

## BROADCASTERS CLOGGING AIR U. S. LAUNCHES MOVE TO BAN LOCAL JAM

### FANS SUFFER IN MAD RUSH TO USE ETHER

Radio broadcasters are speeding to their own destruction.

Already some are falling by the wayside. Yet new adventurers are coming in, only to find the road so clogged up with competitors as to make progress extremely difficult.

Difficult as the going is for broadcasters, this competitive rush for popularity and self-advertisement is making the air less agreeable for radio fans. The listeners are in the situation of a pedestrian unable to cross a congested street.

Look over the radio map of the United States and Canada and see what is meant. Out of New York City 11 stations may have the air at the same time if they wish. Of course, they haven't the same wave length, but what can a poor local fan do when the power of several of these 11 stations is so great as to make reception of their own programs practically impossible.

Besides contending with the 11 broadcasters within the city, the New Yorker has hardship in tuning out four more equally as powerful in Newark, N. J., not far away.

#### Same Elsewhere

The same condition exists throughout the rest of the country. Thirteen stations in and about Chicago, 10 around Los Angeles, eight in the vicinity of San Francisco, seven in Washington, nine in New Orleans, eight each in Omaha and St. Louis and five each in Cleveland, Columbus and Cincinnati. Seattle has nine broadcasters, Toronto seven, Vancouver five, Calgary five, Montreal four, and so on through the rest of the continent.

The situation has become so that a city fan is at a disadvantage in radio reception. If one local station isn't on the air, another is, and its power and broadness are such that he is forced to listen to that station or abandon his set. Even among the best of receivers, there is difficulty in tuning out local broadcasters.

Fortunately, there is generally an understanding among stations that broadcast from the same locality, affording each a definite time in which to transmit its programs unmolested. That would be fine if the programs were the kind the radio fans preferred.

#### Programs Protested

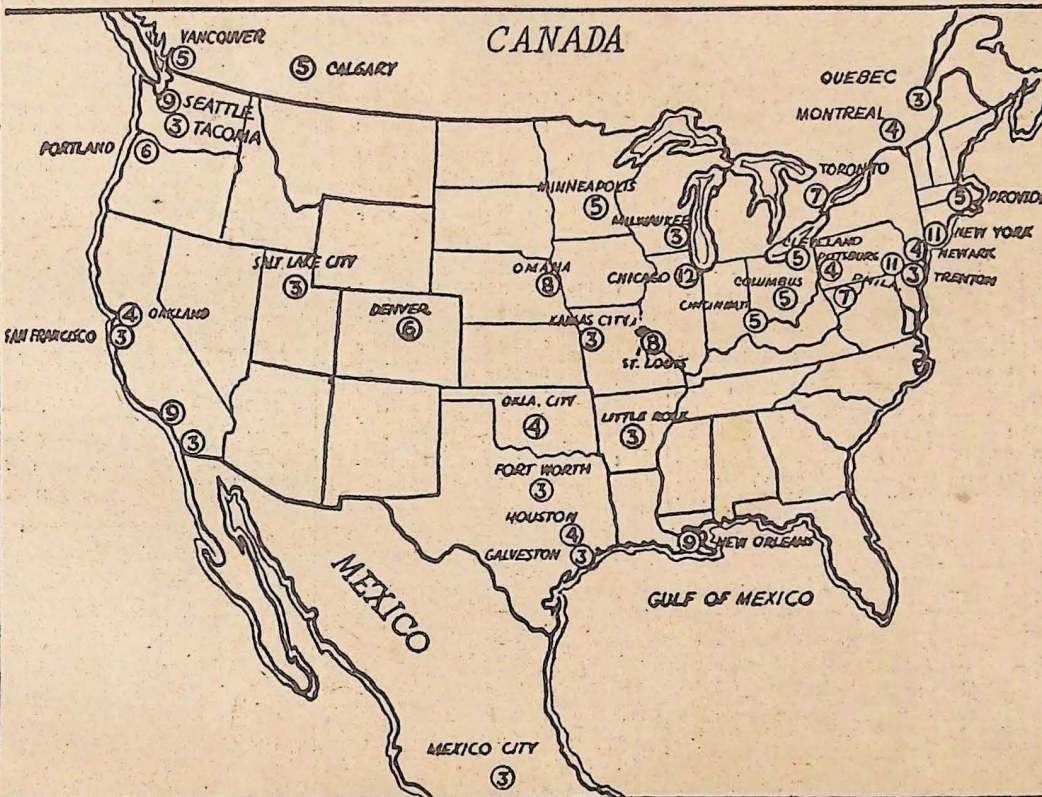
But a general protest is making itself felt against the monotony of musical programs, to the exclusion of spoken numbers. Calls are being made for interesting and educational lectures, while broadcasters still insist on putting any kind of music on the air.

At the same time, a prerogative promised fans by radio was that of freedom of choice among broadcasters, for whatever kind of entertainment the fan happened to like. But if a local station, with power of 1000 or even more watts, is on the air with a jazz concert, how can the fan who seeks operatic music, for instance, overcome the local broadcaster's power, even if he has a good long-distance set?

In most cases, at present, fans have to content themselves with local concerts, as a result. And there's no chance of getting out of town, especially in the bigger cities, because there's a local station on the air every time he turns his dials.

The fan might wait until after midnight. But in many cases broadcasters put special programs on at that time, and even increase their power in their efforts to break the latest long-distance record.

### NETWORK OF RADIO OVER NATION



Map showing cities in which several broadcasters compete for the air from the same place. The figures tell the number of broadcasters in each locality.

### A. R. R. L. Plans Big Powwow For Thursday

The San Francisco Radio Club entertained several out-of-town "hams" at its booth during the radio show held last week. Among the visitors were 6PL of Los Angeles, 6AGN of Napa, 6AAK of Santa Barbara, and 6BDS of Fresno.

A large attendance of out-of-town hams is expected at the A. R. R. L. powwow, to be held at the headquarters of the S. F. R. C., 1380 Bush-st., Thursday. Allan H. Babcock, division manager, will preside at the meeting.

6BQL is converting his R. C. A. inductance into plate and grid coils for a four-coil Meisner circuit, on which he plans to come down to 80 meters, under the new regulations.

6BUF, 6CPW, 6CVL and 6CMM have all made applications for the new low wave length licenses. Under the new regulations they will not have to shut down during local radio entertainment broadcasting.

6BBS, otherwise Paul Burlingame, is going to the University of California and he will move his station from Sausalito to Berkeley in the near future.

6ARB is coming back on the air within the next week with his 250 watt.

### Beetle Causes Short Circuits

The "boll weevil of radio" is claiming the attention of Bureau of Standards engineers.

It is called the "short circuit beetle," because it cuts its way into electric lines and causes a short circuit. Radio broadcasters in warm climates have had trouble with the same bug.

The Bureau of Standards is experimenting with a spraying process to cover wires with a metal through which the beetle cannot bore.

### TUNE IN ON THIS!

Through erroneous-wave transmission, the air is being clogged and the value of radio broadcasting decreased.

Thousands of fans are being deprived of opportunity of hearing elaborate programs, prepared usually at great expense and trouble, for their sole benefit.

The remedy lies in proper adjustment of transmitting sets to wavelengths officially prescribed.

Stanford university in cooperation with the U. S. bureau of standards, on Sept. 5 and Sept. 22 will broadcast over 6XBM frequencies in kilocycles, which will enable owners of radio receiving sets, transmitters and wavemeters to calibrate them properly.

Every fan should take advantage of the opportunity to adjust his set, so that prolonged "tuning" hereafter will not be necessary.

