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RADIO
MAGAZINE

The Daily News

EVERY
MONDAY

MONDAY, JULY 7, 1924

OAKLAND TEACHES BY RADIO

WILLIAM BEAR TO MANAGE BIG P. R. SHOW

Headquarters To Be Opened In Few Days

Appointment of William P. Bear as manager of the second annual Pacific Radio Exposition to be held in the Civic Auditorium, Aug. 16 to 21, inclusive, was announced today by A. S. Lindstrom, chairman of the executive committee of the Pacific Radio Trade Association which is sponsoring the show.

According to Lindstrom, Bear will be in direct charge of arrangements for the show, the executive committee continuing to function in a supervisory capacity. Bear plans to open headquarters this week in the Monadnock building and activities in connection with the exposition will be centralized there.

Co-incident with his appointment, Bear issued the following statement:

"The Pacific Radio Exposition has now assumed the status of an assured success. Practically all of the exhibit space already has been contracted for and more than half the money already paid in. Every national manufacturer of radio receiving sets will exhibit and there will be scores of booths held by individual dealers and distributors.

"We now have under consideration plans for the entertainment of the public, including elaborate musical features and spectacular stage settings and lighting effects.

"More than 100,000 persons are expected to visit the exposition, which we expect to prove the greatest event of its kind ever held in the world. Hundreds of members of the trade will be present, the mornings being devoted to trade meetings and the afternoons and evenings to the public."

Plans Hastened For Radio Union

Plans are being pushed for final organization of the International Amateur Radio Union, to take place at a special congress in Paris during the Easter holidays of 1925. Pres. Hiram Percy Maxim of the American Radio Relay League came back recently from a preliminary conference for this purpose.

Once the reception is good, let the set alone.

S. F. Radio Club to Hold Auction Sale

Local radio fans are taking stock of their radio apparatus, with the intention of supplying any needed parts at the "old hoss" radio auction of the San Francisco Radio Club, which will be held next Thursday, July 10. The club's headquarters are at 1380 Bush-st. Tubes, transformers, batteries, copper wire, and other miscellaneous parts will be offered at the auction.

6BDS and 6CMM can claim the record of being two of the most enthusiastic "hams" in the Sixth district. One night last week the two hams stayed up until the wee sma' hours tinkering with Dick Warner's set. They finally succeeded in getting 92T, Minneapolis, which is some record for this time of year. 92T is one of the best known "hams" in the United States. Last year he was

S. F. FANS HEAR TWO STARS



Lieut. Russell L. Maughan,
dawn-to-dusk flyer.

Los Angeles Firm In Radio Merger

Gilfillan Brothers, Inc., Los Angeles, largest manufacturers of radio parts and automobile magneto parts in the world, have completed a merger with the Radio Service Laboratories of Asbury Park, N. J., and will shortly enter the field as a Hazeltine Corporation subsidiary manufacturer of Neutrodyne receivers. All parts for the Gilfillan Neutrodyne will be manufactured and assembled into complete machines in Gilfillan plants in Los Angeles and Kansas City and in the plant now taken over at Asbury Park. Gilfillan Bros. are the second large group of manufacturers who have announced Neutrodyne models within the past two months.

Explorations Relayed

The experiences in the arctic regions of the Donald B. MacMillan expedition will be relayed to the United States by William Choat, Canadian amateur, from Baffin Bay. His station will be the Canadian government steamer "Arctic," which left Quebec July 1.

Radio broadcasting history has been in the making during the last few weeks.

Two weeks ago Lieut. Russell L. Maughan, intrepid dawn-to-dusk flyer, thrilled radio fans with a recital of incidents of his epochal flight.

Another red letter event on the radio calendar was the debut of Percy Pollock, star of Frank Bacon's famous play, "Lightnin'." He talked to fans over station KGO.

Hundreds of letters have been received from fans all over the country, attesting their appreciation of Pollock's entertainment. The Daily News air reporter, after listening to Pollock's broadcast speech, requested a private broadcasting of his ideas on radio.

"How did addressing an unseen audience impress me?" repeated Pollock.

"Well," he said slowly, "I didn't feel as if I were speaking into empty space. All the time I was talking, I could feel that I was in contact with my audience. I could sense the fact that there were people listening to me as intently as though their eyes were fastened upon me. Talking to an unseen audience, or talking behind the footlights, with a vista of hundreds of faces before me, is the same to me. I live unconsciously the role of 'Bill Jones.' From the moment the announcer introduced me over the air, I felt that I was in communication with a vast audience."

The radio play will afford a new field of expression, Pollock thinks. The voice alone must be the means of interpretation in radio without the assistance of pantomime, however, he pointed out.

"I should think short sketches, or monologues, would appeal more strongly to fans than long worded plays," Pollock declared. "If I had the opportunity, I should enjoy telling bits of clean-cut humor over the radio."

And what radio fan wouldn't thrill at hearing Mark Twain's famous Frog story, or maybe some of the humorous tales concocted by Lincoln, related over the ether waves in the soft, drawing voice of Percy Pollock?

Hazeltine Sales Total \$3,295,000

Announcement is made by R. T. Pierson, president Hazeltine Corporation, that schedule of production of neutrodyne receiving sets, combining all of the 14 sub-licensees of the Hazeltine Corporation, for the year 1924, will be over 12 times the production attained by all sub-licensees in 1923. Plants and installations to this capacity now have been completed. Retail sales value of factory built neutrodyne receiving sets sold during 1923 was recently placed at \$3,295,000.

TIP FOR FANS

The Daily News:
"I am a subscriber of the Daily News and being interested in radio I enjoy the radio magazine which comes with every Monday issue. It surely has been quite a help and I am saving every copy. Some day I expect to make them into book form."

HOWARD W. BUSSE,
Burlingame, Cal.



Percy Pollock, noted star of
"Lightnin'."

Some Call Letters Describe Stations

Broadcasting station call letters usually have no other meaning than simply to designate a radio station. However, some stations are fortunate enough to have assigned to them letters that do mean something. For instance, the Chicago Tribune, whose slogan for years has been "The World's Greatest Newspaper," has the call letters WGN. Whether this was by luck or by good wirepulling does not matter.

WFAA, at Dallas, Tex., had to stretch it a little, but finally evolved the slogan, "Working for All Alike," out of their call letters.

WAAW, station of the Omaha Grain Exchange, has been translated to mean "Where Agriculture Accumulates Wealth." And then there is the station of the Detroit police department, whose call letters are KOP.

WTAM, radio station of the Willard Storage Battery Co., Cleveland, has been neglectful in hunting down an expression to fit their call letters. This expression was supplied in an applause letter following the midnight concert broadcast in connection with the national balloon race, when the Willard station remained on the air from midnight to 5 a. m. The appreciative fan claimed that at first WTAM meant "Waiting Tense-ly at Midnight," but when the concert began it was very evident, he said, that the letters stood for "Willard's Transmissions Are Marvelous."

Program for Colored

Station WOO, Philadelphia, has given over its broadcasting for Sunday afternoon, June 29, to the National Association for the Advancement of Colored People. The program will be transmission of the interracial mass meeting to be held that afternoon in the Metropolitan Opera House in Philadelphia.

Easy With Tubes

Handle vacuum tubes carefully, because they are delicately constructed. Do not remove the tubes from their sockets any more than is absolutely necessary.

PUPILS IN 16 SCHOOLS GET AIR LESSONS

CLASSROOM instruction by radio actually has been accomplished.

The Oakland public schools and KGO, the Pacific Coast station of the General Electric Co., have utilized radio to bring education to pupils of 16 schools.

That the experiment has proved highly successful and that it marks a long stride forward in making radio of greater practical use, is attested by Virgil E. Dickson, director of research of the Oakland public schools.

"On Apr. 30, superintendents' council of the Oakland public schools authorized me to conduct an experiment to determine the feasibility of classroom instruction by radio," she said today.

