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RADIO
MAGAZINE

The Daily News

EVERY
MONDAY

SAN FRANCISCO, MONDAY, JUNE 9, 1924

RADIO MAY END DIVORCE EVIL

SEEK COMMON LANGUAGE FOR DX IN EUROPE

NEA Service Radio Editor
BY ISRAEL KLEIN

Long distance radio broadcasting in Europe is as popular with the fans there as it is in this country, for one significant reason:

The variety of languages. All of Europe can be placed neatly inside the boundaries of the United States and the Province of Ontario, Canada. Yet the people on that continent speak 60 distinct languages, to the one spread over the entire North American continent!

The difficulty of understanding a long distance broadcast program, except music, is apparent. Even were all restrictions and limitations on radio broadcasting and receiving now existent in Europe removed; with everyone as wild about radio as we are in this country, European fans would still be faced by the uselessness of listening in on a lecture or other talk they could not understand.

Local Areas

Every nationality, except the Russian, is confined within an area which we may safely term local, so far as broadcasting is concerned. One station for each country would be almost enough to satisfy all the fans.

In England, where there are more, they interlock regionally, as do many neighboring stations in this country.

Yet that human desire to reach out beyond one's limits has seized European radio amateurs to the extent that they have given greater impetus to the movement for an international language.

Numerous international language radio societies are being formed by the European amateurs, who are convinced some new and simple means of communication should be adopted for their DX, or long distance, work. It is not so much a campaign for a universal language, like the effort to adopt Esperanto or Ido throughout the world as it is a movement to perfect an auxiliary international language.

Start Made

The national languages may remain. But the European amateurs and other radio fans are seeking a language for long distance communication.

European radio amateur societies are already proceeding along this line. They have begun to formulate a language which they call "Ido," although it is not the Ido suggested as a universal language. Its original name was "Ilo," from the initials of "International Language" with an "o," signifying it is a singular noun.

This "Ido" is based principally on 11,000 roots taken from six most popular and varying languages, with some from other languages.

Perhaps, when international and trans-oceanic broadcasting becomes popular, American fans also will have to adopt this language.

Another Quiet House

American amateurs have agreed to extend their period of quiet another hour during the summer months, for the benefit of broadcast listeners. The new hours of quiet are from 7 to 10:30 in the evening, eastern standard time.

Radio in Spain

Spain is planning a conference at Madrid to organize a system of broadcasting stations similar to those in other countries. There is only one station in Spain so far.

SONG BIRD



Myrtle Claire Donnelly

A notable event will occur in radioland tonight, when Myrtle Claire Donnelly, prima donna, who has just returned from a tour of European and American cities, will make her debut over radio KPO.

Selected as one of the stars to appear with the San Francisco Opera Ass'n, which will open its season this fall, Miss Donnelly, a San Francisco girl, has achieved an international reputation.

Miss Donnelly will sing the waltz song from Romeo and Juliet tonight. She will be on the air between 9 and 10 p. m.

Britons Get US And Continent

LONDON, June 9. — British radio fans have a choice of tuning in on Paris, Berlin, The Hague, or American radio stations.

Owners of three-valve sets are laughing every evening with Americans in New York and St. Louis at comedy features.

There is seldom any difficulty in hearing the United States stations, and never any in getting France.

It is usually impossible to hear The Hague station in Holland—the first to broadcast on this side—except on Sunday afternoons, owing to the "jam" in the air.

Aerial wires should be at least 25 feet from power lines and preferably at right angles to them. A loud hum will develop if this is not observed.

CHURCHES TO BROADCAST THROUGH KGO

Sunday church services from KGO, both morning and evening, will now be a part of the broadcasting service delivered by the Pacific Coast station, it was announced today by officials of the General Electric Co.

Connecting the studio building of KGO with several churches in San Francisco and Oakland is an extensive system of ground wires now nearing completion. Two pairs of wires into each church are necessary. Music and voices are carried on one pair, while the other pair is used for quick communication between operators stationed at the church and the control room in the studio building of KGO.

Two microphones are usually placed before the pulpit. Sometimes three are used where the speaker is likely to move around much. One microphone is located to pick up the congregational singing. Another, in the organ loft, picks up the organ music. One or two microphones are then needed for soloists and the choir. Wires from each microphone terminate in the switch box.

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—6-volt amplifying tube for set headphones; value \$3 to \$5. P. S. Jones, 1410 Milvia-st, Berkeley. Phone Berkeley 22743.

