

SOUTH SEAS, ALASKA, GET KGO RAILWAY LABOR UNION IS TO BROADCAST

DISTANT FANS ENJOY KGO JAZZ TUNES

Although situated on opposite sides of the earth from each other, groups of radio listeners now sway, step and glide in unison to dance music played at KGO. This is shown today by letters received at the General Electric Pacific Coast Station.

From Waimate, South Island, New Zealand, almost four thousand miles south of the equator, comes a letter of appreciation. "Every Sunday evening," writes F. D. Blackwood, "the family dances on the front lawn to KGO music reproduced by our loud speaker. We always look forward to hearing KGO, and there is a disappointed household when the atmospheric are bad." Owing to 19 hours difference in time between New Zealand and the United States, music received by the Blackwood family Sunday evening is played at KGO Saturday night.

From the Far North within 50 miles of the Arctic Circle another letter has been received. "We have danced to music from KGO on several occasions," writes G. H. Hillman of Candle, Alaska. "It is certainly great to have dance music carried into the Arctic." Mr. Hillman is the operator of the Candle Radio Station.

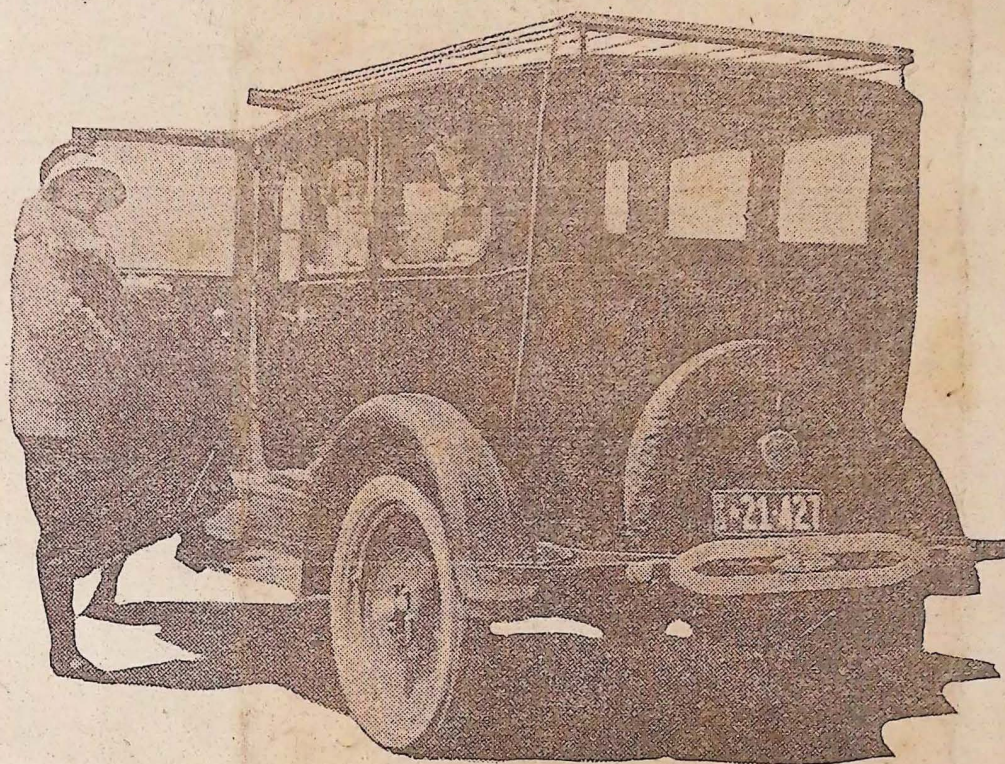
"The wireless station installed here this summer," he continued, "is a new thing to people in this section. Most of them have not been outside for 25 years, and it is hard for them to realize that KGO voices and music come from a distance of over 4000 miles."

'Brother' Plans Radio Picnic

There's a big treat in store for 400 junior radio fans who have been entertained by KPO's children hour programs. Big Brother, the man who tells stories, has arranged to hold a radio picnic on Angel Island next Sunday. The army is to loan the launch "Slocum" to take the kiddies to the island.

Prizes, including a \$350 Harkness Reflex receiving set, will be awarded for athletic events. Juvenile radio stars who have appeared on KPO Children hour programs, will entertain. The KPO Trio will sing popular numbers. Free ice cream will be served.

SMILES AT MILES WITH RADIO



Mrs. R. C. Coffman, 524 29th-st, in the radio equipped car which entertains the Coffman family while they are touring.

HE GROUNDS FREE END

A new preventive against local interference from power lines and electrical machinery has been devised by a French amateur.

He grounded the free end of the aerial.

His method is to connect a heavy wire to that end and bring it direct to the ground. The heavier the wire the better, to reduce resistance to a minimum.

The other end of the antenna is brought to the receiver and thence to the ground as usual.

Spotting by Radio

Radio spotting by army airplanes proved such a success at recent artillery practice in the Philippines that closer co-operation by this means is planned between artillery and aviation officers. Not a single radio failure was reported.

Hang up the phones when not in use, so that the cords will not be kinked.

There is music in the air when R. C. Coffman, 524 29th-st, goes traveling.

Long drives over monotonous stretches of roads offer no hardship to Coffman. Placed behind the driver's seat of his sedan is a portable five-tube neodyne set, which entertains the family and driver en route.

"Radio can be installed on the automobile at a very low cost," said Coffman. "The parts needed for the installation of the set amounted to \$11.00. These included wire, a pair of brackets, insulators and several small items."

There is little danger of breakage to tubes or other parts of the set while traveling, he said.

For his aerial, Coffman secured two brackets, which he placed about half a foot above the top of the car. Over the brackets, in a horizontal position, are stretched 20 pieces of wire, 80 inches long. The aerial lead-in runs down the side of the car, and is brought underneath the floor of the automobile, where it is connected with the radio set in back of the driver's seat. The metal frame of the car provides an adequate ground.

"Traveling at the rate of 40 miles an hour, we could get any station within a 150-mile radius," Coffman said. "Tourists traveling in neighboring counties of San Francisco can enjoy music from KPO and KGO. While in camp, we put up a stationary aerial, which increased our range of distance, and succeeded in getting Los Angeles, Portland and other distant points."

Radio in Jerusalem

Radio fans in Jerusalem are asking for the better type of receivers, because they have to tune in on English, French or German stations if they want to hear anything at all in the line of entertainment.

Radio To Cover World

International radio concerts are being prepared by Station KDKA, Pittsburgh. An evening will be devoted to each nation and the concert will be broadcast in that nation's language, besides English.

IN TROUBLE? READ THIS!

If you have a regenerative set, keep this trouble sheet handy. It tells you what to look for in case of any of four possibilities.

NO SIGNALS—Antenna grounded; "A" battery dead; "B" battery dead; wrong connections; broken wire; bad soldering; shorted condenser.

NO REGENERATION—Wrong grid leak; "B" battery low; tickler leads reversed; broken tickler connection; not enough turns on secondary.

TOO CRITICAL—Too much grid leak; too much plate voltage; too large a secondary or tickler; phone condenser too small; grid wires too close to panel.

WEAK SIGNALS—Low "A" battery; low "B" battery; wrong grid connections; poor antenna insulation.

Two state-controlled radio stations are operating in Lithuania.

BROTHERHOOD WILL ERECT HUGE STATION

Labor is to join the ranks of broadcasters. According to a resolution recently passed by the Brotherhood of Locomotive Engineers, at their convention at Cleveland, O., a high power radiocasting station is to be installed in the union's new bank building now under construction at St. Claire-av and Ontario-st.

Already identified with various activities in the commercial world, the Brotherhood will lead organized labor again, in the Radio World. The situation is analogous only in WOAW, the Woodmen of the World station at Omaha. Both stations are sustained by organizations whose members live in all parts of the country.