"Listen in" for the signals at the hours designated in the following table:

Schedule of Frequencies in Kilocycles (Approximate wave lengths in meters in parentheses)			
Time	Sept. 5	Sept. 22	
11:00 to 11:08 P. M.	300 (1000)	550 (545)	
11:12 to 11:20 P. M.	315 (952)	650 (461)	
11:24 to 11:32 P. M.	345 (869)	750 (400)	
11:36 to 11:44 P. M.	375 (800)	833 (360)	
11:48 to 11:56 P. M.	425 (705)	1000 (300)	
12:00 to 12:08 A. M.	500 (600)	1200 (250)	
12:12 to 12:20 A. M.	600 (500)	1350 (222)	
12:24 to 12:32 A. M.	666 (450)	1500 (200)	

### Wireless to Span Atlantic Each Day

Daily broadcasting to England and Buenos Aires on short wave lengths is the latest feature in radio.

Using approximately seven kilowatts (7000 watts) of energy in its special new short wave antenna system, KDKA has been doing constant noon-day broadcasting between the two distant points.

The newly built short wave transmitter on the hills near Wilkensburg, has a maximum power of 100 kilowatts. Westinghouse engineers have built immense equipment with the sole purpose, it is said, of learning all there is to know about short wave transmission and reception.

### World Broadcast Program Is Sought

American radio fans may expect to tune in on International Exchange programs this winter. David Sarnoff, president of the Radio Corp. of America, recently has gone to Paris and London with a view, it is reported, to arranging international exchange programs on high power, short waves for relay broadcasting.

In case the plans go through, local or nearby stations will repeat Paris and London programs, while French and English listeners will hear local broadcasts of American programs.

More than 100 manufacturers exhibited apparatus at Germany's first radio show, recently.

### STANFORD U. TO TRANSMIT WAVE GUIDE

Arrangements have been completed by the department of electrical engineering, radio station 6XBM, Stanford university, Palo Alto, California, to transmit standard frequency signals on behalf of the bureau of standards.

This arrangement will enable radio owners in this district to check accurately the adjustment of their apparatus, and thus avoid interference which results from erroneous wave transmission.

By listening in on the broadcast signals and calibrating panels of their sets, or otherwise marking them, to the wave lengths as designated, radio fans will be able to tune in thereafter to announced wave lengths without much further adjustment.

The signals begin in September. The innovation will extend to the western part of the United States the same standard frequency service that is available in the eastern half of the country through transmissions from the bureau of standards' laboratory in Washington.

All transmissions are to be modulated continuous wave telegraphy. A complete frequency transmission includes a "general call," a "standard frequency signal," and "announcements."

The "general call" is given at the beginning of the eight minute period, and continues for about two minutes. This includes a statement of the frequency.

The "standard frequency signal" is a series of very long dashes with the call letters 6XBM intervening. This signal continues for about four minutes. The "announcements" are on the same frequency as the "standard frequency signal" and contain a statement of the measured frequency. An announcement of the next frequency to be transmitted is then given. There is a four-minute interval while the transmitting set is adjusted for the next frequency.

### Shenandoah Finds Radio Successful

The first use of radio compass bearings by an airship was made on the recent flight of the naval air cruiser Shenandoah. Results were reported successful.

While near New York City, the Shenandoah encountered a heavy fog, and asked the New York harbor radio compass stations for her bearings. A three-point fix or bearing was received, and while not absolutely accurate, it was sufficiently accurate for any aircraft operations, the commander of the Shenandoah reports.

### Heavy Tax on Broadcasting

BUENOS AIRES, Aug. 25.—Broadcasting in Argentina will be kept down to a minimum of stations, if a bill now pending in the Argentine congress is passed.

The bill provides for an annual tax of 10,000 pesos, or about \$4250, on broadcasters serving institutions which would benefit by such publicity. At the same time the bill gives the president control over broadcasting programs of all kinds.



# THIS WEEK'S AIR PROGRAMS

## Monday

**KPO-Hale Bros., San Francisco (423 Meters)**  
 12:30 P M—Time signals; reading Scriptures in English and Arabic by Mr. and Mrs. Edward G. Freyer of Beirut, Syria.  
 1 TO 2 P M—Rudy Seiger's Fairmont Hotel Orchestra.  
 2:30 TO 3:30 P M—Piano solos, Valse Arabesque, Nocturne, F. Sharp; Robert E. Anderson.  
 Program by Alik's Hawaiians, syncopators: Right or Wrong; Wallana Waltz; Hono; medley, Mexican Rose and Radio Man; California, Here I Come; Memory Lane; Nola.  
 Piano solos, Marche a la Turque des Ruines d'Athens; Hungarian Rhapsodie No. 8; Robert E. Anderson.  
 4:30 TO 5:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.  
 5:30 TO 6:30 P M—Children's Hour.  
 Piano duet, Quo Vire; Bessie Harland and Ruth Jacobs.  
 7 TO 7:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.  
 8 TO 9 P M—Organ recital by Theodore J. Irwin: March, Semper Fidelis; overture, Pique Dame; Valse Lente, Op. 17, No. 2; song melody, Rose of My Heart; Symphony B Minor (slow movement, selected passages); musical comedy selections (from "Irene"); Pastorale Varie; Danse de la Feu; Dragee (from "Nutcracker Suite"); Intermezzo, Land of Sunshine; for trio, Any Old Alley Is Paradise Alley.  
 9:30 TO 10 P M—Danish program, under the management of Albert Petersen:  
 Piano solo, Walther's Prelied (from "Die Meistersinger"); C. Kunczel.  
 Tenor solos, The Great White Host; The Bird Song; Albert Petersen.  
 Piano solo, Liebestraume; Mme. Eula Howard Nunan.  
 Tenor solos, Had You but Known; Uddi; Albert Petersen.  
 Piano duet, Overture, Tannhauser; Mme. E. H. Nunan and C. Kunczel.  
 Tenor solos, Stegund's Love Song (from "Die Walkure"); Your Eyes Have Told Me So; Albert Petersen.  
 Piano solo, The Ride (from "Die Walkure"); C. Kunczel.  
**KGO-General Electric Co., Oakland (312 Meters)**  
 1:30 P M—New York Stock Exchange and United States weather bureau reports.  
 3 P M—Studio musical program.  
 4 TO 5:30 P M—Henry Halstead and his dance orchestra, playing in the garden room of the Hotel St. Francis, San Francisco.  
 6:45 P M—Final reading, stock exchange and weather reports, and news items.  
 8 P M—Educational program, with musical numbers. Courses in agriculture, Spanish, music, economics and literature.  
**KLX-Oakland Tribune (509 Meters)**  
 7 TO 7:30 P M (except Sunday)—News items; United States weather bureau report for California; market and financial news.  
 8 TO 10 P M—Program consisting of talks by members of the faculty, University of California, and music, broadcast from Stephens Union Hall, on the campus, over private leased wires through KLX. At about 8:50 o'clock the controls will be shifted to the American Theater for the overture by the American Theater Orchestra.

### DISTANCE STATIONS

**KFI-E. C. Anthony, Inc., Los Angeles (469 Meters)**  
 9 TO 10 P M—Program from Examiner studio.  
 10 TO 11 P M—Ambassador Hotel-Cocoanut Grove Orchestra.  
**KFOA-Rhodes Co., Seattle (455 Meters)**  
 8:30 P M—The Seattle Chamber of Commerce will present their regular monthly program of musical numbers and educational talks under the direction of Mrs. G. O. Guy.

