senator Howell of Nebraska Charges Dill Control Measure Would Lead to Ether Monopoly

WASHINGTON, D. C.—Legislation with the purpose of controlling and developing the Radio industry in the United States is drawing more attention of the law makers in the senate and house of representatives this year than ever before. The White bill in the house and the Dill and Howell bills in the senate have become open controversies and the hearings that have already been held give indications that a bitter struggle will precipitate before final action is taken on the measure.

### Trouble Is Expected

Although the house committee on merchant marine and fisheries hearings of the White bill brought but slight opposition and it is believed little trouble will be experienced in making the necessary changes to bring out a unanimous report, things are different in the senate. Up to this time the hearings have been punctuated by a series of questions by Senator Howell of Nebraska, which have evidently been supplied him by someone who has "an ax to grind." The questions lead to possibility of the monopoly of broadcasting stations.

### Hoover Favors Bill

Secretary of Commerce Herbert Hoover, appearing before the house committee, gave his hearty endorsement to the White bill when he said, in part, "I consider it highly important to the development of Radio that legislative relief be given at the present session of congress. The Radio public is now numbered in millions and embraces every class in every section. When we consider legislation, we deal with matters which profoundly and intimately effect the daily lives of these millions of American citizens. They are entitled to a Radio service on the highest (Continued on page 26)

# TRAINED CROW DOES STUFF BEFORE MIKE

ONE of the most original Radio artists in the world was heard recently when Jocko, the trained crow who came to Milwaukee from the New York Hippodrome, strutted up to the microphone at WHAD, the Marquette University-Milwaukee Journal station, and cawed to piano accompaniment. Jocko is known in theatrical circles as the most entertaining bird actor on the American stage. The performance at WHAD was his first appearance before the microphone.

# CKAC, La Presse, Vainly Attempts to Give Hockey

MONTREAL.—Hockey fans from all over Canada and the United States, who have written to CKAC here, requesting that the hockey games be broadcast from the rink, whenever American and Canadian teams cross sticks, will regret to learn that although Director Jacques Cartier, of the big "La Presse" station here, left no stone unturned in order to secure permission to install "mikes" in both the Forum and Montreal arenas, he has not been able to give listeners what they ask. Both Leo Dandurand, manager of the French team here, and H. Northey, managing director of the Forum, have refused point blank to allow any broadcasting of hockey.

# Michigan Aggies' Net Contests Well 'Aired'

## WREO and WKAR Divide Honors for Basketball Games

LANSING, Mich.—Both Station WREO of the Reo Motor Car company here and WKAR, located at Michigan State Agricultural college, East Lansing, will broadcast basketball games played at the college this winter, according to an arrangement just completed by the college and the Reo station. James B. Hasselman, known as the pioneer sports announcer, will announce the games which will be broadcast from 8 to 9:15 eastern time, or 7 to 8:15 p. m. central time. Both stations operate on a wave length of 285.5 meters.

WREO will broadcast the following games: Michigan Aggies vs. University of Detroit, Tuesday, February 2; Michigan Aggies vs. Marquette University, Thursday, February 11; Michigan Aggies vs. Notre Dame, Tuesday, February 16.

The remaining games to be broadcast by Station WKAR are: Michigan Aggies vs. Michigan State Normal, Friday, January 29; Michigan Aggies vs. Earlham College, Saturday, February 13; Michigan Aggies vs. Carnegie Tech, Friday, February 19; Michigan Aggies vs. Western State Normal, Friday, February 26.

Radio is being used for signalling between engine cab and caboose on the Virginian railroad.

# Sport Broadcasts

**Basketball**  
**Saturday, January 23**  
KFKU (275m-1090kc) Kansas U.-Missouri, 7:30 p. m., central time.

**Friday, January 29**  
KFMQ (299.8m-1000kc) U. of Arkansas-Centenary, 7:30 p. m., central time.  
WOI (270m-1110kc) Kansas U.-Ames, 7:30 p. m., central time.

WKAR (285.5m-1050kc) Michigan State Normal-Michigan Aggies, 8-9:15 p. m., eastern time.

**Hockey Game**  
**Tuesday, January 26**  
WBZ (333.1m-900kc) Boston Bruins vs. Ottawas, 8 p. m., eastern time.

**Wrestling Match**  
**Saturday, January 23**  
WOI (270m-1110kc) Cornell College-Ames, 3 p. m., central time.

# WFI Promotes Animal Welfare

PHILADELPHIA.—WFI, Strawbridge and Clothier station here, is concluding a series of educational talks designed to promote interest in animal pets and their proper care. Dr. R. S. Amadon, professor at the veterinary school of the University of Pennsylvania, will speak Monday, January 25, on "Physiology of Animal Care." Three similar talks have been delivered.

# Earn \$50 to \$200 a Week in RADIO

You can! Hundreds of ambitious men are already earning thousands of dollars in this wonderful new industry—you, too, can get your share. Mail coupon below for Free Book which describes fully the amazing money-making opportunities in Radio and tells you how YOU can earn from \$5,000 to over \$10,000 a year.

THE astounding growth of Radio has created thousands of big money opportunities. Millions of dollars were spent during the past year on Radio, and thousands of young men are needed right now to meet the ever-increasing demand of work. Men are needed to build, sell and install Radio sets—to design, test, repair—as Radio engineers and executives—as operators at land stations and on ships, traveling the world over—as operators at the hundreds of broadcasting stations. And these are just a few of the wonderful opportunities.

## Easy to Learn Radio at Home in Spare Time

No matter if you know nothing about Radio now, you can quickly

become a Radio Expert, by our marvelous new method of practical instruction—instruction which includes all the material for building the latest up-to-date Radio apparatus.

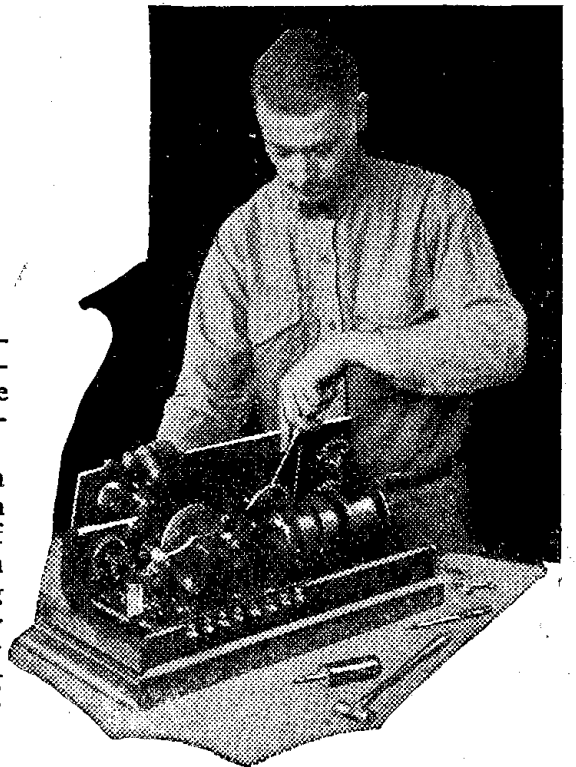
Scores of young men who have taken our course are already earning from \$75 to \$200 a week. Merle Wetzel of Chicago Heights, Ill., advanced from lineman to Radio Engineer, increasing his salary 100% even while taking our course! Emmett Welch, right after finishing his training, started earning \$300 a month and expenses. Another graduate is now an operator of a broadcasting station—PWX of Havana, Cuba—and earns \$250 a month. Still another graduate, only 16 years old, is averaging \$70 a week in a Radio store.

## Wonderful Opportunities

Hardly a day goes by without our receiving urgent calls for our graduates. "We need the services of a competent Radio Engineer." "We want men with executive ability in addition to Radio knowledge to become our local managers." "We require the services of several resident demonstrators"—these are just a few small indications of the great variety of opportunities open to our graduates.

Take advantage of our practical training and the unusual conditions in Radio to step into a big paying position in this wonderful new field. Radio offers you more money than you probably ever dreamed possible—fascinating, easy work—a chance to travel and see the world if you care to, or to take any one of the many Radio positions all around you at home. And Radio offers you a glorious future!

The National Radio Institute is America's Pioneer Radio Home-Study School—established in 1914. Our course is an absolutely complete one which qualifies for a government first-class commercial license. It trains you for bigger paying jobs in Radio.

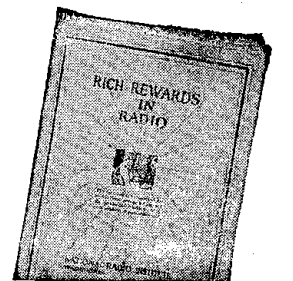


## Send for FREE RADIO BOOK

Learn more about this tremendous new field and its remarkable opportunities. Learn how you can quickly become a Radio Expert and make big money in Radio. We have just prepared a new 48-page book which gives a thorough outline of the field of Radio—and describes our amazing, practical training in detail. This Free Book, "Rich Rewards in Radio," will be sent to you without the slightest obligation. Mail coupon for it now!

For a short time we are offering a reduced rate to those who enroll at once. Act promptly and save money.

**National Radio Institute**  
Dept. AAU-9  
Washington, D. C.



**NATIONAL RADIO INSTITUTE,**  
Dept. AAU-9, Washington, D. C.

Please send me without the slightest obligation your Free Book, "Rich Rewards in Radio," and full details of your special Free Employment Service. Please write plainly.

NAME..... AGE.....  
ADDRESS.....  
CITY..... STATE.....

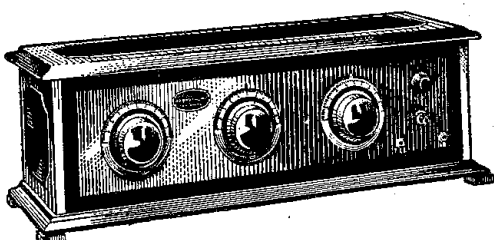
# European Tests for ARBORPHONE OWNERS

Thousands of Arborphone owners will hear European stations during the International Tests, January 24-30.

Valuable prizes will be awarded for longest verified distance and quality of reception with an Arborphone. The contest closes Feb. 6. Identical prizes will be awarded to any tying contestants.

For details see your dealer—or write Contest Committee at factory—immediately.

**Machine Specialty Company**  
319 S. Main St. Ann Arbor, Mich.



**Pay Increases Over \$100 a Month**

I am averaging anywhere from \$75 to \$150 a month more than I was making before enrolling with you. I would not consider \$10,000 too much for the course. (Signed) A. N. LONG, Greensburg, Pa.

**Doubles Salary**

I can very easily make double the amount of money now than before I enrolled with you. Your course has benefited me approximately \$3,000 over and above what I would have earned had I not taken it. T. WINDER, Grand Junction, Colo.

**From \$15 to \$80 a Week**

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



"BRUNHILDE OF VIOLIN" FROM WBAL

Saturday, January 23

WHAS, Louisville, Ky. (399.8m-750kc), 1-2 p. m., Benson trio; 3-3:30, Mrs. Myrtle Fuiks Zahn, Jr., organist; 4-5, musical program, Harry S. Currie, director; editorials; Martha Pope Robinson, reader; 7:30-9, concert, Down club, Ellen Bachus, director.

KHJ, Los Angeles, Calif. (405.2m-740kc), 6-6:30 p. m., Leighton's Arcade cafeteria orchestra, Jack Cronshaw, leader; 6:30-7:30, history story, Prof. Hertzog; Henrietta Poland, Dollie Wright, Nona Clapp, David Durand with Uncle John; 8-10, program, Motor Transit stages.

Eastern Time Stations
6KW, Twinoucu, Cuba (338m-890kc), 10-11 p. m., American dance music. Twinoucu Radio orchestra.

doctor, WEEL, WCAP, WJAR, WGR, WCAE, WSAI, WWJ, WOC, WCCO, WLIB, WEAR, KSD, WTAG, WOO.

Mountain Time Stations
KFAU, Boise, Idaho (280.2m-1070kc), 7:30-8:15 p. m., news service.



"Radio Nightingale" is the name given to Helen Doyle, above, whose lyric voice may be heard every Thursday from WLW, Cincinnati, during the Liberty theater broadcast. To the right is one of the popular bass singers at KDKA, Pittsburgh, Raymond Griffin.

Sunday, January 24

Headliners Today
Eastern 4 p. m.
Central 3 p. m.
Mountain 2 p. m.
Pacific 1 p. m.

Watchtower instrumental trio; 10:55, I. B. S. A. choral singers; 11, Bible lecture, "Fulfilled and Unfulfilled Bible Prophecies," R. H. Barber; 11:30, I. B. S. A. choral singers; 11:40, Watchtower instrumental trio; 2 p. m., Watchtower orchestra; 2:30, L. Marion Brown, soprano; 2:45, Watchtower orchestra; 3, Bible lecture, "Important Bible Teachings Generally Ignored," R. H. Barber; 3:30, L. Marion Brown, soprano; 3:40, Watchtower orchestra; 9, Watchtower violin choir; 9:15, Bible questions and answers; 10, Watchtower violin choir.