KPO To Broadcast 3 Special Events

KPO this week will broadcast the voices of three world famous people who are visitors of San Francisco.

Ernest Block, eminent teacher, composer and lecturer, will talk over KPO tonight at 8:30 o'clock under the auspices of Ada Clement of the San Francisco Conservatory of Music. The pianist at present is conducting a master course in San Francisco.

Nance O'Neill, emotional actress, will make her debut over the radio Thursday at 9 p m. She is to appear in Maeterlinck's "Mary Magdalene" at the Greek theater, University of California, July 30.

Through the courtesy of Dr. Mariana Bertola, Countess Irene di Robilant, who has seen service on the Italian and Turkish fronts, will deliver a talk on "Women of Italy" at 8 p m, Thursday. The countess, who is a daughter of General di Robilant, has been honored with war decorations by several nations for her valor.

On Flanders Farms

Farmers in Belgium are being more and more equipped with radio receiving sets, reports an observer. In cities, half the houses have sets. Only about half pay the state tax of 20 francs for each installation.

North Shore Congregational Church, Chicago, has opened a 500-watt broadcasting station, call letter WDBY.

Crystal Sets Give DX Letters Show

Can distance be obtained on a crystal set?

The question is of primary interest in the radio world.

And Harry Grant Jr, Burlington radio inventor, has hundreds of letters from fans to prove that amazing distances can be obtained on radio sets equipped with A-1 crystals.

For instance, J. R. Moore, a Virginian fan, wrote Grant:

"On my crystal set I have had Washington, Philadelphia, New York, Schenectady, Springfield, Mass., Pittsburgh, Cincinnati, Louisville, Atlanta and Montreal, good and clear and without fading."

"But can this be done in the San Francisco district?" is the next question.

And Grant pulls out another basket of letters, some of which read like this:

S. W. Richards, 14th-st, San

Francisco: "It is surely wonderful. Have only a small crystal set and Sunday night, also late last night, I got Los Angeles clear enough to hear the announcements and music."

Richard R. Breckenridge, secretary, post 6, Disabled Veterans of World War: "A-1 crystal gives entire satisfaction. With your No. 1 crystal set hookup have been able to get Los Angeles, Portland, and Seattle."

Evans Percy, high school student at Madrid-st, San Francisco: "I pick up KFI, and KHJ, Los Angeles. Only last night I listened to the jazz orchestra at KFI. It came in fine."

Similar letters were received from P. G. Mauer, Oakland fireman; M. Ernst, San Francisco fireman, and Leon Babbitt, Oakland mail carrier. All get Los Angeles every night.

Radio 'Spooks' Are Found By S. F. Fans

Thanks to the discovery of troublesome "radio spooks" by C. E. Hubbard, local radio manufacturer, 1944 Cabrillo-st, radio fans of the Park Presidio district are again enjoying radio entertainment.

Hubbard recently reported to the Great Western Power Co. that its transformers were "spooky." The next day the "spooks," or power leakages, were found in one of the company transformers at 20th-av and Cabrillo-st, and another at 22nd-av and Cabrillo-st. While this seemed to clear up the radio trouble, after the street lights were turned on Hubbard reported further interference by "spooks."

Determined to find the trouble, Hubbard started out "spook

hunting" again. On the corner of 21st-av and Cabrillo-st he heard a noise similar to that which had interfered with his crystal set. Upon looking up the poles, he discovered the source of the trouble. The disturbance had been caused by sparks jumping from a 11,000-volt insulator of a P. G. & E. feeder line.

According to Hubbard, fans troubled with sputtering or frying noises can often aid the power companies to locate the defective insulators if they will examine the power poles near their homes. A leakage is seldom heard more than a few hundred feet from the spot, and can often be heard and seen at night from the sidewalk near the pole.

Radio manufacturers and others suggest the use of "radio-cast" instead of "broadcast."

THIS WEEK'S AIR PROGRAMS

Monday, July 21

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

12 NOON—Scriptures. The same Scriptures will be read in Spanish. Dr. A. H. Mellen, Bible secretary of Mexico City, will read in Spanish and Rev. Jose P. Ruiz of San Francisco will read in English. A bilingual program of Scripture reading will be given every Monday noon.

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

2:30 TO 3:30 P M—Piano solos, Nocturne F. Sharp Major; Valse Arabesque; Zulima Bainbridge Brown. Flute solos, Sam Schildkret. Piano solos, Nocturne B. Major; Polichinelle (Woman Clown); Zulima Bainbridge Brown.

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

5:30 TO 6:30 P M—Children's Hour. Stories by Big Brother of KPO: Tales of Aesop, The Witch's Ring, Answers to Questions, Yellowstone Park.

7 TO 7:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.

8 TO 9 P M—Organ recital by Theodore J. Irwin, official organist, at the Wurliitzer.

March, Sigurd Jolsafer Suite; overture, William Tell; gavotte, First Heart Throbs; Melody of Love; Pierrette; larchetto, Clarinet Quintet; light opera selection, Maytime; selection of melodies from Chopin; Souvenir de Vienne; fox trot, Every Day I Hear My Daddy.

9 TO 10 P M—"The Transcontinental United States Air Mail Service," by James E. Power, postmaster of San Francisco. The new continuous day and night postal route through the air, operating regularly between New York and San Francisco and way distributing points; its opportunities and possibilities.

Program arranged by Marjorie S. Stoner.

Soprano solos, Nuit Resplendissante; Where My Caravan Has Rested (violin obligato by Julia H. Cochrane); Daisy O'Brien.

Piano solos, Sunrise; Prelude in G Minor, Dorothy Reed.

Contralto solos (except spirituals), Swing Low Sweet Chariot; Little David, Play on Your Harp; Oh, Didn't It Rain; Marjorie S. Stoner.

Violin solos, Songs My Mother Taught Me; Spanish Dance; Julia H. Cochrane.

Soprano solos, Sittin' Thinkin'; The Laverne Seller; Daisy O'Brien.

Contralto solos, Ave Maria (violin obligato by Julia H. Cochrane); Trees; Marjorie Sprague Stoner.

Violin solos, Melody; On Wings of Song; Julia H. Cochrane.

Duets, The Enchanted Glade; Smilin' Through; Daisy O'Brien, Marjorie Sprague Stoner.

Piano solos, Arabesque; Liebesfreude; Dorothy Reed.

Soprano solo, Le Nebbie; Daisy O'Brien.

Contralto solo, My Heart at Thy Sweet Voice (from "Samson and Delilah"); Marjorie Sprague Stoner.

10 TO 11 P M—E. Max Bradfield's Versatile Band.

KLX—Oakland Tribune (509 Meters)

7 TO 7:30 P M—News items, United States weather bureau report, markets and financial news (except Sunday).

8 TO 10 P M—Educational and musical program broadcast from Stephens Union Hall, University of California, over private leased wire through KLX. Dr. Louis Cazamian, professor of English literature and language at the University of Paris, will talk on "The Educational Value of Yosemite National Park." Dr. Philip Bovier Hawk, director of the research laboratory at McAllister-Hawk School, Massachusetts, will also give a short talk. Musical selections will be rendered by the Andersen Trio, the Scott Elder Trio and Gamble brothers, the selections to be announced later.

KGO—General Electric Co., Oakland (312 Meters)

1:30 P M—New York stock exchange and U. S. weather bureau reports.

3 P M—Studio musical program.

4 TO 5:30 P M—Henry Halstead's Hotel St. Francis Dance Orchestra, 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.

KLS—Warner Bros., Oakland (360 Meters)

11:30 A M TO 1 P M—Phonograph selections.

