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RADIO
MAGAZINE

The Daily News

EVERY
MONDAY

SAN FRANCISCO, MONDAY, JUNE 2, 1924

CONCLAVE TO BE BROADCAST

WORLD RADIO ASS'N IS PLAN OF AMATEURS

HARTFORD, Conn., June 2.—Further impetus to the movement for uniting transmitting radio amateurs into a world association was given in the recent visit to the American Radio Relay League headquarters of Gerald Marcuse, secretary of the Transmitters' Section of the Radio Society of Great Britain. Mr. Marcuse is making a tour of the United States and Canada to study amateur methods.

While in this city as an unofficial representative of the radio amateurs of England, he told Hiram Percy Maxim, president, and other officers of the A. R. R. L., that he would give his personal support to the International Amateur Radio Union. The initial plans for this world association of amateurs were drawn up during Mr. Maxim's recent European trip. The final organization will take place at a special congress in Paris during the Easter holidays of 1925.

Maj. William C. Borrett of Dartmouth, Nova Scotia, manager of the League's Maritime Division, visited this city at the same time. He declared that Canadian amateurs were ready to become connected with such a union and predicted that it would be invaluable as a means of establishing friendly relations among the people of the countries represented. He cited the present intimate relations between amateurs of Canada and the United States as an example of what could be done.

While in this city Maj. Borrett kept in close touch with his friends in Halifax by amateur radio although they were all of 600 miles away. Stopping off in Halifax on his way to Hartford, Mr. Marcuse visited a Canadian amateur station through which he talked by radiophone to friends in England. Both of these incidents were regarded as convincing proof that the time had arrived for an international union of amateurs.

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: Eastman Rigmarotier one tube set for 6 volt tubes.—Joe Kabb, 154 East-st.

TO SWAP—6-volt, 45-ampere storage battery for something equal to \$5 value. Wm. Fabst, 1163 Kansas-st.

TO SWAP—Willard rechargeable "A" Battery for something of equal value. M. Finnegan, 120 Eugenia-av, San Francisco.

TO SWAP—Flawless receiving set, mahogany cabinet. Fine for distance. For one r. c. loop or something of equal value. J. B. Vassallo, 676 Pennsylvania-av, San Francisco.

TO SWAP—Loose coupler crystal set, complete except for headphones; will exchange for other radio equipment. P. S. Jones, 1410 Milvia-st, Berkeley.

TO SWAP—A dandy crystal set, complete with headphones; almost new, in fine condition; gets all local stations. What have you? Phone Market 1412.

TO SWAP—Good crystal set; want a folding card table, a good cross-cut saw or a stereoscope. L. Powell, 2729 Filbert-st. Phone Fillmore 4431.

TO SWAP—Two dandy crystal sets, in exchange for phonograph attachment or other parts. H. J. Pratt, 441 4th-av. Phone Bayview 7663.

TO SWAP—Columbia variometer, new, for phonograph loud speaker attachment or something of equal value. C. H. Gereke, 1000 Ashbury-st, Apt. 3.

TO SWAP—One UV-201 tube, brand new, for a WD-11 tube. M. Finnegan, 120 Eugenia-av, San Francisco.

TO SWAP—Remler variometer for two 23 plate condensers.—H. E. Geay, 2311 Shattuck-av, Berkeley.

SOUTH SEA ISLES ENJOY KGO PROGRAM

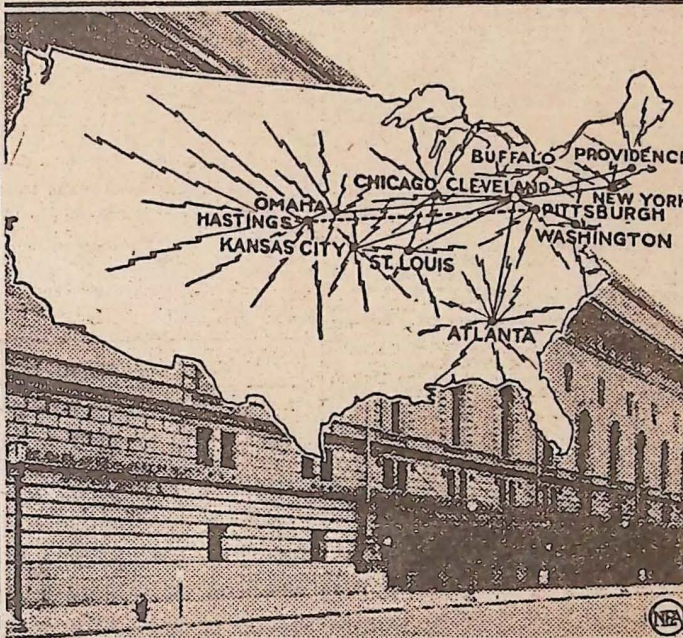
From out where tom-toms war clubs and wails of dancing natives is a part of the daily grind, word has come to KGO, the General Electric Pacific Coast Broadcasting station, that radio jazz music heard by South Sea native chiefs and their people is appreciated and awakens primitive rhythmic instincts.

"Concerts given by KGO are enjoyed here," writes W. R. Ragsdale, trader at Savaii, the last primitive island of Polynesia. "The jazz dance music from the Hotel St. Francis is great and is very much appreciated by the natives who listen in regularly over the loud speaker."

That the tribal tom-tom has lost any of its appeal is not evident by the report, but modern jazz is influencing native music in the South Seas. Through Ragsdale the chiefs of several different tribes sent their applause to the jazz dance orchestra leader.

Listeners in New Zealand, over 1000 miles farther south, report that they do not hear

LIKE A SPIDERWEB



Map shows how 12 lines to strategic broadcasting stations will furnish practically the entire country with speeches and yells from the conventions at Cleveland and New York.

music there like the jazz heard over KGO. Members of the Australian Radio Relay League are

WEST COAST TO LISTEN IN ON SPEECHES

NEA Service
CLEVELAND, O., June 2.—Twelve broadcasting stations scattered over the east and middle west of the United States will broadcast the Republican convention from Cleveland, beginning June 10, and at least one more will pick up a broadcast and hurl it out to the coast.

This is the program, almost adopted, by which the people of America will be in constant touch with the delegates at the Republican convention here listening to speeches, yells and applause, to all the noises and hullabaloo that accompanies a political gathering of this kind.

The committee in charge of broadcasting is lining up stations in the following cities:

Providence, New York, Washington, Buffalo, Pittsburgh, Cleveland, Chicago, St. Louis, Omaha, Kansas City, Dallas and Atlanta.

Connected by Line

The plan is to connect the stations in these cities by telephone wire direct from the convention hall here. Microphones will pick up the speeches, the shouting, the hand-clapping and all, transmit them by wire to the stations all at the same moment throughout the United States.

For farther west, the Westinghouse company is planning to rebroadcast the convention proceedings from KFKX at Hastings, Neb., so that the whole coast may not miss the "big doings."

Since station KDKA at East Pittsburgh, Pa., will be one of the 12 getting direct service from Cleveland, it is planned to pick this up and transmit it to KFKX on a short wave, while it will be broadcast at the same time on the higher broadcasting wave.

In Cleveland, stations WTAM, WJAX and WHK will pick up every bit of the proceedings in shifts, so that nothing of the convention will be passed up. The same arrangement may be tried in the other cities, where there are two or more stations.

For Outsiders

At the same time, arrangement is being made for the installation of public address systems outside the convention hall and at points in the broadcasting cities where overflow crowds might be accommodated.

The crowd around the convention hall will be able to hear everything going on through the installation of a highly powerful loud speaker arrangement—the kind used when Lloyd George spoke here a few months ago. The system itself will become the property of Cleveland for use during other affairs at the auditorium.

At the same time, three of Cleveland's newspapers will install similar systems for their own crowds. As these are stationed within a few blocks of the convention hall, the whole downtown area may resound with G. O. P. yells.

Engineers of the American Telephone & Telegraph company and the Western Electric company believe the same broadcasting stations and the same system will be used for transmitting the doings of the Democratic convention in New York, beginning June 24.

Talks on Psychology

Dr. Gardner Murphy, of the Home Study Department of Columbia University, is delivering a series of weekly talks on elementary psychology from station WEAJ, on Wednesday evenings. Free, of course, except for the purchase of a syllabus of the course for \$2.

LOUD SPEAKERS IMPROVED

Not long ago, when broadcasting was more or less of a novelty, it was common with many enthusiastic experimenters to entertain their friends with a radio concert. After the loud speaker had been induced to operate, the congratulations of the guests were made with effort, the more candid of the critics declaring that if the barnyard chorus coming from the horn was radio, they would be content with a phonograph.