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

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

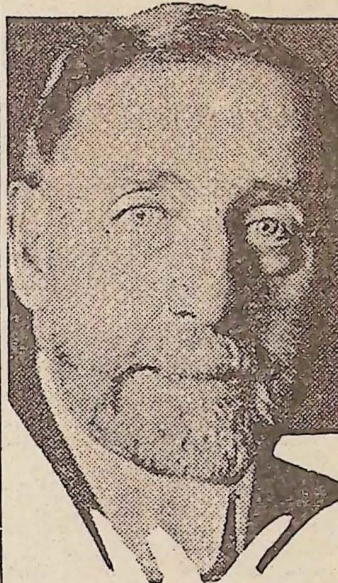
TO SWAP—Remier variometer for two 23-plate condensers. H. E. Geay, 2911 Shattuck-av, Berkeley.

TO SWAP—Two \$4 Feri variometers and a 1250-turn honeycomb for a complete variocoupler and 23-plate variable condenser. John Kriel, phone Valencia 2630.

TO SWAP—Four tubes, 199 or 201, for a good radio set. Joe Kabb, 154 East-st.

TO SWAP—Tungar 2½-amp. charger, brand new, for magnavox and pay difference for Tungar 5-amp. charger. Martyn, Valencia 1717.

CUPID'S AID



Judge Thomas F. Graham is considered one of Cupid's greatest aids in reconciling married couples, sees another aid in radio.

Radio Flats Latest Style

Apartment dwellers who daily suffer the agonies inflicted upon them by phonograph, piano player and saxophone artists, can look forward to a new torture. The latest wrinkle in apartment houses is the completely equipped radio set with loud speaker.

Apartments now under construction in large cities are being equipped with the latest word in radio apparatus. One recently erected in New York city was equipped with four separate receiving sets.

These are operated in the superintendent's office, and are tuned in on a number of broadcasting stations. Four separate trunk lines are carried to each individual apartment living room. This makes it possible for a tenant to choose between four programs, by plugging in on one of the four trunk lines in his own apartment.

Low Power Record

Station WBBG, at Mattapoisett, Mass., claims a distance record among low-power broadcasters. Transmitting on 250 watts, using storage batteries alone for power, WBBG has been reported heard in England and on the Pacific Coast.

JUDGE SEES PREVENTION OF DISCORD

BY A. H. FREDERICK
NEA Service Writer

Probable solution of America's tremendous divorce problem may come through radio.

This is the belief of Judge Thomas F. Graham, local divorce court magistrate, whose work has won him title of "The Great Reconciler."

"The best time to reconcile bickering married couples is before they ever come to court," declares the judge.

"For years judges have been studying this problem, how to reach potential divorcés before the limit of court proceedings has been reached.

"Now we have it, and when we have brought it to proper utilization, I have no doubt that tremendous decrease in the marriage problem will follow."

Call to Attack

Upon these premises, Judge Graham has issued a call to combatants of divorce to consider the possibility of staging such an air attack on the evil.

Recently the judge sent the first of his talks by radio, through station KPO, here. Response was immediate and profuse.

"Clear indication of what may be expected when the work is systematized," says the judge.

"Couples in court are separated by barriers of temper. They are hostile to suggestion and advice. They feel they have been injured beyond reparation.

"This is the first obstacle which those attempting reconciliation must overcome.

Reaches Home

"Contrast this with the method made possible by radio of reaching couples when they are by their own fireside, surrounded by the things which their mutual efforts have won, and happy in each other's company.

"Surely, under these conditions, advice will be welcomed, not received with hostility, even at first."

Radio serves another great function in protecting the American home, the judge adds. No longer is there the same urge for one or the other to go out in search of entertainment.

The radio brings entertainment to them.

Longer Horns Give Clearer Tones

PHILADELPHIA, June 9. — Prof. Dayton C. Miller of Case School of Applied Science, Cleveland, addressed the American Philosophical Society here recently.

Miller demonstrated his invention, the Phonodeik, by which sounds are made visible.

The Phonodeik has a small revolving mirror in it, the size of a pinhead. Sounds cause the mirror to vibrate. A beam of light reflected from the mirror to a screen reproduces the actual shape and motions of the sound waves.

Urges Long Horns

Miller has been using the Phonodeik to study radio loud speakers.

"Before radio can be perfected, attention must be devoted to the acoustics," Miller says.

"The microphone at the broadcasting station distorts the music before it is broadcast. At the receiving end added distortion is caused by the horn of the loud speaker.

"I have been experimenting with loud speaker horns eight feet long and I find they reproduce tremendously better than any horn now being used.

WHAT THE WILD WAVES SAY

The San Francisco Radio Club held its first meeting at the new clubrooms, 1380 Bush-st, Thursday night, with one of the largest attendances ever recorded. Everybody turned out to look over the new clubrooms, and an informal "open house" was held.