DISTANT STATIONS

KFI—E. C. Anthony, Inc. (469 Meters)

8 TO 9 P M—Evening Herald Radiolans Dance Orchestra.

9 TO 10 P M—Examiner, Thomas Taylor drill program.

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

KFOA—Rhodes Store, Seattle (455 Meters)

8:30 P M—Pacific States Electric Co.'s regular monthly program dance music furnished by popular Babby's B. B. Ladies' orchestra.

Tuesday, July 22

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

12 NOON—Time signals; Scripture.

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

2:30 TO 3:30 P M—Organ recital by Theodore J. Irwin, official organist, at the Wurliitzer.

Fox trot, Oriental Love Dreams; light opera selection, Mlle. Modiste; Valse Bluette; selection, Love Song of Old Days; popular waltz song, Hula Dream Girl; march, Jersey Shore; song melody, For You a Rose; fox trot, Don't Mind the Rain.

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

5:30 TO 6:30 P M—Children's Hour. Stories by Big Brother of KPO: Rum-Pel-Stilt-Skin; Men Who Made the Railways; Answers to Questions.

7 TO 7:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.

8 TO 10 P M—Program by members of League of American Penwomen; Josephine Wilson, California vice-president.

Radio lines, "Greetings, Penwomen, Our National President, Mrs. Edna Colman, New York, and Mrs. Bertha Lincoln Heustis, Los Angeles," Josephine Wilson, author and journalist.

"What California Has on the Air," Mrs. Frederick C. Colburn, president. Quotations from her books and poem, "California in December," Mrs. Ella M. Sexton, first vice-president.

Mrs. A. B. Spreckels, second vice-president, donor of San Francisco \$2,000,000 Memorial Museum American Legion of Honor.

B. & O. MANUFACTURING CO. "Nautical Confessions of a Flap-

per," Virginia Sullivan, executive and recording secretary.

Reading from her book, "San Francisco, City of Enchantment," Adele Beckman, acting treasurer.

"Cheerio," Julia Staples Pfeiffer, auditor.

Readings from California authors, "A Bit of Wit, a Dash of Humor and Laughs," Mrs. Mabel Gifford, librarian.

"Our Boys in Letterman," Mrs. W. S. Berry, registrar.

Harp solos, The Fountain; Concert Waltz; Wild Cherry Leaves (composer a Penwoman of San Francisco Branch L. A. P. W.).

"The Flag," by Mae Frances O'Keefe, member of San Francisco Branch, League of American Penwomen.

An excerpt from her book, "Born Rich," which is now being screened, Dr. Hughes Cornell.

"Personality," Harriette Gunn Robertson of Washington, D. C., president of School of Personality.

"Our Florence Nightingale," Mrs. A. W. Scott.

Vocal solos, by Mrs. Frederick H. Colburn.

Ariette (French song); Wings of the Night (words by Sara Teasdale); Indian Call; Helen Coburn Heath; Walter Wenzel, accompanist.

Reading from her book, "Laugh-ter and Longing," a poem, "One Golden Day," and "The Piper," from her book, "Wings of Youth," Nancy Buckley, poet.

Sketch, "Woman's Work," Mrs. W. B. Hamilton, vice-president, Committee of Five Thousand.

Reading from her book, "A-Gypsy-ing," Anna Blake Mezquida.

Vocal solo, I Promise You; Lella Gordon Saling; Marie H. Macquarrie, harp accompaniment.

"The Value of Community Pageants," Grace Hyde Trine, author and authority on pageantry.

Reading from her book, "The Log of the Empire State," Geneva Shaffer.

Whistling solos, Wonderful One; Pale Moon; Myrtle Hill Macquarrie; Mrs. Clyde White, accompanist.

"Young America's Training for the Navy," Mrs. H. A. Kleugel.

Reading from her book, "Here and There in Yosemite," Cristel Hastings.

"Crossing Radio Lines," Lillian Gatlin, girl aviator.

Harp solos, selected; Marie Hughes Macquarrie.

"He Said, She Said—In Convention," Mrs. W. D. Egbert, founder Golden Gate Branch Children of American Revolution; delegate to Cleveland convention.

"Lands Where the Orientals Live," Helen Broomfield.

"To Penwomen, Our Friends in Washington, Mizpah; Our Friends in New York; Everywhere," Josephine Wilson, historian.

Vocal solo, The End of a Perfect Day (by request); Helen Coburn Heath.

10 TO 11 P M—E. Max Bradfield's KLX—Oakland Tribune (509 Meters)

3 TO 5 P M—Baseball.

7 TO 7:30 P M—Stock, weather, news.

KGO—General Electric Co., Oakland (312 Meters)

1:30 P M—New York stock exchange and U. S. 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—Instrumental selection, Medley of Airs, Arion Trio.

Contralto solos—(a) Like a Wonderful Garden, (b) Little Folk Song, Annabelle Jones Rose.

Accordian solos—Max Schmidt.

Baritone solos—(a) Sittin' Thinkin', (b) With You, Wylie Doran.

Soprano solos—(a) Roadways, (b) Doan Yo' Listen, Agatha Cummings Southern.

Instrumental selection—La Golondrina, Arion Trio.

Address—"Hunting with the Bow and Arrow," Donnara R. Smith.

Hawaiian selections—(a) I Love You, Honolulu, (b) Hano, Hano, Hawaii, Mid-Pacific Hawaiian Quartette.

Baritone solos—(a) The Open Road, (b) The Gypsy Trail, Dean Gross.

Cello solo—Margaret Avery.

Contralto solos—(a) Believe Me If All Those Endearing Young Charms, (b) Harp That Once Thru Tara's Halls, Annabelle Jones Rose.

Instrumental selection—On the Bank of a Brook, Arion Trio.

Baritone solos—(a) Thou Gazest on the Stars, (b) Sometime, Wylie Doran.

Accordian solos—Max Schmidt.

Soprano solo—The Klitties' March, Agatha Cummings Southern.

Hawaiian selections—(a) Mid-Pacific Blues, (b) Aloha Blues, Mid-Pacific Hawaiian Quartette.

Violin solo—Josephine Holub.

Baritone solo—Lord God of Abraham (from "Elijah"), Dean Gross.

Instrumental selection—Love's Dream, Arion Trio.

KLS—Warner Bros., Oakland (360 Meters)

11:30 A M TO 1 P M—Phonograph selections.

DISTANT STATIONS

KFI—E. C. Anthony, Inc. (469 Meters)

8 TO 9 P M—Ambassador Hotel-Cocanut Grove Orchestra.

9 TO 10 P M—Examiner-Highland Park Six Orchestra.

10 TO 11 P M—Vocal concert by Leontino Redon.

KGW—Oregonian, Portland (492 Meters)

8 P M—Concert arranged by Seiberling-Lucas Music Co.

KHJ—Los Angeles Times (395 Meters)

8 TO 10 P M—Program presented through the courtesy of the Western Auto Supply Co., arranged by J. Howard Johnson. Dr. Thomas Lutzman, speaker.

10 TO 11 P M—Art Hickman's Dance Orchestra from the Biltmore Hotel.

Wednesday, July 23

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

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

2:30 TO 3:30 P M—Children's Hour. Stories by Big Brother of KPO: Three Nights in the Enchanted Castle; Animals Most Like Men; The Magic Boy Fiddler.

7 TO 7:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.

8 TO 8:45 P M—Talk, "You Boy and Mine and the Smith-Hughes Act," by William T. Elzinga.

Program under management of Zannette W. Potter, Oakland impresario, given for benefit of Western Music Trades convention being held in San Francisco.

Piano solo, Waltz (from "Faust"); Nadine Shepard.

Violin solos, Aria on G String; Menuet; Prayer; Edouard Deru, Beatrice Anthony, accompanist.