Test For Teachers

"What teacher would be willing to stand before the microphone for the first time in his life, risking his reputation by teaching invisible classes in 15 specified schools (nobody knowing how many more might be listening in) realizing that invisible critics actually were stationed in every school and that thousands of people in homes, shops, stores, and everywhere in the community, were listening in, or could listen in if they wished? Eight teachers prepared lessons. The authorities of KGO, the General Electric broadcasting station, offered their services free to broadcast eight lessons. We wished to determine whether anything approaching a common classroom lesson could be sent over the air to many classes at once.

These schools had receiving sets and listened in on a part or all of the lessons: Allendale, Clawson, Durant, Elmhurst, Garfield, Golden Gate, Lakeview, Lowell, Hamilton, Highland, McClymonds, Melrose Heights, Part-Time, Prescott, Roosevelt and University.

Committee Watches Progress

The members of a committee were distributed among the schools to observe each lesson and to take suggestions for improvement of the next.

The committee is unanimous in the belief that radio can be used successfully by a supervisor or demonstration teacher for certain types of lessons. Principals and teachers have grown enthusiastic. The program of instruction follows:

May 9—Miss Blanche Bowers talked to the high eighth and high ninth grade graduates on "What the High Schools Have to Offer." Music by Boys' Glee Club, directed by Irene Mackinder.

May 13—Miss Alice Burnbaugh, with pupils participating, discussed the development of English art and folk songs for the eighth, ninth and 10th grades.

May 15—Miss Arnette Kasper handled a subject in geography—"Petroleum as One of the Three Great Resources of Our State." Music by 12-piece orchestra directed by Mr. Arthur Nord.

May 20—Miss Beatrice Burnett gave a lesson on Shakespearean literature preparatory to the Shakespearean Festival for the junior and senior high schools. Music by stringed trio directed by Mr. Herman Trutner.

May 22—Mr. Howard Welty presented for seventh and eighth grades a history lesson—"Indian Folk Lore." Music by trombone quartet directed by Mr. Fred Rau.

May 27—Mr. E. E. Washburn taught an arithmetic lesson to the ninth grade classes. Music by stringed quartet directed by Mr. Herman Trutner.

May 29—Miss Myrtle Palmer gave a lesson in penmanship for seventh and eighth grade classes. Flute and oboe solos directed by Mr. Franklin Carter.

June 3—Mr. Jay B. Nash conducted a lesson in physical education adapted to seventh and eighth grade classes. Quartet directed by Mr. Herman Trutner.

THIS WEEK'S AIR PROGRAMS

Monday, July 7

KFO—Hale Bros., San Francisco (423 Meters)

10 TO 10:45 A. M.—Special program of greeting to the British fleet approaching San Francisco harbor: Bass solo, British National Anthem; Jean Cowles; Theodore J. Irwin, accompanist.

Soprano solo, American National Anthem; Mm. Dorothy Raegen Talbot; Theodore J. Irwin, accompanist. Speech of welcome by Mayor James Rolph. Address of Welcome by Armistead Simpson, U. S. N., commandant Twelfth District.

1 TO 2 P. M.—Rudy Selger's Fairmont Hotel Orchestra.
2:30 TO 3:30 P. M.—Violin solos, Kol Nidre; Serenade; Ave Maria; Humoresque; Violet Silver.
Program by Lawrence Swalley & Co., the Musical Buffoons: Ensemble number, California, Here I Come; Meet Me at the Golden Gate; Oriental Love Dreams.

Banjo solos, The World Is Waiting for the Sunrise; Harry Elliott.
Ensemble number, Mandalay (featuring guitar by Harry Elliott).
Tenor solo, selected popular number; Frank Snodgrass.

Ensemble number, Marcheta's Sister; Somebody Stole My Gal; Musical Buffoons: Lawrence Swalley, director; Harry Elliott, banjo and guitar; Frank Snodgrass, piano, vocal and saxophone; Franklin Grant, saxophone and violin; Albert Stein, trumpet; George Smith, saxophone and clarinet; Frank Grove, drums; Clarence Butterfield, saxophone.

4:30 TO 5:30 P. M.—Rudy Selger's Fairmont Hotel Orchestra.
5:30 TO 6:30 P. M.—Children's Hour, taken from the Book of Knowledge: The Windy Sleep of Animals; The Big Ball We Live On; Aladdin and His Lamp.

7 TO 7:30 P. M.—Rudy Selger's Fairmont Hotel Orchestra.
8 TO 9 P. M.—Organ recital by Theodore J. Irwin, official organist, at the Wurlitzer: March (from "Lenore" Symphony); Overture (from "William Tell"); Gavotte, First Heart; Chorus; Pierrette; Waltz, Fruhlingsstunde; song melody, Smiling Through; Light Opera selection, "Maytime"; C Minor Symphony, Andante, selected passages; La Cinquantine; fox trot, Shine Away Your Blues.

9 TO 10 P. M.—Bass-baritone solos, Mother of Mine; You'd Better Ask Me; William Worthington, one of the directors of Peninsula Studios, San Mateo; Nina Hinds, accompanist.
Soprano, On Wings of Song; Gladina Mia; Jean Kirk; Theodore J. Irwin, accompanist.

Piano solos, Etude Brillante, G flat major; Waltz, C sharp minor; Prof. Mm. H. Moncheur, Belgian pianist.
Bass solos, Asleep in the Deep; When the Bell in the Lighthouse Rings; Carl M. Koenig; Theodore J. Irwin, accompanist.

Soprano solos, Homing; Thank God for a Garden; Jean Kirk; Theodore J. Irwin, accompanist.
Bass-baritone solo, Vision Fugitive (from "Herodiade"); William Worthington, Nina Hinds, accompanist.

10 TO 11 P. M.—E. Max Bradfield's Versatile Band.
KGO—Gen. Electric Co., Oakland, (312 Meters)

1:30 P. M.—New York Stock Exchange and U. S. Weather Bureau reports.
3:00 P. M.—Short musical program. Speaker furnished through the courtesy of the Parent-Teacher Ass'n of the San Francisco Bay district.

4:00 TO 5:30 P. M.—Hotel St. Francis Dance Orchestra, San Francisco.
6:45 P. M.—Final reading, stock exchange and weather reports, and news items.

8:00 P. M.—Educational program, with musical numbers. Courses in Agriculture, Spanish, music, economics and literature.
KJLX—Oakland Tribune (509 Meters)

7 TO 7:30 P. M.—News, weather and financial news.
DISTANT STATIONS

KGW—Morning Oregonian, Portland (492 Meters)
11:30 A. M.—Weather forecast.
3:30 P. M.—Literary program by Portland Library Ass'n.

7:15 P. M.—Police reports.
7:30 P. M.—Baseball scores, weather forecast and market reports.
8 TO 10 P. M.—Concert, featuring Harriet Leach, soprano; Florence Leach, contralto; Louise Jacobson, pianist, and others.

KHJ—Los Angeles Times, Los Angeles (395 Meters)
12:30 TO 1:15 P. M.—Program presenting Carl Allen and his Rendezvous Ballroom Orchestra from the Crystal Pier.

8 TO 10 P. M.—Special program through the courtesy of Barker Bros., presenting the Philharmonic Orchestra.
KFI—Earle C. Anthony, Inc., Los Angeles (469 Meters)

8 TO 9 P. M.—Evening Herald concert.
9 TO 10 P. M.—Examiner concert. Alhambra night. Program presented by Mr. Seibel.

10 TO 11 P. M.—Ambassador-Cocanut Grove Orchestra.
KFOA—Rhodes Co., Seattle (455 Meters)

8:30 P. M.—Seattle Chamber of Commerce night, presenting a program given under the direction of Mrs. G. O. Guy.

Tuesday, July 8

KFO—Hale Bros., San Francisco (423 Meters)

12 NOON—Time signals; Scriptures.
1 TO 2 P. M.—Rudy Selger's Fairmont Hotel Orchestra.
2:30 TO 3:30 P. M.—Organ recital by Theodore J. Irwin: Fox trot, Hilo, Hilo; light opera selection, "Prince of Pilsen"; Waltz; selection, popular melodies; Serenade; popular waltz melody; Nightingale; fox trot, Don't Mind the Rain; operatic selection, The Pearl Fishers; fox trot, Watching the Moon Rise.