Central Time Stations
CKY, Winnipeg, Can. (384.4m-780kc), 7 p. m., St. Paul's United church; 9, studio program.

















# Radio Digest Illustrated

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

Published by the  
**RADIO DIGEST PUBLISHING CO.,**  
(Incorporated)  
510 North Dearborn Street  
Chicago, Illinois  
Telephones: Superior 7323, 7324, 7325, 7326, 7327

E. C. RAYNER, Publisher

Eastern Office, Park-Lexington Building, 247 Park Ave.,  
New York. Telephones: Ashland, 8144, 8145, 8146

Member of the Audit Bureau of Circulations

241

PUBLISHED WEEKLY

#### SUBSCRIPTION RATES

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

Vol. XVI Saturday, January 23, 1926 No. 3

### "Bloopers" and Foreign Tests

THE eve of International Week is here. Transatlantic reception is in order. The way is paved for many thrills. On Friday night, when various sections of the country remain silent while other sections broadcast, many listeners will have their first taste of long distance reception. Everyone is going to have fun.

Providing—that the "bloopers" don't strain themselves to such a marked degree as to spoil every neighbor's reception.

Let us remark now, before the tests begin, that people who are operating receivers that bloop and know that their sets bloop, should have the spirit of cooperation at least on this occasion and, if necessary, turn off their sets for the silent hours.

Blooming can be stopped by proper neutralization of a neutrodyne, by operating tubes below the oscillating point, by using the Thatcher unit (described in December 5 and 12 issues of this publication) ahead of one's set, by using a loop—not an antenna system—on a super-heterodyne, and by many other ways.

We are afraid bloopers are going to spoil the transatlantic trials. Hence this note of warning appears. If you have a blooper nearby, get busy now and seek the owner's cooperation.

### WEAF Chain Announcing

COMPLAINTS of announcers failing to give their station's call letters are many. We note that the complaining letters often name stations which are regular members of the WEAF chain.

As it happens, the chain features are usually long and so connected that it is practically impossible for the local member station to break in and tell from what source the program is being heard. It is likewise inadvisable for WEAF to break in every 15 minutes or so with the call signals of the entire chain handling the broadcast.

We have heard one chain station, WGN to be specific, break in at the proper moments with announcements of the station's call, together with a description of what was last heard and next to be given. If other chain stations would watch this point as carefully we feel that complaints regarding lack of announcements would not be so frequently arriving on the editor's desk.

The chain, let us pause to remark, has difficulties, however, which originating stations do not have to face. There is at least the semblance of an alibi for the linked stations, but not so for a score of other well-known broadcasters who are not and never have been included in the chain.

### Here Is Another Angle

"IF CONGRESS passes a law providing for a set royalty on each piece of copyrighted music broadcast my station will be paying much more than it does now."

Thus stated one of the few directors who did not favor the passage of a bill providing for relief from the Music Trust holdup. He went on to explain that his station featured orchestra numbers and that they played so many during the course of the year that an individual number tax would wreck their exchequer.

"Who sends you the numbers you broadcast?" we asked.

"Why, the publishers furnish the orchestra with professional copies for the most part," he answered.

"Do you charge them for broadcasting them?"

"No, our fans request us to play the numbers and we respond to the public taste."

"How do you know that a great many of the requests, especially those for new numbers, are not planted by the publishers themselves?"

"Well, I guess some of them are, but how will the proposed single number tax relieve that?"

"This way," we answered. "Say there is a royalty fee of three cents put on each piece of music used. Tell the man who furnishes you with the copy he wants played that you will be glad to use the number if he will pay the three cents each time you play it. And then watch the song pluggers seek cover. They will be taking money out of one pocket and putting it in the other one."

## RADIO INDI-GEST

### A Little Prayer

A wisp of a prayer I sent today;  
By a Radio wave it winged its way.  
I sent it out into space unknown.

Some far-off star; some distant sphere  
Might be in tune—its message hear.  
Would there an answer come?

Whither or whence—I cannot know;  
My spirit felt a sudden glow  
Of happiness and peace.

Perhaps—who penetrates the veil?  
Or who this dictum will assail?  
Our prayers their answer be.

MAUDE M. WEEDE.

### Hurting Our Feelings

**YOW! Whadyneen?** A letter came to the Radio Digest office and the writer said, "Please give this material to the editor of the column 'Indi-Gest' if you find it unavailable for publication." Come on out and fight.

### Zoologically Speaking

Dear Indi: I see where some bird sent in a list of 47 stations received at one set-in to get himself a membership in the D. T. club.

Now you know what them letters used to stand for—when our friend in white used to muster the ceremonies. Now I am informed that them letters now stands for "Dial Twisters" and all he wanted was to join up with the rest of the DX hunters.

He did not say how many hours that one set-in lasted—but he hasn't got a thing on me. I received 47 stations all at the same time last night on the bunch of haywire and tobacco cans that directions, "How to Build," said was a very selective receiver, and believe me it is, for it selects them from all over these United States and receives them all at the same time. Well, after you twist the dials on that contraption for one set-in you want to join up with the old-fashioned D. T. gang and a few pink elephants, boa constrictors or six-headed lizards would be a relief.

OLD KING TUTT.

### Then Duck

Dear Indi: My wife came home from the club the other night and said that the reason classic music won out at KOA was because not many of the jazz people knew how to read and write, so they couldn't vote.

L. E. PECK.

**That's a dirty dig.** Right there you should have told her you would be glad if none of them could, and then have reminded her you had to sign a marriage license.

### The Main Reason

Isabel—Why is the purchase of a Radio set a good way of spending money?

Wasabel—Because it is a sound investment!

DINNERBELL.

### Our Crystal Set

**My wife and I are radio fans  
In a small way as yet;**

**We can't afford a neutrodyne,  
But have a crystal set.**

**Its restful when we're tired of work  
To play cards ev'ry night;**

**For we like double solitaire,  
'Tis wifey's one delight.**

**I take my head phones and adjust  
Them firmly to each ear;**

**And wife puts o'er her neat bobbed hair  
Her phones, good songs we hear.**

**And thus each night we play at cards  
My dear old wife and I;**

**We listen o'er our crystal set,  
And hear the songs roll by.**

RHEA.

### Oh! Luther Burbank, Look

Dear Indi: The fan who wrote to me for advice about his aerial pole which sprouted as an apple tree while in active service as part of his set, has a rival. "My aerial," writes the newcomer, "passes over what I thought was a pear tree, but chestnuts came on 'it." My theory is that they must have dropped off the aerial during some of the announcers' jokes.

PHIL O. SOPHER, LONDON.

### Uneasy Lies the Crown

Dere Indy:—Say-lissen bozo—which is the word crack riters like me uses, when thay wants tew tell editurs whicht thay try tew help out with wow coppie, when such editurs haint got ne better cents then tew tell other dudes whicht lay down on him, that hees sorrrie, caus thay has tew read my stuff.

You better turn over a new leave an sent me a ingraved knockdown tew yer pet bootleggur, an publidch a apolligie soas maggie can read it, or eye will set tite an let your column go hi an dri, soas mabbe you wont have no customers leff tew read your stuff, onli you an the proof readers, whicht haint got no choist, an has tew read it er be expelled. You gotta remember the old sain, whicht says—"Dew rite an fear no man—dont rite an fear no womun."

KING.

**We apologize, King,** but not for the wise crack. We apologize, we started to say, for the fact that we publish your stuff. Pity the poor readers, "whicht aint got no larnin" and can't decipher your code.

## Hands Across the Sea



## Condensed

BY DIELECTRIC

When Station WJZ, New York, came on the air with a special New Year's Day program listeners in heard features of surpassing interest. Except for two breaks in the broadcasting, which of course were wholly unforeseen, there was nothing to detract from the work of musical artists of fame, speeches by representatives of foreign countries, news of the minute gathered by Radio and dance tunes from Merrie Olde England. While the first concert in a series of Victor musicals was incorporated in the broadcasting no preferences are to be mentioned here.

Since a certain individual made his first appearance before a mike there have been many imitators but no equals. I refer to "The Red-Headed Music Maker," Wendell Hall. There are some who attempt the intimacy of his style of singing without success. No one else can be so red-headed. As we listened to his songs from Station WOK, Chicago, visions of a marriage ceremony performed in a broadcasting studio came to mind with Mr. Hall as an actor playing a leading role. Then, too, we recall with what feeling he sang of a girl in Chicago—now his wife.

Hail to the Liberty Bell! At least some merry makers paused long enough to hear its greeting to the year we enter. The suggestion was made in these columns two or three years ago that the sound of this great bell should reach every nook of these United States and, if possible, to people across the seas. So far as our own land is concerned it would be entirely possible with our present linking of broadcasting stations. Independence Day would take on a hallowed air were this feature given.

There is an organ in a theater in Omaha, Neb., familiar to a large part of the Radio audience through the combined efforts of station WOAW and Arthur Hayes, the latter organist for this "wonder organ." Mr. Hayes is complete master of the instrument and should bring pleasure to all lovers of this form of music. Mr. Craig was not putting it on too thick for Old Man Apple Sauce and Arthur Hayes when he said their programs were about the best in the country. Don't you think so?

An orchestra in the studio of Station WREO, Lansing, Mich., devoted an entire program to sacred and old-time songs, which they rendered in a pleasing manner. The vocal artists selected for the concert were entirely adequate and deserve to be heard again. The concluding number on the program, "The Star Spangled Banner," was quite in good taste since most of the familiar airs were of American origin.

Down in Florida—you've heard of that state—there is a powerful broadcasting station, WJAX, Jacksonville, and likely their programs are known to you, too. If not, try them out. Once in a while Radio listeners are privileged to hear cello solos of more than ordinary merit and one of those times was when WJAX (an old Cleveland call—remember?) had a performer of the instrument interspersed in a vocal program. Although the latter were worth listening to the cello numbers excelled.

Minstrels find a place on Radio entertainments every now and then with the hope that you enjoy them. Do you? Station WLW, Cincinnati, offered to its unseen audience recently the Crosley Burnt Corkers who included in their numbers a little sketch entitled "All Aboard," which had in it some humorous sidelights on a railway ticket agent's treatment of his customers, with Mr. Miller and Mr. Anderson providing the conversation. Singing by the entire ensemble of "darkies" followed.

# ABC Radio Fundamentals for Everybody

## Chapter III—How the Sound Waves are Put on the Air

By Milo Gurney

IN LAST week's article, it was pointed out that many of the colors produced electromagnetically, while invisible to the eye, were capable of being photographed. Radio waves also have color, but so far as known, it has been impossible to see or photograph them. It is this characteristic which has, in a measure, prevented its isolation toward a more definite explanation relative to its association with light.

The progressive steps up to the transmission of wireless intelligence has been shown through the explanations regarding both audio and wire telephony, each step being pointed out as requiring either the modulation of air currents, or of a continuous electrical direct current. Radio telephony is likewise very closely related to each as it requires not only a medium between the transmitting and receiving terminals, but also a means for the modulation, or moulding, of the current which is to travel this medium.

### Microphone Old Idea

In Radio telephony, in place of an electrical direct current being used, advantage is taken of an alternating current, and it is this current which is modulated. This current is of a very high frequency, being quite beyond audibility. The purpose of the Radio receiver is to convert such received modulations into frequencies which are audible to the ear. Many of you have heard announcers refer to the word microphone, and have, no doubt, wondered whether it was another mystery word, coined only to make one's understanding of Radio more complex. Such, however, is not the case. A microphone is nothing more than a highly developed, supersensitive telephone transmitter, identical in the mechanics of its construction electrically, with the telephone transmitter which you use every day. Of added interest is the fact that the earliest of the telephone transmitters were called microphones, the word transmitter coming into use many years after the invention of the telephone.

### Radio and Audio Frequencies

In order that my readers may not be confused, it seems expedient that both Radio and audio frequencies be defined, as from now on each of my discussions will carry many references to these terms.

Audio frequency may be defined as vibrations of any character which are audible or may be heard by the ear. Thus any sound, irrespective of character, which the ear can hear represents vibrations within the capacity of the ear drum to respond to and transfer to the auditory nerves. Conversely, radio frequency represents like vibrations which are of a speed or pitch beyond the ability of the ear to hear. Therefore, irrespective of their electrical source, if the created vibrations, or frequencies, remain outside of the possibility of hearing, they are termed radio frequencies, while those within such conception, are called audio frequencies. The question has often been asked regarding the range of vibrations audible to the ear. While this value varies in some degree, in accordance with one's sense of hearing, yet, in general, a frequency range of from 16 to 10,000 vibrations covers the total field audible to the average ear. These frequencies take in the lowest notes of the oboe as well as the highest notes of the violin. Hearing sounds above this register, usually results in pain as many of you may have experienced.