Baritone solos, Brian of Glenaig; Arise, O Sun; The Windmill; Vale; Harold Kirby (courtesy Metropolitan Bureau).

Violin solos: Preluded; Rondino; Edouard Deru, Beatrice Anthony, accompanist.

Cello solos, Nocturne; Apres in Reve; Jozelen Vander Ende, Wilhelm Walthus, accompanist.

Soprano solos, Pace, Pace mio Dio (from "La Forza del Destino"); I Came With a Song; Slumber Song; Marion Hovey Brower, Nadine Shepard, accompanist.

Violin solos, Sarabande et Tambourin; Old Folks at Home (arranged by Zimbalist); Edouard Deru, Beatrice Anthony, accompanist.

8:45 TO 11 P M—E. Max Bradfield's KLX—Oakland Tribune (509 Meters)

3 TO 5 P M—Baseball.

7 TO 7:30 P M—Stock, weather, news.

8 TO 10:30 P M—Studio program and music from the orchestra and organ of the American Theater, broadcast over private leased wire from the orchestra pit of the theater. Studio program:

The Artieda Opera company, Gregorio Artieda, director, will have the entire evening for a presentation of Gounod's opera, "Faust." Artieda, singing in the role of Faust, Elsie Hillton Cross, soprano, will have the part of Marguerite, and J. Corral, bass, the part of Mephistopheles. A. Serantoni and Maria Maytorena will assist at the piano and organ.

ACT I

The scene is the town of Wittenberg, Germany, in the 16th century. The action takes place in the alchemist's room which serves Faust as a study.

Scene 1—Recitative, "No, Interrogo in van," by Faust, Gregorio Artieda; chorus, "La vaga pupilla," mixed chorus directed by Walter Horace Bundy.

Scene 2—(a) "Ma il ciel"; (b), Waltz Finale, duet sung by Marguerite and Faust.

ACT II

Scene 1—The Kermesse (a), Song of the Golden Calf, "Dio dell' or," Mephistopheles.

Scene 2—Auerbach's cellar (a), "Salve dimora casta e pura," Faust; (b), Recitative, "Allerta!" Mephistopheles and Faust.

Scene 3—Marguerite's chamber (a), Aria, "Come vorrei saper," Marguerite; (b), Song of the Spinning Wheel; (c), The Jewel Song, Marguerite; (d), Buona Notte, Mephistopheles.

Scene 4—The garden (a), duet, "Marguerite," Marguerite and Faust; (b), "Divina Purlita," Faust; (c) Recitative, "Che bel matto," Marguerite and Faust; (d), "Di Mamma!" Marguerite.

ACT III

Scene 1—Marguerite's home (a), The Soldiers' Chorus, chorus; (b), Serenade, Mephistopheles.

Scene 2—In the church (a), Church scene, "Signor concessio sia," Marguerite.

Scene 3—In the prison (a), Recitative, "Va via," Faust and Mephistopheles; (b), duet, "Penetrato e il mio cor," Marguerite and Faust; (c), Trio finale, "Allerta!" Mephistopheles, Marguerite and Faust.

KGO—General Electric Co., Oakland (312 Meters)

1:30 P M—New York stock exchange and U. S. weather bureau reports.

3 P M—Short musical program. Speaker furnished through the courtesy of the Cora L. Williams Institute, Berkeley, Calif.

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

cisco, Vinton La Ferrara, conducting.

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

KLS—Warner Bros., Oakland (360 Meters)

11:30 A M TO 1 P M—Phonograph selections.

DISTANT STATIONS

KFI—E. C. Anthony, Inc. (469 Meters)

6:45 TO 8 P M—Detective stories and vocal concert.

8 TO 9 P M—Evening Herald, Owen Fallon's Californians, dance orchestra.

9 TO 10 P M—Wampus night program.

10 TO 11 P M—Hollywood Community Orchestra.

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

KGW—Oregonian, Portland (492 Meters)

8 P M—Concert.

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

KHJ—Los Angeles Times (395 Meters)

8 TO 9:30 P M—Program presented through the courtesy of Ray F. Chesley, Ford dealer at Bell, Cal.; arranged by Zarah Myron Bickford, mandolin.

9:30 TO 10 P M—Program presenting Al Schiller, pianist. Dr. Mars Baumgardt, lecturer.

10 TO 11 P M—Art Hickman's Dance Orchestra from the Biltmore Hotel.

KFOA—Rhodes Store, Seattle (455 Meters)

8:30 P M—James Hamilton Howe, dean of American College of Music, will give his regular monthly recital assisted by members of the faculty, students and guest artists.

Thursday, July 24

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

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

2:30 TO 3:30 P M—Junior musicale under auspices of Merrill & Merrill, musical merchandise brokers of Oakland.

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

5:30 TO 6:30 P M—Children's Hour. Stories by Big Brother of KPO: The Men Who Gave Us Light; Tom Thumb; The Land of Red Daisies.

7 TO 7:30 P M—Rudy Seiger's Fairmont Hotel Orchestra.

8 TO 9 P M—Organ recital by Theodore J. Irwin, official organist, at the Wurliitzer.

March Militaire; Nutcracker Suite; Danse Arabe, Nutcracker Suite; light opera selection, Mikado; gavotte, Premier Bonheur; Romanza; Lisellotte and Lancelot; Consolation; song melody, Little Gray Home in the West; fox trot, Not Here, Not There.

9 TO 10 P M—Watsonville night, under management of Dr. C. O. Patterson.

Quartet: Love's Old Sweet Song; Po' Little Lamb.

Violin solo, Mazurka de Concert; C. M. Howe, Mrs. Howe, accompanist.

Tenor solo, When You and I Were Young Maggie; C. O. Patterson; C. M. Howe, violin obligato.

Quartet, Kentucky Babe.

Bass solos, Barefoot Trill; Old Road; C. M. Howe.

Reading, "Seein' Things at Night," C. O. Patterson.

Tenor solo, I'll Take You Home Again, Kathleen; C. O. Patterson.

Quartet, Sweet Galilee; Until the Dawn.

10 TO 11 P M—E. Max Bradfield's Versatile Band.

KLX—Oakland Tribune (509 Meters)

3 TO 5 P M—Baseball.

7 TO 7:30 P M—Stock, weather, news.

KGO—General Electric Co., Oakland (312 Meters)

1:30 P M—New York stock exchange and U. S. 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 P M—Three-act drama, "Kindling," under direction of Wilda Wilson Church. Music between acts by Musaeus Trio.

KLS—Warner Bros., Oakland (360 Meters)

11:30 A M TO 1 P M—Phonograph selections.

DISTANT STATIONS

KFI—E. C. Anthony, Inc. (469 Meters)

6:45 TO 8 P M—Aeolian organ recital.

8 TO 9 P M—Evening Herald, Grigsby's Orchestra.

9 TO 10 P M—Examiner-University of Southern California school of speech night.

10 TO 11 P M—Pupils of Myra Belle Vickers in vocal recital.

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

KGW—Oregonian, Portland (492 Meters)

8:15 P M—Studio concert by George Olsen's Metropolitan Orchestra of the Hotel Portland, Herman Kenin, director.

10:30 P M—Hoot Owls.

KHJ—Los Angeles Times (395 Meters)

8 TO 10 P M—Program arranged through the courtesy of Margaret (Concluded on Page Three)

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.

B. & O. MANUFACTURING CO.
Room 661 Pacific Bldg., San Francisco

A-1 CRYSTALS
GET DISTANCE
AT LIVERMORE
"I received the A-1 Crystal yesterday and it is fine. The local stations came in louder."
"Last night, Friday, I got KFSG, KGW, KHJ, KFI, KGW besides local stations."
"D. G., Jr., Livermore, Calif."