4:30 TO 5:30 P. M.—Rudy Selger's Fairmont Hotel Orchestra.
5:30 TO 6:30 P. M.—Children's Hour, Stories by Big Brother of KFO, taken from the Book of Knowledge: Nature's Wonderful Family; Pardoners; Animals That Work for Nature.

7 TO 7:30 P. M.—Rudy Selger's Fairmont Hotel Orchestra.
8 TO 10 P. M.—Quartet selections. When Good Fellows Get Together; Sleepy Hills of Tennessee; Exchange Club Quartet.

Soprano solos, Casta Diva (from "Norma"); Auld Lang Syne; Mm. Dorothy Raegen Talbot; Theodore J. Irwin, accompanist.
Quartet selections, Heidelberg Stein

Song; Absent; Exchange Club Quartet. Speeches by the admiral and officers of the British fleet, from the banquet at the Palace Hotel (subject to change).
Quartet selections, Why Did I Kiss That Girl?; California, Here I Come; Solos, selected; Mrs. Harry Steel Haley; John England, tenor; Jean Cowles, bass; accompanied by Mrs. Haley.

Soprano solo, Mandalay (by request); Mm. Dorothy Raegen Talbot; Theodore J. Irwin, accompanist.
Quartet selections, Invictus; The West, a Nest and You; Exchange Club Quartet.

Soprano solos, Ah Non Credea Mirarti; National Anthem of Great Britain (sung in honor of British fleet guests of San Francisco); Mm. Dorothy Raegen Talbot; Theodore J. Irwin, accompanist.

Bass solos, Loch Lomond (old Scotch air); Lass o' Mine; Allick Sheriffs; Theodore J. Irwin, accompanist.
Quartet selections, I've Gwine Back to Dixie; Sleep; Exchange Club Quartet. Quartet numbers accompanied by Mrs. Harry Steel Haley.

10 TO 11 P. M.—E. Max Bradfield's Versatile Band.
KGO—Gen. Electric Co., Oakland, (312 Meters)

1:30 P. M.—New York Stock Exchange and U. S. Weather Bureau reports.
4:00 TO 5:30 P. M.—Concert Orchestra of the Hotel St. Francis, San Francisco.

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

8 TO 10 P. M.—Instrumental selection, Dance of the Hours, Neapolitan Four.
Soprano solos, (a) Una voce poco fa, (b) Zembra and Azor, Isabelle Engle, Mabel Saunders, accompanist.

Viola solo, Song Without Words, Edward Leslie.
Coloratura soprano solos, (a) Qui la voce (from "Il Puritani"); (b) Nymphs and Shepherds, George Schiller (16 years old) (pupil of Homer Henly).

Baritone solos, (a) In Circe's Garden, (b) The Sea Road, Luther E. Stet (pupil of Homer Henly).
One-act Comedy—"The Florist Shop," Hawkridge.

Cast—Maud, the florist's bookkeeper, Vera Frances Morse; Henry, the office boy, C. A. Anderson; Slovisky, proprietor of the shop, W. J. De Gloria; Miss Wells, a timid, talkative spinster, Mary Harper; Mr. Jackson, the spinster's fiancé, Henry Fluke. Under the direction of Wilda Wilson Church.

Dramatic soprano solo, Pace mio dio (from "La Forza del Destino"), Merle Floyd, Ruth Burligame, accompanist.

Baritone solos, (a) Largo, (b) Gloria, Edwin Heinsohn (pupil of Carl Anderson).
Instrumental selection, March Volunteer, Neapolitan Four.

Chorus, Viking Song, The Etude Club.
Tenor solo, Somewhere in the World, Harry Pierson.

Chorus, Steal Away, The Etude Club.
Duet for soprano and contralto, Sadie Phipps and Carrie Taylor.

Violin solo, Owen A. Troy.
Chorus for women's voices, Since You Went Away, solo by Marguerite Johnson.

Chorus, Lee Shore, The Etude Club.
Selections for Ladies' Quartette, Lute Saunders, Marie Lenex, Myrtle Mitchell and Louella Johnston.

Chorus, Listen to the Lambs, The Etude Club.
Contralto solo, That Is Why, Louella Johnston.

Vocal trio, Nobody Knows the Trouble I See, negro spiritual, Lute Saunders, Marguerite Johnson and Louella Johnston.

Chorus, O Southland, The Etude Club (solo by Lute Saunders).
10 P. M. TO 1 A. M.—Hotel St. Francis Dance Orchestra, San Francisco.

KJLX—Oakland Tribune (509 Meters)
3 TO 6 P. M.—Baseball scores.
7 TO 7:30 P. M.—News, weather, financial reports.

DISTANT STATIONS
KGW—Morning Oregonian, Portland (492 Meters)

11:30 A. M.—Weather forecast.
3:30 P. M.—Children's program.
7:15 P. M.—Police reports.
7:30 P. M.—Baseball scores, weather forecast and market reports.

8 P. M.—Concert provided by Selber.
KJLX—Los Angeles Times, Los Angeles (395 Meters)

12:30 TO 1:15 P. M.—Program presenting Carl Allen and his Rendezvous Ballroom Orchestra from the Crystal Pier.

8 TO 10 P. M.—Special program through the courtesy of Barker Bros., presenting the Philharmonic Orchestra.
KFI—Earle C. Anthony, Inc., Los Angeles (469 Meters)

8 TO 9 P. M.—Evening Herald concert.
9 TO 10 P. M.—Examiner concert. Alhambra night. Program presented by Mr. Seibel.

10 TO 11 P. M.—Ambassador-Cocanut Grove Orchestra.
KFOA—Rhodes Co., Seattle (455 Meters)

8:30 P. M.—Seattle Chamber of Commerce night, presenting a program given under the direction of Mrs. G. O. Guy.

There are some 290 radio stations in Russia.
Get a good grade of porcelain insulator for your aerial.

Yale has started a "communications course."
There are 36 broadcasters in Canada.

Rubber tape is better than friction tape for aerial work.
Strain insulators may be made from scraps of bakelite or hard rubber.

British postal authorities have issued 720,000 licenses for receiving sets.
Three of the world's most powerful transmitting stations are in Moscow.

Radio industry in this country numbers about 250,000 persons connected with it.
CKAC, Montreal, is being transformed into what may be the most powerful station in the world.

In January alone, this country exported nearly 200,000 pounds

KUO

San Francisco Examiner—860 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
6:45 TO 6:00 P. M.—Health bulletin.

Ling-Lucas Music Co.

KHJ—Los Angeles Times, Los Angeles (395 Meters)

12:30 TO 1:15 P. M.—Program of news items and music.
3:30 TO 5:30 P. M.—Matinee musical.

6 TO 6:30 P. M.—Art Hickman's Concert Orchestra from the Biltmore Hotel.
10 TO 7:30 P. M.—Children's program presenting Prof. Walter Sylvester Hertzog. The weekly visit of the Sandman and Queen Titania.

Dorothy Nichols, pianist, 13 years old, pupil of Mrs. Walter M. Reckford. Bedtime story by Uncle John.
8 TO 10 P. M.—Program presented through the courtesy of the Stebbins, Roberts, Buccor Co., arranged by J. Howard Johnson.

10 TO 11 P. M.—Art Hickman's Dance Orchestra from the Biltmore Hotel.
KFI—Earle C. Anthony, Inc., Los Angeles (469 Meters)

8 TO 9 P. M.—Ambassador-Cocanut Grove Orchestra.
9 TO 10 P. M.—Examiner concert. Program presented by Anita Arlis and pupils.

10 TO 11 P. M.—Harry Porter, baritone, arranging concert.
KJLX—Los Angeles Times, Los Angeles (395 Meters)

12:30 TO 1:15 P. M.—Program presenting the Junior Novelty Three, through the courtesy of "Radio Red."
3:30 TO 5:30 P. M.—Matinee musical.

6 TO 6:30 P. M.—Art Hickman's Concert Orchestra from the Biltmore Hotel.
6:45 TO 7:30 P. M.—Children's program, presenting Prof. Walter Sylvester Hertzog. Geneva Smith, 12 years old, pianist, pupil of Mrs. Shepard.