### Modulation Is Essential

Modulation of the high frequencies as used in Radio is just as essential in order that we may understand their meaning after being converted when passing through our receivers, as is modulation of voice, or the direct current, used in telephony. In either case, each remain silent, or rather unintelligible until modulated. The whistling sound which is heard as one tunes in a broadcast station is but the tone of the carrier wave, or the unmodulated portion of it. As one tunes slightly sharper, his receiving circuit falls into synchronism, or step, with the modulated portion of the wave, and voice or music result. In all Radio receivers, it is of the utmost importance that both the radio and audio frequency components of the circuits contained must be kept very definitely within their respective pathways in order to insure the quality of reception which we desire.

My purpose, primarily, in emphasizing this point, is to caution the many constructors and designers of Radio receivers who blame all of the poor quality reception on the loud speaker which the owner uses. Often the real seat of the trouble lies in the receiver builder not knowing how to confine these opposed frequencies so that they may travel only within the channels which positively separate each from the other.

The above remarks apply equally to altogether too many manufacturers, as well as those interested in building their

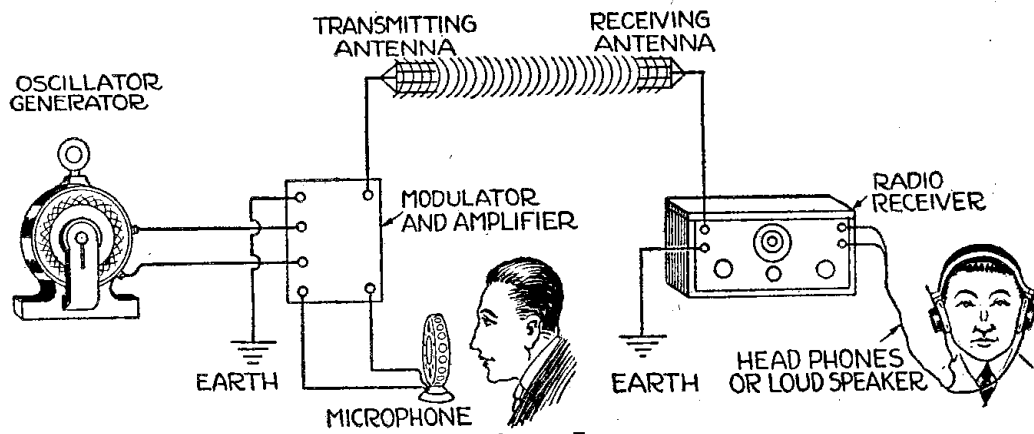


Figure 7

own receivers, and I quite appreciate that the return mail will bring to me a thousand letters of both abuse and praise, together with three or four dozen sample loud speakers for approval, which will, in a measure, compensate for the abuse.

While a voice transmitter is all that is required to modulate the direct current used in telephony, Radio transmitters, or microphones, as used in broadcast stations, require the addition of elaborate equipment for the modulation and amplifying of the voice or music energy emitted from the microphone. This energy is extremely small in comparison to the generated Radio wave. A descriptive explanation of such amplifying and modulating equipment is beyond the scope of these articles, it being sufficient to explain that their function is to momentarily add to, or subtract, wave energy from the circuit controlled by the microphone.

The amplifying equipment is not unlike that used in many receiving sets. It only differs in its almost unbelievable ability to magnify the original voice or music as it reaches this equipment, after

(Continued on page 24)

## The Best Radio Affords!



With the Radiotone all the family can enjoy your radio at the same time!

# FREE

## Hydrometer and Voltmeter

As an extra special offer to those who hurry their order for the Radiotone Loud Speaker offered below, we shall include absolutely free a highest grade Hydrometer to test your "A" battery and a guaranteed accurate Voltmeter to test your "B" batteries. You need these two accessories if you want to keep your radio always at its best efficiency. A genuine \$3.00 value—and given free on this special sale, while it lasts. So act quick!



## Radiotone Loud Speaker

Only \$1.00 with the coupon below brings this Genuine Radiotone loud speaker to your home on approval for 30 days! No radio is complete without a good loud speaker. Here's a first class loud speaker at an astounding rock-bottom price, direct—and on easy, monthly payments besides! Special now—Hydrometer and Voltmeter, \$3.00 value, included FREE, if you send at once.

### Makes Your Radio Complete

The Radiotone is super-sensitive, brings in distant stations with full volume so every one in the room can hear distinctly and easily. Wonderful clearness and absolute purity of tone. No distortion.

The Radiotone has a 14-inch horn made of Thorite in one piece without seam or joint, acoustically correct. This eliminates the metallic clang you often hear in other loud speakers. The reproducing unit is entirely enclosed at the base of the horn. The well balanced construction does away with all vibrations. The Radiotone has a graceful shape with a beautiful black florduline finish. It stands 23 inches high and weighs only 15 lbs. No extra batteries needed for the Radiotone—just plug it in as you do your head set. Nothing to wear out or get out of order. Sent complete with cord and plug.

# 30 Days Trial—\$3.00 a Month

**Straus & Schram, Dept. R-8411 Chicago, Ill.**  
Enclosed find \$1. Ship special advertised Radiotone Loud Speaker. I am to have 30 days free trial. If I keep the Radiotone, I will pay you \$3.00 monthly, total price \$25. The Radiotone is to become my property as soon as you receive the final payment. If not satisfied, I am to return it within 30 days and you are to refund my money and any express charges I paid. Hydrometer and Voltmeter FREE  
Radiotone Loud Speaker No. Y8726A—\$25.00.

My Name \_\_\_\_\_ (Head of the family must sign this order. If you are not of age, have your parent or guardian order for you.)  
My Street Address \_\_\_\_\_ R. F. D. or Box No. \_\_\_\_\_  
My Post Office \_\_\_\_\_ My State \_\_\_\_\_  
My Shipping Point \_\_\_\_\_ I have lived in this Town \_\_\_\_\_ years  
And before that I lived in \_\_\_\_\_ Town \_\_\_\_\_ State \_\_\_\_\_ for \_\_\_\_\_ years  
Occupation is \_\_\_\_\_ Age \_\_\_\_\_ Married or Single \_\_\_\_\_  
Give names of merchants who know you personally  
Name \_\_\_\_\_ Town \_\_\_\_\_ State \_\_\_\_\_  
Name \_\_\_\_\_ Town \_\_\_\_\_ State \_\_\_\_\_  
If you have ever bought goods on credit by mail, tell us from whom. If there is anything else you wish to tell us about yourself, write on a piece of paper and enclose it with this coupon. But the coupon alone, fully filled out will do.  
That's all we want to know and we're ready to ship the goods at once. No formalities. No C.O.D. We trust rich and poor alike when they merely show us that they are honest.

When the Radiotone comes, there's nothing to pay. Use it freely at our risk, on trial for 30 days. See how loud, clear and distinct the Radiotone brings in all stations—better than any other loud speaker that you have ever heard, giving you the best that is in your set. After 30 days trial if you think you can get along without the Radiotone, return it to us and we will refund your dollar plus all transportation charges. No red tape. The trial costs you not a cent. But if you decide to keep the Radiotone, pay only \$3.00 a month until you have paid the total rock-bottom direct price—only \$25.00. See if you can equal this offer anywhere on such amazingly liberal terms. You'll scarcely feel those small monthly payments.

## Send Coupon NOW!

Only \$1.00 with the coupon brings the Radiotone on 30 days' trial, satisfaction guaranteed, your dollar refunded if not satisfied. Send the coupon now while this special offer lasts. Hydrometer and Voltmeter FREE, if you act quick.

**STRAUS & SCHRAM**  
Dept. R-8411 Chicago, Ill.

### ABC'S OF RADIO SETS

(Continued from page 23)

having passed through the microphone, in a ratio comparable to a million to one. Imagine, if you will, the result of magnifying, or rather amplifying, music or voice a million times greater than its original volume, and you then have some idea of the great credit due the Radio engineering fraternity, the scientific minds which have made this possible. This accomplishment, rather than Radio itself, remains as the uncanny part of Radio to me. I have never been able to comprehend just what the tiny atomic electrons within a vacuum tube thought of themselves while performing this marvelous work. Possibly they are too busy to think, which is nearer the solution of my query.

In figure 7 is shown the essentials comprising a modern broadcast station. Contrary to the general impression one gains after viewing the multiplicity of tubes, switchboards and—what you have—figure 7 still remains a picture of what it was all about.

#### Parts of a Station

Each station comprises a high frequency oscillation generator, a microphone transmitter, a voice amplifying and modulating system, a ground and an antenna. Beyond this, all else that you may see is, as my friend Horle opines, nothing but scenery.

The function of the alternating high frequency generator is that of producing the alternating current, which is radiated, or started, from the antenna on its way to your receiver, and upon which the voice or music is carried. Both the amplifying and modulating factors, as well as the microphone or transmitter, have been explained as the producers and moulders of the sound which the carrier wave of the alternator is to deliver to you. The antenna consists of a combination of wires, supported upon towers, from which they are insulated, and which connects directly with the output system.

#### Antenna and Ground

The antenna consists of a multiple of copper bronze wires, supported but insulated, from steel towers, which are usually placed in close proximity to the broadcast station. This antenna is directly connected with the output circuits of the broadcast station, and function as the medium for the reception and radiation of the modulated and carrier wave.

The ground consists of either connecting wires, which are connected to the station and embedded in moist earth, or a network of wires also connected to the station, which are placed directly beneath the antenna, though some distance from it. Such a ground is known as a counterpoise. However, the function of either type of ground is to act as a return medium for the current radiated from the antenna, after having passed through your receiver.

Thus, as we hear ourselves speak, through the completion of a return circuit from air surges, as I pictured in complete loops or return circuits as used in wire telephony, likewise, a Radio transmitting station cannot transmit, nor can your Radio receiver accept such transmission, unless it be provided with some form of return circuit.

All writers are ever conscious that possibly sufficient detail is not given to make possible a clear understanding of his subject by the reader. In this feeble effort to clarify the interpretation between audio, wire and Radio telephony, I may be justly accused of such carelessness,

though I hope that my explanations have been somewhat more correct than those of the southern darkey, who was explaining to some of his friends how a snapping turtle just missed being gobbled up by an alligator, through climbing a tree. When told that he should be more careful in his statement of facts, because it was well known that a turtle could not climb a tree, he said: "Well, I know that, but in this yere case, that turtle just didn't have no choice, he jess had to climb that tree."

(In his fourth article, next week, Mr. Gurney will explain the fundamentals of Radio receivers and how the sound waves are taken in and mastered for your entertainment.—Editor's Note.)

### ZINGARO CONQUERS

(Continued from page 7)

sunshine you want. And the dogs and the pony will do most of the work. How about it?" The rancher jerked his head toward a fivver a few feet distant.

But he did not forget that Zingaro was hungry. They went into a small restaurant where a stout woman in blue checked gingham soon prepared ample rations of thick slices of fried ham and a garnish of eggs.

It was a twenty-two mile drive to the Hanan ranch. There Zingaro met Barney, his saddle pony, Shep, the black sheep dog, and her overgrown puppy, Babe. The next day he met the sheep at the mouth of a canyon where the walls ascended straight up for 1,500 feet on one side and 300 feet on the other. Here he was to experience all the loneliness that sometimes drives the sheep herder from an incoherent mumbler to stark madness.

But Zingaro kept his head level. Pessimistic at first, he soon felt the glow of returning health and returning optimism.

"I don't know just when the melancholy left," he wrote in his story to the Radio Digest, "but it may have been the day I climbed to the highest cliff above the timber line, 12,000 feet, looked down at the gorgeous landscape and felt that I was king over all."

Then came the terror of the "Great Alone," as he called it. Starlight coming down through the crags—no human being within many miles. The bleat of the little stray lamb. The sad cry of the withered ewe with no milk for her young. The quavering howl of the lurking coyote and the maddening yip of the starving wolf.

Zingaro built his fire and sat with his thoughts. He read poetry. Days, weeks and months passed—

\*\*\*

HANS PEDERSON, arriving with the chuck wagon brought an express package from town which Zingaro had been anxiously awaiting.

"Think you know how to put it together?" asked Pederson, for the signs had stated the contents to be a Radio kit and he had been wondering about it all the way over from town. Now Zingaro was more used to a coal pick than he was to a screw driver and soldering irons and somehow he had not noticed those details in the magazine advertisement from which he had ordered the set. But you never saw a Pederson who couldn't handle tools. So Hans stayed over to put the thing together. He had never seen one but he had read about them and the directions were as explicit as if John G. Ryan himself had written them.

"I don't see how it's going to perform without a wire to the telephone line, but

we can see how it looks with the parts together," said Hans.

While Hans was adjusting the more delicate parts, Zingaro stretched the aerial wire from the top of the corral gate post to the chuck wagon. Hans attached the lead to the set which was now properly adjusted with batteries and bulbs in order. A crowbar had been driven into the earth for the ground connection.