A-1 CRYSTALS
Sent postpaid 50c each, 60c C. O. D.
California Radio Minerals
Harry Grant, Jr.,
904 Oak Grove Ave.,
Burlingame, California.

Million Point Super-Crystals

are unconditionally guaranteed to be the best for distance and there is no louder crystal made. Sold by first class jobbers and dealers everywhere.

Sample postpaid 40c if your dealer does not stock them.

Hubbard Laboratories
1944 Cabrillo St., San Francisco

I. S. COHEN'S SONS
1015 Market St., near 6th.
Phone Market 9558.
Mail Orders Promptly Filled.

RADIO SPECIALS

TUBES—Never before at this price. Radiotron or Cunningham. All types. No seconds or refills. List price \$5. Our price..... \$3.80

A-1 Wonder Crystals, gets distance. Our price..... 50¢

Scientific Headset, 3000 ohms, world's greatest phone value. Our price..... \$2.75

Murdoch Headset, 2000 ohms. Regular price \$4.00. Our price..... \$3.45

Murdoch Headset, 3000 ohms. Regular price \$4.50. Our price..... \$3.75

Brandes Superior Headset. Regular price \$6.00. Our price..... \$4.10

Brandes Navy type Headset. Regular price \$8.00. Our price..... \$5.85

Brandes Loud Speaker. Regular price \$10.50. Our price..... \$7.20

Eveready B Batteries, 45 volts, large size. Regular price \$5.00. Our price..... \$3.40

Eveready B Batteries, 22½ volts. Regular price \$2.50. Our price..... \$1.80

FADA—Five-tube Neutrodyne, knockdown parts, complete. Regular price \$65.00. Our price..... \$49.75

Master 23-Plate Vernier Condenser. Regular price \$6.00. Our price..... \$2.75

Lemco Crystal Set, Reg. price \$7.50. Our price..... \$5.80

Manhattan Loud Speaker Limited supply only. Regular price \$25.00. Our price..... \$12.95

SPECIAL TUBE WILL BE USED FOR U. S. SETS

NEA Service
WASHINGTON, July 21.—Government radio men have decided upon a special receiving tube for use by all departments. They have therefore drawn specifications for manufacturers to follow in construction of these tubes.

The tube is of the dry battery variety, not unlike the WD-11, and the base is of a size that fits into UV-199 sockets.

Its difference from other tubes lies in its contact points. These, instead of being prongs, are of the knifeblade type and make contact permanent and certain.

The filament requires a fourth ampere with a nominal voltage of one volt. It will generally be used with 60 volts on the plate and a negative grid voltage of three volts.

Several manufacturers are said to be ready for production of these tubes, for the government departments.

Nothing is said of tube's adoption for general use outside government departments, but the innovation may be taken up by the public as fast as it becomes known.

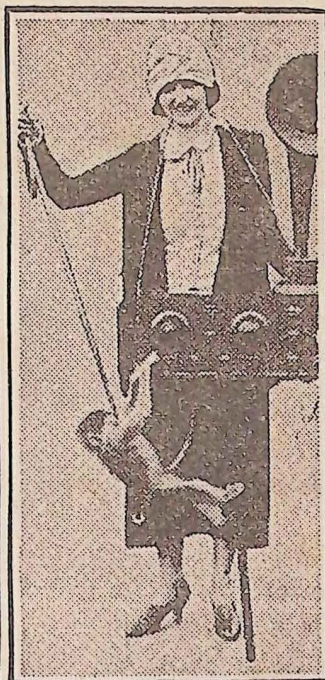
England Heard By "Direct Ray"

HARTFORD, Conn., July 21.—"Direct ray" radio transmission tests being conducted by the Marconi station at Poldhu, England, have aroused a great deal of interest among amateurs of the American Radio Relay League in the eastern part of the country who have heard these signals on 94 meters.

This method of transmission which provides for the sending of radio signals in a given direction is accomplished by a system of reflection similar to that used for directing a light beam. The radio waves are sent out from the station toward a definite point of the compass with the help of a network of wires near the antenna, placed in such fashion that they act as a reflector.

By this novel means of transmitting radio waves it is claimed

'RADIO GRADIO' LOUD SPEAKER



The hurdy-gurdy, for generations the curbstone favorite of children, threatens to pass. Enters the radio-gradio, or whatever they will name the latest variation of organ grinding. Oh yes, the inevitable "monk" will still be there to attract the youngsters.

Watch for "Beats"

If you hear a constant pitch whistle while receiving, some broadcasting station, generally nearby, is not transmitting on its assigned wavelength. This whistle or "beat" is produced by the carrier waves of two broadcasting stations. Waves are assigned far enough apart to avoid this.

that greater distances can be covered with the same power, as well as being concentrated definitely toward the receiving station. There is a rumor that work on the construction of the high power link in the British Empire wireless chain in Australia has been halted pending the definite outcome of these experiments.

LOUD SPEAKER ON SOLENOID SYSTEM BEST

There are three kinds of loud speakers.

1. Those by which a simple headphone is attached to a horn by means of clamps.

2. Those that have a telephone receiver at the base of the horn, or attached more closely than the first class.

3. Those built on the solenoid principle in which the currents act on a coil placed in the field of a strongly energized magnet.

The last is most proficient, although the other two are effective sound producers. The difficulty with them is that strong signals cause the diaphragm to strike the magnet and produce rattles. Also, when the plate voltage is high a direct current flowing through the magnet exerts a strong pull on the diaphragm and causes distortion.

In the solenoid type the gap between coil and diaphragm is constant and fluctuations of current do not change the impedance of the circuit. Thus, no matter how weak or how strong the signals, the sounds are not distorted.

The shape of the horn, it has been found by experiment, should be straight, rather than curved and the opening has to be regulated in size in proportion to the length.

Wood is the best material. Papier-mache also is good. A metal horn gives a brassy overtone and produces vibrations in itself.

Philharmonic on Air

The famous New York Philharmonic Society is to broadcast its orchestra's concerts through Station WJZ, New York. Plans call for three concerts weekly from the Lewisohn stadium.

Owens Own Station

Dr. J. L. P. Landry is both builder and owner of Station CJCM at Mount Joli, Quebec. He has made most of the parts for the transmission and conducts all the broadcasting himself.

PROGRAM CONTINUED

(Concluded from Page Two)
Coutche, composer.
10 TO 11 P M—Art Hickman's Dance Orchestra from the Biltmore Hotel.
KFOA—Rhodes Store, Seattle (455 Meters)
8:30 P M—Piano solos by Elaine Larson.
Baritone solos by Marvin Wake; Elaine Larson, accompanist.
Banjo solos by Frank Hollock.

Saturday, July 26

KPO—Hale Bros., San Francisco (423 Meters)
8 TO 12 P M—Dance music by Art Weidner's Orchestra. KPO Trio during intermission.
KGO—General Electric Co., Oakland (312 Meters)
12 NOON—New York stock exchange and U. S. weather bureau reports.

4 TO 5:30 P M—Concert Orchestra of the Hotel St. Francis, San Francisco, Vinton La Ferrera conducting.
8 P M—Part I:
Program being given through the courtesy of Camp Curry, Yosemite National Park, California.

Violin solo—Zigeunervelsen (Gypsy Airs), Carol Weston.
Soprano solos—Edith Benjamin.
Piano solo—Rigoletto Fantasie, Marian Provost.

Address—"The History of the Fire Fall," Don Tresidder, Manager Camp Curry.

Character songs—Glen Hood.
Violin solo—Carol Weston.
Reading—"Dooley on the Pullman Car," Mrs. R. D. Jilson.

Soprano solos—Edith Benjamin.
Piano solos—Marian Provost.
Reading—Mrs. R. D. Jilson.
Character songs—Glen Hood.

PART II

Instrumental selection—Old Vienna Waltz, Arion Trio.