## Tuesday

**KPO-Hale Bros., San Francisco (423 Meters)**  
 12 M—Time signals.  
 1 TO 2 P M—Rudy Seiger's Fairmont Hotel Orchestra.  
 2:30 TO 3:30 P M—Organ recital by Theodore J. Irwin:  
 Fox trot, Tonight's the Night; Arietta; Serenata, Hasta Manana; operatic selection, Madame Butterfly; Morning (from "Peer Gynt" suite); light opera selection, Yeoman of the Guard; song melody, The End of a Perfect Day; Andantino; fox trot, My Fair Lady.  
 4:30 TO 5:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.  
 5:30 TO 6:30 P M—Children's Hour.  
 7 TO 7:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.  
 8 TO 10 P M—Piano solos, Regard; Lento; Irving Krick.  
 Soprano solos, Les Filles de Cadix; Vissi d'Art (from "La Tosca"); Mrs. Prosper Reiter; Maude G. McPhaul, accompanist.  
 Cornet solos, Berceuse (from "Joce-lyn"); Birds in the Night; Samuel E. Hasselroth; Orrie Young, accompanist.  
 Recitations, selected; William Hill. Piano solos, Valse Caprice; Rigoletto; Irving Krick.  
 Soprano solos, The Robin Song; Waltz Song; Mrs. Prosper Reiter; Maude G. McPhaul, accompanist.  
 Cornet solos, Dream of Paradise; Hark, Hark, the Lark; Samuel E. Hasselroth; Orrie Young, accompanist.  
 Recitations, selected; William Hill.  
**KGO-General Electric Co., Oakland (312 Meters)**  
 1:30 P M—New York Stock Exchange and United States weather bureau reports.  
 4 TO 5:30 P M—Concert Orchestra of the Hotel St. Francis, San Francisco, Vinton La Ferrara conducting.  
 6:45 P M—Final reading, stock exchange and weather reports, and news items.  
 8 TO 10 P M—Program given by Oakland Lodge of Elks, No. 171.  
 Instrumental selection, march, Land of the Troops; Big Brotherhood Boys' Band, Oakland Lodge of Elks.  
 Mezzo-soprano solos (a), A Dream; (b), Sandman's Lullaby; Mrs. Clinton G. Dodge.  
 Accordion trios (a), Pietro's Return; (b) Don't Mind the Rain; Joseph L. Bobba, Lucy Bobba Estee, Alfred S. Capelli.  
 Address, "The Boy and the Man," Fred J. Johnson, chairman local committee on Big Brotherhood.  
 Vocal selections (a), Medley From the South; (b), Mammy's Goodnight Lullaby; Elks' Male Quartet.  
 Cornet solos, selected; Lyle Bardo of the boys' band (age 12 years).

Tenor solo, Songs of Araby; R. A. Brown.  
 Burlesque, "Deeply Scientific Dissertation on the Subject of Music"; Max Horwinski, past exalted ruler, Elks.  
 Soprano solos, selected; Mrs. Eugene Blanchard.  
 Baritone solos (a), Inletus; (b), Song of Waiting; Fred N. Anderson.  
 Accordion trios (a), One of These Days; (b), Medley of popular melodies; Bobba, Estee and Capelli.  
 Mezzo-soprano solos, selected; Mrs. Clinton G. Dodge.  
 Address, "America's Menace," Clinton G. Dodge.  
 Vocal selections (a), Aloha Land; (b), Coppa Moon; Elks' Male Quartet.  
 Soprano solos, selected; Mrs. Eugene Blanchard.  
 Instrumental selections (a), The Boy and the Birds; (b), Waltz, Era; Big Brotherhood Boys' Band.  
 10 P M TO 1 A M—Henry Halstead and his dance orchestra playing in the Garden Room of the Hotel St. Francis, San Francisco.

**KLX-Oakland Tribune (509 Meters)**  
 7 TO 7:30 P M—Financial news.  
 7:30 TO 8 P M—Sunset program under the direction of Aunt Elsie of the Tribune staff. This will be the third of a series of adventures between pirates and witches, presented in the form of a play for children, Etta Wilson Coleman playing the part of Witch Giggie Wiggle and Fred W. Blanchard the part of theirate Pirate.

### DISTANCE STATIONS

**KFI-E. C. Anthony, Inc., Los Angeles (469 Meters)**  
 8 TO 9 P M—Ambassador Hotel-Cocoanut Grove Orchestra.  
 9 TO 10 P M—Program from Examiner studio.  
 10 TO 11 P M—Popular ballad program.  
**KHJ-Los Angeles Times (395 Meters)**  
 8 TO 10 P M—Program arranged through the courtesy of J. Howard Johnson.  
 10 TO 11 P M—Art Hickman's Dance Orchestra, Biltmore Hotel; Earl Burnett, director.  
**KGW-Oregonian, Portland (492 Meters)**  
 8:00 P M—Concert.

## Wednesday

**KPO-Hale Bros., San Francisco (423 Meters)**  
 12 M—Time signals.  
 1 TO 2 P M—Rudy Seiger's Fairmont Hotel Orchestra.  
 2:30 TO 3:30 P M—Program by Garry Fisher's Amphians of the Cabrera Cafe.  
 4:30 TO 5:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.  
 5:30 TO 6:30 P M—Children's Hour.  
 7 TO 7:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.  
 8:20 P M—French conversational course directed by Edna K. Barker. Instruction by Marie Louise Boutin, director College Francise, San Francisco. Lesson 1, Chart 1.  
 8 TO 10 P M—Piano solos, David Zimet.  
 Tenor solos, Friend o' Mine; Smith Through; C. S. Douglas; Elizabeth Dempster, accompanist.  
 Soprano solos, Song of Songs; Song of Love (from "Blossom Time"); Florence Cleveland; Alva Parker, accompanist.  
 Baritone solos, When the Shadows Fall; Rock-a-Bye My Baby Blues; Walter Dupre; David Zimet, accompanist.  
 Piano solos; David Zimet.  
 Tenor solos, Sunrise and You; When Irish Eyes Are Smiling; C. S. Douglas; Elizabeth Dempster, accompanist.  
 Soprano solos, Love Sends a Little Gift of Roses; A Kiss in the Dark; Florence Cleveland; Alva Parker, accompanist.  
 Baritone solos, Patsy; My Dear; I Don't Know Why; Walter Dupre; David Zimet, accompanist.  
 Piano solos, David Zimet.  
 Tenor solo, Requiem; C. S. Douglas; Elizabeth Dempster, accompanist.  
 Baritone solos, Good-Bye, Old Pal, Good-Bye; Oriental Love Dreams; Walter Dupre; David Zimet, accompanist.  
 Program by the MacDowell Sisters: Old Plantation; On the Beach at Waikiki; Drowsy Waters; Hawaiian Twilight; Baby Sister Blues; Mauna Kea; Marcheta; My Honolulu Girl; Mai Poina Oe Au; Whispering Hope; Aloha Oe.  
**KGO-General Electric Co., Oakland (312 Meters)**  
 1:30 P M—New York Stock Exchange and United States weather bureau reports.  
 3 P M—Studio musical program.  
 Speaker furnished through the courtesy of the Cora L. Williams Institute, Berkeley.  
 4 TO 5:30 P M—Concert Orchestra of the Hotel St. Francis, San Francisco, Vinton La Ferrara conducting.  
 6:45 P M—Final reading, stock exchange and weather reports, and news items.  
**KLX-Oakland Tribune (509 Meters)**  
 7 TO 7:30 P M—Baseball scores.  
 7:30 TO 8 P M—Financial news.  
 8 TO 10:30 P M—Studio program presented by the National Carbon Co., including the presentation of the three-part opera, "Rigoletto," and selections by Wendell Hall, Eveready entertainer.  
 National Carbon Co. night at KLX: The opera "Rigoletto," presented under the direction of Gregorio Arde-ta.  
 Following the opera Wendell Hall, Eveready entertainer, will sing a number of his popular songs.  
 Concluding the program, J. A. Ramsey of the National Carbon Co. will talk on the subject, "The Radio Audience."