Then came the portentous moment of turning the dials.

Suddenly loud and clear came a woman's voice rippling a song from an unknown world! It was uncanny, weird, impossible!

Hans was so startled he fell backward over a bag of potatoes and sat down in a basket of onions. His imagination had been unable to stretch beyond the string that only went as far as the corral gate. Anyway it worked and life took on a rosier hue for Zingaro.

Everything was DX for the sheep herder and his new set. Every night was silent night so far as local interference was concerned. So he began to compile a log. He listed most of the larger calls from coast to coast.

"I have mentioned about fifty-five stations but do not think they are all," he stated in his story. "The nights in the foothills are generally frosty and I can pick up some very far distant stations. And again some of the little fellows that go rambling in and out among the high peaks fall off and come toppling down to my Radio that catches and gives them to me."

Thus the shackles of solitude that have harassed the sheep herder from the day Adam started working for himself were struck aside by this marvelous space annihilator, Radio. Music, comedy dialogue, university lectures, political speeches poured a copious stream into a word-hungry mind.

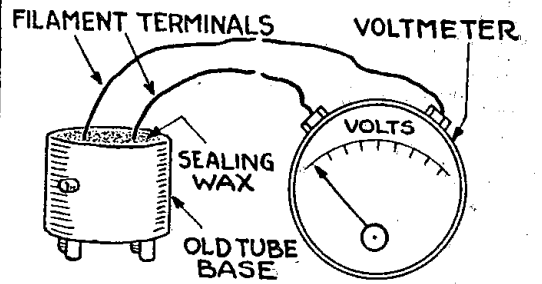
Surcharged with this flow, Zingaro felt the compelling urge to contribute his own expression of personality. He consulted his periodicals and answered other advertisements which brought him bulky packages of literature and finally a box with a portable typewriter. He toiled over the rules of preparing manuscript.

Finally came to the Radio Digest, a little story about himself in the third person. He was asked for more details and pictures and he replied with a second manuscript (from which this story was compiled) and seven pictures. We do not print Zingaro's

story as he wrote it for his own sake. When he reads more and writes more he will be glad that we didn't. He has the spirit and soul of a real writer, but fate started him out in an unfavorable environment. Now he is hoping the "twelve hours of daily sunshine and 100 per cent air" that have brought him vigor and health may, with much listening, reading and study, help him to go back to the East a man of fame and letters.

### Connections Tester

Most set builders do not like to put the tubes in a set they have just built as, in case of a short circuit, they would be blown. Take an old tube base, scrape it out and solder two number 18 rubber-covered wires to the filament terminals. Then fill the base with sealing wax and



fasten the other ends of the wires to the terminals of a cheap voltmeter. This saves bulbs and the voltmeter will register 22½, 45, 67 or 90, as the case may be, and show you which B circuit is shorted into the filament wiring if you have made a mistake.—Momo Hunter, Milwaukee, Wis.

### Hydrometer Is Necessity

There are many fans who charge storage batteries without testing them with a hydrometer to see whether the batteries have been fully charged. Without the use of this instrument the fan cannot tell in what condition the battery is, and if it is not charged at certain intervals its life is materially decreased. A hydrometer is one of the best investments the B. C. L. can make.

A carefully installed indoor antenna will often give very nearly the same results as an outdoor aerial.

A crystal detector, as well as a vacuum tube detector, can be amplified to almost any degree.

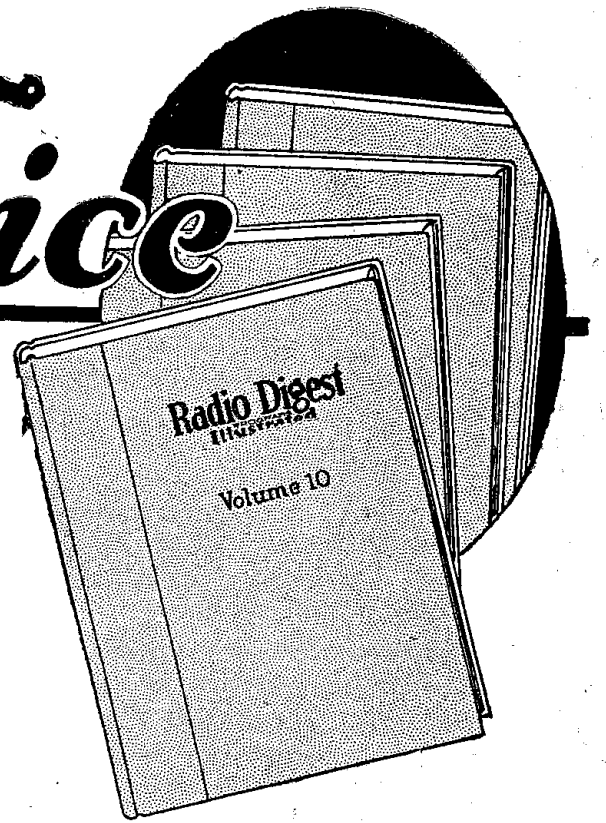
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We have a limited number of bound volumes which we are disposing of at a low cost to readers of Radio Digest. Fill in the coupon below immediately. This offer holds good only on the following volumes, while they last, 8, 9, 10, 11, 12, 13 and 14.

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## This Aerial Gets Everything But Noise

DRAY RADIO LABORATORY  
Precision Radio Apparatus Tests

KANE ANTENNAE COMPANY 6 EAST LAKE ST., CHICAGO

Gentlemen: December 24, 1925  
As you requested we are enclosing under separate cover a picture of the Kane Antennae you recently installed on the roof of our building, at Lake and State Street, Chicago. As you know, we have never here at the Laboratory been able to get clear reception from distant stations. As soon as we turned on enough power to bring in the DX we of course picked up the electric sign noises, the telegraph office next door, the street cars, the elevators, etc. Loop sets with their strong pick-up of local noises were particularly bad. For the last couple of months we have been getting letters from our dealers telling us that if we could only figure out some way to install radio sets near power noises with some scheme of Antennae that would bring in the distant stations with less of the local noises, that they could sell more sets in difficult places where all makes of radios had proved too noisy for satisfaction. In many cases these dealers could not give decent demonstrations in their own stores. Finally we heard from Henry Stahl and Son, our dealer at Elkhart, Illinois, that they had eliminated the interurban and power line noises at their store by the use of a Kane Antennae. This was what led us to ask you to show what you could do for us at the Laboratory. Last night when we tested out your eighty foot transposed antennae and counterpoise, we were very much surprised. We had distant reception of very good quality. We checked back by using the usual type of ground and the ratio of power noises to music increased several hundred per cent, rendering the reception absolutely unsatisfactory. Then we would switch back again and get very excellent reception. We are enclosing a check in payment of your invoice. We are going to tell all of our dealers about our experience. After all the perfect schemes that we have wasted time in trying, we are glad to grant you the permission of publishing this letter if you care to.

Very truly yours,  
DRAY RADIO LABORATORY, By W. R. Dray.  
The KANE ANTENNAE entirely eliminates all power noises such as leaky Transformers, Generators, Motor hums, Delco Plants, etc. Power noises cause more trouble than all other forms of Radio interference. Get rid of them NOW by ordering a KANE ANTENNAE.

### Get Facts NOW About The Kane Antennae

We will send you working drawing with instructions for erecting this wonderful Antennae for a dollar bill (a check will do). If, after looking over the drawing, you decide you would rather have a factory-built Antennae than build one yourself, we will take back the drawing and allow you full purchase price on an order for an Antennae.

The Special Kane Antennae for Radiola Super-Het's.....\$10.00  
The Regular Kane Antennae for all other sets that use a ground connection. 20.00  
Working drawing with instructions for erecting..... 1.00

(Stamps not accepted)  
Postpaid to any part of the United States or sent C.O.D. when 25 per cent of price accompanies order.

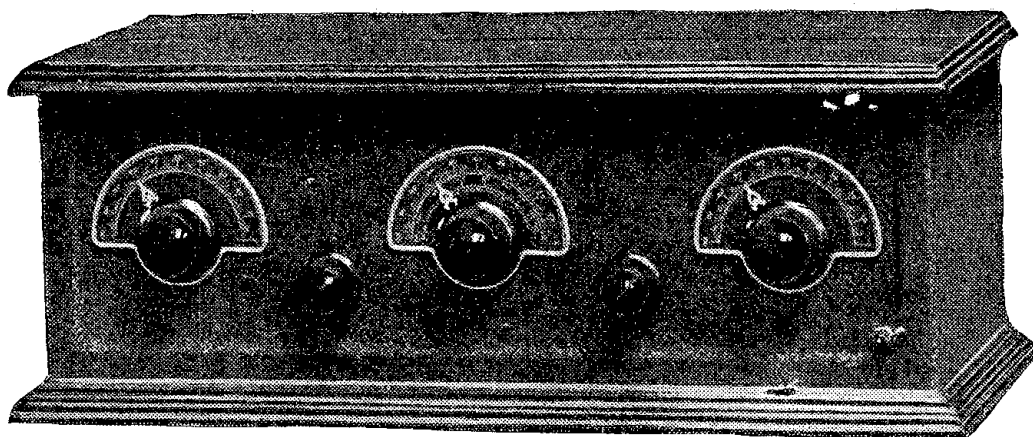
## THE KANE ANTENNAE CO.

Dept. 823A, 3343 W. Monroe St. Chicago, Ill.  
JOBBER—DEALERS: Send at once for attractive proposition.



# 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 Stewart-Warner Receiver

**T**HIS is a most handsome outfit with mahogany crackle finish panel, a solid attractive cabinet and gold finished dial scales. That was what first struck the writer when Model 325 was hauled out of its heavy corrugated board packing. So many sets that are exceptional in results present such a poor appearance that to the feminine mind they are impossible in the parlor. This one is a delight to the eye.

The antenna lead-in wire and the connection to ground should be as short as is reasonably possible and should not be run together at any point. Many Radio set users bring these leads together at some point say five to ten feet from the set and then twist them together for the rest of the way. Do not do this under any circumstances. The wire from the aerial is to be brought into the set through a

hole provided in the rear of the cabinet near the left end, directly behind a binding post identified with the word "aerial." About three inches to the left is a similar hole and binding post for the ground wire.

Two small jacks are provided for the cord tips on the speaker cable and it should be noted, in particular, that one of these is marked "-" while the other is marked "+." The terminals of the speaker cord are identical except that in one there will be found a red or blue tracer woven into the covering. This means that the phone tip on this wire goes in the "+" jack on the set, while the unmarked tip goes in the other small jack. The battery connections are taken care of by a five wire cable, the coverings of each wire being of a different color scheme. Thus you cannot well make a mistake in connecting the batteries with the consequent chance of burning out a tube or two.

### Accessories Required

For operation this receiver requires one 6-volt storage battery, or its equivalent in a way of an "A Battery Eliminator," and two 45-volt B battery units, either dry cell or storage, or their equivalent in a "B Battery Eliminator." One of the storage battery terminals will be found to be marked POS. or + or with a dash of red paint. This is called the positive terminal and the other is the negative. That wire of the battery cable which is pure yellow in the color of its covering must

be attached to the positive post of the battery. That which is black with a yellow tracer thread woven in, goes to the negative. Should a Philco, Gould or Cooper power unit for "A" supply be used, it will have these same two terminals, + and -.

We tried the set on both B batteries and B eliminators with equally good results, connections being as follows: One of the B batteries will be found to have a minus post to which you attach the black covered wire with red tracer thread. This B unit also has a plus 45 post to which the maroon covered lead is connected. The other B battery has a minus post and the short black wire soldered to the maroon lead by the manufacturer goes to this minus post on the second B battery. The bright red lead goes to the remaining plus 45 post of this second battery. In the case of the B eliminator, however, there will be found three binding posts, B-, B+45 and B+90. The black and red lead goes to B-, the maroon lead goes to B+45 and the short black connector is to be cut off. The bright red covered wire goes to B+90.

### Aerial and Ground Connections

As to aerial, it may consist of a single wire between 50 and 100 feet in length,

measured from the end furthest out, to the set. The writer would recommend the enamelled wire marketed by Belden for use as antenna, as it will not corrode and will never need replacing except in case of actual breakage. Use porcelain or Pyrex glass insulators at each end of the straightaway portion of the aerial and either extend the wire itself down to the set or use heavy rubber covered lead-in wire which is soldered to the straightaway close to one end just inside an insulator. In either case the lead-in portion should be kept clear of the building by insulators and kept from swinging, which would cause crackling noises and gradually tear off the insulation. Bring it into the room either through a porcelain tube or by one of the flat insulated strips on the market which go under the window sash.