There were many fans, it is true, who overlooked the obvious imperfections in the reproduction of the human voice. The marvelousness and mystery of radio itself was quite sufficient to outweigh any shortcomings of the loud speaker. Recently the demands have become more critical, and the radio public has been insistent that the loud speaker should not be the cause of imperfect reproduction.

Sooner or later you will wish to lay aside the headphones and attach a loud speaker to your radio so that the younger folks can dance by the music, and the whole family can enjoy the programs without the inconvenience of wearing headphones. When this time comes you will be confronted with the problem of selecting a loud speaker that will faithfully reproduce, without distortion or noise, the quality of the radio programs that you have been enjoying with the headphones.

In its present usage, the term loud speaker is applied generally to electrophonic devices employing some means of distributing sound over an area. It is possible to divide loud speakers into three separate and distinct classes, however:

1. Those which make use of existing telephone receivers by means of rubber connectors or clamps to attach a pair of phones to a horn.

2. The type of speaker that uses a single telephone receiver equipped with a cap to permit its being fastened to the small opening of a horn. In this class can be included the numerous loud speakers that incorporate a telephone of some sort in the base of the horn.

3. The loud speakers constructed on the solenoid principle such as the Thorophone, in

which the currents act on a coil placed in the field of a strongly energized magnet.

The first and second types of loud speakers are excellent in their own limited way, however, there are a few serious faults that entirely prevent them from being considered as first class loud speakers. One is that they cannot be used on very strong signals without causing the diaphragm to strike the pole pieces of the small fixed magnet and produce a rattle in the loud speaker.

Another serious limitation to this class of loud speakers is that when high B battery voltages, such as are common in most audio frequency amplifiers, are used, a DC current flows through the windings of the phone and exerts a strong downward pull on the diaphragm. This causes the metal diaphragm to be drawn out of shape and will cause the loud speaker to have a hollow or tinny sound.

The vibration of the metal diaphragm toward and away from the poles of the magnet in the unit will cause the air gap to vary. This, in turn, will cause the impedance (alternating current resistance) of the loud speaker to vary and has a great deal to do with the proper operation of the receiving set itself on weak or distant signals. The impedance of the loud speaker has its function in the tuning and balancing of the receiver, and if it is fluctuating, will have its effect in upsetting the accurate tuning of a receiver.

In the third type of loud speaker this factor need not be considered as the air gap is constant and fluctuations of current through the windings of the loud speaker does not change the impedance of the circuit. The DC current from the B battery does not act on the diaphragm of loud speakers such as the Thorophone and less distortion may be expected.

At the same time the third type of reproducer will not rattle or "freeze" on extremely loud signals, yet will give a greater amount of sound on extremely weak or faint signals. A mica diaphragm, one of the most perfect substances known for sound reproduction, is used whereas in most of the other classes of

speakers a metal diaphragm must be used resulting in a greatly inferior tone quality.

The particular shape of the horn has a great deal to do with the performance of any loud speaker. From a theoretical point of view a straight horn is better than a curved one, and the amount of increase in the size of the horn in proportion to its length must be very carefully calculated for best results. When this is once obtained the horn can be curved into most any shape without destroying its amplifying value or tonal qualities.

The material of which the horn is composed of is very important in regard to the quality of music that will be received, and with the faithfulness with which the sounds are reproduced. A horn made of wood or paper mache gives a purer tone than a metal one, which is liable to produce brassy overtones or vibrations.

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.

Lawrence Finkenbinder, 248 11th-st, San Francisco, asks:

(1) Can you give me a formula for determining wave length of coils? (2) Have a crystal set, but cannot tune out KPO and KLB. Would it be worth while to shield the set? (3) What is the average range of a Haynes DX receiver? (4) Would like to know comparative merits of different apparatus on the market.

(1) The wave length of any tuning coil may be found by the following formula:

$$W. L. = 3.1416 \times d \times n \times 10^4$$

Where "W. L." is wave length in meters, "d" is diameter of coil in feet, "n" is number of turns of wire per inch, "1" is length of coil in inches. (2) Shielding the set has nothing to do with selectivity. Suggest building double circuit tuner. (3) It is impossible to estimate the range of a receiver, as any number of conditions must be taken into consideration. Transmitting apparatus is generally rated; not receiving. (4) We cannot give comparative merits of apparatus on the market.

THIS WEEK'S AIR PROGRAMS

Monday, June 2

KPO—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 solo, Romance; Nan Rowan.
Contralto solos, When You Come Home; Keep on Hoping; Mrs. Wilbur Pratt.
Baritone solo, All for You; Charles W. Thomas.
Duet, Come, Sing to Me; I Love a Little Cottage; Mrs. Wilbur Pratt and Mrs. Ernest Rhodes.
Piano solo, In an Old Fashioned Garden; Nan Rowan.
Soprano solos, Down the Vale; Rose in the Bud; Mrs. Ernest Rhodes.
Baritone solo, My Thoughts Are of You; Charles W. Thomas.
Contralto solos, Ma Curly Headed Baby; A Wee Bit Shy; Mrs. Wilbur Pratt.
Piano solo, Nocturne; Nan Rowan.
Duet, Out of the Dusk; Mrs. Wilbur Pratt and Mrs. Ernest Rhodes.
Piano solos, Sextet from Lucia di Lammermoor (played with left hand); Elvira Ferrari, pupil of Clara Campbell.
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 KPO, taken from the Book of Knowledge: Answers to Children Questions; The Homes of Birds; The Search for a Happy Man. Recitation, Why? (from the Book of Knowledge); Sadie Hooper. Sadie Hooper in dialogue with Big Brother.
6:30 TO 7 P M—Soloists from New Fillmore and New Mission orchestras.
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 Wurllitzer: March, Pere de la Victoire; overture, La Dame Blanche; selected melodies; air de ballet; song melody, Who Is Silvia?; light opera selection, Yeoman of the Guard; suite, Day in Venice; gavotte, La Cinquante-taine; Spring song; selection, old time popular melodies.
9 TO 10 P M—Mezzo-soprano solos. Folk songs—Irish, Believe Me I'm All Those Endearing Young Charms; Scotch, Leezie Lindsay; American, When You and I Were Young, Maggie; Irish, The Kerry Dance; Lena Frazee, Carol Jarboe, accompanist.
Baritone solo, Vision Fugitive (Herodiade); August Johnson, Hendrik Gjerdrum, accompanist.
Mezzo-soprano solo—Aria, Santa Maria's Song (from Cavalerio Rusticana); Lena Frazee, Carol Jarboe, accompanist.
Piano solo, Theme and Variations; Beatrice Clifford.
Baritone solos, Svarmeri; Kornodsglandsen; Fiskarvalsen; August Johnson, Hendrik Gjerdrum, accompanist.
Mezzo-soprano solos, 'Tis Not in Seeking; A Woman's Sea Song; Spring Night; Lena Frazee, Carol Jarboe, accompanist.
Mezzo-soprano solo, Morning; Lena Frazee, Beatrice Clifford (composer), accompanist.
Baritone solos, Sacramento; Elfin; Until; August Johnson; Hendrik Gjerdrum, accompanist.
10 TO 11 P M—E. Max Bradford's Versatile Band, playing in Rose Room Bowl, Palace Hotel.
KGO—General Electric Co., Oakland (312 Meters)
1:30 P M—New York Stock Exchange and United States weather bureau reports.
6:45 P M—Final reading, stock exchange and weather reports, and news items.
8 TO 10 P M—Educational program, with musical numbers. Courses in agriculture, Spanish, music, economics and literature.
KLX—Oakland Tribune (509 Meters)
1 P M—Lecture on astronomy, Prof. R. T. Crawford, University of California.
2 P M—Talk on physical education for women, Miss R. Elliott, assistant professor of physical education and director of the women's gymnasium, University of California. (This is the first of series of such lectures for women.)
3 P M—Music memory numbers played on the piano by Irving Krick. Titles of selections to be announced at conclusion of program.
8 TO 9 P M—Educational program consisting of talks and lectures by professors of the University of California, broadcast direct from the university over private leased wires through KLX.
9 TO 10 P M—Studio program. Music by the popular L'Aiglon Ballroom Orchestra.
7 TO 7:30 P M—News items, weather bulletin, market and financial news.