Baritone solos—(a) The Sea Gypsy, (b) Farewell, Irwin Johnson; Hans Hoeburn, accompanist.

Hawaiian selections—Prof. John Kelliaa, G. Deloro, Virgil M. Holden.

Travel talk (being the second in a series of "Around the World"), Hongkong, Canton and Manila, J. E. Barnes.

Harmonica selections—(a) Call of the Rose, (b) Faithful Step, John T. Brown.

French horn solos—Edwin Bergenholz.

Instrumental selection—Murmuring Zephyr, Arion Trio.

Baritone solos—(a) It Was Not So to Be, (b) Evening Star (from "Tannhauser"), Irwin Johnson.

Piano solos—Mrs. Herbert Avery.

Hawaiian selections—Kelliaa, Deloro and Holden.

French horn solo—Edwin Bergenholz.

Instrumental selection—Valse Triste, Arion Trio.

10 P M TO 1 A M—Dance music.

KLX—Oakland Tribune (509 Meters)
8 TO 5 P M—Baseball.
7 TO 7:30 P M—Stock, weather, news.

KRE—Berkeley Gazette (278 Meters)
8 TO 12 P M—Dance music by Horace Held's orchestra of the Hotel Claremont.

KLS—Warner Bros., Oakland (360 Meters)
11:30 A M TO 1 P M—Phonograph selections.

DISTANT STATIONS

KFI—E. C. Anthony, Inc. (469 Meters)

6:45 TO 8 P M—Hennessy's Paramount Players.

8 TO 9 P M—Norman Kelch, bass, arranging program.

9 TO 10 P M—Examiner-Pullerton program.

10 TO 11 P M—Popular song program.

11 P M TO 12 M—Ambassador Hotel-Cocoanut Grove Orchestra.

KGW—Oregonian, Portland (492 Meters)
10 P M—Police reports, baseball scores, weather forecast and dance music by George Olsen's Metropolitan Orchestra of the Hotel Portland (two hours).

KHJ—Los Angeles Times (395 Meters)
8 TO 10 P M—Program arranged through the courtesy of J. Howard Johnson, tenor.

10 TO 11 P M—Art Hickman's Dance Orchestra from the Biltmore Hotel.

KLX—Oakland Tribune (509 Meters)
9:30 TO 10 P M—Talk by Rev. John Snape, pastor First Baptist Church of Oakland, with sacred music before and after the talk by members of the First Baptist Church choir.

KLS—Warner Bros., Oakland (360 Meters)
12 TO 1 P M—Radio Church of America, Rev. Dr. George Chambers; music in charge of Charles Dickens.

KPO—Hale Bros., S. F. (423 Meters)
11 TO 12 M—Organ prelude, Theo. J. Irwin; solos, Mme. Madge DeWitt, dramatic soprano. Undenominational services, prayers, sermon.

8:30 TO 10 P M—Rudy Seiger's Fairmont hotel orchestra.

KGO—General Electric Co., Oakland (312 Meters)
11 A M TO 12 M—Non-sectarian church services, First Presbyterian Church of Oakland, Rev. Drury C. Haight; prayers and sermon.

3:30 TO 4:30 P M—KGO Little Symphony Orchestra, "Ocean Breezes"; overture, "Carnival of Venice"; ballet suite, "Casse Noisette"; contralto solos, Marjorie Sprague Stoner, "Open to Me the Gates"; piano solo, Allan Bacon, "Polonaise in A Flat"; "Nocturne in G Major"; contralto solos, Marjorie Sprague Stoner, selections from "Lovers of Damascus"; "Far Across the Desert Sands"; "How Many a Lonely Caravan"; piano solos, Allan Bacon, "Rain in the Garden"; "Frolie of Waters"; "Marionette Show."

KGO Little Symphony, lyric pieces, "Russian Band," old songs, series No. 11, "Coronation March."

7:30 P M—Non-sectarian church services, First Presbyterian Church of Oakland. Talk, "America's Interest in World Peace," Prof. Irving Fischer, Yale University.

DISTANT STATIONS
KFI—Earle C. Anthony, Inc., L. A. (469 Meters)

10 TO 10:45 A M—L. A. Church Federation service.

6:45 TO 8 P M—Crosby Sisters and Sigma Pi violin trio.

8 TO 9 P M—Ambassador Hotel Dance Concert orchestra.

9 TO 10 P M—Examiner-Wes Bennett's orchestra.

10 TO 11 P M—Packard Six orchestra.

KHJ—L. A. Times (395 Meters)
10 A M—Sermon from KHJ studio by Dr. C. H. Culbertson, pastor of the Plymouth Congregational church.

10:30 TO 12:30 P M—Organ recital and entire religious service from the First Methodist Episcopal church, Arthur Blakeley, organist, and Rev. Elmer B. Helms, pastor.

6:30 TO 7 P M—Art Hickman's Concert orchestra from the Biltmore hotel.

7 TO 7:30 P M—Organ recital from the First Methodist Episcopal church; Arthur Blakeley, organist.

8 TO 10 P M—Program presented through the courtesy of the West Coast Theaters, arranged by Mr. Spier.

WAVELETS

Summer time is hard on long distance reception.

Austria is to start regular broadcasting on July 1.

Nearly 300 radio books have been published in the last two years.

Wires should be kept as far apart as possible.

Station KFNF, Shenandoah, Pa., has a pig for mascot.

Acid should not be used as a soldering flux, because it attacks the copper.

France doubts the wisdom of installing radio sets in hospitals.

King George of England has a seven-tube receiving set.

A broadcast receiving license in Great Britain costs \$2.50 a year.

England has issued about 56,000 experimental licenses.

Over 12,000 miles of aerial wire have been installed in Great Britain in the last year.

Recent Esperanto talk from WOR, Newark, was received in Tokio, 9000 miles away.

Chili is planning a broadcast system covering every town in the country.

State control of radio broadcasting in Ireland has been recommended to the Dail Eireann.

RADIO FROM THE GROUND UP

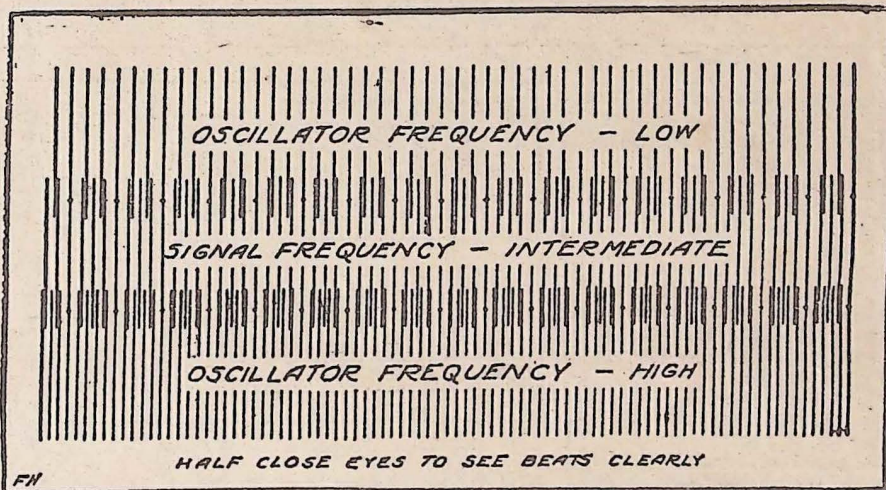
When regeneration is carried past the point of maximum sensitiveness, the signals received are distorted, and in the case of a broadcasting station a loud whistle is heard. The pitch of this whistle may be changed at will by adjustments of the tuning control. The detector tube is then in what is known as an "oscillating" condition and it has indeed become a transmitting tube itself. The transmission from such an oscillating detector tube connected to a receiving antenna is not very powerful, but the effect can be heard for a half mile or so and is often the cause of extreme annoyance to other listeners.