Marjorie Kertchbaum, violinist, pupil of Louise Moody. Victoria Kerner, screen juvenile. Dick Winslow, juvenile reported. Bedtime story by Uncle John.

8 TO 9 P. M.—Program presented through the courtesy of the Ben Hur Co.
9 TO 10 P. M.—Program presenting Dr. Mars Baumgardt, lecturer; Hoffman's Hawaiian Trio, through the courtesy of the Hoffman Candy Co.

10 TO 11 P. M.—Art Hickman's Dance Orchestra from the Biltmore Hotel.
KFI—Earle C. Anthony, Inc., Los Angeles (469 Meters)

8 TO 9 P. M.—Evening Herald concert.
9 TO 10 P. M.—Examiner concert. Program presented by the Penwomen of America.

10 TO 11 P. M.—Hollywood Orchestra.
11 TO 12 P. M.—Ambassador-Cocanut Grove Orchestra.

KFOA—Rhodes Co., Seattle (455 Meters)
8:30 P. M.—Vocal and instrumental recital by Mrs. Ralph Ostrom, soprano; Mildred Johnson, soprano, and Kenneth Lyman, pianist.

Thursday, July 10

KFO—Hale Bros., San Francisco (423 Meters)

1 TO 2 P. M.—Rudy Selger's Fairmont Hotel Orchestra.
2:30 TO 3:30 P. M.—Piano accordion solos, The Sharpshooters' March; Carry Me Back to Old Virginia; Albert Bailey.

Program under management of May Clarke Burns.
Lyric soprano solos, Tiptoe; A Kiss in the Dark; Edna Walsh Gallagher. Vocal duet, Starlight Love; Pickaninny Rose; Edna W. Gallagher, lyric soprano; May Clarke Burns, mezzo-soprano.

Piano solo, Scenes from Childhood; Mabelle Gilmour (pupil of Eileen Fealy).
Mozzo-soprano solos, Till Then; California Lullaby; May Clarke Burns. Vocal duet, Gray Days; The West, a Nest and You; Edna W. Gallagher, lyric soprano; May Clarke Burns, mezzo-soprano.

Piano accordion solos, Havana; I'm Going South; Alberta Bailey.
4:30 TO 5:30 P. M.—Rudy Selger's Fairmont Hotel Orchestra.

5:30 TO 6:30 P. M.—Children's Hour, Stories by Big Brother of KFO, taken from the Book of Knowledge: All Baba and the Forty Thieves; How

of the Hotel St. Francis, San Francisco.
6:45 P. M.—Final reading, stock exchange and weather reports, and news items.

KJLX—Oakland Tribune (509 Meters)
3 TO 6 P. M.—Baseball scores.
7 TO 7:30 P. M.—News, weather, financial reports.

8 TO 10:30 P. M.—Studio program and music from the American Theater. Studio program:
Vocal selections (a), Ernani (opera "Ernani"); (b), Silver Threads Among the Gold; (c), April Morn; Mm. Dorothy Raegen Talbot, coloratura soprano; Clare Darrimon, accompanist.

Cornet solo, The Bride of the Waves; George H. E. Green.
Review of Andrew W. Mellon's book, "Taxation, the People's Business," arranged by Lawrence Drake of the book department of the White House, San Francisco; J. S. Curran, assistant vice-president of the Anglo and London Paris National Bank, San Francisco, reviewer.

Vocal selections (a), Old Folks at Home; (b), Vale; (c), Caro Nome (opera "Rigoletto"); Mm. Dorothy Raegen Talbot, coloratura soprano; Clare Darrimon, accompanist.
English concertina solos, national songs; J. W. Green.
Vocal solo, The Wood Pigeon; Mrs. G. H. E. Green.

Cornet and trombone duet, Excelsior; George H. E. Green and J. W. Green (Green & Son).
Overture by American Theater orchestra, Owen Sweeten director, broadcast over private leased wires through KJLX.

Pianoforte solos (a), Sonata Pathétique; (b), Andante Finale (for left hand only); Mrs. G. H. E. Green. Cornet solo, The Lost Chord; George H. E. Green.

Vocal solo, The Little Brown Owl; Mrs. G. H. E. Green.
Trombone solo, The Death of Nelson; J. W. Green.
Concertina solo, Simple Aveu; J. W. Green.

Cornet solos (a), Inflammatus (from "Stabat Mater"); (b), Music written to Tennyson's "Dirge," by soloist and harmonized by J. W. Green; George H. E. Green.
Organ recital by Clement Barker, broadcast from the American Theater over private leased wires through KJLX.

DISTANT STATIONS
KGW—Morning Oregonian, Portland (492 Meters)

11:30 A. M.—Weather forecast.
3:30 P. M.—Talk by Jeanette P. Cramer, home economics editor of the Oregonian.

7:15 P. M.—Police reports.
7:30 P. M.—Baseball scores, weather forecast and market reports.

8 P. M.—Concert.
10 P. M.—Dance music by George Olsen's Metropolitan Orchestra of the Portland. Intermission solos by Rayberta and Margory Reed, juvenile artists of Salisbury, Mo.

KHJ—Los Angeles Times, Los Angeles (395 Meters)
12:30 TO 1:15 P. M.—Program presenting the Junior Novelty Three, through the courtesy of "Radio Red."
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Marjorie Kertchbaum, violinist, pupil of Louise Moody. Victoria Kerner, screen juvenile. Dick Winslow, juvenile reported. Bedtime story by Uncle John.

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11 TO 12 P. M.—Ambassador-Cocanut Grove Orchestra.

KFOA—Rhodes Co., Seattle (455 Meters)
8:30 P. M.—Vocal and instrumental recital by Mrs. Ralph Ostrom, soprano; Mildred Johnson, soprano, and Kenneth Lyman, pianist.

an Oyster Makes a Pearl; The Zoo That Never Was.
7 TO 7:30 P. M.—Rudy Selger's Fairmont Hotel Orchestra.
8 TO 9 P. M.—Organ recital by Theodore J. Irwin:
March, Stars and Stripes Forever; selection, American airs; waltz, Water Nymph; Narcissus; selection, Mlle. Modiste; song melodies, Aloha; La Paloma; Rubinesque; Coquette; waltz song, When Lights Are Low; fox trot, 9 To 10 P. M.—Program in honor of British fleet:
Scotch comedy songs, I Love to Be a Sailor! Roamin' in the Gloamin'; Breakfast in My Bed on Sunday Morning; Jim McKenna, Scottish entertainer; George W. Ackerman, accompanist.
Welsh songs, Make New Friends but Keep the Old, Dr. Joseph Parry; Bells of Aberdore (old Welsh), Gwyn Jones, Tebault, contralto; Theodore J. Irwin, accompanist.
Tenor solos, Duna, Old Pal of Mine, Frank Terramorse Jr., navy tar; Theodore J. Irwin, accompanist.
Irish songs, selected, Patricia O'Connor Morbio, soprano.
Canadian songs, Oh, Oh, Hear the Wild Winds Blow, O Canada (Canadian national anthem), Mrs. D. B. McKinley, contralto, Toronto, Canada; Theodore J. Irwin, accompanist.
English songs, Come Let's Be Merry, Roses of Picardy, E. Harold Dana, baritone.
Scotch comedy songs, When I Get Back Again to Bonnie Scotland, The Message Boy, I Think I'll Get Wed in the Summertime, Jim McKenna, Scottish entertainer; George W. Ackerman, accompanist.
Tenor solos, From the Land of the Sky-blue Water, God Remembers When the World Forgets, Frank Terramorse Jr., navy tar; Theodore J. Irwin, accompanist.
English songs, Mary, The Pretty Creature, E. Harold Dana, baritone.
10 TO 11 P. M.—E. Max Bradfield's Versatile Band.