DISTANT STATIONS

KHJ—Los Angeles Times (395 Meters)
12:30 TO 1:15 P M—Program presenting E. M. Bonnell (Uncle Remus), through the courtesy of the Barnes Music Co. Carl Allen and his Rendezvous Orchestra from the Crystal Pier.
WBAP—Fort Worth (Tex.) Star-Telegram (476 Meters)
9:30 TO 10:45 P M—Concert by the orchestra of the First Presbyterian Church, Mrs. Thomas Holt Hubbard, director.
KGW—Morning Oregonian, Portland (492 Meters)
11:30 A M—Weather forecast.
3:30 P M—Literary program by Portland Library Ass'n.
7:30 P M—Baseball scores, weather forecast and market reports.
8 P M—Recital by Roy Bryson, tenor; assisted by Imogene Letcher, pianist.
KFI—Earle C. Anthony, Inc., L. A. (469 Meters)
4:45 TO 5:15 P M—Evening Herald news bulletins.
5:15 TO 5:45 P M—Examiner news bulletins.
8 TO 9 P M—Evening Herald concert.
9 TO 10 P M—Examiner concert.
10 TO 11 P M—Ambassador-Max Fisher's Coconut Grove Orchestra.

Tuesday, June 3

KPO—Hale Bros., San Francisco (423 Meters)
12 NOON—Time signals; reading of the Scripture.
1 TO 2 P M—Rudy Selger's Fairmont Hotel Orchestra.
2:30 TO 3:30 P M—Organ recital by Theodore J. Irwin, official organist, at the Wurllitzer: Fox trot, Sawmill River Road; light opera selection; march, Slav; valse Lento, Druid's

SAVE THIS COMPLETE SCHEDULE

This is the only COMPLETE broadcasting program published by a California newspaper. Radio fans are urged to preserve this magazine for reference during the week. Its small page size makes The Daily News Radio Magazine a handy accessory to your receiving set. Phone the Circulation Department if you desire another copy. Tell your friends about it.

Prayer; Cabaletto; Chaconne; popular waltz melody, Sleep; operatic selection, La Gioconda, fox trot.
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 KPO, taken from the Book of Knowledge: The Man Who Drove Downstairs; The Rubber Industry; The People of the Desert. Songs by Ralph Bacon, accompanied by Earl Ducklow.
6:30 TO 7 P M—Cleveland Six Orchestra, under direction of Wilt Gunzendorf: Twilight Rose; It's Not the First Time; It Had to Be You; violin and saxophone duet, Who Knows (Ben Lindholm and Roland Ofarrell); D Minor; Hula Dream Girl; saxophone solo, Pale Moon, Wilt Gunzendorf; Never Again; Shing Lal Lullaby.
7 TO 7:30 P M—Rudy Selger's Fairmont Hotel Orchestra.
8 TO 10 P M—Program by the Third Band, Coast Artillery Corps, "Guardians of the Golden Gate." Warrant Officer J. C. Coe, U. S. A., director.
March, The Prophet.
Overture, Hunyadi Laszlo.
Soprano solos, My Lover He Comes on the Skies; I Passed by Your Window; Patricia O'Connor Morbio, Marlon de Guene Stewart, accompanist.
Characteristic piece, Fairy Tales.
Grand selection, Herodias.
Address, "The Army of the United States." Lieut. Col. J. R. Kelly, U. S. A.
Mazurka, The Dragon Fly.
Procession of the Knights (from "Parsifal").
Soprano solos, Robin, Robin, Sing Me a Song; Love's in My Heart (march); Patricia O'Connor Morbio, Marlon de Guene Stewart, accompanist.
March, La Reine de Saba (Queen of Sheba).
Intermezzo, La Danseuse.
Address, "The Defense Test." Lieut. Col. R. S. Fitch, U. S. A.
Suite, Ballet Egyptian.
A flower song, Sweet Summer Rose.
March, The Swedish Wedding.
March, K. P. O.
10 TO 11 P M—E. Max Bradford's Versatile Band, playing in Rose Room Bowl, Palace Hotel.

KGO—General Electric Co., Oakland (312 Meters)
1:30 P M—New York Stock Exchange and United States weather bureau reports.
6:45 P M—Final reading, stock exchange and weather reports, and news items.
8 TO 10 P M—Special program of Hebrew music, under the direction of Benjamin S. Liederman, cantor of Temple Israel, San Francisco.
PART I
Instrumental selection, Kol Nidre; Arion Trio.
Vocal selection, Adonoi, traditional Hebrew; quartet of Temple Israel, San Francisco. Mrs. Arthur J. Hill, soprano; Blanche Hamilton Fox, contralto; Robert E. Saxe, tenor; Mynard S. Jones, bass; Mrs. Josephine Crew Aylwin, accompanist.
Cantor solo, an old Hebrew melody; Benjamin S. Liederman, cantor, Temple Israel, San Francisco.
Vocal selection, Ez Chayim, traditional Hebrew; quartet of Temple Israel.
Instrumental selection, Orientale; Arion Trio.
Vocal selection, Kedusha, traditional Hebrew; quartet of Temple Israel.
Address, Rev. Dr. J. Nieto, rabbi Temple Israel, San Francisco.
Instrumental selection, Day of God (traditional Hebrew melody, arranged by Cantor E. J. Stark); Arion Trio.
PART II
Bass solos, Arthur Leydecker.
Whistling selection, Harriet Adair.
Soprano solos, Mrs. Arthur J. Hill.
Address, "Hunting Wild Game in Africa." A. A. Spohn Chamberlain.
Tenor solos, Shanon Chamberlain.
Instrumental selection, Darby March; Arion Trio.
Contralto solos, Blanche Hamilton Fox.
Bass solos, Mynard S. Jones.
Duet for women's voices, Bernice Hackett, Charlotte Hatch; Mildred Hackett, accompanist.
Tenor solos, Robert E. Saxe.
Whistling selections, Harriet Adair.
Instrumental selections (a) Etude, (b) familiar melody, "All Through the Night"; Arion Trio.

KLX—Oakland Tribune (509 Meters)
3 TO 5 P M—Baseball scores, all leagues, given inning by inning; local Pacific League game, or game in which Oaks participate, given play by play.
7 TO 7:30 P M—News items, weather bulletin, market and financial news.

DISTANT STATIONS

KHJ—Los Angeles Times (395 Meters)
12:30 TO 1:15 P M—Program presenting White's Californians, Steve White leader, through the courtesy of the La Raza Palm Grove.
2:30 TO 3:30 P M—Program presented through the courtesy of Barker Bros., arranged by Claire Forbes Crane.
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 the Sandman and Queen Titania. Baby Muriel McCormack, screen juvenile. Russell Cheever, 13 years old, saxophone, pupil of Kathryn Thompson.

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Blueprint of Beck's hook-up free with order if you mention Daily News.
A-1 Crystals
Sent postpaid, 50c each.
Sixty Cents, C. O. D.
California Radio Minerals
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304 Oak Grove Ave.,
Burlingame, California

son. Bedtime story by Uncle John.
9 TO 10 P M—Program presented through the courtesy of Kathryn Thompson and her Southern California Saxophone Band. Dr. Thomas Lutzman, speaker.
10 TO 11 P M—Art Hickman's Dance Orchestra from the Biltmore Hotel.
WBAP—Fort Worth (Tex.) Star-Telegram (476 Meters)
9:30 TO 10:45 P M—Concert by the Fort Worth Harmony Club, in its final opera program of the season.
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.
7:30 P M—Baseball scores, weather forecast and market reports.
KFI—Earle C. Anthony, Inc., L. A. (469 Meters)
4:45 TO 5:15 P M—Evening Herald news bulletins.
5:15 TO 5:45 P M—Examiner news bulletins.
6:45 TO 7:30 P M—Vocal concert.
8 TO 9 P M—Ambassador-Max Fisher's Coconut Grove Orchestra.
9 TO 10 P M—Examiner concert.
10 TO 11 P M—Milabelle Everett Studio in recital.