### DISTANCE STATIONS

**KFI-E. C. Anthony, Inc., Los Angeles (469 Meters)**  
 8 TO 9 P M—Evening Herald, Frank Carr's Orchestra.  
 9 TO 10 P M—Program from Examiner studio.  
 10 TO 11 P M—Hollywood Community Orchestra.  
 11 TO 12 P M—Ambassador Hotel-Cocoanut Grove Orchestra.  
**KHJ-Los Angeles Times (395 Meters)**  
 8 TO 10 P M—Program presented through the courtesy of the Platt Music Co., arranged by Edwin Lester of the Platt Music Co.  
 9:30 TO 10 P M—Program presenting Dr. Mars Baumgart, lecturer, The Filipino String Orchestra playing through the courtesy of the Blue Bird Cafeteria.  
 10 TO 11 P M—Art Hickman's Dance Orchestra, Biltmore Hotel; Earl Burnett, director.  
**KGW-Oregonian, Portland (492 Meters)**  
 8:00 P M—Concert.  
 10:00 P M—Dance music by George Olsen's Metropolitan Orchestra of Hotel Portland.  
**KFOA-Rhodes Co., Seattle (455 Meters)**  
 8:30 P M—A varied program of vocal and instrumental music and readings has been arranged by Anna Mrowinski Child, dramatic soprano.

**Radio, \$5.95**  
 Wonderful, guaranteed receiving set! Complete, including phone, lead-in, aerial, etc. Nothing more to buy. No tubes or batteries needed. Simple and easy to operate. Brings in local and distant broadcast entertainments clear and loud within a 50-mile radius. Orders filled at sales office.  
**R. & O. MANUFACTURING CO.**  
 Room 661 Pacific Bldg., San Francisco

## KLS

**Warner Bros., Oakland—(360 Meters)**  
 11:30 to 1:00 P M—Phonograph selections (daily except Sunday).

### Sunday

**13 M to 1:00 P M—Radio Church of America, Rev. George Chambers; music in charge of Charles Dickens.**

## KUO

**San Francisco Examiner—(360 Meters)**  
 Daily Except Saturday and Sunday

9:05 A M—Weather forecast.

11:00 to 11:30 A M—Market reports.

3:30 P M—Financial bulletin.

6:00 to 6:20 P M—Financial and garden hint broadcast.

6:40 P M—Weather forecast.

**Saturday Only**  
 9:05 A M—Weather forecast.

6:00 to 6:20 P M—Financial and garden hint broadcast.

6:40 P M—Weather forecast.

**Sunday Only**  
 9:05 A M—Weather forecast.

6:45 P M—Weather forecast.

**Additional Friday**  
 5:45 to 6:00 P M—Health bulletin.

**KHJ-Los Angeles Times (395 Meters)**  
 8 TO 9:30 P M—Program presented through the courtesy of the Platt Music Co., arranged by Edwin Lester of the Platt Music Co.

9:30 TO 10 P M—Program presenting Dr. Mars Baumgart, lecturer, The Filipino String Orchestra playing through the courtesy of the Blue Bird Cafeteria.

10 TO 11 P M—Art Hickman's Dance Orchestra, Biltmore Hotel; Earl Burnett, director.

**KGW-Oregonian, Portland (492 Meters)**  
 8:00 P M—Concert.

10:00 P M—Dance music by George Olsen's Metropolitan Orchestra of Hotel Portland.

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 8:30 P M—A varied program of vocal and instrumental music and readings has been arranged by Anna Mrowinski Child, dramatic soprano.

## Thursday

**KPO-Hale Bros., San Francisco (423 Meters)**  
 12 M—Time signals. Reading of Scriptures by Kate Foley, blind reader and teacher of blind in department of California state library, using two systems: First, the Moon, commonly used by elderly blind people; second, the Braille, used by younger generation of the blind.

1 TO 2 P M—Rudy Seiger's Fairmont Hotel Orchestra.

2:30 TO 3:30 P M—Program under management of Alice McClelland: Piano solos, Etude; Kamenol Dstrow; Alice McClelland.

Recitations: Hello; Rosa Beppi; Alfreda Fleischman.

Vocal solos, The End of a Perfect Day; Little Gray Home in the West; Mabel Turner Payne; Alice McClelland, accompanist.

Piano solos, Etude; Kamenol Osthethique Sonate; Alice McClelland.

Recitations, Tit for Tat; Invy; Alfreda Fleischman.

Piano solos, selected; Alice McClelland.

4:30 TO 5:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.

**KHJ-Los Angeles Times (395 Meters)**  
 8 TO 10 P M—Program presented through the courtesy of the Platt Music Co., arranged by Edwin Lester of the Platt Music Co.

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 8:30 P M—A varied program of vocal and instrumental music and readings has been arranged by Anna Mrowinski Child, dramatic soprano.

**Free While They Last—An A-1 Long distance crystal hook-up to anyone calling at our store.**

**A-1 The Wonder Crystal!**

Our price 50c. We are selling 100 A-1 crystals a day. Have you bought yours?

On Demonstration at Our Store.

Crosley Model 51 is a two-tube regenerative receiver, the biggest selling radio receiver in the world, with loud speaker volume on both local and distant stations. Our price... **\$18.50**

Brandes Table Talker, regular \$10.50; our price... **\$6.60**

Brandes Superior Headset, our price... **\$3.90**

Brandes Navy Type Headset, our price... **\$5.85**

Scientific Headset, our price... **\$2.75**

Eveready "B" Batteries, No. 767, 45 volts; our price... **\$2.85**

**Manhattan Loud Speaker \$10.00**

Shamrock Variocouplers and Variometers, regular \$3.50; our price... **\$2.95**

Lemco Crystal Set, formerly \$7.50. Our Price... **\$4.85**

**L. S. COHEN'S SONS**  
 1015 Market St.  
 Mail Orders Promptly Filled.

5:30 TO 6:30 P M—Children's Hour.  
 7 TO 7:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.

8 TO 9 P M—Organ recital by Theodore J. Irwin:  
 All Russian night: March Slav; Chanson Triste; phantom waltz, But Lady in Dance I Embrace Her; Prelude, C Sharp Minor; Hymn to the Sun (from "Coq d'Or"); symphonic poem ("Romeo and Juliet," selected passages); Dance Oriental; Au Convent; Melodie, Op. 3, No. 3; Lamentation; Finale to Act ("Prince Igor").

9 TO 10 P M—Piano solo, March of the Dwarfs; Norma Detano.  
 Soprano solos, A Little Bit of Heaven; Macushia; Isabella Wheeler; Norma Detano, accompanist.

Baritone solos, selected; Paul Alexander Frey; Theodore J. Irwin, accompanist.  
 Piano solo, La Regatta Veneziana; Norma Detano.

Soprano solos, Killarney; The Cruisken Lawn; Isabella Wheeler; Norma Detano, accompanist.  
 Tenor solos, selected; Wendell Hall, comedian.

**KGO-General Electric Co., Oakland (312 Meters)**  
 1:30 P M—New York Stock Exchange and United States weather bureau reports.

4 TO 5:30 P M—Concert orchestra of the Hotel St. Francis, San Francisco, Vinton La Ferrara conducting.

6:45 P M—Final reading, stock exchange and weather reports, and news items.

8 TO 10 P M—**"HOMING"**  
 A comedy-drama of the heart, in three acts, by Dan Totheroh. Presented by the KGO Players, under the direction of Wilda Wilson Church.

**KLX-Oakland Tribune (509 Meters)**  
 7 TO 7:30 P M—Baseball scores.  
 7:30 TO 8 P M—Financial news.

**DISTANCE STATIONS**  
**KFI-E. C. Anthony, Inc., Los Angeles (469 Meters)**  
 8 TO 9 P M—Ambassador Hotel-Cocoanut Grove Orchestra.

9 TO 10 P M—Program from Examiner studio.

10 TO 11 P M—Mrs. Guy Bush arranging concert.

**KHJ-Los Angeles Times (395 Meters)**  
 8 TO 10 P M—Program presented

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**Friday**  
**KPO-Hale Bros., San Francisco (423 Meters)**  
 12 M—Time signals.  
 12:45 P M—Talk broadcast from Commonwealth Club luncheon at Palace Hotel.

1 TO 2 P M—Rudy Seiger's Fairmont Hotel Orchestra.

2:30 TO 3:30 P M—Organ recital by Theodore J. Irwin:  
 4:30 TO 5:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.