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

8 TO 10 P. M.—"PASSING OF THE THIRD FLOOR BACK"
A drama in three acts, played by the KGO Players, under the direction of Wilda Wilson Church.
CAST
Mrs. Sharp.....Mary Harper
Stacia.....Lillie
Miss Kite.....Vera Frances Morse
Mrs. de Hooley.....Florence Palmer
Mrs. Thompson.....Evelyn Avery
Maj. Thompson.....Burt Horton
Vivian Thompson.....Edna Jones
Christopher Penny.....Charles Field
Japs Samuels.....Barry Hopkins
Harry Larkom.....Fred Thomas
Joey Wright.....Guy Kibbee
The Stranger in the Third Floor Back.....Richard Hotelling
Instrumental selection, Je-T'aimie; Neapolitan Four.
ACT I
Instrumental selection, Polish National Dance; Neapolitan Four.
ACT II
Instrumental selection, Hungarian Dance No. 1; Neapolitan Four.
ACT III
Instrumental selection, The Jolly Coppersmith; Neapolitan Four.
KJLX—Oakland Tribune (509 Meters)
3 TO 6 P. M.—Baseball scores.
7 TO 7:30 P. M.—News, weather, financial reports.

DISTANT STATIONS
KGW—Morning Oregonian, Portland (492 Meters)

11:30 A. M.—Weather forecast.
3:30 P. M.—Children's program.
7:15 P. M.—Police reports.
7:30 P. M.—Baseball scores, weather forecast and market reports.

8 P. M.—Concert.
10 P. M.—Dance music by George Olsen's Metropolitan Orchestra of the Hotel Portland. Intermission solos by Gracia Stewart, mezzo-soprano.

KHJ—Los Angeles Times, Los Angeles (395 Meters)
12:30 TO 1:15 P. M.—Program arranged through the courtesy of Ethel Sanborn, pianist.
3:30 TO 5:30 P. M.—Matinee musical.

6 TO 6:30 P. M.—Art Hickman's Concert Orchestra from the Biltmore Hotel.
6:45 TO 7:30 P. M.—Children's program, presenting Prof. Walter Sylvester Hertzog. The weekly visit of Dickie Brandon, screen juvenile. Elinore Hammon, 12 years old, pianist, pupil of Winifred Pennell, H. G. Noble, harmonica. Frances Barba, 9 years old, reader. Bedtime story by Uncle John.

8 TO 10 P. M.—Program presented through the courtesy of the Platt Music Co.
10 TO 11 P. M.—Art Hickman's Dance Orchestra from the Biltmore Hotel.
KJLX—Oakland Tribune (509 Meters)
3 TO 6 P. M.—Baseball scores.
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DISTANT STATIONS
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7:15 P. M.—Police reports.
7:30 P. M.—Baseball scores, weather forecast and market reports.

8 P. M.—Concert.
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3:30 TO 5:30 P. M.—Matinee musical.

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6:45 TO 7:30 P. M.—Children's program, presenting Prof. Walter Sylvester Hertzog. The weekly visit of Dickie Brandon, screen juvenile. Elinore Hammon, 12 years old, pianist, pupil of Winifred Pennell, H. G. Noble, harmonica. Frances Barba, 9 years old, reader. Bedtime story by Uncle John.

8 TO 10 P. M.—Program presented through the courtesy of the Platt Music Co.

NIFTY OUTFIT IS MADE FOR WHITE HOUSE

WASHINGTON, July 7.—The Coolidge family is all hooked up and tuned in.

Pres. Cal, Mrs. President, John and Cal Jr are spending their evenings listening over one of the most individual—and at the same time most efficient—radio receiving sets ever constructed.

It was designed by Lieut. Com. E. D. Langworthy of the naval bureau of engineering radio section.

The listeners simply wheel the table into the room, take the folding aerial out of its mahogany case and turn on the juice.

The loud-speaker horn is concealed by a woven screen; the dials and controls are behind built-in doors; the batteries are on a hidden shelf; the whole affair is an attractive piece of furniture.

The cabinet-work was done in the Washington navy yard. The set was installed by naval engineering experts under Langworthy's direction.

"The set is of the super-heterodyne type," says Langworthy. "The main receiver has six tubes and the push-pull amplifier has three—nine tubes in all, but all of them very small. The circuit is not grounded, the special folding aerial making this unnecessary."

More Death Rays

Following announcement of the invention of a "death ray," by H. Grindell-Matthews, others have come forth with similar ideas, some claiming priority to that of Matthews. Prof. T. S. Wall of Sheffield says he has patented such a ray, and a Londoner says he has had one like it for nearly a year. The British air service says it has been experimenting with it for the last two years and also has a protection against this ray.

He's "Doctor" Now

Hiram Percy Maxim, famous inventor and president of the American Radio Relay League, is doctor of science now. Colgate University conferred this honorary degree upon him at its commencement recently.

Rock Is Hindrance

The great pile of rock on which the famous Edinburgh castle stands in Scotland is believed to present an obstacle to efficient broadcasting from the relay station at Edinburgh.

RADIO FROM THE GROUND UP

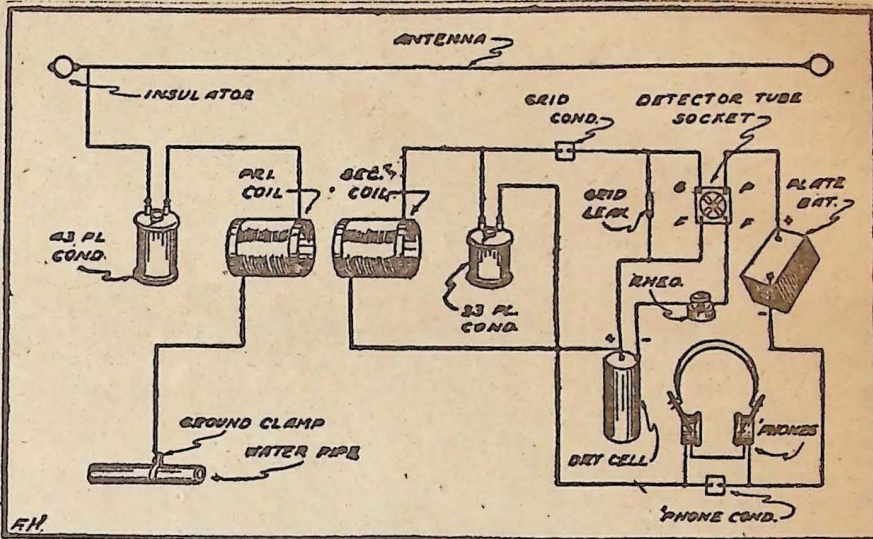
Instead of a crystal detector we may employ a vacuum tube for the detector with somewhat better results. Reception with the arrangement pictured herewith will be considerably better in volume than with the crystal, but by a special connection to be given later on, results will be many times better than with the crystal, and dozens of distant broadcasting stations may be received in addition to those within ten or fifteen miles. You will note that the connections of the variable condensers and the primary and secondary coils are just the same as in the case of the crystal. The detector or "demodulating" portion of the set is entirely different.

Keeping in mind the fact that the tube is a valve for controlling the current from the "B" battery we may easily understand why the voltage fluctuations going on in the secondary coil should be impressed in some way upon the grid of the tube. If the connections were directly made to the grid there would be a steady charge on the grid placed there by the filament battery. This would cause the incoming alterations of current to add to, or to subtract from, this steady charge and would not operate the tube at the best point of its characteristic curve.

Grid Condenser

Hence the grid must be insulated from the filament battery, and a fixed condenser of very small capacity (usually .00025 mfd.) is connected in series. You will recall that while direct current cannot pass through a condenser, alternating current has that power. Hence the alternations caused by the incoming signal can affect the grid although the charge from the filament battery, which would come around through the secondary coil otherwise, is kept off.

The characteristic curve of a detector tube is not as straight as that of an ideal amplifier tube, and it has two sharp bends, as in the accompanying figure. If the grid has a definite positive or negative charge or "bias" from the filament battery so that its voltage is at either of these two bends in the curve-point N or M, best results are secured. This necessary voltage is applied through a very high resistance, usually about 2,000,000 ohms (2 megohms), known as the grid leak. Assume this slight biasing voltage places the tube at point M. The incoming alternations are, of course, rapidly changing from positive to negative and adding or subtracting from the steady voltage or potential at point M. On account of the bend, however,



these equal fluctuations of the grid charge do not produce equal fluctuations of the plate current. The current change indicated by I² is much less than the change at I¹, and the average change in the plate current is the difference between these two, or I¹ minus I².