Wednesday, June 4

KPO—Hale Bros., San Francisco (423 Meters)
1 TO 2 P M—Rudy Selger's Fairmont Hotel Orchestra.
2:30 TO 3:30 P M—Jack Falt's Entella Cafe Orchestra.
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 KPO, taken from the Book of Knowledge: When Man Meets Beast; answers to questions; The King's Daughter.
6:30 TO 7 P M—Dinner program by Hamm Brothers, World War veterans.
Selections for accordion and trumpet: Why Did I Kiss That Girl? Look for the Silver Lining; Chinese Love; That's Me; Linger Awhile; You're in Love With Everyone; Dearest California; The West, a Nest and You; It Ain't Gonna Rain No More; Mr. Rolo Man; Arcady; Marcheta; La Golondrina (The Swallow).
7 TO 7:30 P M—Rudy Selger's Fairmont Hotel Orchestra.
8 TO 11 P M—E. Max Bradford's Versatile Band, playing in Rose Room Bowl, Palace Hotel. During the intermissions Leah June Cohen, soprano, will sing popular songs. Among her selections will be: Where the Lazy Daisies Grow, Dream Daddy, The Parade of the Wooden Soldiers.
KGO—General 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. Address, "A Vision of What Education Might Be," by Mrs. George H. Hoyt, member of the faculty of the Cora L. Williams Institute for Creative Education, Berkeley, Cal.
6:45 P M—Final reading, stock exchange and weather reports, and news items.

KLX—Oakland Tribune (509 Meters)
3 TO 5 P M—Baseball scores, all leagues, given inning by inning; local Pacific League game, or game in which Oaks participate, given play by play.
7 TO 7:30 P M—News items, weather bulletin, market and financial news.
8 TO 10:25 P M—Studio program. Amateur night. More than 40 amateurs who have never had radio broadcasting experience will sing and play in competition for a five-tube radio receiver set, given by Roscoe M. Olson, wholesale radio dealer of Oakland; the amateur receiving the greatest number of applause cards to be awarded the set. The amateurs will be listed and announced by number only, so that each will compete for the prize upon merit only. Each amateur participating will be given a number when he enters the studio, and the public in selecting the winning amateur will refer to him by that number only. No amateur will participate who has had previous broadcasting experience from more than one broadcasting station.
At 8:45 p m the program will be interrupted for 20 minutes when the controls of KLX are switched to the American Theater, from where will be broadcast over private leased wires through KLX a group of special selections by the American Theater Orchestra, Owen Sweeten directing.
At 10:10 P M Clement Barker, American Theater organist, will broadcast a group of organ numbers.

DISTANT STATIONS

KHJ—Los Angeles Times (395 Meters)
12:30 TO 1:15 P M—News items

RADIO SUPPLIES
At Cut Prices

Burgess "B" Batteries, 45-volt; regular \$5; sale price \$3.80.
Amplifier Tubes, 6-volt, 1/2 amp.; regular \$5.00; sale price \$3.25.
(Fully Guaranteed)
Scientific Headsets, 3000-ohm, fully guaranteed; world's greatest phone value.....\$2.95
Murdock Headsets, 2000-ohm; regular \$4.00; sale price.....\$3.45
Murdock Headsets, 3000-ohm; regular \$4.50; sale price.....\$3.75
Swedish-American Headsets; regular \$8.00; sale price.....\$3.35
Brandes Superior Headsets, regular \$8.00; sale price.....\$4.55
Brandes Navy Type Headsets; regular \$8.00; sale price.....\$6.25
Brandes Table Talker; regular \$10.50; sale price.....\$7.95
Eveready "B" Batteries; regular \$5.00; 45-volt; sale price.....\$3.80
Eveready "B" Batteries; regular \$2.50; 22 1/2-volt; sale price.....\$1.95
23-Plate Vernier Condensers; regular \$4.00; sale price.....\$2.35
43-Plate Vernier Condensers; regular \$4.50; sale price.....\$2.85
Electric Soldering Irons, special \$2.00 (Guaranteed for one year).
Many other values at great savings.
Call or write for our prices
I. S. COHEN'S SONS
1015 Market St.
Tel. Market 9558. Mail Orders Solicited

and music.
2:30 TO 3:30 P M—Program presented through the courtesy of Barker Bros., arranged by Claire Forbes Crane.
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 Melrose School of Musical Arts. Dick Winslow, juvenile reporter. Bedtime story by Uncle John.
8 TO 10 P M—Program presenting Roberts' Golden State Band, Harold M. Roberts, director and manager. Lester Hugo Castle, baritone. Dr. Mars Baumgardt, lecturer.
10 TO 11 P M—Art Hickman's Dance Orchestra from the Biltmore Hotel.

WBAP—Fort Worth (Tex.) Star-Telegram (476 Meters)
9:30 TO 10:45 P M—Concert by the original Green River Orchestra of Wichita Falls, Tex. (The Hired Hand announcing).
KGW—Morning Oregonian, Portland (492 Meters)
11:30 A M—Weather forecast.
3:30 P M—Children's program.
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 numbers by Lenore Hatter and Arthur Ewell, pianist.
KFI—Earle C. Anthony, Inc., L. A. (469 Meters)
4:45 TO 5:15 P M—Evening Herald news bulletins.
5:15 TO 5:45 P M—Examiner news bulletins.
6:45 TO 7:30 P M—Nick Harris detective stories and concert.
8 TO 9 P M—Evening Herald concert.
9 TO 10 P M—Examiner concert.
10 TO 11 P M—Hollywood Community Orchestra.
11 TO 12 P M—Ambassador-Max Fisher's Coconut Grove Orchestra.

Thursday, June 5

KPO—Hale Bros., San Francisco (423 Meters)
1 TO 2 P M—Rudy Selger's Fairmont Hotel Orchestra.
2:30 TO 3:30 P M—Organ recital by Theodore J. Irwin, official organist, at the Wurllitzer: Trip Along; Liebesfrucht; La Sorella, Spanish dance; waltz, L'enfant Prodigue; light opera selection, Ziegfeld Follies; gavotte, Holberg Suite; Mazurka; Strains of Killarney, selection; fox trot, Sitting in a Corner.
4:30 TO 5:30 P M—Rudy Selger's Fairmont Hotel Orchestra.
KGO—General Electric Co., Oakland (312 Meters)
1:30 P M—New York Stock Exchange and United States weather bureau reports.
6:45 P M—Final reading, stock exchange and weather reports, and news items.
8 TO 10 P M—Program furnished by the Truman Undertaking Co., Oakland, Cal.:
Violin solos (a) Gavotte, (b) Orientale; Arline Martin; Ada Dykes, accompanist.
Vocal selections (a) Barcarolle, (b) Nearest and Dearest; Truman Trio. Hugh J. Williams, tenor; Ruth Hall Crandall, contralto; Charles Theodore Bessner, organist.
Whistling selections (a) From the Land of the Sky Blue Waters, (b) In Springtime; Shirley Irvine, Ethel Irvine, accompanist.
Vocal selections (a) Sing Alleluia Forth; (b) The Radiant Morn; Truman Male Quartet. Hugh J. Williams, first tenor; Robert Battison, second tenor; Clarence Oliver, baritone; Charles Lloyd, bass. Charles Theodore Bessner, organist.
Organ solo, Largo; Charles Theodore Bessner.
Tenor solos (a) Friend o' Mine, (b) Until, (c) I Hear You Calling Me;

Hugh J. Williams, Charles Theodore Bessner, organist.
Violin solos (a) Mazurka, (b) Moment Musical; Arline Martin.
Vocal selections (a) Wanderers' Night Song, (b) The Swallow; Truman Trio.
Cornet solos (a) The Blind Girl's Song (from "La Gioconda"), (b) Elsy; Grace Adams East, Mrs. J. V. Hawley, accompanist.
Baritone solos (a) O Flower of All, (b) Good-Night; Clarence H. Oliver. Address, "The Evolution of the Pipe Organ," Charles H. J. Truman.
Vocal selections (a) Annie Laurie, (b) Marcheta; Truman Male Quartet. Organ solo, Reverie; Charles Theodore Bessner.
Vocal selection, Crucifix; Truman Trio.
Whistling duet, Moon Moths; Shirley Irvine and Elaine Buckland, Ethel Irvine, accompanist.
Tenor solos (a) I Hear a Thrush at Eve, (b) Then You'll Remember Me (from "Bohemian Girl"); Robert M. Battison.
Contralto solos (a) In an Old Fashioned Town, (b) Dream Tryst, (c) Sonny Boy; Ruth Hall Crandall, Charles Theodore Bessner, accompanist.
Cornet solos (a) I Love You Truly, (b) Just a-Wearyin' for You; Grace Adams East.
Vocal selections (a) Schneider's Band, (b) Winter Song; Truman Male Quartet.
Violin solos (a) Norwegian Dance, (b) Le Cygne (The Swan); Arline Martin.
Bass solos (a) Roadways, (b) I'm a Jolly Old Rover; Charles H. Lloyd.
Vocal selections (a) The Garden of Your Heart, (b) The End of a Perfect Day; Truman Trio.
KLX—Oakland Tribune (509 Meters)
3 TO 5 P M—Baseball scores, all leagues, given inning by inning; local Pacific League game, or game in which Oaks participate, given play by play.
7 TO 7:30 P M—News items, weather bulletin, market and financial news.