The ground in most cases can be made to a cold water pipe. These instructions have been in print many hundreds of times before but for the benefit of the new owner of a set they will be briefly run over once more. Scrape the surface of the pipe for a length of about two inches, so you get through the corrosion, and the exposed metal is bright and shiny all the way around. Then put on a ground clamp such as can be purchased at any Radio or electrical store for this purpose and connect a wire from the ground post of the set, to this ground clamp. Remember, while it is not half as much trouble to install as the aerial, it is just as important and the set will not function properly without a good electrical connection to ground made in this way.

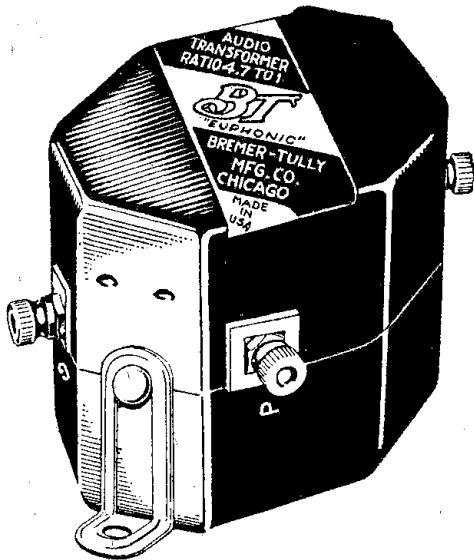
The country user of this, or any other set, can best get a ground by burying several large pieces of metal in a spot usually damp and soldering a connection from each one to the ground connection wire. Old wash boilers, pipe, edge-of-roof gutter, chicken wire and cylinder head shims are suggested. It is easier, if a pond or spring is close, to drive a length

(Continued on page 26)

## for PARTS or COMPLETE SETS you can't do better than choose B-T PRODUCTS

They are designed for radio use by radio experts

Just as the COUNTERPHASE and the NAMELESS circuits are the year's acknowledged leaders, so is the



### B-T AUDIO TRANSFORMER

A LEADER

They are preferred by experienced radio fans who appreciate high quality in amplification. Try them in your set—measure their worth by results and the price is not distorted.

2.2 to 1....\$5.00  
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### WHY TAKE LESS

When you can get B-T apparatus? All dealers who sell on quality can supply you with B-T parts and kits. Before you buy examine them.

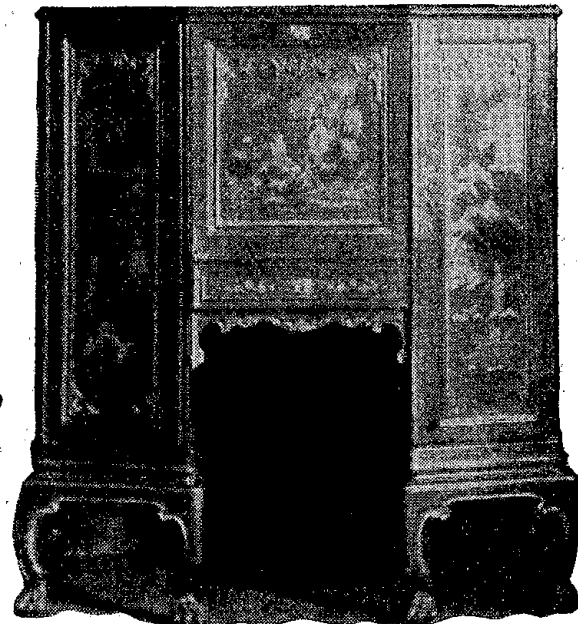
"Better Tuning" describes and illustrates all B-T hook-ups. Sent for 10 cents  
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# THORDARSON

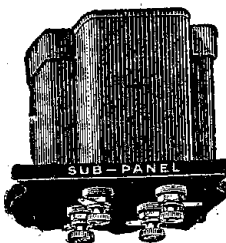
Super TRANSFORMERS  
Standard on majority of quality sets

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; 3½-1, \$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.

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GLOBE  
Newport  
BUCKINGHAM  
NURN-LONDON  
KUSTOMBILT  
many others  
use Thordarsons

Also choice of MacMillan Arctic Expedition

### STEWART-WARNER SET

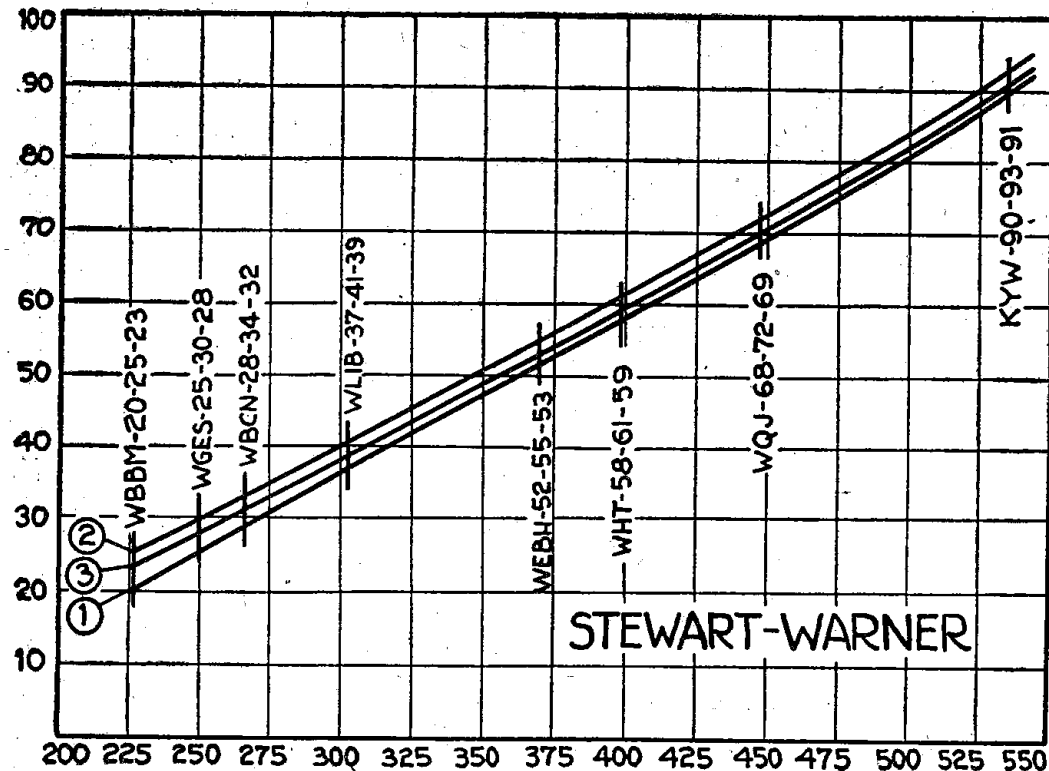
(Continued from page 25)

of rod into the ground in the wet soil and attach wire to this rod with a ground clamp.

The accessories having been connected we are ready to put the Stewart-Warner into operation. This receiver requires five tubes or bulbs, known to the Radio fraternity as "A" tubes, because the manu-

facturers identify them as UV-201A or C-301A or M-401A, etc. The majority of dealers today have a tube testing device of some kind and you should insist on your tubes being tested, not only for filament lighting, but for amplification. If any one of the five tubes is inefficient the results will be most unsatisfactory even though all tubes light. Turn the small switch knob in lower right corner to the left which is the "Off" position and insert the tubes in the five sockets. Now set "Volume Control" knob and "Battery Control" knob so each points upward and slightly to the right, a "2 o'clock position." The switch in lower left corner may, for this first test, be turned to the right.

Now turn switch at right, to the right, the "On" position, and the tubes should all light up. This will not be bright, as you would expect from an electric light bulb, as these filaments are not of the type to get that bright in normal use and the inner surface of the glass bulb is coated with metallic magnesium which prevents anything but a slight glow from getting out around the lower edge.



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The dial numbers on the first and third pointers have no connection with the wave length on which a station may be transmitting but the center dial is provided with an auxiliary scale below the 0 to 100 scale, giving the approximate position of the pointer for settings by meters. The center pointer and that at the right (number 3) will run pretty close together in their settings for the various stations and the first pointer will not be far from them. It will, however, be somewhat different because the apparatus which it con-

trols is influenced by the antenna and ground connections and these differ in every case. As a starter, set all three dials at 39 which is in the section in which one finds such stations as KDKA, WLIB, WSMB and KTCL. Now place one hand on dial 1 and the other on dial 3 and move them slowly back and forth between 36 and 42 on their scales. If nothing is heard set dial 2 at 40 and repeat this operation.

If no results, turn the "Volume Control" knob a little further to the right and try again. It may be that the "Battery Control" knob should be turned further to the right also. A combination of settings of these two knobs and the dials will be found that will bring in programs. Once a station is tuned in, bring it to maximum strength with the dials, very carefully, and then turn "Battery Control" knob to right to the point where further turning does not help, and leave it. Then turn "Volume Control" to right until signals become a little distorted and leave just to left of this point.

This "Volume Control" is the key to long distance and clear volume. Its position will have to be altered slightly with each new setting of the large dials and in each case it will be found that it can be turned to the right just so far and a maximum of range and volume will be had before distortion shows. When a powerful local is tuned in and the volume causes distortion, due either to overloading of the last tube or rattle in the loud speaker, turn the small switch at left, to the left, which will reduce the volume and clear up the program. When looking for long distance stations, though, this switch should be at the right or "Full Volume" position as otherwise you might not hear the program at all. When through using set, simply turn switch at right to "Off" position.

(The Day-Fan five tube single control set will be discussed in the next issue.—Editor's Note.)

### RADIO BILL PROGRESS

(Continued from page 10)

plane that inventive genius and mechanical progress will permit. The law in force today does not provide establishment of such a system."

The secretary said, in discussing the bill, that three facts are settled: first, that Radio legislation is absolutely and immediately essential if we wish to prevent a chaos in Radio communication, especially broadcasting; second, the bill now proposed has already received substantial approval; and third, the principles in this bill have received the approbation of both the Radio industry and the Radio public.

#### Davis Tells of Congestion

Judge Stephen B. Davis, solicitor of the department of commerce, went into the provisions of the bill in detail and outlined the increases in the Radio industry and the congestion that is filling the ether. He expressed himself as heartily in favor of the provision of the bill providing for an appeal committee to consider a decision of the department.

Representative S. H. Appleby and Representative E. R. Ackerman, both of New Jersey, appeared before the committee and filed protests at the high power used by the Radio Corporation superpower station at Bound Brook, New Jersey.

E. S. Wilson and W. E. Harkness, both of the American Telephone and Telegraph company, and S. Brown, of the Radio Corporation of America, appeared before the committee, endorsing the bill, and J. L. Nicholson, representing the U. S. Shipping board, appeared, asking for minor changes on behalf of the shipping board.

#### But One Opposes Bill

Other witnesses appearing before the committee included Paul B. Klugh, executive chairman of the National Association of Broadcasters; H. W. Smith, National Carbon company; Major J. O. Mauborgne, U. S. Army signal corps; Emil J. Simon, president of the Intercity Radio Telegraph company; Captain Ridley McLean, director of naval communications, U. S. Navy, and Lieut. E. M. Webster, U. S. Coast Guard. All of these witnesses appeared in favor of the bill except Mr. Simon, who said that the present law is good enough and he opposed additional restrictions as provided for in the new draft of the bill.

#### Howell Charges Monopoly

But in the senate, where Senator Howell has introduced a free ether bill, a real conflict is expected. Senator Howell stated that he has been informed that

claims of vested rights in the ether are contemplated by some parties and that was his reason for trying to get action by congress declaring the ether free.

Judge Davis was also called to testify at the senate hearings of the Howell ether bill and the Dill Radio control bill. He outlined the development of the Radio industry up to the present time, including a full discussion of the present law under which the department operates and which was passed in 1912. In answer to questions of the committee, he said that in his opinion, none of the present broadcasters have a vested right or could claim a perpetual license.

The Radio licenses for broadcasting are divided about as follows, he told the committee: stores, including Radio stores, have 124 stations; colleges and schools, 94; churches, 43; publishers, 35; manufacturers, including Radio manufacturers, 30; states and municipalities, 15; banks, 15; hotels, 12; societies, 11; and scattering, 22.

#### United States Tax Free

Judge Davis also called attention to the fact that the United States and Canada are the only countries in which the listener in does not pay something in the way of a tax or license, which is paid largely to the broadcaster for his entertainment. (Editor's Note.—The judge is partly in error, for Canadian listeners in do pay an annual fee, but only in Manitoba does a part of this revenue go toward the maintenance of broadcasting.) He said also that at the present time there are more stations than there should be for good broadcasting results and that it would be unwise for congress to allow perpetual licenses to anyone and he strongly contended for a limited license.

In response to questioning by members of the committee, Judge Davis expressed the opinion that some of the provisions of the bill will provide for the killing of any monopoly of broadcasting stations; that the licensee gets a valuable property when he gets a wave length from the government that will increase as time goes on; that no person, or unified group of persons, should be allowed to own more than one station, and that more than 200,000 persons were employed in the Radio industry.