Many interesting events are planned for the future.

While it is undecided whether or not the club will adopt a new call signal, for the time being, 6AUU will be retained as the official signal.

After the general meeting, an open discussion was held on Heising modulation. Interesting talks on the subject were given by 6UQU, 6AMS and 6AVG.

6CPW, the Sheik of the Sand Dunes, is on a new station, which is working with two five-watt tubes in parallel with CW.

FANS TO GET RADIO NEWS

Introducing our new radio column, to appear each week in the Daily News Radio Magazine. This is your column, B. C. L. (broadcast listeners) and amateur radio operators! Here you will find all the local doings in radioland. If you have any news, write in and tell us.

He is using Heising modulation for phone and ICW.

6QH is fixing up his heap and will be on the air soon with two five-watt tubes.

A sad story is reported by 6RY, who recently blew out two fivers. However, he finally suc-

ceeded in joining the filament by the old method of tapping on the side of the tube.

6AUU's old 100-watter burned out at 5 o'clock Friday afternoon and he was obliged to take up a collection for new tubes for the club set.

ARRL message reports are due this week. All official relay stations are warned by the city manager of 6CHL to turn in their reports, otherwise they will have their certificates taken away.

Members of the Park Radio Club are looking forward to their annual "blowout," which will be held next Friday afternoon at 6:30 o'clock at the Bluebird tea room, Stanyan and Frederick-st. All former and present members of the club are invited to attend. Among the numbers planned for the evening is dance music over the club's receiving set.

THIS WEEK'S AIR PROGRAMS

Monday, June 9

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—Program under the management of the Wurliitzer Co.: Piano solo, Invitation to the Waltz, Minnie Thompson.

Soprano solos, Morning; California; Ruth Cart, Minnie Thompson, accompanist.
Piano solo, Town Talk Rag, Al Hyndman.

Tenor solos, If the Rest of the World Don't Want You; Just a Girl That Men Forget; Eddie M. Hyndman; Al Hyndman, accompanist.
Piano solo, Spark Plug, Al Hyndman.

Soprano solos, The Road of a Loving Heart; You Will Forget; Under My Heart I Carried You; Ruth Cart, Minnie Thompson, accompanist.

Tenor solo, That Old Irish Mother of Mine; Eddie M. Hyndman, Al Hyndman, accompanist.
Piano solo, Sonata; Minnie Thompson.

Soprano solo, Yesterday and Today; Ruth Cart, Minnie Thompson, 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: A Day With a Lion; Answers to Questions; More About Jack's House; Musical recitation, When We Haven't Said Our Prayers, Babe Pretious (11 years old).

6:30 TO 7 P M—Soloists from Fabello's Orchestra of the New Mission and New Pillmore theaters.
7 TO 7:30 P M—Rudy Selger's Fairmont Hotel Orchestra.

8 TO 9 P M—Mrs. A. Wilson, justice of the peace, Sydney, Australia, will give a short talk on "Women I Have Met in America."
Organ recital by Theodore J. Irwin: Wedding March, Midsummer Night's Dream; overture, Raymond; song melody, The Rosary (with chimes); Chaconne; song melody, Bon Voyage (by request); operatic selection, Mireille; A Song of India; Symphony Pathétique, selected passages from second movement; Down South; musical comedy selection, You're in Love.

9 TO 10 P M—Soprano solos, Waltz Song (from "Romeo and Juliet"); Myrtle Clare Donnelly; Cecil Hollis Stone, accompanist.

Program under management of Los Gatos Chamber of Commerce:
Soprano solos, Dreamy Days; Four-Leaf Clover; Mabel Penny Mallory.
Violin solos, Adoration; California Lullaby; Esther Bartley Smith.

Soprano solos, Ave Maria (with violin obligato); My Curly Headed Baby; Dorothy Cooper Fletcher.
Piano solos, Staccato, Etude in C; Danse Negre; Erali C. Brashers.

10 TO 11 P M—E. Max Bradfield's Versatile Band, playing in Palace Hotel Rose Room Bowl.
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 by Olive Wilson Borrett on the subject, "Why Teach Music in the Schools?"

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

8 P M—Educational program, with musical numbers. Courses in agriculture, Spanish, music, economics and literature.

KLX—Oakland Tribune (509 Meters)
7 TO 7:30 P M—News, weather report, market and financial news.

8 TO 9 P M—Program broadcast from University of California at Berkeley over private leased wires through KLX. Talks and lectures by University of California professors and music.

9 TO 10 P M—Dance music broadcast from KLX studio.

DISTANT STATIONS
KFI—Earle C. Anthony, Los Angeles (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.

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.