**KGO-General Electric Co., Oakland (312 Meters)**  
 1:30 P M—New York Stock Exchange and United States weather bureau reports.

3 P M—Studio musical program.

4 TO 5:30 P M—Concert Orchestra of the Hotel St. Francis, San Francisco, Vinton La Ferrara conducting.

6:45 P M—Final reading, stock exchange and weather reports, and news items.

**KLX-Oakland Tribune (509 Meters)**  
 7 TO 7:30 P M—Baseball scores.  
 7:30 TO 8 P M—Financial news.

8 TO 10:20 P M—Studio program. (Concluded on Page Three)

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W. D. 11 Tubes—Regular \$4.00  
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 Will improve the appearance of your set.

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 Contains a stand-straight float for accurate testing of your storage battery.

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**FADA 5-TUBE KNOCK-DOWN NEUTRODYNE**—Complete set of parts in original packages, including drilled and engraved panel, blue prints, etc., ready to wire; regular price \$65.60. Special \$39.50

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 Boston, Mass.

**OPEN EVENINGS**



## WOMAN OWNS RADIO SCHOOL, BUILDS SETS

NEA Service  
WASHINGTON, D. C., Aug. 25.—Mary Texanna Loomis came to Washington back in 1917 to obtain work that would help out in the war. She remained to establish a radio college.

She became interested in radio through a chance lecture she heard. In 1920 she founded her radio school, putting up every cent she possessed. Her college is known throughout the country now as a radio institution of the highest standard.

Miss Loomis' college offers four courses. The first is for commercial radio operators and qualifies young men to obtain a first-class commercial radio operator's license. The second is a special course for those who want to understand, and perhaps build, the ordinary receiving sets.

Another course prepares for the amateur radio operator's license. The fourth is for commercial radio operators whose tickets have expired, and former army and navy operators who need only a few weeks' training.

Last year every one of her graduates in the first course obtained a first-class license and was placed in a good position.

Miss Loomis constructs much of her own apparatus and gives many of the lectures in person. Miss Loomis' college is founded in honor of Dr. Mahlon Loomis, a kinsman of hers who, in 1865, is said to have sent the first wireless telegraph message.

### Your Own Aerial

A novel suggestion to avoid static, and replace an indoor loop aerial: Be your own aerial! This, one fan suggests, may be accomplished by standing on a couple of tumblers, and touching the antenna post with a wet forefinger and thumb.

### It's a "Vox Haus"

Instead of merely referring to it as a broadcasting station, owners of Germany's newest station in Berlin call it the "Vox Haus." This is a combination of Latin and German, and means "The Voice House."

Hotel Majestic, New York, now is on the air with its own broadcasting station, WFBH.

## RADIO PROF.



Mary Texanna Loomis, shown here, is the first woman in the United States and perhaps the world, to conduct a radio college. Her institution is at Washington, D. C.

## RADIO WILL AID IN SURVEY OF WATERWAYS

WASHINGTON, Aug. 25.—Army, navy and other government departments interested in radio are planning the participation of this form of communication in a proposed hydrographic survey of the waters of the world.

Not only is radio to help facilitate this survey, but in return it may gain considerable assistance toward solution of some perplexing radio problem. The survey is expected to begin within a year, and to last several years.

The main purpose of the expedition is to find means to prevent marine disasters and bring about better transportation and communication at sea. The ship personnel and itinerary have not yet been decided upon, although its job is clearly mapped out.

The ship will be equipped with the most modern radio transmitting and receiving apparatus, besides all sorts of sound instruments and other varieties needed for hydrographic work.

Two investigations will also be made in the field of radio. They will cover the mysteries of static and "dead spots." Dead

## ANSWERS

Questions addressed to this department will be answered by L. E. Day of the Day Radio Laboratory, 693 Mission-st. No hookups will be printed.

Joseph S. Marshall, 3700 Laguna-av, Oakland, asks:

(1) Can I use WD-12 or UV-199 tubes in a 5-tube neutrodyne set? (2) Will I get as good results as with "A" tubes? (3) Is there a 3-tube Harkness called the Neutroflex set? If not how can I add a stage of radio frequency to my Harkness set? (4) I hear Los Angeles stations on the headphones, but not loud enough for loud speaker reception with Harkness reflex using "A" tubes. Should I expect better reception with his circuit?

(1) WD-12 tubes would not be very satisfactory in a neutrodyne, but with some changes in the circuit and reneutrolizing you could obtain good results with UV-199 tubes. (2) "A" tubes will give most satisfactory results. (3) Yes, there is such a set. An additional stage of audio frequency would be better than a stage of radio frequency. We are unable to print any diagrams in this column. (4) You are obtaining very good reception for this time of year on your set. You will no doubt be able to hear Los Angeles on the loud speaker during the winter months.

Julius Krohm, 3167 Mission-st, asks:

(1) Is the enclosed hookup about as good as possible or would any other place for the variable condenser be better? (2) Have only room for 50 feet of aerial and at present have three strands. Would four strands give me any better results? (3) Could I add any equipment to improve volume or selectivity?

(1) This hookup is about as efficient as could be without any changes. (2) If your aerial is 50 feet long and consists of three strands, the over-all or total length is 150 feet, plus one-half of the length of the lead-in. The addition of more wire would improve the volume and at the same time decrease the selectivity, rendering it almost impossible to tune into local stations, as it raises the wave length of your set considerably. The addition of a two-tube amplifier would make practical the use of a loud speaker. (3) Will say in regards to selectivity, if at present you have trouble in interference, cut off 25 or more feet from your aerial.

### Belgian Dead Spot

The Brussels station in Belgium reports a dead spot in the area southeast of the antenna. The cause of it is being sought.

## LETS SWAP

TO SWAP—One new "Brande" loudspeaker and a radio frequency transformer for a good pair of headphones.—Michael Bruno, 645 Bay-st.

TO SWAP—One bakelite panel, 10x14, two double contact sockets, two double circuit jacks, two plugs, one Skinkerdiven button, one 80 ohm receiver, three rheostats, 11 plates for variable condenser, one dial, one knob, for any kind of a loudspeaker, or for sale or what have you? Phone, write or call H. Tobias, 1478 15th-st, Market 4178, between 5:45 and 6:45 any week day.

TO SWAP—Three-tube radio set, console model; will trade for any kind of Ford. West 4930.

TO SWAP—Vibrating reed charger, for one of silent type. Also large loose coupler and (or) bakelite panel for any of these: tube, soldering iron, transformer, socket, rheostat, 2512 McGee, Berkeley, or phone Berkeley 17W, after 7 p m.

TO SWAP—Variocoupler, Bradley leak and 43-plate condenser for two variometers and 1250-turn dual-lateral coil. 3761 Army-st, John Millias.

TO SWAP—WD-12 tube, slightly used, for one UV-199 radio tube. C. Herm, P. O. Box 443, Redwood City.

new, two almost new, with Kellogg sockets, for three UV-199-5 or C-299-5 with sockets. 1366 26th-av. Irvin Manning.

TO SWAP—New 3-tube set, in cabinet, with batteries and tubes, for parts of Eria reflex set, or what have you? F. Miller, 4341 23rd-st.

TO SWAP—One new Atlas Loudspeaker, two new UV199 tubes, two Eria transformers audio ration 6 to 1 and 3 1/2 to 1, also two 75-turn honeycomb coils. Will swap any of the above parts, or sell same cheap. O. H. Schwartz, 210 Lovell-av, Mill Valley, Cal.

### Gain and Loss

While an increase was shown in the number of class A and class B stations in this country on July 1, the number of class C and class D stations has fallen off considerably. There are now 377 class A, 54 class B, 101 class C and 2 class D stations.

World's largest loud speaker, 14 feet wide at the mouth, was claimed at the recent fair at Leipzig, Germany.