#### Educators Give Testimony

Dean J. H. Umberger, of the Kansas Agricultural college; C. W. Warburton, of the bureau of extension of the department of agriculture, and Prof. F. G. Helvar, Rutgers university, were also heard (Continued on page 29)

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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.

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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!**

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1-23-26

# Unitrola: Single Dial Phonograph Receiver

## Part II—Assembly of Apparatus

By Carl Patterson

PROBABLY to those who have built one or more receivers before, the assembly of Unitrola will present but little difficulty, but for those who may be tackling this outfit as their first experience at building a set I am going into all details. Even the more experienced may be reminded of one or two points they have been forgetting. To begin with, we have in figures 2 and 3 what are known as layout diagrams. Figure 2 includes also the detail for constructing the special brackets necessary and the binding post mounting strip. The main part of figure 2, however, is the layout of the front panel and this must be enlarged to full size for a drilling template. With a sheet of flat, unwrinkled paper a little larger than the panel size, a ruler and sharp pencil you can readily enlarge this drawing. Possibly the best way, to insure right angles, is to lay the front panel itself on the paper and draw closely around it.

**Start at Left**

You will find that practically all the holes fall on but two or three lines both

If you do not have every size called for, use the next smaller size drill you do have and ream to size. In connection with the 5/32 holes, it will be found that a 9/64 drill will do if the larger size is not in your collection. The drilling should be done with the panel flat on the surface mentioned and preferably clamped to it. Do not try drilling on an uneven surface as many of the holes will chip out on the underside.

**Sub Base Panel Needs Care**

The same procedure is then followed with the diagram of figure 3 and the large sub base panel. Greater care is necessary for exactness in placing here, as most of the holes are in pairs and it would require reaming later to get apparatus mounted. All holes in this sub base are 5/32 or 9/64. The binding post mounting strip can be prepared either by making a small template or marking directly on the bakelite with pencil or pointed tool. The aluminum brackets should present but little trouble as you probably either have or can borrow a pair of metal snips. The bracket layout of figure 2 can

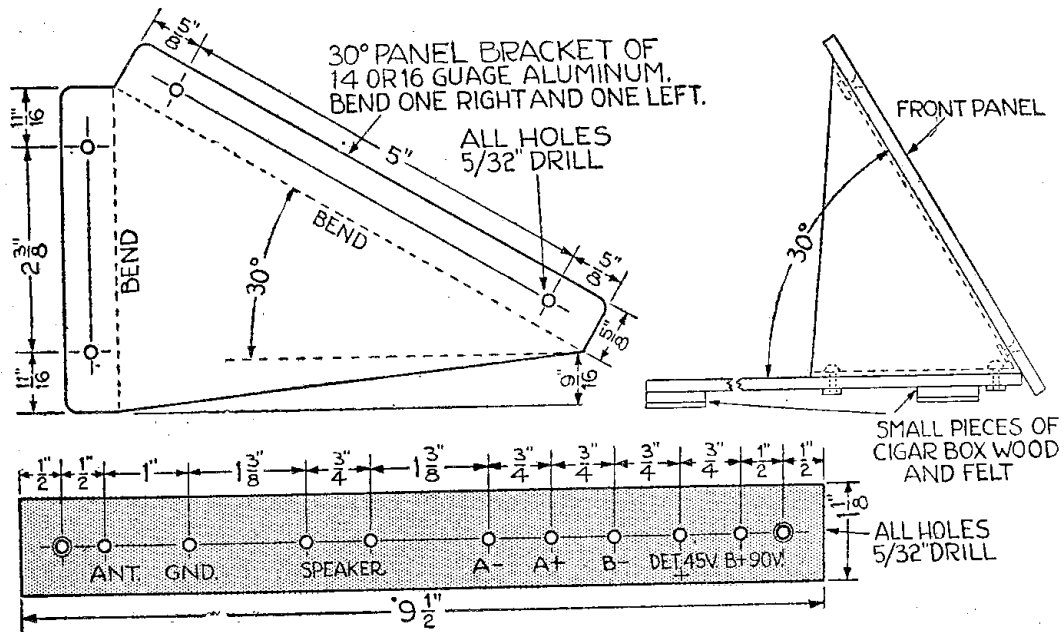


Figure 2

vertically and horizontally. It is a good idea to start at the left and work across toward the right. Be especially careful of the placing of the holes in the upper center as the three condenser mounting holes and the shaft holes must be exact or there will be trouble. It is better, naturally, to have the other holes as exact as possible also but there will not be the consequent trouble if they are not. It should be noted that the upper center-group hole is for one make of dial only. If you use a Mar-co dial, for example, this hole above shaft would not be put in but there would be a hole 3/4-inch below the shaft hole. If you use the non-univerner dial furnished, no special hole is needed.

A large, flat surface, preferably a bench top, or at least a breadboard or piece of plank, is now required. The 7"x12" panel is placed face upwards with the drilling template, cut to size, squarely on top of it. The template should either be clamped to the panel with small C clamps or pasted to it lightly with a touch of paste in each corner. A center punch and a hammer are next used and a light tap with the hammer, and the punch carefully placed at each cross, will put a little dent in the panel beneath. With all holes marked, the template is removed. In drilling, watch the sizes carefully as the holes cannot be made smaller once they are in.

either be marked on the aluminum itself or a paper pattern made. Make two of these aluminum pieces, but when it comes to bending them remember to bend the flanges on one to the left and on the other to the right. To get a good, even bend, it might be a good idea to score one side lightly with a pointed instrument, along the lines indicated and then bend with heavy pliers. If you have the right place, another method is to clamp the bracket to the edge of a heavy bench with the scored line exactly on the sharp edge and bend the flange down with a hammer.

In mounting apparatus, follow the common-sense procedure of putting on the sturdier pieces first. Put the rheostats on the front panel first, the 15-ohm size going in left hole at the bottom. The 30-ohm is placed in the lower right hole. Then put the 200,000-ohm C-R-L unit in the left hole 2 3/4 inches from the bottom and the 500,000-ohm C-R-L unit in the right hole across the panel from the first. The condenser comes next and is mounted with stator plates downward. The compensator shafts project through the 3/4-inch holes about 2 1/8 inches each side of center. If care has been used in punching and drilling, the three mounting screws and the shafts will all pass through their allotted holes without trouble. If the mounting holes do not quite

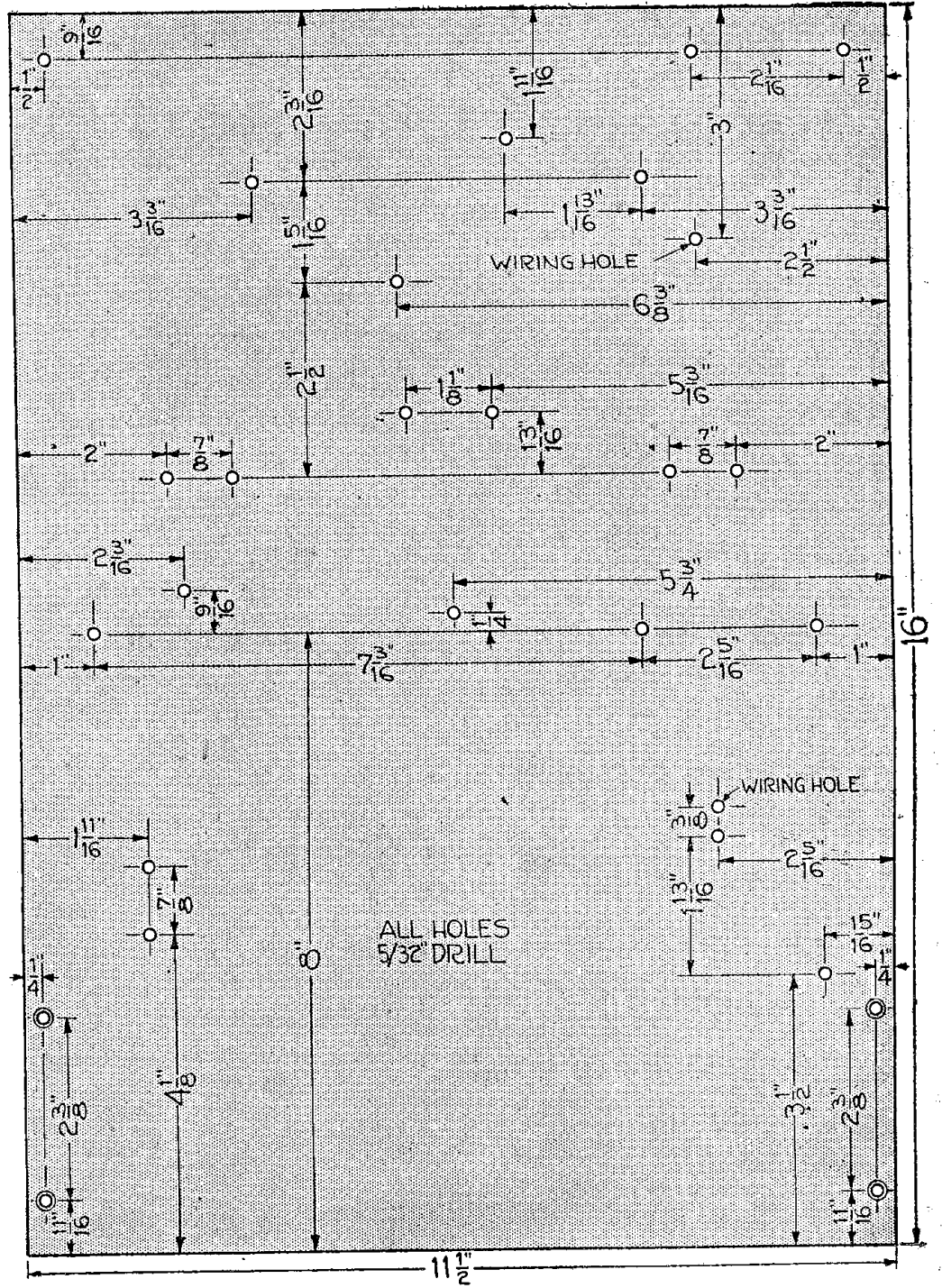


Figure 3

match up, a little reaming, with pressure toward one side, will correct this enough to get the screws in. Always remember when putting on an instrument of this kind to just start the three screws and tighten up a little on each, going from one to another so that they all reach tightness at the same time.

**Mounting of Lights**

The Dialite is mounted by a single 1/2-inch hole, the one to the left and above the condenser. This is to be tightened in place so that when the hood is turned toward the off position, the opening is upward and, when in the on position, the light will shine out across the dial. The pilot light goes, of course, in the right hole just above condenser. The dial comes last and, as most manufacturers of dials include very complete directions for their assembly and mounting, it will probably go on without complications.

Going now to the sub base, place the Amperite mounts in position first, their holes being just back of center, fore and aft, and slightly each side of center cross-wise. Study of the photograph, figure 4, will make their positions clear. The Grid Gate mounting, Daven No. 50, is then placed on the hole 8 inches from front and 3 1/8 inches from right edge. A Sangamo .5-mfd. condenser is then secured in the rear right corner with the terminals forward and the right mounting lug used on the hole at rear right of sub base. The other .5-mfd. condenser is mounted with terminals to the right and the rear lug used, on the hole 8 1/2 inches from front and 2 3/8 inches from the left edge (refer to figure 4).

**Sockets and Transformers**

The five sockets are next. The one at the extreme left is mounted with P and (Continued on page 28)

# CROSLEY

Powel Crosley, Junior  
has always done the unexpected.

His Announcement of December 26th  
was no exception to  
that rule.