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 TO 10 P M—Program by Civic Music Club of Portland.

WBAP—Fort Worth Star-Telegram (476 Meters)

9:30 TO 10:45—Concert offered by talent from Alvord, Tex. N. O. Carter, director.

KFOA—Rhodes Dept. Store, Seattle (455 Meters)

8:30 TO 10 P M—Rhodes Dept. Store Night. The feature of this program will be the appearance of the Lincoln High School Double Quartet, who will sing a number of songs.

KFAE—Washington State College (330 Meters)

8:30 TO 9:30 P M—Baritone solos, Paul Christian, Butte, Mont.; piano numbers, Jean Fulmer, Pullman; soprano solos, Agnes Dilts, Palouse; Pasture for Swine, Prof. R. T. Smith; educational lecture.

Tuesday, June 10

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

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

RADIO SALE

EVERY DAY

Used and new radio apparatus bought, sold and exchanged. Save yourself half. Receiving sets, all kinds, for less than price of parts. All guaranteed for one year.

RADIO ELECTRIC SUPPLY CO.

Phone Kearny 1519. 539 Call Bldg.

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.

Fairmont Hotel Orchestra.

2:30 TO 3:30 P M—Organ recital by Theodore J. Irwin:
March, Jersey Shore; selection, Love Songs of Olden Days; comic opera selection, Fortune Teller; fox trot, It Had to Be You; waltz, Vienna Woods; operatic selection, La Source; popular waltz melody, Love in Idleness; fox trot, Stealing to Virginia.

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: Olaf of Orchard Farm; The Story of Tea; Answers to Questions.

6:30 TO 7 P M—Cleveland Six Orchestra, under direction of Wilt Gunzendorf.

7 TO 7:30 P M—Rudy Selger's Fairmont Hotel Orchestra.
8 TO 10 P M—Shilo solos, Romanza Andaluza; Misero (from "Il Traviatore"); Marcelita Vega.

Baritone solos, Phyllis Has Such Charming Graces; The Happy Lover (arranged by H. Lane Wilson); Paul Weber, Hazel Such, accompanist.

Violin and piano duets, Fantasia Lirique; Serenade; Prof. Edmundo Dieguez, Marcelita Vega.

Soprano solos, selected; Mrs. Clyde M. Beck, Miss Mayer, accompanist.

Violin and piano duets, Mazurka de Concerto; Rigoletto; Prof. Edmundo Dieguez, Marcelita Vega.

Baritone solos, Ford o' Kabul River (by request); Sunrise and You; Paul Weber, Hazel Such, accompanist.

Violin and piano duets, Danzas Mexicanas; Liebesfreud; Prof. Edmundo Dieguez, Marcelita Vega.

Soprano solos, selected; Mrs. Clyde M. Beck, Miss Mayer, accompanist.

Baritone solos, Little Woman o' Mine; Lonesome, That's All; Paul Weber, Hazel Such, accompanist.

Piano solos, Toreador, grand march (from "Carmen"); Long of the Alps; Marcelita Vega.

Poem, "San Francisco, City of Enchantment," Adelyn Brickley Jones; reading by the author.

Program by San Francisco's eminent composer, H. Bickford Pasmore, consisting of his own compositions:

Vocal, A Summer Song (words anonymous), chorus of 34 voices, pupils of H. Bickford Pasmore.

Solo, Where Cowslips Grow, words by Charles Keeler; The Mountains (words by Charles Keeler); Rosabelle Scott.

Chorus, The Treasures of the Deep (words by Felicia Hemans).

Solo, The Miller's Daughter; My Love Is Not as Your Love Is; Mrs. Charles Stuart Ayres.

Solo, The Shi Lin Tree (Chinese melody); Therisa Zahmalyn. H. Bickford Pasmore, accompanying soloists; Vera W. Frazier, accompanying chorus.

10 TO 11 P M—E. Max Bradfield's Versatile Band, playing in Palace Hotel Rose Room Bowl.

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

1:30 P M—New York Stock Exchange and United States weather bureau reports.

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

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

8 TO 10 P M—Instrumental selections. Band of the service company, 159th Infantry, California National Guard; Charles Porep, leader; Capt. Byron W. Gray, commanding.

Soprano solos (a), "Oh! Quand je dors"; (b), Le coeur de ma mie; Claire Harsha Upshur.

Instrumental selection, selections from "Martha," Arion Trio.

Tenor solos (a), Untill; (b), Where My Dear Lady Sleeps; Erwin Holton.

Piano solos (a), selections from "Bohemian Girl"; (b), Nearer, My God, to Thee (transcription); Ada Jeanice Madison.