## RADIO FROM THE GROUND UP

As already pointed out, the loop antenna, because of its smaller area, requires a more sensitive receiver than the outside antenna. Several stages of radio frequency must be employed to build up the weak impulses to a point where they are sufficiently great to be detected and amplified by the audio frequency method later on. As a rule, no more than three nor less than two stages of radio frequency are in use.

The circuit given shows the standard straight method for loop reception, in which untuned radio frequency transformers are utilized and all of the tuning is done by the variable condenser shunted across the terminals of the loop. The grid returns, or "T" leads, from the secondary windings of the radio frequency transformers and the grid return from the loop are all three brought to the movable arm of a potentiometer, whereby a sufficient negative bias is placed on the grids to get the tubes near enough to the point of regeneration for good amplification.

### Differing Sensitivities

With well designed radio frequency transformers it is often possible to connect the grid return leads of all the radio frequency tubes, except the first, directly on the negative side of the filament. Then the sensitivity of the first radio frequency tube only is varied by the potentiometer. This is the ideal condition, but it is usually necessary to connect one or both of the other grid returns to the potentiometer also. As a matter of fact the very best practice would be to use three potentiometers for such a three-stage amplifier and to connect each separate grid return lead to a different movable arm. In that way each stage could be worked near its oscillation point and the utmost sensitivity attained.

The grid return from the transformer connected to the de-

tector is, of course, not connected to the potentiometer or to the negative side, but is brought to the positive side in accordance with the usual practice for a detector tube. Such a circuit in use with a loop from three to four feet square will give as much "DX" as it would with an outside antenna and as much as other circuits, using less radio frequency, which cannot be used at all with a loop.

### Adjustment Critical

The adjustment of the loop-tuning condenser will be found very critical when distant stations are being received; this condenser and the potentiometer form the only two active tuning controls. Two stages of audio frequency are shown for use with a loud speaker, but neither of these stages is necessary for head phones, and the audio amplifier rheostat may then be turned off. The UV-201A or the C-301A is the recommended tube for the circuit, although quite good results may be had with

UV-199 or C-299 tubes, provided the audio portion is equipped with one peculiarity about three volts.

There is one peculiarity about the loop antenna which is deserving of further explanation. Normally its directional effect is always present, as previously described. But in certain locations, and in certain buildings especially, it may be found that no signals whatsoever are received unless the loop is pointing in a certain direction. It may be found that the loop receives signals best from a certain station only when it is at right angles to the station's direction. This is an indication that large masses of iron or steel, or perhaps abrupt hills, are deflecting the waves and changing their direction of movement.

### Wave Absorption

In many steel buildings the loop must be placed near a window to receive properly. The

electromagnetic waves set up currents flowing in the steel walls of the building, but as far as a radio set inside is concerned, it is effectively shielded. The wave may "bulge" in at the windows and permit good reception when the loop is on or near the window sill and pointing straight out. On the other hand, a wooden building does not shield the loop at all, and radio waves may pass through brick, wood and stone unimpeded. This is due to the fact that these materials are not metallic and hence no currents to ground can be set up in them.

The loop is often the only possible form of antenna and is of greatest benefit in situations where an antenna cannot be erected. Since it reduces interference from static and other stations because of its directional properties, clear reception is often obtained with a loop antenna where but mediocre or poor results could be had with the usual outside wire.

## CANDIDATES STUMPING U. S. BY RADIO NOW

Folks are going to know presidential candidates this year as never before. By their voices, over the radio, candidates will be judged.

Radio is developing into the great unknown of the 1924 campaign. Ten million receiving sets are doing service already, the federal radio inspector estimates, each set capable of accommodating several people.

When John W. Davis made his acceptance speech at Clarksburg, W. Va., he was heard by perhaps 10,000 drenched fellow citizens and by possibly 10,000,000 who sat comfortably in their homes, from the Atlantic to the Rockies. A telephone circuit connected his microphone with broadcasting stations in a dozen strategic cities.

In this campaign the candidate with the "radio voice," as radio people call it, has the advantage.

### Davis Clear Speaker

Over the radio, Candidate Davis has the advantage over his rivals in the presidential race. Davis is a distinct talker. His voice is deep, resonant and clear. It is a voice that folks like. It is a friendly, hearty voice. It carries with it a magnetism that may mean many votes to the Democrats before the campaign is over.

Seriously at a disadvantage is Pres. Coolidge. The President's voice is flat and indistinct. It doesn't make you want to know the man who works it. It sounds too much like a tired tin pan. The President seems to sense this. He dislikes the radio heartily. A number of his speeches have been broadcast. He has had much more experience at broadcasting than his rivals, either Davis or La Follette.

In the Senate, Robert M. La Follette is one of the most effective of speakers. He is forceful and dramatic. He is perhaps the greatest actor in the Senate. This turns out to be his handicap when he is speaking over the radio. He must unlearn his technique of public speaking and learn to read his addresses straight into the microphone, if radio fans are to enjoy his speeches. Also, he must cease to extend his voice, which has been one of his most effective methods of driving home his points before a personal-contact audience. The radio balks at high-pitched voices.

### Tricks Are Banned

Never before in any campaign has a brand new element, such as the radio, been developed between one presidential campaign and another. Radio broadcasting was practically unknown when Warren G. Harding ran against James M. Cox, four years ago. It has suddenly given candidates an open sesame into the homes of millions of voters, many of whom never voted before, many of whom never listened to "the other side's" candidate before, and most of whom would not take the trouble to read a political speech through. Over the radio they will listen to it, if the candidate has a good voice and a message.

Radio may mean that the tried tricks-of campaign strategy are out of the bag henceforth. It may mean a vote double that of any preceding campaign. It may mean that millions of voters will come to feel that they know all three candidates so well that their personal feelings will dictate their vote. It undoubtedly means that the man is much more important than the platform, in a campaign.

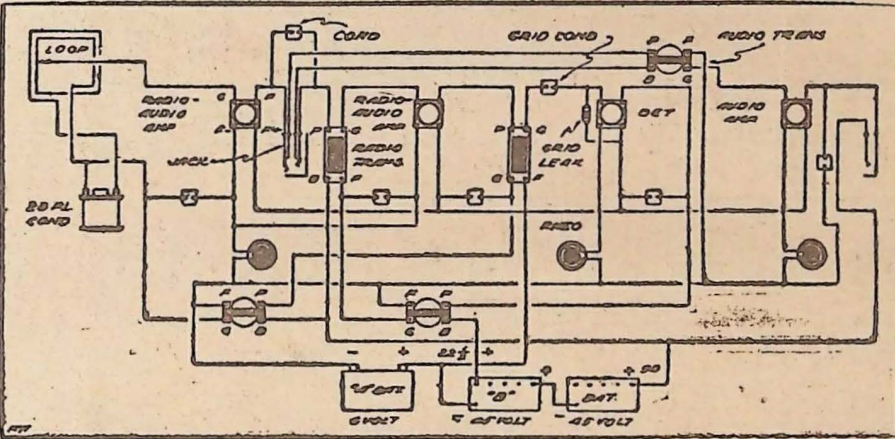
The candidate is more this year than the standard bearer. He is the man the folks know—by radio.

### Over Highest Top

The peak of the highest mountain range in the world, the Himalayas, is apparently crossed with ease when the new French radio station in Indo-China communicates directly with the station at Bordeaux.

### Variable Condenser

Variable condensers must be kept perfectly clean for good reception. Dust may cause leakage from rotor to stator plates. They may be cleaned with an ordinary pipe cleaner.





# RADIO SHOW RECORD BREAKER

## Industry Benefits From Exposition

One of the greatest trade expositions ever held!

That is the way radio fans, dealers and manufacturers are describing the second annual Pacific radio exposition which closed after five record days at Exposition auditorium Thursday night.