The carrier wave from the broadcasting station, we have already learned, is alternating hundreds of thousands of times per second—so rapidly that the human ear cannot possibly detect it. The upper limits of hearing are in the vicinity of 10,000 cycles—in other words, we can hear frequencies as rapid as 10,000 vibrations per second, but not those of higher frequencies. These others, that we cannot hear, are termed "radio frequencies," while those below 10,000 cycles are called "audio," or audible, frequencies.

Two Frequencies

When the receiving detector tube starts to oscillate it, too, is generating a frequency up in the hundreds of thousands per second. This acts along with the incoming carrier wave, provided the two aren't very far apart in wave length, and every now and then a pulse from the aerial and one from the oscillating tube pass through the phones together. This makes a "click." Some time later another pulse from outside and one from the tube again strike the phones in unison, and then comes another click. The whistle which we get in the phones is merely a succession of these clicks, and the combination of the two inaudible frequencies has resulted in an audible frequency within our hearing limits.

This is heterodyning. You



may observe the same phenomenon on your piano. Strike two bass notes which are a half tone apart and listen to the slow throbbing effect produced by this combination. Every so often one vibration from one note comes at the same instant as a vibration from the other note, and the reinforcement produces the third and slower frequency. Now, if you tune the receiving set past the wave length of a broadcasting station while the tube is oscillating, you will note that the whistle goes down to zero and then starts to increase its pitch again. There are two whistles, in other words. If we combine the incoming carrier wave with a frequency which is slightly higher or lower, the result is the same and the resulting frequency is the difference between them. The accompanying sketch will help you to understand this heterodyning. The carrier wave is shown in the middle—waves a certain distance apart. If the tube's oscillations, of slower

frequency, be superimposed upon the signal every so often they will come together, as shown by the dot.

If the oscillator is made a higher frequency—waves closer than with the signal frequency—the effect is the same, for they come together just as often. The points of unison are called "beats," and you can easily see them in the figure. If you allow your regenerative tube to oscillate while receiving, you may be transmitting a wave which will interfere with listeners near you. They will hear a whistle if your tube is oscillating at a frequency very nearly that of the station they are getting. Since it is not necessary to have the tube oscillating, listeners who are thoughtful of others are very careful to prevent their tubes from transmitting in this way and creating a disturbance.

The New Wave

The wave length of the third frequency produced is a compromise between the oscillator and

the signal frequencies. Hence it cannot be the actual frequency of the new wave that you hear, for this is evidently still up in the hundreds of thousands. No, but the "beat" note is audible and the accompanying curve shows that the beats are composed of a number of alterations, gradually increasing in strength and then dying down again as the two frequencies come more and more closely together and then draw apart again.

Heterodyning is made use of in the superheterodyne receiver but for ordinary broadcast reception it should be carefully avoided as an interfering nuisance. The principles of heterodyning should be understood so that the birdlike whistles we so often hear will be recognized in their true aspect. Regeneration is of inestimable importance and is practically indispensable, but it should not be carried to the point where heterodyning and consequent interference is instituted.

BILLY SUNDAY HAS DOUBLE OVER ETHER

Pastors are seizing upon radio. They are finding it the most effective method of reaching large numbers of hearers when their churches are filled to capacity.

One of the first to adopt the innovation is Rev. John Stevens of the First Methodist Church, Oakland. His sermons and the church services were broadcast Sunday over KGO. Ground wires connected his pulpit with the KGO radio control room.

Rev. R. R. Brown of Omaha, Neb., has won the title of "Billy Sunday of Radio" through his frequent use of the microphone to save souls.

He takes off his hat and coat and performs and perspires before the microphone of Station WOAW just as the famous evangelist has been noted to do before his congregation.

He talks personally to pool-room loungers, hospital patients and isolated men, women and children, as though he were pointing a direct finger at them. And he gets results.

"Hey, you guys in that garage," he'd ejaculate. "Take those hats off your heads and those cigarets out of your mouths and bow with me in prayer!"

Or, he'd say, "You hard-bailed mossback lying there on that couch. Get down on your knees and thank the Lord for all he's done for you."

Sunday after Sunday Brown prepares his sermons for his ever-growing radio congregation. By plowing through more than 6000 appreciative letters, he has learned that he is being consistently listened to by a congregation that covers the entire middle west.

"I see 'em all in the steel-framed circles of my microphone," Brown declares. "There's the husband who won't go to church with his wife. There's the gang at Billy's billiard hall.

"There's a little consumptive girl who is taking the fresh-air cure. There's an old couple out on the farm who wrote me, 'you have brought Sunday back to us.'"

"There's a little lad in the school for the blind who says I am making a good boy out of him. There's a chap out in a car inspector's shanty who hasn't gone to church for years because he has to work on Sunday. And there's a little group of worshippers in a country schoolhouse in Colorado.

"I take off my coat and preach to them till the perspiration pours down my face."

In return this is his reward: Gifts of country butter, fresh eggs, honey, cake, homemade candy and many other things that used to make up a country clergyman's pay years ago.

LET'S SWAP

These "Swap" advertisements will be published free of cost until further notice in the Monday Radio Magazine of The Daily News. The article to be traded must be radio equipment. Keep the wording concise.

TO SWAP—Brand new tubes, UV199 or C299 or C300; will swap one for audio-freq. transformer or new 45-volt battery; or will sell each for \$3.50. Call at 2711 Bryant-st between 7:30 and 9 p. m.

TO SWAP—25-volt rechargeable "B" battery and 4-volt rechargeable "A" battery, for a loud speaker. J. E. 2369 Howard-st. Phone Mission 5956.

TO SWAP—Good crystal set for vacuum tube and socket or a good "B" battery or "V" condenser. Francis Kirby, 244 Allison-av, San Francisco.

TO SWAP—Loose coupler crystal set, complete except for headphones; will exchange for a variable condenser or something of equal value. E. N. Hacker, 3647 Logan-st, Oakland.

TO SWAP—Ten-watt transmitter, complete, \$50; 6-volt, 140-amp. "A" battery, new; \$15 honeycomb coils and parts. Martyn, 475 30th-st, San Francisco. Phone Val. 1717.

TO SWAP—Half kilowatt spark set, complete for parts for low power tube set. Or what have you? White (GCS), 476 Page-st. Phone Park 5403.

TO SWAP—Lemco tuner set (range 1000 miles), without phones, tubes or batteries, for good complete crystal set. Write George Paulouls, 2345 21st-st, San Francisco.

TO SWAP—One-stage audio frequency amplifier in cabinet, for other radio equipment. R. W. Kiepert, 320 Frederick-st.

RADIO BRINGS CHURCH TO HOME



Rev. R. R. Brown of Omaha, Neb., lets his congregation stay home while he delivers his sermons to them by radio. Here he is at the microphone, with Marylin Jean, his one-year-old daughter, who was named "Radio Baby" by his congregation.

Fans See Latest In Radio Sets

Many local radio fans took the opportunity of seeing the latest in radio apparatus, with the arrival of the Brooklyn Daily Eagle's special train last week.

The entire apparatus, which was installed in an all-metal car, included an especially constructed superheterodyne. The set is gold plated and encased in heavy plate glass.

One of the features that attracted radio fans was the power equipment. Recharging of batteries was accomplished by simply hooking an electric cord to a lamp socket in the car, the batteries charging from the car's 32-volt electric power system.

Station at Madrid, Spain, is broadcasting on two and a half kilowatts.

French Amateur Heard in Brazil

NICE, France, July 14.—It has just been reported here that Leo Deloy, prominent local amateur, was heard in Brazil during the Pan-American radio tests of the American Radio Relay League. This probably gives Deloy the honor of being the first European amateur to be heard by an amateur operator in South America.