This gives the rectification effect of the crystal, which allows current to pass more easily in one direction than in the other and thus provides a pulsating current in only one direction to affect the telephone receivers. The tube's rectifying effect is the same, but it is the "B" battery current which changes in intensity and causes the response in the headphones. Without the grid condenser the charge on the grid would be too great and the grid would be at the wrong operating point for good detection.

Various Tubes

The symbolic diagram shows the connections to the grid of the tube and gives in schematic form the secondary circuit connections shown in the picture diagram. Tubes are not all the same as regards their operating point, but it is a general rule that most tubes detect most efficiently when the grid leak and wire from the tuning coil are brought to the positive end of the filament battery. The grid leak serves another purpose besides that of placing a charge on the grid. In the case of fairly strong signals the grid accumulates a negative charge

which grows stronger and stronger until the tube is "choked" and will not operate for a few seconds. If the tube is what is known as a "soft" tube and contains a good deal of gas, this charge leaks away through the gas. With a hard tube an external leak must be provided. If the grid resistance is made too high, the excess negative charge will not leak off

rapidly enough and broadcasting is distorted or the tube may start and stop operating periodically, with loud clicks a second or so apart. Thus it is the function of the grid leak to take away extra strong charges and at the same time to permit a certain amount of potential from the filament battery to get to the grid and maintain it at the current detecting point.

Reinartz Wins Cup

John L. Reinartz, famous radio engineer, is first to win the cup presented by the executive radio council of the second district for contributing the greatest advancement in radio communication last year. His development of receiving and transmitting circuits helped make trans-Atlantic amateur work possible.

1000 Letters Weekly

R. J. Horton, who conducts the morning exercises for women radio fans from station WOR, Newark, says he receives an average of 1000 letters from fans thanking him for the "course." He estimates he has a class of more than 30,000 fans.

Three Crystals

Of all kinds of crystals for reception, three are best adapted for use in any kind of crystal circuit, including the reflex. They are synthetic galena, the pyrites and the combination of boronite and zincite. The last is considered best for a reflex set.

Super-Power Ready

Station KFI, Los Angeles, is installing a 5000-watt super-power station as its part in the contemplated superpower chain of broadcasters. It will cost the owners \$75,000 for installation and an estimated \$10,000 a month for maintenance.

French in America

Station CKAC, at Montreal, is tuned in by thousands of French Canadians in North America. Every announcement and all talks are given in French and in English.

Colleges Off Air

Several colleges and other educational institutions having broadcasting stations have shut down for the summer. They will resume broadcasting when school reopens.

WEEK'S AIR PROGRAMS, CONTINUED

(Concluded from Page Two)
ing Carl Edward Hatch, violinist, and associates, "A Song of David."
KFI—Earle C. Anthony, Inc., Los Angeles (469 Meters)
8 TO 9 P M—Ambassador Hotel Concert Orchestra.
9 TO 10 P M—Examiner concert. Program by Central M. E. Orchestra, Long Beach.
10 TO 11 P M—Leontine Redon, mezzo-soprano, and others.

Friday, July 11

KPO—Hale Bros., San Francisco (423 Meters)
12 M—Time signals. Scripture.
12:45 P M—Talk broadcast from Commonwealth Club luncheon at Palace hotel.
1 TO 2 P M—Rudy Selger's Fairmont Hotel Orchestra.
2:30 TO 3:30 P M—Organ recital by Theodore J. Irwin.
Fox-trot, "Why Did I Kiss That Girl?"; waltz, Rose Mousse; light opera selection, "Robin Hood"; popular waltz song, Cabaletto, selection of Irish airs, operatic selection, "Madame Butterfly"; fox-trot, Sawmill River Road.
4:30 TO 5:30 P M—Rudy Selger's Fairmont Hotel Orchestra.
KGO—Gen. Electric Co., Oakland (312 Meters)
1:30 P M—New York Stock Exchange and United States weather bureau reports.
3 P M—Short musical program and one-act play.
4 TO 5:30 P M—Concert Orchestra of the Hotel St. Francis, San Francisco.
6:45 P M—Final reading, stock exchange and weather reports, and news items.
KIX—Oakland Tribune (509 Meters)
3 TO 5 P M—Baseball scores.
7 TO 7:30 P M—News, weather, financial reports.
8 TO 10:20 P M—Studio program and music by the American Theater Orchestra. Studio program: "Musical Boogie"; (b), Down in the Forest; Dorothy Buechner, soprano soloist; Plymouth Congregational Church of Oakland.
Instrumental selections, "Hono Hono Hawaii" and "Amama"; Hawaiian Harmony Kings.
Vocal selections (a), Lindy Lou; (b), Pierrot; Dorothy Buechner, soprano.
Instrumental selections (a), Wavawavaw; (b), Matsonia; (c), Honolulu

Blues; Hawaiian Harmony Kings.
Vocal selections, group one, Hazel Carlson Wood.
Instrumental selections (a), Kila-hai; (b), A Smile Will Go a Long Long Way; (c), Lonesome Mama Blues; Hawaiian Harmony Kings.
Vocal selections, group two, Hazel Carlson Wood.
Instrumental selections (a), Leihua; (b), March; (c), One, Two, Three, Four; (d), Aloha; Hawaiian Harmony Kings.
Vocal selections (a), All for You; (b), Come, Sing to Me; Mrs. R. D. Papadon, accompanying herself at the piano.
Piano solos (a), Waltz; (b), Harlequin.
Must broadcast from the American Theater over private leased wires from the theater pit through KIX. The American Theater Orchestra, Owen Sweeten director, followed by organ recital by Clement Barker.

DISTANT STATIONS

KGW—Morning Oregonian, Portland (492 Meters)
11:30 A M—Weather forecast.
3:30 P M—Woman's program.
7:15 P M—Police reports.
7:30 P M—Baseball scores, weather forecast and market reports.
10:30 P M—Hoot Owls.
KJL—Los Angeles Times, Los Angeles (395 Meters)
12:30 TO 1:15 P M—Program of news items and music.
2:30 TO 3:30 P M—Matinee musical.
6 TO 6:30 P M—Art Hickman's Concert Orchestra from the Biltmore Hotel.
6:45 TO 7:30 P M—Children's program presenting Prof. Walter Sylvester Hertzog. The weekly visit of Richard Headrick, screen juvenile. Jack Downs, singer, 10 years old. Bedtime story by Uncle John.
8 TO 10 P M—Program presented by the Community Broadcasters of Pasadena, Edward Murphey, director. Hatch Graham, singer and banjoist.
10 TO 11 P M—Art Hickman's Dance Orchestra from the Biltmore Hotel.
KFSG—Angelus Temple, Los Angeles (278 Meters)
8 TO 9 P M—Crusaders rally, "National Address" by Judge Carlos S. Hardy, justice superior court; Ada Lantz, soprano; Temple Silver Band; evangelistic address by Aimee S. McPherson.
9 TO 10 P M—Gray studio program, courtesy Maude Reeves-Barnard and pupils; Angelus Temple Silver Band, under direction of

Gladwyn N. Nichols. "Good Night Psalm."
KFI—Earle C. Anthony, Inc., Los Angeles (469 Meters)
8 TO 9 P M—Evening Herald concert.
9 TO 10 P M—Examiner concert. Patriotic program presented by Floryane Thompson, soprano.
10 TO 11 P M—Patriotic concert.
11 TO 12 P M—Ambassador Coconut Grove Orchestra.