In the mammoth throngs which packed the big structure to examine the exhibits, in the volume of sales recorded as a result of direct and forceful appeal made to fans by the interesting, instructive and elaborate exhibits, in the great interest aroused by the afternoon and evening programs broadcast from the big studio on the auditorium stage, and in benefit to the industry as a whole, the show undoubtedly shattered all records in the west and perhaps in the entire country.

### 65,000 Attend

The bare figures on the total attendance—65,000 including dealers, exhibitors and show officials, and 50,000 in paid admissions, tell but lamely the success of the project.

Leading men of the radio industry, attracted to San Francisco for the exposition, today voiced almost unanimously their amazement at the enthusiasm with which the show was greeted, and their compliments to officials and workers here who made the display possible and carried out the almost stupendous task of staging it so elaborately.

The approbation of the local radio world is voiced in a more tangible way. Plans for the 1925 exposition already have been completed and announced by Herbert E. Metcalf, president of the Pacific Radio Trade Ass'n. They indicate that the show next year will be even larger than the 1924 display, with more dealers, jobbers and manufacturers enrolled and better features included as a magnet for the fans.

### 100 Exhibitors Sign

The 1925 exposition will be held from Aug. 22 to 27 inclusive. Should the interest demand it, those dates may be extended.

The entire auditorium, including the corridors, small halls, and basement will be utilized next year under present plans, instead of only the theater portion as occupied this year, according to present plans.

More than 100 of the exhibitors who displayed their wares this year already have signed up for the 1925 exposition, Metcalf announced. Most of them will take more space than for the last show. A total of 135 exhibitors were in the 1924 show.

One of the things on which the show officials pride themselves the most in a survey of the 1924 exposition, is the fact

that all expenses of staging the big exhibit were paid from the proceeds derived from the sale of space.

### New Plan Success

The cooperative non-profit plan was tried out for the first time by the management, not without considerable trepidation. The results were far beyond their expectations. The gate receipts, rising beyond the total estimated by even the most conservative, are to be divided equally, on a 50-50 basis between the exhibitors and the committee to finance next year's show.

Fans throughout the west and wherever the broadcasting over KPO, the exposition's official station, was heard, have joined novel and highly entertaining features in commendation of the many tunes on the radio program sent from the auditorium during the show. Some of the leading artists of California appeared on the broadcast bill during the exposition. Addresses by leading radio, civic and state officials added immeasurably to the interest aroused in the show, and lent to it a high standard seldom equalled in trade expositions here or anywhere.

## Esperanto Is Adopted By A. R. R. L. 'Hams'

After a two years' survey of the international language situation, the American Radio Relay league, with certain qualifications, has decided in favor of Esperanto as its official international auxiliary language, this action having been taken by the A. R. R. L. board of directors at their annual meeting recently.

This decision was made on the ground that Esperanto is easily the chief of the auxiliary languages and has by far the greatest number of followers, with hundreds of thousands of users.

Interest in an international language developed rapidly among members of the A. R. R. L. following the successful communication in radio telegraph code between transmitting amateurs in the United States and Canada and those in many foreign countries.

Eight German cities have broadcasting stations.

## RADIO FOR THE BOUDOIR



While you're combing your hair, or primping up, listen-in on a broadcasting station through this form of loud speaker. Miss Betty Pearce of Forest Hills, L. I., is shown with it. It's an accordion-pleated paper cone, instead of the horn type. It was invented by a French engineer.

## Dead Spot Cause?

One of the probable causes for dead spots, where radio reception is poor, may be existence of large deposits of magnetic iron ore underground. This explanation is offered by some scientists and others, who add that the iron deposits may affect the radio waves in some way or other.

## Pills as Detectors

Instead of a crystal detector—a pill! This is the new form used in Europe in some places. The galena crystal is crushed and formed into pills which, says the inventor, have more sensitive points than the original crystal.

## WLAG Signs Off

Station WLAG of Minneapolis has signed off for the last time. The famous "call of the north," which came from this station, is no more. Mrs. Eleanor Poehler, one of the few women radio directors in the country, was its manager.

A five kilowatt transmitter has been ordered for Station WSAI, Cincinnati.

## London's Big Ben Way Off Time As Calcutta Hears It

Despite the fact that India is separated from England by many leagues of water and land, radio experts are of the opinion that it may be possible in the near future to receive regularly in India programs broadcast from Europe.

If this proves successful, it is practically certain that telephonic speech between India and Europe and other countries equally distant, is within the realm of achievement.

Recently when "Big Ben," the great clock in Westminster tower, was broadcast from the London station, it was clearly heard in the vicinity of Calcutta, striking 7. The time in Calcutta was about 12:30 a. m.

The present Calcutta transmission station is a Marconi type U11-2 k. w. set, and portions of the Calcutta program have actually been picked in Madras and Burma.

## RADIO WORLD PAYS TRIBUTE TO S. F. SHOW

Here are the opinions of leading out-of-town radio men on the Exposition:

F. A. D. ANDREA, president F. A. D. Andrea, Inc., New York: "The Pacific Radio Exposition, to my mind, completes a triumvirate of the three pre-eminent successful radio expositions so far held in the United States. There three are the Second Executive Radio Council's show in New York in 1922, the Chicago Radio Exposition in 1923, and the Pacific Radio Exposition in San Francisco.

C. C. COLBY, president Samson Electric Mfg. Co., Boston, Mass.: "The outstanding feature of the Pacific Radio Exposition, to my mind, was the spirit of co-operation one saw on every hand—a spirit almost totally lacking in the East. San Francisco put on a show to be proud of, the best I have ever attended or participated in. Everyone in the city co-operated in putting over the show, the newspapers and broadcasting stations being largely instrumental in spreading the doctrine of radio and making the Exposition the success that it was. I traveled across the continent to be present, and would gladly make the same trip again."

SIDNEY L. GOODWIN, president, Radio Headquarters Laboratories, Portland, Ore.: "The success of the Pacific Radio Exposition exceeded all my expectations. The spirit of co-operation was splendid and made the show possible. The newspapers of the city and state, as well as other institutions, contributed in large share to the show, the outstanding feature of the 1924 season in the United States."

LOMBARD J. SMITH, Los Angeles, representative of eastern manufacturers: "San Francisco put on a wonderful show in the Pacific Radio Exposition. Conduct of the show was remarkably clean, arrangement artistic and beautiful, and every exhibitor seemed satisfied in the fullest degree. Attendance was wonderful and the people were all radio enthusiasts. All of them seemed to know something of radio and exhibitors are bound to get great results from their displays."

## There's No "R. E."

If you ever meet a fellow with an "R. E." after his name and he explains the letters stand for "Radio Engineer," ask him who gave him the honor. No American college, at any rate, for no such degree has been offered.

# WEEK'S AIR PROGRAMS, CONTINUED

(Concluded from Page Two)  
The KLX Players, under the direction of Etta Wilson Coleman, will present the one-act drama, "Drums of Oudh," by Austin Strong. This drama is laid in India in the province of Oudh and deals with the Sepoy uprising.

Preceding the play, music of India, rendered by the KLX Trio: Harriet French, violinist; Jozeena Vander Ende, cellist.

"Drums of Oudh" cast: Stewart (the sentry), Dorian Rutter; Sgt. McDougal, Oscar Snyder; Mrs. Clayton, Etta Wilson Coleman; Capt. Hector McGregor, J. Spencer Riley; Lieut. Alan Hartley (brother of Mrs. Clayton), Orville G. Jones.

Following the play, instrumental selections by the KLX Trio; music by the American Theater Orchestra (Owen Sweeten, directing) broadcast from the theater pit over private leased wires; organ recital by Clement Barker, American Theater organist.

### DISTANCE STATIONS

KFI—E. C. Anthony, Inc., Los Angeles (469 Meters)  
8 TO 9 P. M.—Evening Herald, Blue Moon Syncopators.  
9 TO 10 P. M.—Program from Examiner studio.  
10 TO 11 P. M.—Maud Reeves Barnard arranging concert.  
11 TO 12 P. M.—Ambassador Hotel-Cocoanut Grove Orchestra.