200 Miles on Crystals

Crystal set users in England may be able to hear the new high-power station at Chelmsford up to 200 miles away, say officials of the British Broadcasting Co. The new station will try to reach across the ocean, operating on 1600 meters with a power of 25 kilowatts.

HOW TO BUILD 1-TUBE SET

BY DAVID DIETZ

A modified three-circuit set using a fixed coupler can be built for about \$20 exclusive of phones and batteries.

The writer has found that the set functions well with a "peanut tube." Consequently by using either the WD12 or C12 tube, the amateur can use a dry battery for the "A" battery and thus keep the cost down.

The set being a three-circuit set will not radiate and the hook-up is simple.

Parts Needed

The following apparatus is needed for the set:

One panel of insulating material, 15 inches long and seven inches high.

One base of hardwood, 15 inches long and 10 inches wide.

One strip of insulating material, six inches long and one inch wide. This is for the battery connections.

One fixed coupler.

One variable condenser, 23-plate.

One variometer.

One vacuum tube and socket.

One grid leak and condenser, .00025 mfd. and two megohms.

One rheostat.

Eight binding posts.

Tinfoil for shielding panel.

Bus wire for making connections.

The accompanying illustration shows how the set is assembled.

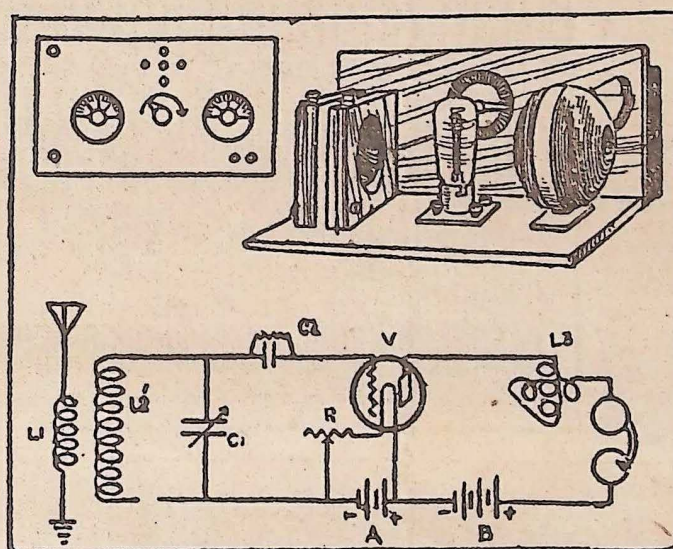
Assembling Set

After the panel is drilled, it is fastened to the base with brass screws.

The rheostat is then fastened in place on the back of the panel, the shaft extending through to the front of the panel.

The variable condenser is next fastened in place in similar fashion.

The variometer is now mount-



ed on the base, the shaft extending through the hole drilled for this purpose in the panel.

The vacuum tube socket is fastened on the base behind the rheostat.

The grid leak and condenser is mounted on the base near the grid terminal of the tube socket.

The fixed coupler is mounted on the base back of the variable condenser.

The four binding posts are mounted on the front of the panel in the holes drilled for them.

The other four binding posts are mounted on the strip of insulating material. This in turn is mounted on the base by means of two small blocks of wood, at the rear edge of the base behind the tube socket.

These binding posts are for the "A" and "B" battery connections.

The set is now completed with the exception of the connec-

KPO OFFERS FANS COURSE IN FRENCH

French taught over the radio, is the latest in opportunities offered to local fans.

Commencing on Wednesday, Aug. 20, at 8:20 p. m., KPO will offer a course in conversational French. Those who wish to enroll and receive necessary details, charts, etc., should send a self-addressed, stamped envelope to KPO, Hale Brothers, at Market and Fifth-st.

Good Care Doubles Life of Battery

Proper care of the battery will double the usual reception of the set. Always remove the acid or water from the top of the battery, as the moisture will sometimes cause unnecessary noises. Never place the battery near window curtains, as the fumes will ruin them. Do not set the battery on or next to a rug, as the acid might leak and ruin it. If battery is in good condition it will not freeze. The care of the radio battery is more important in the summer time than in the winter, because many people are not inclined to use their sets in summer. If the battery is not used for a long time and is left in a discharged condition, sulphation will result. This condition can sometimes be remedied by a prolonged charge. Many times it is necessary to dismantle and repair.

Blind Composer Sings Over Radio

Radio fans who tuned in station KLX Friday night, heard for the first time the new songballad, "Only the Leaf of a Rose."

The ballad was sung by the composer himself, A. E. Buckingham, who is blind. Having lost the sight of both eyes through an explosion of dynamite while perfecting a scientific invention, Buckingham has now turned to song writing as a means of livelihood.

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.

Howard W. Busse, Burlingame, Calif., asks:

I am unable to hear any other station while KPO is on; what can be done to eliminate the trouble? Have crystal set.

The addition of a wave trap is not always successful on a single circuit receiver. Would suggest that you construct a crystal set which is commonly known as a two circuit. The use of a vario-coupler is good for this. Shunt a 23-plate condenser across the secondary of coupler.

Albert Bruckner, 2249A Clement-st, San Francisco, asks:

I have one tube variometer set which will not tune in KFBK or KPFG. Is there any way by which this can be done?

We are taking for granted that you are receiving stations of higher wave length, but are unable to get below 360 meters. If this be the case, suggest the placing of a 23-plate variable condenser in series with the antenna. If this does not help, suggest that you send diagram of your set for inspection.

R. Marley, 327 23rd-av, San Francisco, asks:

(1) How is enclosed diagram for selectivity? (2) What type of tubes would you suggest for it? (3) Will it work a loud speaker as it is now?

Selectivity, fair; distance, coast stations during winter months; volume, fair.

2. Use UV 201-A or C-299 tubes.

3. Should work all local stations on loud speaker.

A. Rosici, 55 Rotteck-st, San Francisco, asks:

Have 3-tube Eria Reflex set with Remler vario-coupler (about 36 turns on secondary and 50 turns on primary). Reception is very good on both local and long distance with the exception of KLX and northern stations. I think the explanation is that these stations are on too high a wave length for this style of coupler.

You are right. Suggest that you purchase one of the new type Eria selectoformers built especially for this circuit. You should then have no further troubles.

W. J. Stanley, 405 3rd-st, San Francisco, asks:

Would like to know why my reflex set operates just the same with or without the crystal. Am using straight Eria single tube hook-up with all American transformers.

It is next to impossible to say where the trouble is. The set is not reflexing properly. The aerial may be too long or the capacity of the fixed condensers is not right. Very carefully check over the hook-up and test transformers for possible defects.

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

What ratio transformer should I use for second step on amplifier?

Any standard make of transformer is good; suggest 3 to 1 ratio.

Keep Spare Parts And Tools Handy

A fully equipped radio set includes not only the parts actually in use, but tools and spare parts for emergency use.

Besides the every-day tools, such as pliers, screw drivers and other necessary implements, the radio fan should be supplied with apparatus that keeps his batteries in good shape at all times, and others that may be substituted when those in use break down.

A storage battery charger will more than repay the fan for its cost in saving trips to charging stations, besides cost of charging. A hydrometer is necessary to keep tab of the battery solution, and a bottle of distilled water is another necessity.

The battery should be kept on a rubber pad or a tray to keep the carpet or floor from soiling.

A spare tube should always be on hand, in case one in use burns out.

And for the fan who likes to test various hook-ups, test clips can save him from useless soldering jobs. When the fan finally decides on a "permanent" circuit, his electric soldering iron, with its accompanying rosin powder and solder, comes in handy.

Swiss radio magazine has suspended publication because of slow growth of the science in that country.