DISTANT STATIONS

KHJ—Los Angeles Times (395 Meters)
12:30 TO 1:15 P M—News items and music.
2:30 TO 3:30 P M—Program presented through the courtesy of Barker Bros., arranged by Claire Forbes Crane.
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. Wilbur A. Lester, reader, 7 years old. Sylvia Panitz, 12 years old, pianist. Joseph Haag, harmonica. Bedtime story by Uncle John.
8 TO 10 P M—Program presented through the courtesy of the Fitzgerald Music Co. Ruth Quisenberry, reader.
10 TO 11 P M—Art Hickman's Dance Orchestra from the Biltmore Hotel.
WBAP—Fort Worth (Tex.) Star-Telegram (476 Meters)
9:30 TO 10:45 P M—Concert by the Tom Bean, Tex., Fiddle Band.
KGW—Morning Oregonian, Portland (492 Meters)
11:30 A M—Weather forecast.
3:30 P M—Baseball scores, weather forecast and market reports.
8:15 P M—Studio program of dance music by George Olsen's Metropolitan Orchestra of the Hotel Portland, Herman Kenin, director.
10 P M—Dance music by George Olsen's Metropolitan Orchestra of the Hotel Portland. Intermission solos by June Sanders, pianist.
KFI—Earle C. Anthony, Inc., L. A. (469 Meters)
4:45 TO 5:15 P M—Evening Herald news bulletins.
5:15 TO 5:45 P M—Examiner news bulletins.
6:45 TO 7:30 P M—Y. M. C. A. concert and lecture.
8 TO 9 P M—Ambassador Hotel concert.
9 TO 10 P M—Examiner concert.
10 TO 11 P M—Enrico Roma, Edith Lillian Clarke and others.

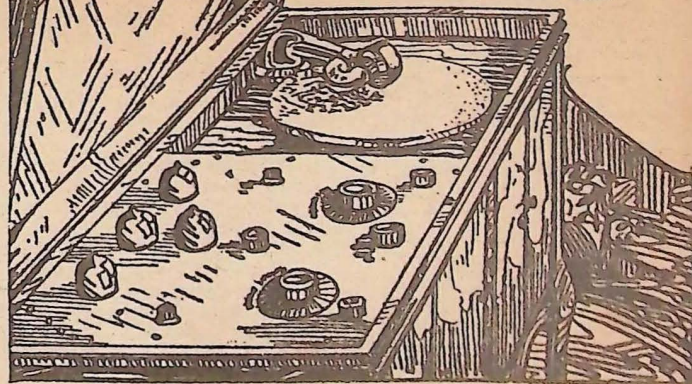
Friday, June 6

KPO—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 solos, La Castagnette (Caprice Espagnol) Op. 34; Butterfly (Papillon) Op. 43, No. 1; Winifred Jones.
(Continued on Page 3, Column 1)

The Emporium
Radio Equipped Victrolas

Time Payments!
When KGO signs off after a period of interesting entertainment, you have but to change reproducers and listen to a solo by Chalapin—providing you have a combination like this Victrola 210 with Federal radio installed. \$295.

Hear this new combination in The Phonograph-Radio Section, Third Floor.



The Radio Column

BY CARLTON E. BUTLER
Radio Engineer

On your first radio set you may have all connections correctly made, have a good aerial and ground installation, and still be disappointed in results. Local stations will come in with excellent volume but not a sound do you hear from the broadcast in a distant city.

The distance stations will come in if you are able to receive the more powerful stations with excellent volume. It is merely a matter of fine tuning.

A certain amount of skill is necessary in order to tune in the weaker and more distant stations. Combined with the skill, a knowledge of the tuning characteristics of your receiver is also of importance.

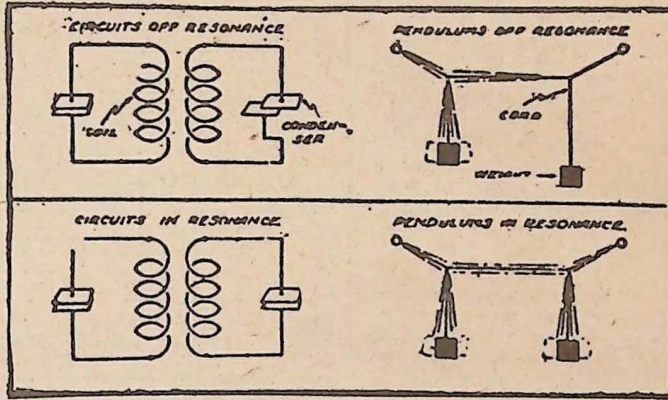
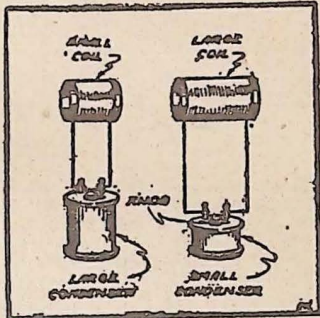
A thorough knowledge of your detector tube is another important point to be considered in tuning. The audio-frequency amplifier will automatically increase the volume of sound that is furnished it by the detector tube, but careful adjustment must be made in order that the detector tube will operate at its best.

Before blaming the circuit or your aerial try different voltages of B battery from 16 to 25 on your detector tube. Try reversing the filament connections on your socket and try changing the position of the rheostat. If it is now in the positive lead, try the negative.

Tuning experience and fa-
(Concluded on Page 4, Column 1)

RADIO FROM THE GROUND UP

By combining a certain capacity with a certain inductance, we secure what is termed a "tuned circuit." If an alternating current from some source is impressed upon the terminals of a condenser, which is also connected in "shunt" to an inductance coil, a current starts swinging first one way and then back the other way through the coil. The condenser, as we learned in the last lesson, is charged up to its capacity, at which point the voltage of the charge in the condenser becomes equal to the impressed voltage. When the impressed voltage changes its polarity with its alternation, the condenser discharges. Perhaps it may help to understand the oscillation of current back and forth around a tuned circuit if we consider the current as a certain definite quantity of liquid flowing through a coiled pipe and into a tank at one end. The liquid first dashes through the coil in one direction and continues until the tank is full to capacity. Then it bounces back, or re-



bounds, and swings around to the other side, filling that tank while the first one is empty.

Sympathetic Vibration

Now, if the tank is large and if the coil is long, considerable time will be required in filling the tank. If both are small the current will dash back and forth more frequently. Thus the frequency of the oscillating current in a tuned circuit depends upon the size of the condenser and the number of turns of wire on the coil. It is possible to cause the oscillating current in one coil to create a voltage in another coil coupled to it, provided the circuit is tuned to the same frequency.

A simple analogy of this common tuning of two adjacent circuits, called "Resonance," lies in the familiar example of two weights or pendulums hung from two points on a cord. If the strings holding the weights

are of the same length, a swing of one pendulum will start pushing and pulling on the other one through the connecting cord, and shortly both will be swinging "in step." But should one string be longer than the other, the "pull" or "push" from the first pendulum will not come at the proper instant and the mechanical circuits are out of tune or "off resonance." Perhaps you have seen the school experiment in which two tuning forks, both of the same pitch, are set on a table 10 or 15 feet apart. One of them is set into vibration, and soon the other fork commences vibrating strongly. It is the air which connects the two, the impulse from one striking the second fork at precisely the right time to keep it vibrating.

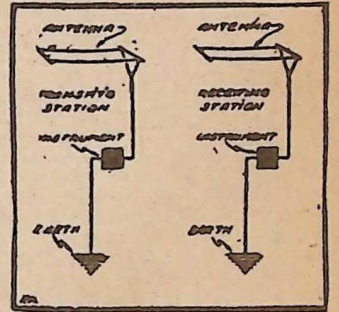
Attuned circuit may be adjusted to a given frequency by a variation of either the capacity

or the inductance, or of both. We may have a given frequency of oscillation with a combination of a large condenser and a small coil of wire, or we may reverse this and secure the stated frequency just as easily by a smaller condenser and a larger coil. Thus we might have two circuits coupled to each other and tuned to exactly the same frequency yet with one having small inductance and large capacity and the other just the reverse.