Saturday, July 12

KPO—Hale Bros., San Francisco (423 Meters)
8 TO 12 P M—Dance music by Art Weidner's Orchestra. KPO Trio during intermission.
KGO—Gen. 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.
8 TO 10 P M—This program given by the San Jose Scouts' Band, San Jose. Edward Towner, director.
March, Invincible Fidelity; San Jose Scouts' Band.
Soprano solos (a), Stars of Normandy; (b), The Dustman; Mrs. George W. MacMillan, George W. MacMillan, accompanist.
Instrumental selection, selection from Faust; saxophone quartet.
Medley of patriotic war song melodies; San Jose Scouts' Band.
Baritone solos (a), For All Eternity; (b), Heart of Mine; G. Franklin Roberts.
Trombone oddity, Lassus Trombone. Saxophone solos, Paul King.
Piano solos (a), C Sharp Minor Polonaise; (b), Mazurka; Joseph McIntyre, Berkeley.
Characteristic waltz with chimes, Angelus; San Jose Scouts' Band.
Cornet solo, Killarney; Edward Moore.
Bass solo, Trade Winds; D. E. Neal.
Instrumental selections (a), Rase of an Hour; (b), Twelfth Street Rag; saxophone quartet.
Piano solo, Rigoletto Paraphrase; Edna Kindall.
March, In Storm and Sunshine; San Jose Scouts' Band.
10 P M TO 1 A M—Hotel St. Francis Dance Orchestra.
KIX—Oakland Tribune (509 Meters)
8 P M TO 12 M—Claremont Hotel Dance Orchestra.

KJL—Oakland Tribune (509 Meters)
3 TO 5 P M—Baseball scores.
7 TO 7:30 P M—News, weather, financial reports.
DISTANT STATIONS
KGO—Morning Oregonian, Portland (492 Meters)
11:30 A M—Weather forecast.
3 P M—Children's musical program by pupils of Marie C. Dooley. Story Hour.
10 P M—Police reports, baseball scores, weather forecast and dance music by George Olsen's Metropolitan Orchestra of Hotel Portland (two hours).

KJL—Los Angeles Times, Los Angeles (395 Meters)
12:30 TO 1:15 P M—Program presenting the Long Beach Californians, through the courtesy of Piggly Wiggly.
2:30 TO 3:30 P M—Matinee musical.
6 TO 6:30 P M—Art Hickman's Concert Orchestra from the Biltmore Hotel.
6:45 TO 7:30 P M—Children's program presenting Prof. Walter Sylvester Hertzog. Hector Dyer, pianist, 14 years old, pupil of Mrs. Walker M. Reckord. Helen Pirie, screen juvenile. Bedtime story by Uncle John.
8 TO 10 P M—Program presented through the courtesy of the San Diego Elks.
10 TO 11 P M—Art Hickman's Dance Orchestra from the Biltmore Hotel.
KFI—Earle C. Anthony, Inc., Los Angeles (469 Meters)
8 TO 9 P M—Harry Girard in operatic program.
Room 661 Pacific Bldg., San Francisco
9 TO 10 P M—Examiner concert. Musical program presented by Albert Metzler, pupil of Olga Steeb, Hollywood Conservatory of Music.
10 TO 11 P M—Popular song concert.
11 TO 12 P M—Ambassador Coconut Grove Orchestra.

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.
H. & O. MANUFACTURING CO.,

Sunday, July 13

KPO—Hale Bros., San Francisco (423 Meters)
11 A M TO 12 M—Non-sectarian church services, prayers and sermon, Dr. Roy Gullid, field secretary of Federal Council of Church of Christ of America; soloist, Mrs. Clara T. Ward, contralto; organ solos, Theo. J. Irwin.
8:30 TO 10—Rudy Selger's Fairmont Hotel Orchestra.
KJL—Oakland Tribune (509 Meters)
9:30 TO 10 P M—Talk by Rev. John Snape, pastor First Baptist Church of Oakland, with sacred songs before and after the talk by members of the choir of the First Baptist Church.
KGO—General Electric Co., Oakland (312 Meters)
11 A M TO 12 NOON—Non-sectarian church services.
3:30 TO 4:30 P M—Little Gem Symphony Orchestra.
7:30 P M—Non-sectarian church services.
KLS—Warner Bros., Oakland (360 Meters)
11:30 A M TO 1 P M—Non-sectarian church services; Rev. R. L. Chambers, pastor Radio Church of America.

Spiderweb coils are considered the best kind of inducances.

Radio Set Complete, \$6.25

Limited Time Only—To July 31
Receiving set, headphone, aerial, lead-in, ground wire, etc. Easy to install and simple to operate. Nothing else to buy. Each set tested and fully guaranteed.

THOSE RADIO MEN
400 Wilson Building
973 Market Street

NEW OFFICES TO BE OPENED IN FEW DAYS

NEA Service

CHICAGO, July 7.—Three women hold the distinction of being the only broadcast directors of their sex in the United States.

They are:

Eleanor Poehler, who manages station WLAG at Minneapolis.
Miss Judith Waller of station WMAQ, Chicago.

Miss V. A. L. Jones, station KSD, St. Louis.

There are many women broadcast announcers, but out of the some 550 stations throughout the country, only three are known to be run entirely by women.

Widely Known

All three, for this reason, have gained wide popularity in the radio world. Mrs. Poehler, for instance, not only manages her station, but is called upon to write special radio articles for newspapers and magazines and to deliver lectures to clubs and classes.

As head of WLAG, she has complete charge of the programs and business arrangements, and she frequently announces her evening concerts. She is a widow, with one son, an accomplished musician and a soprano of European as well as American training.

Miss Waller is responsible for the operas broadcast through station WMAQ at Chicago by the Chicago Civic Opera company. She has planned educational programs for WMAQ fans and is known well for her musical concerts.

Well Equipped

Training for this job came to Miss Waller from the field of advertising and office management.

Not only is Miss V. A. L. Jones director of station KSD at St. Louis, but she retains her control over her own advertising concern in that city. She is a musician and a critic, graduate of the University of California. She announces her own programs, besides managing the business end.

All three stations are in Class B, and of the highest grade, officially. Their directors compete good-naturedly among themselves for highest honors in broadcasting.

Yet they have never met.

Grid and plate leads of tube sockets should be away from the panel.

BREAK INTO RADIO KFI TO HAVE NEW STATION READY SOON



America's three women broadcast directors. At left, Eleanor Poehler, WLAG; upper right, Judith Waller, WMAQ; lower right, Miss V. A. L. Jones, KSD.

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.

Irvin Manning, 1366 26th-av, San Francisco, asks:

(1) In the tuned grid and plate circuit, is the rough tuning done with the grid variometer? (2) Is there any way to increase the wave length of a set without using a loading coil?

(1) Tuning must be done with both variometers. (2) Wave length of a set may be increased by putting the antenna condenser in shunt with the antenna inductance. A .001 condenser on the average antenna and inductance will give approximately 800 meters.

W. Pengelly, Box 29, R. F. D., Calistoga, Cal., asks:

(1) How can I add one step of R. F. to circuit in diagram enclosed? (2) If the 11-plate condenser in the dotted line was put in, would it be more selective? (3) If I used a Rhenhart or honeycomb coil, would it give better results? (4) My variometer in the grid circuit tunes, but not the one in the plate. Can it be made more efficient? (5) What would you call the circuit shown in the diagram?

(1) We are unable to print any diagrams in this column. (2) The 11-plate condenser would be of little value in the circuit. (3) Both the Rhenhart and the honeycomb coils have slight advantages over the coil you are using. (4) You will be able to tune your plate variometer if you will attach a .001 mf fixed condenser to the plate and positive B battery. This acts as a by-pass to the radio frequency currents. (5) Your circuit is known as the single circuit regenerative set with tuned plate and grid.

M. V. Clarke, 2865 Harrison-st, San Francisco, asks:

What about the selectivity, distance, volume and clearness of the enclosed diagrams?

Diagram No. 1, selectivity fair; distance good; volume excellent. Diagram No. 2, selectivity good; distance doubtful; volume fair; clearness good.

Martin Kenoyer, 59 Hancock-st, San Francisco, says:

(1) I am using triple honeycomb mounting on crystal set with 30, 45 and 60 turns, but cannot get below 300 meters. (2) Is hookup correct? (3) Is there any way I can increase volume without using tubes? (4) Is there any way that I can use dry cell batteries to an advantage with this set? (5) What is the ideal aerial for a crystal set?