# RADIO

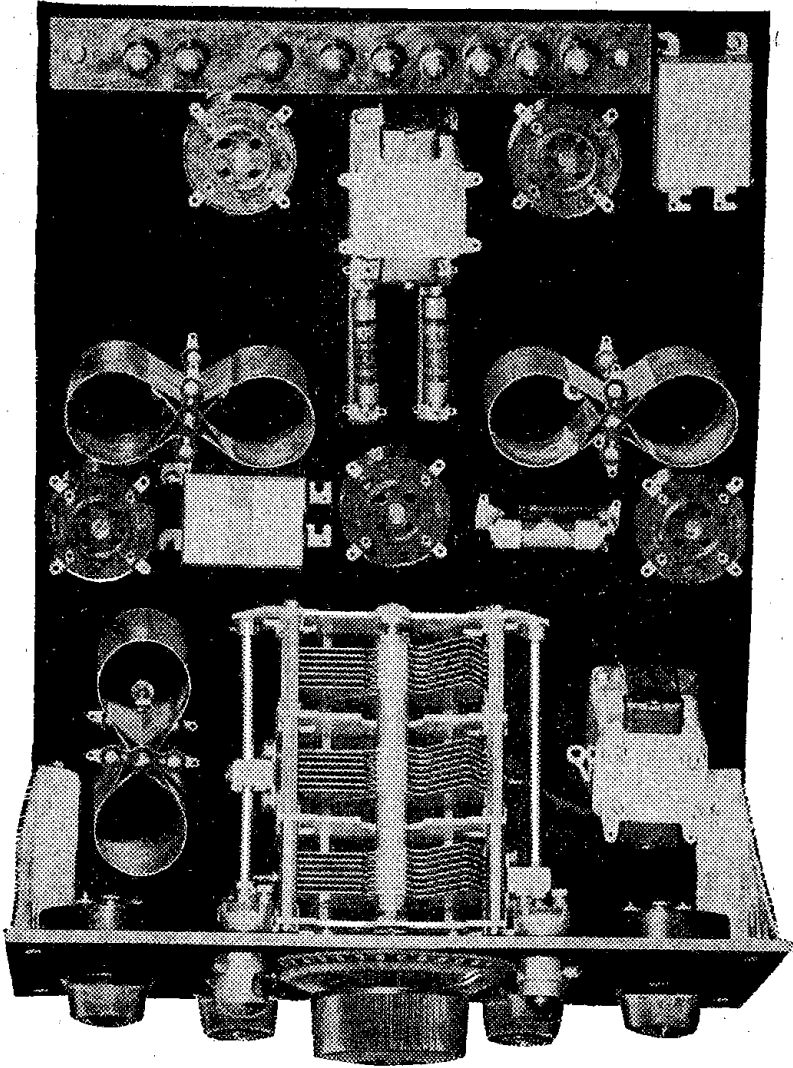


Figure 4

**MAKING THE UNITROLA**

(Continued from page 27)

G posts outward (to the left); that at the center is placed with P and G toward the rear; that at the right is secured with P and G outward (to the right). Going now to the audio frequency tube sockets at the rear, both are mounted with P and G toward the front. Place one of the audio transformers in the front right corner with Grid and Plate posts to the rear. The other transformer goes in the center to the rear and with its P and G terminals to the rear. The rear left and front right mounting holes are used on the first mentioned transformer while the front left and rear right holes are used on the second one.

The binding post mounting strip is placed across the rear edge and the two end holes used for mounting. I used two 3/4-inch high, nicked pillars for this purpose with a screw coming up through the bottom and another passing through the strip and downward into the pillar. Round head screws were used at all four points. If you do not have such pillars and cannot get them at your Radio store, long screws can be used and binding post terminals from old dry cells stacked up to about 3/4 inch on them. Little square blocks of wood could also be used, meas-

uring 1 inch square and 3/4 inch high, with wood screws used at each end.

**Placing of Coils**

The coils come last and should be handled most carefully. The Twin-8, which goes in the left front corner, is placed with G and B terminals to the right, while the other two are placed with G and B toward the front. I used round head, 6-32 screws for securing the coils, transformers, condensers and Daven mounting, and flat head 6-32 screws for the sockets and the Amperites. The front panel and sub base can be secured together with the brackets and the 6-32 screws to be sure that all fit correctly but will have to be again separated for wiring, as much of it can best be done on the sub base alone.

On looking over the set once more I notice a couple of mounting points not quite covered above. The rheostats are placed with terminals inward, the C-R-L units with terminals downward. This cannot be clearly seen in the photograph and would not otherwise be clear. All sub base mounting machine screws are to be cut and filed off flush with the nuts on the under side.

(This completes the assembly of the parts and in next week's issue, Mr. Patterson will cover the wiring, wire by wire, so that no mistakes can be made—Editor's Note).

**ADVANCE PROGRAMS**

(Continued from page 21)

Erving, baritone; Louise Bohmrich, violinist; Prof. Edwin Franze, pianist; J. V. De Cimber, pianist-composer; talk, F. W. Vaughn, "Electricity."

**WSUI, Iowa City, Iowa (483.6m-620ke), 12:30 p. m.,** duets, Mrs. Mildred B. Paddock, soprano; William G. Edmondson, Jr., tenor.

**Mountain Time Stations**

**CFAC, Calgary, Can. (435.8m-690ke), 8-9 p. m.,** ladies trio, May Hockey, cellist; Miss Beerling, pianist; Gladys Foster, violinist.

**CNRE, Edmonton, Can. (516.9m-580ke), 7:30-8 p. m.,** music.

**KFWA, Ogden, Utah (251m-1150ke), 4-5 p. m.,** organ recital, Paramount theater; 5-6, Ogden Radio Dealers Program.

**KOA, Denver, Colo. (322.4m-930ke), 12:15 p. m.,** Rialto theater musical; 3:15, relaxing and corrective exercises; 3:30, matinee for housewives; 4, culinary hints; 4:15, fashion review; 6:30, dinner concert, Brown Palace string orchestra, Howard Tillotson, director; 7:30, preview of International Sunday school lesson; 8, studio program, violin solos, Mrs. Edith Sindlinger Wible; address, "The Opportunity of the Youth of Today," Rev. C. F. Stevens; cornet duet, William Wible and Thomas DeHaven; instrumental selections; soprano solos, Mrs. Marie Stevens Murphy; instrumental selections, KOA orchestra; 9:30, special DX program for overseas listeners.

**KOB, State College, N. M. (348.6m-860ke), 7:30-8:30 p. m.,** musical program, Mrs. H. C. Rivers.

**Pacific Time Stations**

**CNRV, Vancouver, Can. (291.1m-1030ke), 8:30 p. m.,** Rhena Marshall, soprano; Mrs. F. X. Hodgson, contralto; Russell Hawes, tenor; Donald Hyslop, baritone; James Todd, pianist; 10:30, Cabaret Belmont orchestra; Bebe Muller, soprano.

**KFI, Los Angeles, Calif. (468.5m-640ke), 5:30-6 p. m.,** Kenneth Morse and his dance orchestra; 6, nightly doings; 6:15, KFI's Seeing California; 6:30, vest pocket program; 6:45, Radiotriennial period; 7-8, Carlyle Stevenson's dance orchestra; 8-9, Aeolian organ; 9-9:30, Clyde Sparks, baritone; Wesley Tourtelotte, pianist; 9:30-10, Mutual Motors mirth contest; 10-11, Ionian male quartet.

**KFOA, Seattle, Wash. (454.3m-660ke), 12:30-1:30 p. m.,** program; 4-5:15, Wm. F. Hoffman's orchestra; today's recipe; 6-6:45, Hoffman concert orchestra; 6:46-8:15, program; 8:30-10, Times studio program.

**KFON, Long Beach, Calif. (233m-1290ke), 4:30-5 p. m.,** amusement bulletin; 6-6:30, organ, Brayton's theater; 6:30-7, Captain's Inn orchestra from Seal Beach; 8-9, Press-Telegram program; 10-12, Long Beach Elks No. 888, frolic.

**KFWB, Hollywood, Calif. (252m-1190ke), 7:10 p. m.,** Safety First talk by Officer E. G. Brown; 7:20, Jack Boaz, fishing and hunting scout; 7:30, Eye-o-logue, Dr. Marshutz; 7:40-8, microphone brevities; 8:30-8:45, international test program; 9-10, program, John Wright, The Right Tailor, Chico de Verde trio; Raquel Nieto,

soprano; Frank Stever, baritone; 10-11, Warner Brothers frolic, direction Charlie Wellman.

**KGO, Oakland, Calif. (361.2m-830ke), 7:15-7:30 a. m.,** health training exercises, Hugh Barrett Dobbs; 7:45, "Pep Class," Hugh Barrett Dobbs; 8:15-8:30, health training exercises, Hugh Barrett Dobbs; 8:30, daily strength; 11:10, home-making talk, Prudence Penny; 3-4 p. m., Nathan J. Landsberger, violinist; Sofie Woolfe Leon; Margaret Lloyd, soprano; Alice Meyer and Joseph Salvalo, pianists; program, Pacific Coast Musical review; 4-5:30, concert orchestra, Hotel St. Francis, Vinton La Ferrera, conductor; 6-6:55, dinner concert, Knickerbocker trio; 6:55, news items; 8:45-9, Josephine Holub, violinist; Joyce Holloway Barthelson, pianist; Jennings Pierce, tenor.

**KGW, Portland, Ore. (491.5m-610ke), 7:15 a. m., Y. M. C. A. Physical culture exercises; 10:30-11:30, town crier; music; household hints; shopping guide and news items; 12:30-1:30, concert, Oregon Radio Trades association; 6-7, dinner concert, Olds, Wortman & King company; 7:30-7:45, news items and sporting results; 9-10:30, concert, Sherman, Clay & company; Duo art-studio; 10:30-12, Hoot Owl frolic.**

**KHJ, Los Angeles, Calif. (405.2m-740ke), 6-6:30 p. m.,** Leighton's Arcade cafeteria orchestra, Jack Cronshaw leader, 6:30-7:30, history story, Prof. Hertzog; Richard Headrick and Vyola Von, screen juveniles; story by Uncle John; 7:30, "Romance of Santa Fe Trail," Gladys De Witt; 8:30-8:45, special international Radio week program; 9-11, program, Western Auto Supply company.

**KMTR, Hollywood, Calif. (238m-1260ke), 5-6 p. m.,** home hour, Mammy Simmons and pupils of Carter Weaver; 7, "Color Photography," Charles W. Beam; 7:30, "Wonders of Nature," Prof. Alfred Cookman; 8:30-8:45, special broadcast for international tests; 9-10, Turner orchestra, direction Loren Powell; 10-11, Starr Piano company studio.

**KNX, Hollywood, Calif. (336.9m-890ke), 5-5:30 p. m.,** Sunny Jim's story; 5:30-6:15, Wurlitzer pipe organ studio; Town Tattler; 6:15, travel talk, W. F. Alder; 6:30-7, Arwater Kent concert orchestra; 7-8, program, Jell-X-Cell company, Paul Einstein's string quartet; 8:30-8:45, international test program; 9-10, Order of Optimistic Donuts; 10-11, popular song and dance music hour.

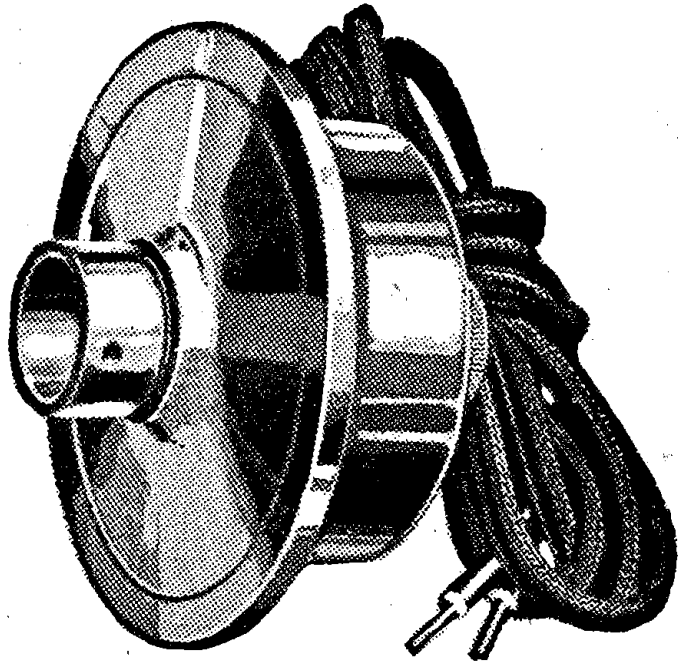
**KOAC, Corvallis, Ore. (280.2m-1070ke), 7:05 p. m.,** musical selections; 7:15, "Business Digest," A. C. Schmitt; 7:30, "Minor Adjustments and Inspection of the Auto," Prof. W. J. Gilmore; 7:45, "Oregon Fuels and Their Economical Use," C. E. Thomas.

**KPO, San Francisco, Calif. (428.3m-700ke), 1:30-2 p. m.,** Rudy Seiger's Fairmont hotel orchestra; 5:30-6, children's entertainment; 6:30-7, Waldemar Lind and the States Restaurant orchestra; 7:10-7:30, Rudy Seiger's Fairmont hotel orchestra; 9-10, Gene James' orchestra; 10-11, Waldemar Lind and the States restaurant.

**KTAB, Oakland, Calif. (240m-1250ke), 9-9:30 a. m.,** prayer service, Rev. E. L. Spaulding; 12-1, luncheon concert; 9-11, program, Breuner's.

**KWSC, Pullman, Wash. (348.6m-860ke), 7:30 p. m.,** Aloha Harmonizers; Jean Worthington, vocalist; "Results of Extension Work in 1925," W. W. Underwood.