Magnetic Coupling

The two weights of our experiment are connected by a visible fastening—the cord. The tuned circuits are also connected, not physically or visibly, but are coupled together by the magnetic field which spreads out and contracts again each time the current in the circuit upon which the alternating voltage is impressed changes its direction of flow.

A radio transmitting station consists essentially of a device
(Concluded on Page 4, Column 5)



WEEK'S AIR PROGRAMS, CONTINUED

(Concluded From Page 2)
Baritone solos, Dio Possibile, Dro d'Amor (from "Faust") (sung in Italian); A Dream; James DeLuca, Victor Garcia, accompanist.
Piano solos, Second Mazurka; Valse Caprice, Op. 7; Winifred Jones.
Baritone solos, O Sole Mio (sung in Italian); James DeLuca, Victor Garcia, accompanist.

Soprano solos by Mrs. Rob Roy McDonnell, flute obligato by Sam Schildkret.
3:30 TO 5:30 P M—Tea Dansant. E. Max Bradford's Versatile Band, playing in the Palace Hotel Rose Room Bowl.
5 P M TO 12 M—Dance music by Art Weidner and his popular orchestra.

KGO—General Electric Co., Oakland (312 Meters)
1:30 P M—New York Stock Exchange and United States weather bureau reports.
3 P M—Afternoon of California composers and authors.
6:45 P M—Final reading, stock exchange and weather reports, and news items.

KLX—Oakland Tribune (509 Meters)
3 TO 5 P M—Baseball scores, all leagues, given inning by inning; local Pacific League game, or game in which Oaks participate, given play by play.
7 TO 7:30 P M—News items, weather bulletin, market and financial news.

8 TO 10 P M—Studio program. The KLX Concert Trio and Plea's KLX Hawaiians will offer a special program, the trio and the Hawaiians alternating, the trio rendering classical music and the Hawaiians the latest popular and Hawaiian numbers.
At 9:10 p m the controls of KLX will be switched to the American Theater, where the American Theater Orchestra, under the direction of Owen Sweeten, will render a group of special selections.

At 10:10 p m Clement Barker, American Theater organist, will play a group of special selections.

DISTANT STATIONS

KHJ—Los Angeles Times (395 Meters)
12:30 TO 1:15 P M—Music and news items.

1:30 P M—Dr. Mayer Winkler, rabbi Sinai Congregation.
2:30 TO 3:30 P M—Program presented through the courtesy of Barker Bros., arranged by Claire Forbes Crane.

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 presented Prof. Walter Sylvester Hertzog. The weekly visit of Richard Hendrick, screen juvenile. Bedtime story by Uncle John.

8 TO 10 P M—Program arranged through the courtesy of the Paul G. Hoffman Co., Inc., presenting the Studebaker Radio Orchestra of Long Beach.

10 TO 11 P M—Art Hickman's Dance Orchestra from the Biltmore Hotel.
WBAP—Fort Worth (Tex.) Star-Telegram (476 Meters)
9:30 TO 10:45 P M—Concert by Fred Wagner Hawaiian Trio. (The Hired Hand announcing.)

KGW—Morning Oregonian, Portland (492 Meters)
11:30 A M—Weather forecast.
3:30 P M—Lecture by Jessie D. McComb, head of home economics extension service, Oregon Agricultural College.

7:30 P M—Baseball scores, weather forecast and market reports.
10:30 P M—Hoot Owls.
KFI—Earle C. Anthony, Inc., L. A. (469 Meters)
4:45 TO 5:15 P M—Evening Herald news bulletins.
5:15 TO 5:45 P M—Examiner news bulletins.
6:45 TO 7:30 P M—Vocal concert.

8 TO 9 P M—Evening Herald concert.
9 TO 10 P M—Examiner concert.
10 TO 11 P M—Frederick North arranging program.
11 TO 12 P M—Ambassador-Max Fisher's Coconut Grove Orchestra.

Saturday, June 7

KPO—Hale Bros., San Francisco (423 Meters)
1 TO 2 P M—Rudy Selger's Fairmont Hotel Orchestra.
2:30 TO 3:30 P M—Soprano solos, Musetta Waltz (from "La Boheme"); Dawn; Jessie Clyde.

Tenor solos, Song of Songs; Thank God for a Garden; George Buck; Irma Harris Vogt, accompanist.
Piano solos, Mazurka; Hungarian March; Irma Harris Vogt.
Soprano solos, Le Saran Rose; In My Garden; Jessie Clyde.

Tenor solos, Lullaby o' Mine; O Dry Those Tears; George Buck; Irma Harris Vogt, accompanist.
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 KPO, taken from the Book of Knowledge: The Submarine; answers to questions; Darius Green and His Flying Machine. Solos and duets by Allison Church and Leo Christiansen.

7 TO 7:30 P M—Rudy Selger's Fairmont Hotel Orchestra.
6:30 TO 7 P M—Art Weidner's Orchestra.

8 TO 9 P M—Organ recital by Theodore J. Irwin, official KPO organist, at the Wuritzer.
March, War March of Priests (Athletic); overture, Haydée; waltz, Christmas Roses; musical comedy selection, Sally; Andante, B Minor Symphony; Al Fresco; Album Leaf; song melody, Mighty Lak a Rose; Dance Arable (from Nut Cracker Suite); Poupée Valsante; fox trot, Oriental Love Dreams.

Talk, "Making a Balanced Flower Garden," Curtis Redfern.
9 TO 10 P M—Program by pupils of Mme. Rose Florence.
Soprano solo, Vaghiissima Lumbianza; Irene Carroll, Helen McClory, accompanist.

Soprano solo, My Lovely Cella (old English); Irma Harris Vogt, Helen McClory, accompanist.
Quartet selection. The Sunbeam Quartet, under the direction of Argall Brothers; accompanied by Wolfe Silverman.

Soprano solo, Polly Willis; Helen McClory, Irma Harris Vogt, accompanist.
Soprano solo, Un bel di (from Madame Butterfly); Emily Beal, Irma Harris Vogt, accompanist.

Piano solo, Rhapsodia, Norma Macpherson (from the studio of Lorraine Stebinger).
Soprano solo, Largo; Helen McClory, Irma Harris Vogt, accompanist.

Mezzo-soprano solo, Voi la sapete (from Cavalleria Rusticana), Martha Jalava, Helen McClory, accompanist.
Soprano solo, Phidyle, Lenore Keithley, Helen McClory, accompanist.

Soprano solo, Serenata, Reva Thomas, Ker, Irma Harris Vogt, accompanist.
Piano duet, one movement of a Beethoven Symphony, Lorraine Stebinger, Norma Macpherson.

Soprano solo, In a Garden; Irma Harris Vogt, Helen McClory, accompanist.
Mezzo-soprano solo, A California Lullaby; Martha Jalava, Helen McClory, accompanist.

Quartet selection.
Soprano solo, At Parting; Emily Beal, Irma Harris Vogt, accompanist.
Piano solo, Minuet; Norma Macpherson.

Soprano solo, A Brown Bird; Irene Carroll, Helen McClory, accompanist.
Soprano solo, Princessita; Lenore Keithley, Helen McClory, accompanist.

KUO

San Francisco Examiner—360 Meters
Daily Except Saturday and Sunday

9:05 A M—Weather forecast.
11:00 TO 11:30 A M—Market reports.
2:30 P M—Financial bulletin.

6:00 TO 6:30 P M—Financial and garden hint broadcast.
6:40 P M—Weather forecast.

Saturday Only
9:05 A M—Weather forecast.
6:00 TO 6:30 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 6:50 P M—Health bulletin.

Soprano solo, Il Bacio; Reva Thomas Ker, Irma Harris Vogt, accompanist.
Duet for soprano and mezzo-soprano, duet from Madame Butterfly; Emily Beal, Martha Jalava; Irma Harris Vogt, accompanist.

10 TO 11 P M—E. Max Bradford's Versatile Band, playing in Rose Room Bowl, Palace Hotel.
KGO—General Electric Co., Oakland (312 Meters)

12:30 P M—New York Stock Exchange and United States weather bureau reports.
8 TO 10 P M—Instrumental selections (a) Moorish Night Song, (b) Negro Song; Arion Trio.

Vocal selections (a) Moonlight, (b) My Old Irish Mother; Ray Nealan, soloist; Carey Male Quartet, Edwin Stott, first tenor; Ray Nealan, second tenor; Harold Blisshopp, baritone; Charles Delmar, bass. Joseph B. Carey, the composer, at the Steinway.