Baritone solos (a), Serenade from "Don Juan"; (b), Ben Bolt; Walter H. Bundy.

Contralto solos (a), Care Salve; (b), Song of Jami; Corinne Keefer.

Travel Talk—Life at Sea, and Impressions of Hawaii and Japan (being first installment, "A Trip Around the World"); J. E. Barnes.

Cornet solos, Charles Porep, leader of 159th Infantry Band.

Vocal selections for baritone with ukulele accompaniment; Kin Carroll.

Instrumental selection, Melody; Arion Trio.

Mezzo-soprano solos (a), Recit. et Air de Lia (from "L'Enfant Prodigue"); (b), Fleeting; Jean A. Center, Charles Newel, accompanist.

Violin solo, Gypsy Airs; Mrs. J. E. Toussaint, Caroline Irons, accompanist.

Instrumental selection, band of the service company, 159th Infantry, California National Guard.

Soprano solos (a), Canzonetta; (b), The Little Damozel; Claire Harsha Upshur.

Cello solo, Nocturne; Margaret Avery.

Tenor solos (a), De Captinne of de Marguerite; (b), Lettie Batesee; Erwin Holton.

Vaudeville act, "You're Dumb!" Boruck and Tarleton.

Mezzo-soprano solos (a), Like a Blossoming Lilac; (b), Comin' Through the Rye (Scotch); Jean A. Center.

Instrumental selection, familiar

melody, "Sally in Our Alley"; Arion Trio.

Instrumental selection, band of the service company, 159th Infantry, California National Guard.

10 P M TO 1 A M—Hotel St. Francis Dance Orchestra, San Francisco; Henry Halstead, leader.

KLX—Oakland Tribune (509 Meters)
3 TO 5 P M—Baseball scores, all leagues.

7 TO 7:30 P M—News, weather report, market and financial news.

DISTANT STATIONS
KFI—Earle C. Anthony, Los Angeles (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—Ambassador-Max Fisher's Coconut Grove Orchestra.

9 TO 10 P M—Examiner concert.

10 TO 11 P M—Don Meany night.

KHJ—Los Angeles Times (395 Meters)

8 TO 10 P M—Program arranged through the courtesy of G. Allison Phelps.

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

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.

WBAP—Fort Worth Star-Telegram (476 Meters)

9:30 TO 10:45 P M—Concert by the Fort Worth Camp Fire Girls, Mrs. Lucia Walker, director.

KFAE—Washington State College (330 Meters)

8:30 TO 9:30 P M—Glee music, W. S. C. Quartet; late song hits. Leighon Bailey, Spokane; comic tenor numbers, F. Marshall, Spokane; Doder in Alfalfa, Bliss Dana; educational lecture.

KFOA—Rhodes Dept. Store, Seattle (455 Meters)

8:30 TO 9:30 P M—Program arranged and given through the courtesy of the Metropolitan Building Co. under the able direction of Freda Tildon, publicity manager.

KLX—Oakland Tribune (509 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.

3:30 TO 4:30 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: Unknown Animals; Jack's Kitchen; The Tales of a Slave.

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

8 TO 8:30 P M—Talk "Your Boy and Mine and the Smith-Hughes Act," William T. Elzinga. E. Max Bradfield's Versatile Band, playing in Rose Room Bowl, Palace Hotel; during intermissions, popular selections.

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. Speaker furnished through the courtesy of the Cora L. Williams Institute, Berkeley.

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

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.

7 TO 7:30 P M—News, weather report, market and financial news.

8 TO 10:20 P M—Studio and American Theater program:

Vocal number by the Chanson Quartet, Sleeping! Why Now Sleeping. Mrs. Miriam E. Sellander, soprano; Miss Helen E. Halst, contralto; Philip Ashcraft, tenor; Morton Gleason, bass; Mrs. Bessie H. Woods, accompanist.

Bass solos (a), L'll Black Rose; (b), Oh, My Lawd! What Shall I Do? Piano solo, March Wind; Bessie H. Woods.

Soprano solos (a), Lithuanian Song; (b), Wings of the Night.

Piano solo, Novelette; Bessie H. Woods.

Quartet numbers (vocal) (a), The Sweetest Flower That Blows; (b), Babylon's Wave.

Contralto solos (a), a'Le Chevalier Belle; (b), The Picture.

Piano solo, selected; Bessie H. Woods.

Tenor solos (a), Two Grenadiers; (b), Morning.

Overture from the American Thea-

ter, broadcast over private leased wires through KLX. The American Theater Orchestra, Owen Sweeten, director.

Quartet numbers (vocal) (a), The Last Hour; (b), Recessional; Chanson Quartet.