KHJ—Los Angeles Times (395 Meters)  
8 TO 10 P. M.—Program presented through the courtesy of the Golden State Electric Co., arranged by Mr. Sedwell.  
10 TO 11 P. M.—Art Hickman's Dance Orchestra, Biltmore Hotel; Earl Burnett, director.  
11 TO 12 P. M.—Oregonian, Portland (423 Meters)  
8:15 P. M.—Studio concert by George Olsen's Metropolitan Orchestra of Hotel Portland; Herman Kenia,

director.

10:30 P. M.—Hoot Owls.  
KFOA—Rhodes Co., Seattle (455 Meters)  
8:30 P. M.—Kenneth Lyman, instructor of piano and popular Seattle soloist, has arranged an interesting program of piano, violin and xylophone solos and several groups of trio numbers. Harold Long, violinist of Kent, Washington, whose numbers pleased thousands during a recent radio concert, will play several selected groups. Ruth Meredith is a remarkably clever xylophone artist, having appeared in concert at the various theaters of the principal cities of the northwest.

### Saturday

KPO—Hale Bros., San Francisco (423 Meters)  
12 M.—Time signals.  
1 TO 2 P. M.—Rudy Selger's Fairmont Hotel Orchestra.  
2:30 TO 3:30 P. M.—Program under the management of Mrs. Charles Ayres.

Ladies' trio, Who Is Sylvia? Mrs. Charles Ayres, first soprano; Frances Gielow, second soprano; Mrs. Helen V. Murphy, mezzo-contralto; Mrs. Lilla F. Tudor, accompanist.  
Contralto solos, Vale; The Star; Helen Vollmar Murphy; Lilla Forderer Tudor, accompanist.  
Soprano solos, You in a Gondola; Dreaming Alone in the Twilight; Frances Gielow; Lilla Forderer Tudor, accompanist.  
Piano solos, Gopak; Serenade of the Doll; Lois MacConaughy.

U. S. Lullaby.  
Soprano solos, Pale Moon; Serenade; Frances Gielow (flute obligato by W. Nankerville Jr.); Lilla Forderer Tudor, accompanist.  
Contralto solos, Requiem; An Irish Love Song; Helen Vollmar Murphy; Lilla Forderer Tudor, accompanist.

Flute solos, Little Rogue (gavotte); Zingareca; William Nankerville Jr.; Frances Gielow, accompanist.

8 TO 12 P. M.—Art Weidner and his popular artists. Solos by Wendell Hall, comedian tenor.

KGO—General Electric Co., Oakland (312 Meters)  
12:30 P. M.—New York Stock Exchange and United States weather bureau reports.

4 TO 5:30 P. M.—Concert Orchestra of the Hotel St. Francis, San Francisco, Vinton La Ferrara conducting.  
8 TO 10 P. M.—Part 1: This part of the program given by the "Seven Laurels Quartet": Mabel Frisbee Adams, soprano; Gertrude Patterson, Contralto; Gilbert Hyde Chick, tenor; George C. Carter, bass; Ethel Palmer, accompanist. Assisted by Oliver Hinman, baritone.

Vocal selections (a), Oh, Ye That Love the Lord, baritone recitation and aria; (b), quartet, Cast Thy Burden (from "Elijah"); "Seven Laurels Quartet."  
Soprano solos (a), Chanson Provencale; (b), The Little Damsel; (c), The Wedding Morn; Mabel Frisbee Adams.

Duets for contralto and tenor (a), Oh, Wert Thou in the Cauld Blast? (b), duet from "Il Trovatore"; Gertrude Patterson and Gilbert H. Chick.  
Baritone solos (a), Danny Boy; (b), All Through the Night; Oliver Hinman.

Vocal selections (a), Thy Beaming Eyes; (b), Swing Low, Sweet Chariot; "Seven Laurels Quartet."  
Tenor solos (a), Songs My Mother Taught Me; (b), M'appari tutt' amor (from "Martha"); Gilbert Hyde Chick.  
Baritone solos (a), Aria, Honor and Arms (from Samson); (b), Passing By (old English); Oliver Hinman.  
Duets for soprano and tenor (a), Still, Still With Thee; (b), Tuscany Folk Songs; Mabel Frisbee Adams, Gilbert Hyde Chick.

Vocal selections, popular old quartets and rounds; "Seven Laurels Quartet."

### PART TWO

Hawaiian selections (a), Palolo Hula; (b), Maui Waltz; Mid-Pacific Quartet.  
A one-act original character sketch, "The Love of Loretta," Lydia Warren Lister.

Hawaiian selections (a), Mele Ana E; (b), Old Plantation; Mid-Pacific Quartet.

Soprano solos, selected, Augusta Hayden.  
Travel talk, "Rangoon, Calcutta, Mount Everest," J. E. Barnes.

Soprano solos, selected, Augusta Hayden.

Hawaiian selections (a), Aloha Blues; (b), Hula Blues; Mid-Pacific Quartet.

10 P. M. TO 1 A. M.—St. Francis Hotel Orchestra.  
KLX—Oakland Tribune (509 Meters)  
3 TO 5 P. M.—Baseball scores.  
7:30 P. M.—Financial news.

### DISTANCE STATIONS

KFI—E. C. Anthony, Inc., Los Angeles (469 Meters)  
8 TO 9 P. M.—Instrumental recital.  
9 TO 10 P. M.—Program from Examiner studio.  
10 TO 11 P. M.—Packard popular program.  
11 TO 12 P. M.—Ambassador Hotel-Cocoanut Grove Orchestra.

KHJ—Los Angeles Times (395 Meters)  
8 TO 10 P. M.—Program presented through the courtesy of Paul G. Hoffman Co., Inc.  
10 TO 11 P. M.—Art Hickman's Dance Orchestra, Biltmore Hotel; Earl Burnett, director.

### Sunday

KPO—Hale Bros., San Francisco (423 Meters)  
11 A. M. TO 12 M.—Undenomination-

al services, prayer, sermon, Dr. J. C. Reid, pastor, Howard Presbyterian church, "Universal Song of Labor"; organ prelude, Theo. J. Irwin soloist, Mabel N. Bailey contralto.

8:30 TO 10 P. M.—Rudy Selger's orchestra.

KGO—General Electric Co., Oakland (312 Meters)  
11 A. M.—Services from the First Presbyterian church, Oakland, Rev. Frank M. Silsley, pastor. Prelude, "The Last Hope"; anthem, "Christian, the Morn Breaks Sweetly O'er Thee"; anthem, "God Is a Spirit," from the "Woman of Samaria"; sermon, "Christ and the Modern Mind," Rev. Frank M. Silsley; postlude, Walter B. Kennedy.

3:30 P. M.—Concert by KGO Little Symphony orchestra and vocalists, Carl Rhodehamel conducting; Valze Parisienne; overture, Stradella; selection, Parsifal; tenor solos—three boat songs, (a) Volga Boat Song, (b) Barcarolle, (c) Venetian Boat Song, Carl Anderson; piano solos, Helen McClory; tenor solos, three Irish songs, (a) Off in the Stilly Night, (b) Off to Philadelphia, (c) The Wearing of the Green. Carl Anderson; piano solos, Helen McClory. KGO Little Symphony orchestra, Selection, Prince Ananias, Russian Dance, Shadows, Andante (violin solos) (played by Josephine Holub).

7:30 P. M.—Evening services from the First Presbyterian church, Oakland; prelude, "Andante Grazioso"; choir hymn, "Day Is Dying in the West"; anthem, "My Faith Looks Up to Thee"; anthem, "If Thou but Suffer God"; sermon, "America's Doubters and Elijah's Challenge," Rev. Frank M. Silsley; postlude, Walter B. Kennedy.

Notes of a robin were inadvertently broadcast from station WHAA, University of Iowa, recently.