Euphonium solos (a) The Kerry Dance, (b) Good-bye; Ernest Paul Alwyn.
Piano solos (a) Etude, Opus 35, (b) Second Nocturne; Marian Kinnisten. Reading, "Bradford, You're Fired," Guy B. Kibbee.

Violin solos (a) Elegie, (b) Gypsy Dance; Ethel Isaacs.
Baritone solos (a) Just a Wearyin' for You, (b) I Love You Truly; E. E. Lichtig.

Instrumental selections, (a) Serenade, (b) Pierrette; Arion Trio.
Vocal selections (a) Mattinata, (b) A Dream; Dorothy Hanly, Harry W. Wadsworth, accompanist.

Trios for soprano, violin and baritone. Belmont Trio, Matilda Stross, soprano; Ethel Isaacs, violinist; E. E. Lichtig, baritone.

Vocal selections (a) A Bungalow in Idaho (Edwin Stott, soloist), (b) In the Harbor of Home, Sweet Home (Charles Delmar, soloist), (c) Sierra Sue (Harold Blisshopp, soloist); Carey Male Quartet.

Violin solos (a) Andante Religioso.
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E. & O. MANUFACTURING CO., 661 Pacific Bldg. San Francisco

(b) Berceuse; Ethel Isaacs.
Tenor solos (a) Two Little Girls in Blue, (b) Sweet Sixteen; Pete Dunworth.
Saxophone solos (a) Saxette (Valse Caprice), (b) Last Rose of Summer; Ernest Paul Alwyn.

Soprano solo, Thy Beaming Eyes; Matilda Stross.
Baritone solo, Tommy Lad; E. E. Lichtig.
Piano solos (a) Concert Study in D, Flat, (b) Romance; Marian Kinnisten.

Vocal selections (a) A negro oddity, "Arkansas," (b) West, West, West in California; Carey Male Quartet.
Instrumental selection, familiar melody, "Juanita"; Arion Trio.

KLX—Oakland Tribune (509 Meters)
3 TO 5 P M—Baseball scores, all leagues, given inning by inning; local Pacific League game, or game in which Oaks participate, given play by play.

DISTANT STATIONS
KHJ—Los Angeles Times (395 Meters)
12:30 TO 1:15 P M—Music and news items.

2:30 TO 3:30 P M—Program presented through the courtesy of Barker Bros., arranged by Claire Forbes Crane.

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. Helene Pierle, screen juvenile. Deena Kaufman, reader, 7 years old. Bedtime story by Uncle John.

8 TO 10 P M—Program presenting the Long Beach Californians, through the courtesy of Piggy Wiggly. Capt. Max Wardall, speaker.
10 TO 11 P M—Art Hickman's Dance Orchestra from the Biltmore Hotel.

WBAP—Fort Worth (Tex.) Star-Telegram (476 Meters)
7 TO 7:40 P M—Review of the interdenominational Sunday school lesson and radio Bible class by Mrs. W. F. Barnum.

KGW—Morning Oregonian, Portland (492 Meters)
11:30 A M—Weather forecast.
3 P M—Children's program. Story by Aunt Nell.

10 P M—Baseball scores, weather forecast and dance music by George Olsen's Metropolitan Orchestra of Hotel Portland (two hours).
KFI—Earle C. Anthony, Inc., L. A. (469 Meters)
4:45 TO 5:15 P M—Evening Herald

news bulletins.
5:15 TO 5:45 P M—Examiner news bulletins.
8:45 TO 9:30 P M—Vocal concert.

8 TO 9 P M—Windor Trio and Mme. du Plessis, pianist.
9 TO 10 P M—Examiner concert.
10 TO 11 P M—Popular concert.
11 TO 12 P M—Ambassador-Max Fisher's Coconut Grove Orchestra.

Sunday, June 8

KPO—Hale Bros., San Francisco (423 Meters)
11 A M TO 12 N—Organ music, Theodore J. Irwin. Prayers, Rev. W. H. Nelson, D. D., pastor M. E. Church South, San Francisco, and editor Pacific Methodist. Sermon.

8:30 TO 9:30 P M—Rudy Selger's Fairmont Hotel Orchestra.
KGO—General Electric Co., Oakland (312 Meters)
3:30 TO 4:30 P M—KGO Little Symphony Orchestra.

KLX—Oakland Tribune (509 Meters)
9:30 TO 10:30 A M—Talk, prayers, Rev. John L. Snape, pastor First Baptist Church of Oakland.

DISTANT STATIONS
KGW—Morning Oregonian, Portland (492 Meters)
6 P M—Church services conducted by Bishop Walter Taylor Sumner, Episcopal diocese of Oregon.

7 P M—George Olsen's Concert Orchestra in dinner program; baseball scores.
WBAP—Fort Worth (Tex.) Star-Telegram (476 Meters)
11 A M TO 12:15 P M—Complete services of the First Christian Church, Rev. L. D. Anderson, pastor.

4 TO 5 P M—Organ concert from the Rialto Theater, Miss Marguerite Agnew White, organist.
5 TO 6 P M—Concert by the Osceola, Tex., Quartet.

7 P M—Sport review.
11 P M TO 12 M—Popular program by Crockett's Texans Orchestra.

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FANS WARNED NOT TO BUY 'GOLD BRICKS'

NEA Service
NEW YORK, June 2.—Prominent radio manufacturers have joined in warning amateurs and other radio fans against losses that might be incurred by accepting any new radio proposition.

According to these leaders in the industry, it was estimated, nearly 2000 radio corporations were organized within a few months. Yet it is believed a small percentage of these will be successful.

Gold bricks are being sold almost daily, in this industry, with promises of fabulous profits. Inexperienced enthusiasts become imbued with the idea that if one set can be built for a certain price, a number can be produced for less. And so they fail.

According to the manufacturers' statistics, at least 37 per cent of the sets built must be rejected when they come to final test. Amateurs make "discoveries" already patented and find themselves in a tangle if they try to develop their idea.

Radio Column, Continued

(Concluded From Page 3)
miliarity with your receiver can only be gained from experience, and this experience cannot be obtained in a few evenings.

In tuning be governed by results. If turning a dial in one direction clears up a signal or improves the volume keep on turning in that direction until the maximum volume is secured. If, on the other hand, turning the dial in one direction reduces the signal the proper action to take is to return the dial to its former setting and try it in the other direction.

This sounds like superfluous advice, but it is really the whole story of tuning a radio receiving set. For the first few evenings tuning will probably be a slow process, but you should soon become accustomed to the function of each dial and learn the approximate settings at which stations come in at their best.

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Radio in Africa

From far off Africa comes the news that N. Grant Dalton, a radio amateur of Johannesburg, picked up radio broadcasting from Europe and America on the same evening. This linking of three continents was secured when Dalton, using a three-tube set, picked up London and WGY of Schenectady, N. Y.

Fire by Radio

Station WOR, Newark, N. J., tried another novel radio stunt when it opened its studio windows and directed the microphone at the noises associated with modern fire fighting. The Newark fire department staged a complete fire drill outside the studio.

Barber Shop Chords

WSB, Atlanta, has contracted to broadcast real barber shop harmony out of the luxurious tontorial parlors in the new Biltmore Hotel there. Four of the barbers will provide the music.

CHEAP SET DOES WORK

BY ISRAEL KLEIN
NEA Service Radio Editor

If you hanker for distance, ease of control, selectivity and strength of reception, yet find it hard to buy the parts for a super-heterodyne or similar set, look over the little receiver to be described here.

It's just a simple regenerative circuit, with two stages of amplification. But it is so constructed as to reduce capacity losses to a minimum. It is non-radiating because of the untuned antenna circuit. It has only two controls and its construction is simple.

The parts for the set, excluding tubes, batteries, phones and loud speaker, should cost no more than \$25, and may even be brought down to \$20.

Here they are:
L1, L2 and L3, antenna, secondary and tickler coils.

C1, 23-plate variable condenser, .0005 mfd.

C2 grid leak, 1.5 megohms, and condenser, .0002 mfd.

C3, by-pass mica condenser, .001 mfd.

T1, high ratio audio-frequency transformer, 10-1.

T2, low ratio audio-frequency transformer, 3.75-1.

R1, 6-ohm carbon pressure rheostat.