Piano recital by pupils of Letitia Anna Miller Studio of Berkeley: (a), Selections from "Faust," Herbert Ingham; (b), Tam O'Shanter; piano trio, Richard, Dorothy and Tom Stevenson; (c), Kammerel Ostrow, Tyndi Malmstrom; (d), Ensemble (six violins and piano); Sextet from "Lucia," William Zuerner, Ernest Perry, Ralph Davidson, Lucille Althebery, Lillian Forster and Alton Hallenbeck; (e), Jolly Little Rain Drops, Marion Tronsen (piano); (f), The Chirping Sparrow (piano trio), Elva Dimpfel, Margaret Kluk, Evelyn Forster; (g), G String solo (viola), Miss Christiansen; (h), March Militaire (piano trio), Edith Ohler, Ruth Brockley, Florence Mulgrew; (i), Thais, Beatrice Rommel (piano); (j), When We Haven't Said Our Prayers, Louis Erna Royce (piano); (k), Consolation, Constance Hopkinson (piano); (l), Russian Dance, Winfred Connolly (violin); (m), La Chasse au Lion, Tyndi Malmstrom and Herbert Ingham (piano duo).

Organ recital, broadcast from the American Theater over private leased wires through KLX. Clement Barker, organist.

DISTANT STATIONS
KFI—Earle C. Anthony, Los Angeles (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—Ambassador Hotel concert.

9 TO 10 P M—Examiner concert.

10 TO 11 P M—Hollywood Community Orchestra.

11 P M TO 12 M—Ambassador-Max Fisher's Coconut Grove Orchestra.

KHJ—Los Angeles Times (395 Meters)

8 TO 10 P M—Program presented through the courtesy of the Aetna Life Insurance Co., arranged by Leslie Brigham, Dr. Mars Baumgardt.

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

KGW—Morning Oregonian, Portland (492 Meters)

11:30 P 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.

8 P M—Concert provided by Selberling-Lucas Music Co.

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

WBAP—Fort Worth Star-Telegram (476 Meters)

9:30 TO 10:45 P M—Concert offered by Dot Echols and her orchestra.

KFSG—Angelus Temple, Los Angeles (278 Meters)

8 TO 9 P M—Baptist service, "River Jordan Scenes Re-enacted"; male quartet; sermon by Almee Sampson, McPherson.

9 TO 10 P M—Instrumental and vocal numbers.

Thursday, June 12

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—Saxophone solos, Valse Lewellyn; Lanette; Gypsy Love Song; William Ambrose, Charles Vincent, accompanist.

Tenor solos, Mother o' Mine; I Hear a Thrush at Eve; William Conway, Jean Mirk, accompanist.

Piano solos, Kitten on the Keys; Just Be Yourself (played and sung by composer), Charles Vincent.

Violin solos, Angey Serenade; Marigale; Nina; Albert Pagnini.

8 TO 9:15 P M—Program arranged through the courtesy of the Fitzgerald Music Co.

9:15 TO 10 P M—Program arranged through the courtesy of Clifford Lott; chorus of 60 voices.

10 TO 11 P M—Art Hickman's Dance Orchestra.

(Concluded on Page 3, Column 1)

Charles Vincent, accompanist.

Tenor solos, Because; Song of the Soul; William Conway, Jean Mirk, accompanist.

Trombone solo, The End of a Perfect Day; Jack Falt, Charles Vincent, 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: Farmer and the Raven; The Son Who Returned; The Stone That Gathered No Moss. Piano solos, In Stately Halls; Elfyn Dance; Margaret West, 11 years old (pupil of Mrs. Jeannette Mulford).

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

8 TO 9 P M—Organ recital by Theodore J. Irwin: March Slav; overture, Volage to China; Echoes of Naples, Neapolitan song selection; operatic selection, Madame Butterfly; Arietta di Ballata; Symphony in C Major, selected passages from Andante; light opera selection, Robin Hood; selection, Old English Airs; Al Fresco; fox trot, Mandalay.

9 TO 10 P M—Program by artist pupils of Andrew Bogart: Tenor solos, Because I Love You, Dear; In the Garden of My Heart; J. G. Walker.

Dawn; O Sole Mio; Emilia Da Prato (the Italian Nordica).

Baritone solos, Rose in the Bud; Vale; Pete Bach.

Contralto solos, Expectancy; Sacrament; Isabel Bissett.

Tenor solo, My Dreams; Jerome Devoto.

Un bel di (Madame Butterfly); Emilia Da Prato (the Italian Nordica).

Tenor solos, My California Rose; Friend o' Mine; J. G. Walker.

Soprano solos, Kerry Dance; An Open Secret; Summer; Mildred Hessian-Hair.