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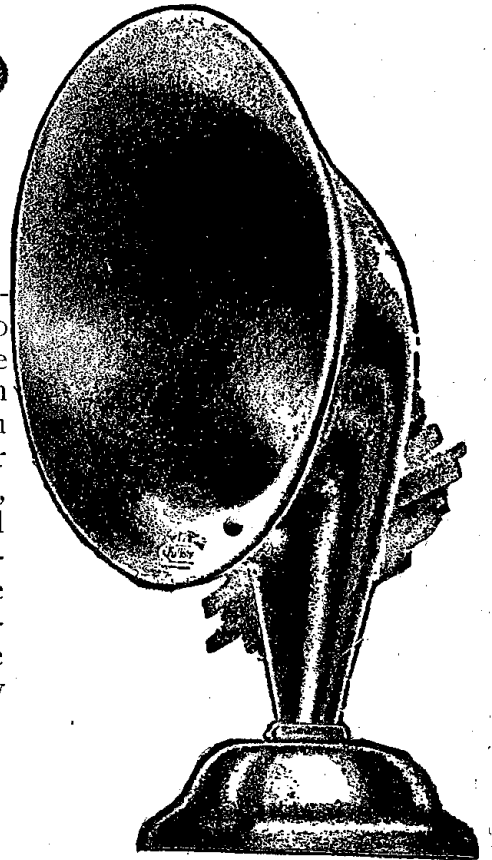
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# Potentiometer Control for R.F. Stage

## Kinkster Applies Part Across Filament Leads

I don't know whether this qualifies as a kink or not, but it saved considerable money for me and I doubt whether many of your readers are sufficiently engineers to straighten out a tricky tuned radio frequency stage. In my case I had built a

### WORKSHOP KINKS EARN A DOLLAR—

There are many little kinks worked out at home that would aid your fellow Radio worker if only he knew about them. There are new hook-ups, new ways of making parts and various unique ways of operating sets that are discovered every day. Radio Digest is very much interested in obtaining such material. Send them in with full details, including stamped envelope, so rejected copy may be returned. The work must be entirely original, not copied.

RADIO KINKS DEPARTMENT  
Radio Digest  
510 North Dearborn St., Chicago

four tube set with a method of compensating for the capacity of the tube in the first socket but the compensation method did not work out and I had a really good looking, carefully made outfit that wouldn't behave. The insertion of a potentiometer across the filament wires and with its center terminal attached to the grid return of the first tube now gives me good control of oscillation in the tuned radio frequency stage.

From Milo Gurney's articles, and others you have published, I presume this would tend to broaden tuning but I seem to have comparatively little difficulty separating stations and I did not have to junk this set. Maybe some other beginner is in this same difficulty with tuned radio frequency stages and does not know of this sure-fire solution.—Charles Windsor, Joplin, Mo.

## CONQUER PIKES PEAK

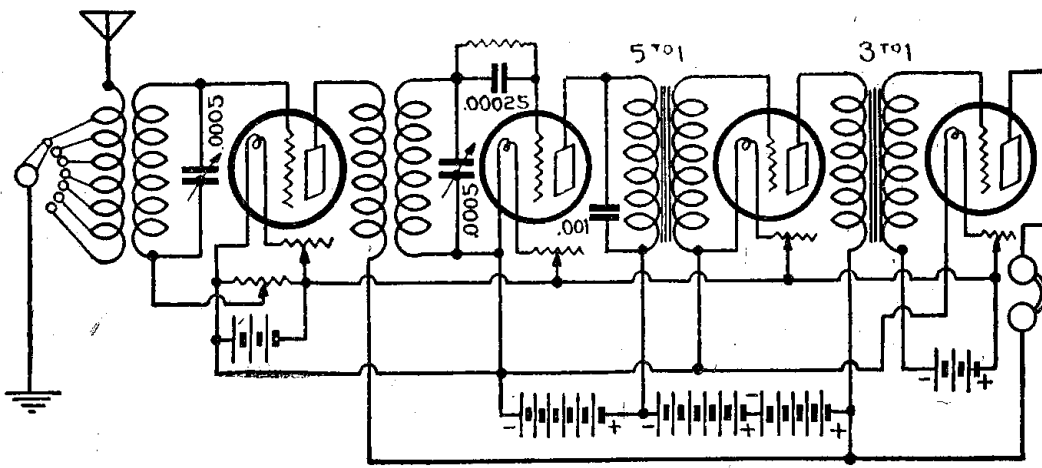
(Continued from page 6)

drifted down from the towering domes. Friends are speculating as to your location. Listeners, tuned in on KFXF, have been hearing of your progress until you disappeared beyond the reach of all observation glasses. They are waiting for the signal from the top of the world as it appears in Colorado.

LEG weary and ready to drop you feel some relief because the snowstorm has swept its way from under your feet. The light of the moon and the stars reflected by the pure white snow has made the night clear and wonderful. You are in a world apart from all that you have ever known. It puts new elixir into your blood. And you thrill with a sense of victory as the man ahead gives a yell and points upward. There against the sky is a long, man-made ridge terminating in a skeleton tower—the goal!

It is almost a race to be first at the door. Aching shoulders are relieved of their burdens. Each one has a work to perform. A report is telephoned to the KFXF studio. Wood is brought in and a fire built in the range. Snow is melted for coffee. Provisions are unpacked. Food is

## HOOK-UP LESSENS OSCILLATION



prepared. Fireworks are inspected and put in order. All preparations are made for the big flare at the hour of 12, midnight.

You never knew what hunger was before. In all your life you never enjoyed food as you do this New Year's Eve on top of the world. You are exhilarated and happy. The meal is over and the arrangements completed for the firing of the rockets and the lighting of the 50,000 candle power flares.

A hundred thousand pairs of eyes are straining through the night. The clock strikes 12. The top of the famous old mountain seems to burst into flame. Red and green flames shoot upward in a towering cataract. Rockets fountain their floating balls of fire that seem to come from the stars themselves. A new year has been welcomed in from the highest point of old Pikes Peak.

For those who are unable to see the spectacle direct a most vivid description is given by the announcer at the microphone below and the work of the ten men who have plodded their weary way to this lofty point has made the event a national celebration. As a musical setting to the whole plan there comes an accompaniment by the Warner Stone Columbian orchestra in the KFXF studio.

## RADIO BILL HEARINGS

(Continued from page 26)

by the committee, telling of the magnitude of their broadcasting and the favorable educational work they are doing; of the unlimited possibilities of Radio for the

furtherance of knowledge among the people denied higher education; and the obstacles, in some cases, they have had to overcome to do their work.

Although nothing has been done that would point to any definite advancement toward congressional action, the members of the house and senate committees are at least receiving a lot of information on a subject they seem to little understand, and there is a hope that the knowledge they have been given on the deplorable condition of the ether channels may lead to the clearance and regulation of Radio at further hearings to be held in the future, for which no dates have been set.

## The Reader's View

### Opera in English

This is the day of voting contests. Why not get a vote from the public on whether they prefer their grand opera in a foreign language or in our own English? The schools and societies all cry, "Better English." Why not make unpopular this singing in a foreign tongue? Boost America.—Mrs. B. S. W., Galesburg, Ill.

### Leaving What?

Adoring jazz, especially saxophonic, to death, I freely give my great discovery to the world.

Finding two stations heterodyning jazz, noting improvement, had to research.

## ARE YOU THE MAN

to be first in your town to sell and demonstrate POWEROLA, the famous 5 tube NO-BATTERY ELECTRIC LIGHT SOCKET RADIO RECEIVER (not an attachment), universal for D.C. or A.C. (100-115 v., 40-60 cycle), now sold and demonstrated thru THE NEW YORK EDISON CO., public utility companies and radio, electric and music dealers everywhere. Absolutely dependable, fully guaranteed, powerful, practical, perfect in performance.

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Enjoy perfect reception regardless of weather conditions. The Static Eliminator—the newest and most startling thing in Radio—cuts out practically all static without loss of volume!

And in addition it will help increase selectivity, tune out local stations, sharpen signals, remove noises, lessen interference and prevent re-radiation!

Use it with any receiving set—simply hook up to your aerial lead-in and enjoy perfect reception unmarred by static. \$1.00 Postpaid

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## Nightingale

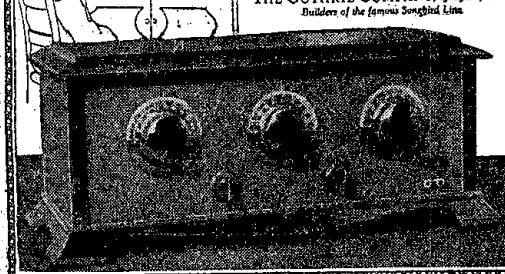
THE UTMOST IN RADIO

DISTANCE, volume, purity of tone—all are at your command in unstinted measure when you make the Nightingale Six, the companion of your evening hours.

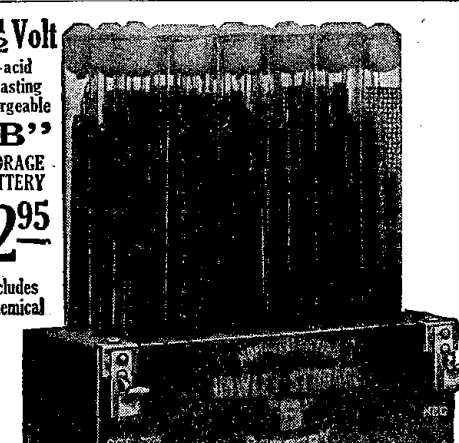
With the golden tube contacts, straight line wave condensers and other special features of the Guthrie Songbird Line, the Nightingale Six represents supreme radio value housed in cabinets of strikingly rich and appropriate design and finish.

Two stages of tuned radio frequency amplification, detector and three stages of transformer coupled audio frequency amplification afford a volume three times greater than can be secured with a five tube set.

Complete manufacture in our own shops give us control over every feature that is vital to your satisfaction. See the Nightingale dealer for any one of our several cabinet models or write to THE GUTHRIE COMPANY, Grafton, Ohio, Builders of the famous Songbird Line.



22½ Volt un-acid everlasting rechargeable "B" STORAGE BATTERY \$2.95 Includes Chemical



45 volts, \$5.25; 90 volts, \$10.00; 112½ volts, \$12.50; 135 volts, \$14.75; 157½ volts, \$16.80. Truly the biggest buy today. Easily charged on any current including 32-volt systems. Any special detector plate voltage had. Tested and approved by leading authorities such as Popular Radio Laboratories. Over 3 years sold on a non-red tape 30-day trial offer with complete refund if not thoroughly satisfied. Further guaranteed 2 years. Knock-down kits at great savings. Complete "Hawley" "B" battery charger, \$2.75. Sample cell, 35c. Order direct—send no money—simply pay the expressman cost on delivery. Or write for my free literature, testimonials and guarantee. Same Day shipments. B. Hawley Smith, 617 Washington Ave., Danbury, Conn.

## Steinite

Interference Eliminator LOW LOSS No Radio Complete Without It! NOW you can select stations at will, cut out interference and undesired stations—tune in loud and clear. Wonderful results with any tube or crystal set. Over 150,000 sold. Partially absorbs static.

FREE Complete Steinite Literature. Steinite Famous 1500 MI. One-Tube Set \$6; Crystal Set \$6; Crystals \$3 for \$1; 5-Tube Set—\$29.75. STEINITE LABORATORIES Radio Building 303 Atchison, Kans.

Caught three heterodyning same. Wait till you hear them! Suggest all jazz and all saxophone selections be transmitted on 530 kilocycles, regardless of station's assigned frequency. Eliminates hunting for 'em, vastly improves quality and increases volume.

The highbrows preferring musical instruments to saxophones must then dial there for their stuff.

If not asking too much, when you accomplish this, give a little variety to above by assigning to 520 kilocycles fresh and breezy announcing, saw solos, Ford Fiddling, infant prodigy stuff and the rest of the high class rural entertainment so freely offered.—E. I. S. Butler, Pa.

### Attention "Brass Pounders"

I have read of the proposed tests, January 24-30, of the international exchange of programs and that all American stations will stand by at certain times, one hour.

What about the "brass pounders"? Last year at the time of the tests, we could get the stations all right but the everlasting dit, dah, dit, dat, made it miserable. Of course, we understand there is no law to control them, but we think they should be willing to lay off for a few hours at least.

We have been hearing some code every night for over a month at all hours (7 to 10). Isn't 10 o'clock the time set for them to come on the air?—W. A. A., Richmond, Ky.

### All Right, Canadians, Write!

I would like to see more letters on the readers' page from Canadian listeners about Radio conditions in Canada.

In particular I would like to see comments on the Canadian method of licensing Radio equipment. The license fee of one dollar per year is said to be used in controlling and eliminating interference.

Come on you Canadian fans and let us hear from you. This is a topic on which we are all more or less interested.—R. F. Sperling, Manitoba, Can.

### Who Were the Artists?

Please ask the announcers to let us know occasionally who we are listening to. I have listened for more than an hour without a station announcement. I enjoyed the violin and piano selections on a recent program, but would like to have known who they were.—A. C., Durham, N. C.

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