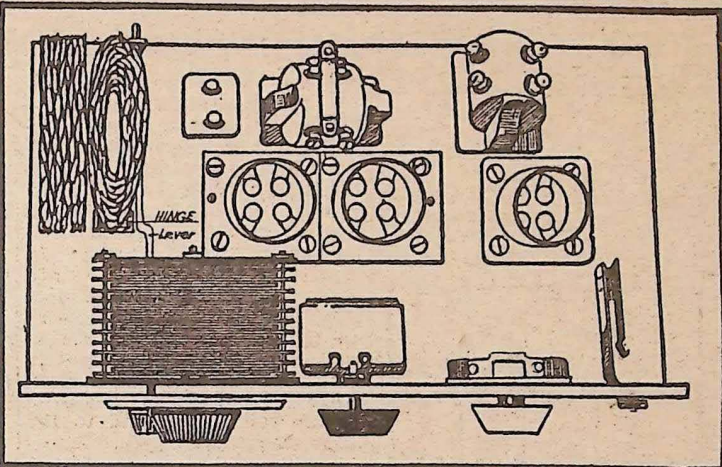
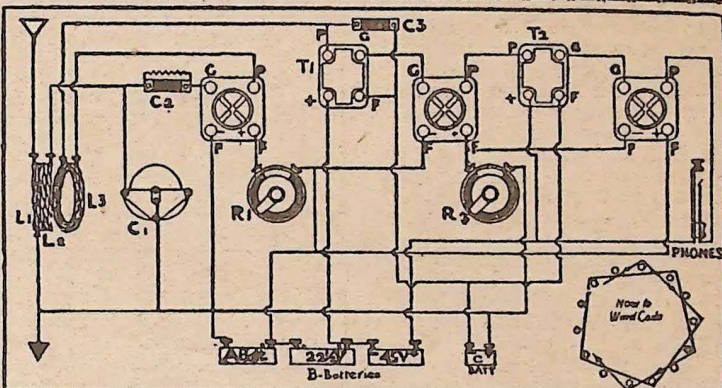
R2, 6-ohm rheostat.

Three tube sockets, an open circuit jack, nine binding posts, bus wire for connections, a vernier dial for the condenser, and a quarter-inch rod 8 inches long, complete the list of parts. The panel can be 7 by 13 inches.

Arrangement

The two binding posts for antenna and ground are mounted on a 3 by 3-inch panel in back left of the base, which may be 7 by 12 inches. The seven binding posts for A, B and C battery connections are mounted on a panel, 6 by 2½ inches at the right side of the base.

The parts may be neatly arranged as shown in the sketch. The feature of this set is the



Hook-up diagram of the receiver described here, with top view sketch (below) showing arrangement of parts.

coils and the low-loss condenser. The vernier control keeps the condenser finely tuned.

The antenna and secondary coil are actually one. It is basketwound around 14 pegs on a 3½-inch circle, skipping every two pegs, as shown in the diagram. No. 18 or 20 wire is used, the heavier the wire, the lower the loss.

How to Wind

First wind 40 turns, then tap for ground, and complete the coil with six more turns, running this end to the antenna post, and the beginning of the coil to the grid. The grid side of the coil should face the tickler, which consists of 20 turns of the same wire, in the same direction with one end to the plate and the other to the high

ratio transformer.

The tickler is mounted on a hinged support, and the primary and secondary on a permanent support even with the tickler. The 8-inch rod is run through from the front to the rear panel and a hook arrangement soldered on so that a turn of the dial in front moves the tickler on the hinge, varying the inductance.

The coils may be kept intact by shoemakers' twine. The wiring should be as short and direct as possible, yet neatness need not be sacrificed for this.

The tubes for this set consist of one UV200 and two UV201-A amplifiers. A C-battery is shunted across the filament posts of the two transformers and the negative side of the filament.

SAYS RADIO WILL BRING ONE TONGUE

BY HARRY B. HUNT

NEA Service Writer
WASHINGTON, June 2.—C. C. Dill, juvenile senatorial insurgent from Washington, believes that radio will ultimately unscramble the confusion of tongues resulting from the attempt to build the tower of Babel, and that it will, in addition, accomplish more than all the statesmen and diplomats in history toward establishing world peace.

"I foresee the day," says Dill, "when a universal language will result from the worldwide broadcasting by radio."

"The better understanding, the friendlier relationships, that will be promoted by this means of communication, will be the biggest factor in bringing universal peace."

Radio From Ground Up, Cont'd

(Concluded From Page 3)
for generating oscillating current and a large tuned circuit comprising capacity and inductance, commonly called the "antenna" or "aerial." The inductance is to be found in the coil of wire by which the antenna is coupled to the generator of the oscillations, and the capacity exists by virtue of two large parallel "plates"—the aerial wires and the earth. The difference in the working ability of the tuned circuits previously described and the case of the antenna is that the antenna is so much larger that its magnetic field extends for long distances.

The receiving station is very similar to the transmitting station, with the exception that a smaller antenna is used, and that no generator of oscillations is employed since the energy is coming in, not going out. The connection between the two antennas is through the magnetic waves which spread out from the sending aerial and snap across the receiving aerial, thereby creating a voltage and setting up an alternating current in it. And by proper arrangement of the inductance and the capacity in each case the receiving aerial is tuned to the sending aerial, or the receiving aerial may be tuned to some other sending aerial by a different adjustment. There are a myriad devices for tuning the receiving station to resonance, all differing considerably, but the principle in the main is as it has been given.

Oakland Schools May Teach By Radio

The three "Rs" learned by radio! Oakland kiddies will have lots of fun going to school, if the experiments now being made by the Oakland public schools are successful. This is to be accomplished by a radio broadcasting station transmitting especially for public schools.

Instead of traveling from one school to another counselling instructors of the Oakland public schools now speak in the studio of KGO, the Coast broadcasting station of the General Electric Co., on Tuesday and Thursdays at 10:20 a. m. and radio loud speakers installed in 20 schools in the city, reproduce what is said. Teachers and pupils assemble in classrooms in the regular manner with not more than two classes in any one place.

Evidence that parents of pupils in the schools equipped with radio receivers are taking

an active interest in the experiments is to be found in a report from one school showing that 47 mothers had telephoned that they were listening to the programs and were enjoying them.

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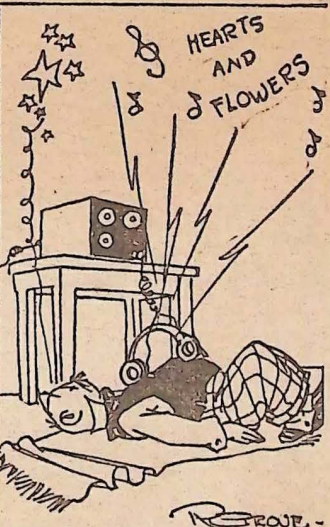
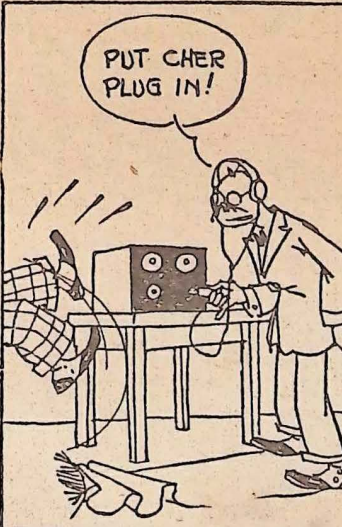
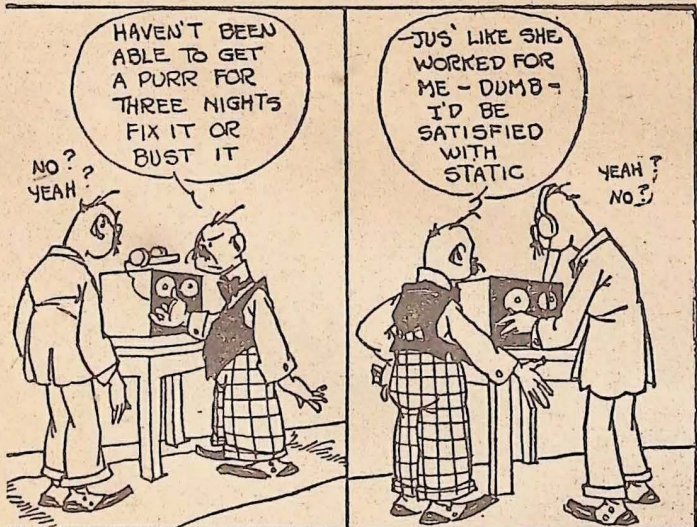
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