Vol de sapete (Cavalleria Rusticana); Emilia Da Prato (the Italian Nordica).

Tenor solo, For You Alone; Jerome Devoto.

Firm Mounting Is Always Necessary

Radio sets require sturdy frame construction as most of them are moved about more or less.

The handling of a set during and at completion of its assembly, the shaking out of short ends of wire and drops of solder require that the set be turned upside down, demand that the panel and sub-base or bottom board be attached securely to each other so that none of the soldered joints be forced apart or wires or contacts loosened.

A loose panel is the cause of much trouble. If the sub-panel or baseboard is not fastened rigidly and firmly, to the panel, the pressing of the tubes into the sockets will spring the sub-panel downward and pull on the wires connecting the instruments proper.

Angle pieces may be used to fasten the front panel to the baseboard. Ordinarily, however, screws through the panel to the hardwood baseboard will do the job. But it is wise to make sure that these panels are secure before finishing the assembly job.

Experts On Guard For SOS Signals

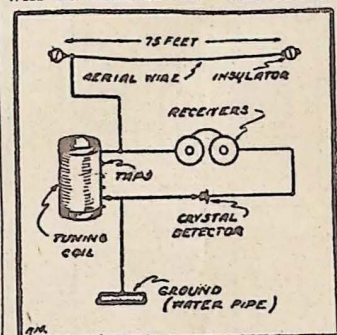
While radio fans are seated safely in their homes, enjoying the programs broadcast by local stations, expert radio operators are listening in constantly for possible distress signals from vessels on the high seas.

An operator in the control room at KGO keeps an accurate log of what he hears. This log is proof that listening actually is being done on the 600 meter wavelength used by shipping. Should an SOS call be heard, the local broadcasting stations would shut down instantly.

Half a mile away from the KGO studio building, in the powerhouse, a 600 meter transmitter is always ready for an attempt to communicate with a stricken ship.

Federal regulations provide that every broadcaster must listen in three minutes out of each

Before delving further into the principles of wavelengths and frequencies, a few elementary receiving arrangements will be considered. The receiving



system consists of three essential parts: The antenna or "receptor," the "tuner" and the "detector." The ordinary receiving antenna for broadcasting is a single straight wire suspended between two elevated points about 75 feet apart, on the roof of a building or other high location. An insulator at each end prevents electrical loss

by contact with partial conductors of current. The wire running down is termed the "lead-in" and is either soldered to one end of the antenna or is merely the antenna wire extended downward.

The ground connection is made to a "ground camp" screwed to a cold water pipe the surface of which is scraped clean beforehand. The antenna is a tuned circuit. It has a certain capacity, as we have already learned and it has a small amount of inductance, too. The main inductance is provided by a coil of wire termed the "primary." For broadcast reception the primary coil may consist of 50 turns of magnet wire about No. 22 in size, wound on a cardboard tubing about 3 1/2 inches in diameter. In series with this coil is a variable condenser of .001 mfd. maximum capacity, more commonly, but inaccurately, known as a "43-plate" condenser. A reduction of the condenser's capacity has the effect of raising the antenna in that its capacity becomes less as far as its effect on the set is concerned.

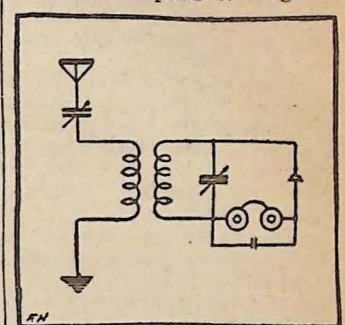
Thus the antenna circuit is tuned for frequencies used by broadcasting stations by the variable condenser and the passing magnetic wave from a station will cause the circuit to "oscillate" if it is in time. Current will then flow through the primary coil and a magnetic field rising and falling in tune with that current will reach out in the space around that coil.

The other coil, also of 50

turns of wire, is called the "secondary" and it is part of the secondary tuned circuit which is adjusted to various frequencies by the .005 mfd. or "2-plate" condensers, connected across or in shunt to it. If the two coils are too far apart, too "loosely coupled," insufficient current will be set up in the secondary to cause an audible response in the telephones, while if the coils are too close, the points of resonance become indefinite and a great deal of energy is lost by re-absorption back into the antenna circuit.