(1) Try using two 25 coils on the swinging arms and a 50 in the stationary arm. (2) Would suggest on your hookup that you use the two swinging arms as the primary, hooking them in series, and use the stationary coil as the secondary, shunted by a 23-plate variable condenser. Be sure that the two primary coils are hooked in place. (3) No. (4) There are crystals that require batteries to operate them, but we do not believe this would be necessary if you have a good crystal. (5) A rather large aerial on a crystal set materially increases the volume but it cuts down the selectivity of the set. With your set, an aerial of a single wire 150 feet long should give very good results.

Frank Scully, 218 Grafton-av, San Francisco, asks:

What must be done to use loud speaker on the model J Echophone receiver?

In order to use a loud speaker on the receiver it will be necessary to add a two-stage amplifier, two tubes and one more B battery.

C. M. Behlow, 2819 25th-st, San Francisco, asks:

Will a 201-A tube give fair results as a detector in superdynamo circuit set?

A 201-A tube will work satisfactorily and the plate voltage should be increased to about 45 volts.

Edgar Darby, 2633 60th-av, Oakland, asks:

Is enclosed diagram correct? Also, where can I use 23-plate condenser to most advantage?

Your enclosed hookup will work, but suggest that you remove the variometer and the .00025 condenser from the circuit. Put the .005 or 23-plate condenser across the secondary of the variocoupler.

In Africa at Last

South Africa, finally, is to get its own broadcasting station, after a protest lodged by the city of Johannesburg. A private company is seeking to get the license and broadcasting is promised soon after.

LETS SWAP

TO SWAP—Two amp. Tungar charger for a larger charger, any make. Pay difference.—Safley, 3670 22nd-st.

TO SWAP—One W. D. 11 and 1 V. V. 200 for U. V. 201 A tubes. Call Park 3331 after 5:30 p m.

TO SWAP—Two Acme R. 3 R. F. T. and one Acme Var. Con. .0005 for U. V. 201 A tubes. Call Park 3331 after 5:30 p m.

TO SWAP—One-loop aerial and a C-300 detector tube for radio apparatus. 415 Miguel-st. Phone Mission 3611, after 5:30 p m.

TO SWAP—6-volt amplifying tube for set headphones; value \$3 to \$5. P. S. Jones, 1410 Milvia-st, Berkeley. Phone Berkeley 2274J.

TO SWAP—Three W. D. 12 tubes for 3 U. V. 201 tubes.—Joe Kabb, 154 East-st.

TO SWAP—\$100 Columbia Grafonola will trade for a radio st. Give good description.—Emile Price, 302 Maple-av, South San Francisco, Cal.

TO SWAP—Two dandy crystal sets,

in exchange for phonograph attachment or other parts. H. J. Pratt, 441 Fourth-av. Phone Bayview 7663.

TO SWAP—A dandy crystal set, complete with headphones; almost new; in fine condition; gets all local stations. Phone Market 1411.

TO SWAP—22½ Dutho "B" battery; recharged; all it needs is a charge for a vario-coupler. What have you? John Ward, 571 Santa Clara-av, Alameda.

TO SWAP—Two UV-199 tubes, with adaptors; used less than 3 months; trade for two 201-A tubes. 127 Milton-st, evenings.

TO SWAP—Pair of new Frost headphones (value \$6.50), for a pair of Baldwin phones; will pay the difference. Write to Louis Rugani, 116 Magnolia-st.

TO SWAP—One Remler variometer, 3 honeycomb coils (350-500-850 turns) 1 W. D. twelve tube for two audio frequency transformers, two Cunningham C 301 ampl. tubes, 1 Cunningham C 301 det. tubes or other parts. —F. Rojas, 1688 Ellis-st.

'HAM' BUILDS SET FOR THE NAVY

BY ISRAEL KLEIN

JOHN L. REINARTZ of South Manchester, Conn., is radio's hero for 1923. He holds the radio cup, annual award of the executive radio council of the second district, for best work among amateurs in this science last year.

His latest achievement is a ten-meter transmitter which he has turned over to the U. S. navy for use on American warships. In reception he is best known by the hook-up which bears his name and which he has lately improved.

Difficulty with Reinartz' first receiver was its interference from reradiation. Now he has found an easy way to avoid this and at the same time maintain the high tuning qualities and selectivity of his original circuit.

The new circuit is applicable for a variety of wavebands, but for broadcast receiving it may be made up as follows:

The Parts

Two-contact switch.
Switch lever and five switch points.

Three low-loss coils, preferably spiderweb.

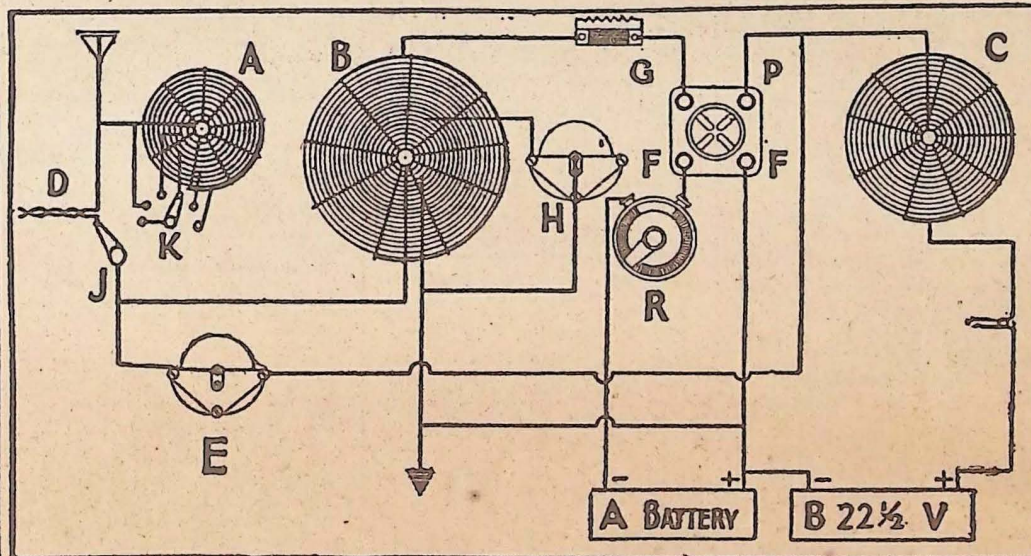
Two variable condensers, 11 plates each. Also low loss and of reliable construction.

One tube socket.

One 6-ohm rheostat.

One grid leak and condenser, .001 mfd.

Two feet of plain lamp cord.



Hook-up diagram of improved Reinartz circuit.

Jack, or phone binding posts, three battery binding posts, wire for connections.

The Coils

Coil A, in the hook-up, consists of 50 turns of No. 24 D. C. C. wire, wound on a two and one-half inch core with 11 spikes radiating from it. The windings start at the core and go in and out of the spikes until the coil is completed.

Take a tap at every tenth turn and connect to the five switch points, the first tap or beginning of the coil going to the aerial.

The tuning coil, B, consists of three sections. The beginning of the coil, also of No. 24 D. C.

C. wire, goes to the two-contact switch, P. From this point wind five turns, then take a tap to the ground and to the rotor of variable condenser H.

Then wind 20 more turns and tap again to the stator plates of H. Continue with 40 more turns, the end of which goes to the grid leak and condenser and to the grid of the vacuum tube. This lead should be as short as possible.

The choke coil, C, is a single coil of 76 turns and should be placed at the other end of the set, to be as far away from the other coils as possible. Coils A and B should be at right

angles for best reception.

For eliminating interference, the lamp cord D, is placed in the antenna lead, one set of ends being attached to one of the switch points of the two-contact switch, and to the antenna, and the other set of ends being left open. If selectivity is too great, add to the length of wire used.

In connecting the variable condensers, always join the rotor plates to the grounded part of the circuit.

Use a UV201-A tube in this circuit as detector, and if desired, add two stages of audio amplification for greater volume and use of loud speaker.