The charges and discharges of the secondary condenser then affect the detector part of the set. The detector itself consists of a piece of mineral, possessing the peculiar property of permitting current to pass only in one direction, with a light springy wire in contact with its surface. Galena or lead sulphite is usually the most sensitive, but it is so difficult to find the proper pressure for the contact that a more rugged crystal is usually selected, such as iron pyrites or certain "synthetic" grayish crystals now on the market. The telephones contain a magnet wound with many thousand turns of fine thread-like wire through which the currents pass. Arranged a small fraction of an inch from the magnet is an iron disc or diaphragm which may be set into vibration in accordance with the fluctuations of the currents in the magnet coil. The diaphragm is the armature of the electromagnet which we studied in the earlier lessons.

If it were not for the crystal detector or "rectifier," alternating current would pass through the magnets and the diaphragm could not respond to magnetic



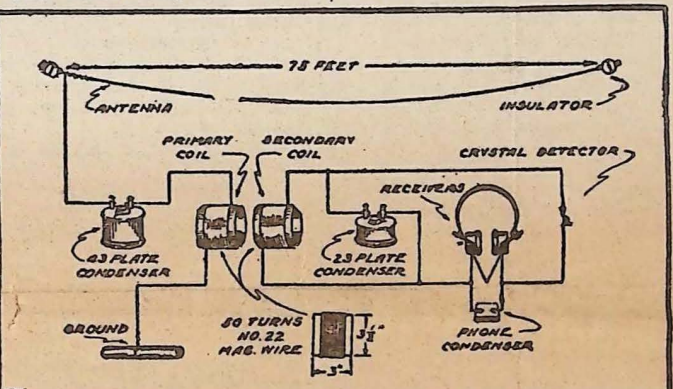
pulls and pushes coming so rapidly. But with current passing in one direction only, the diaphragm is always acted upon in the same way, the difference in vibration being caused by differences in the strength of successive current impulses passing the crystal.

The symbolic diagram of the first circuit or "hook-up" given is also shown, so that you may compare the two and begin to familiarize yourself with the "short-hand" of circuits. The arrangement is possible of hundreds of variations, for the inductances may take the form of honeycomb or spider web coils and the condensers may be made in many different forms, so long as their electrical capacities are not greatly different from those specified.

Radio Thief Found

A new specimen of burglary has been found, the radio burglar. Because she feared the police might shoot him, a Cleveland, O., mother helped the police capture her 19-year-old son, who was accused of stealing radio receivers. The police say the boy has confessed to have broken into 50 homes since the first of the year. Two dozen radio receivers comprised part of his loot.

Clifford Arner of Orangeville, O., has a record of having received 147 different broadcast-



WEEK'S AIR PROGRAMS, CONTINUED

(Concluded From Page 2)

Dance Orchestra from the Biltmore Hotel.

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.

8:15 P M—Studio program of dance music by George Olsen's Metropolitan Orchestra of Hotel Portland; Herman Kenin director.

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

WBAP—Fort Worth Star-Telegram (Texas), (476 Meters)

9:30 TO 10:45 P M—Bandmaster's Band concert, to be participated in only by masters of Texas bands. J. E. King, director. (The Hired Hand announcing).

Friday, June 13

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

12:45 P M—Talk broadcast from the Commonwealth Club luncheon at the Palace Hotel.

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

2:30 TO 3:30 P M—Organ recital by Theodore J. Irwin:

March, Semper Fidelis; light opera selection, Chimes of Normandy; fox trot, Mr. Radio Man; songs, Roses of Picardy; operatic selection, Ballo in Maschero; popular waltz song—West, a Nest and You; waltz, The Skaters; old time popular song favorites; fox trot, Some One Loves You After All.

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

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

1:30 P M—New York Stock Exchange and United States weather bureau reports.

3 P M—Program of instrumental and vocal selections.

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

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

KLX—Oakland Tribune (509 Meters)

3 TO 5 P M—Baseball scores, all leagues.

7 TO 7:30 P M—News, weather report, market and financial news.

8 TO 10:20 P M—Studio program: Instrumental numbers: (a) The Wedding of the Rose; (b) La Golondrina, Orpheus Instrumental Trio; Philip Tait, violin; Frederick R. Wilkins, flute; Howard Eastwood, piano, with George Shervey, bell soloist.

Vocal numbers: (a) Song of Songs; (b) Gray Days; (c) When My Ship Comes Sailing Home, George Ingalls Buck, tenor; Irma H. Vogt, pianist.

Instrumental numbers: (a) Lo,

Hear the Gentle Lark; (b), Rendezvous (with bells), Orpheus Instrumental Trio.

Vocal solos: (a), Will o' the Wisp; (b), Stanoto Polka, Mrs. Phyllis Worden.

Instrumental number, Chant du Rossignol; Orpheus Instrumental Trio.

Tenor solos: (a), The Star; (b), O Dry Those Tears; (c), Colleen o' Mine; George Ingalls Buck; Irma Harris Vogt, accompanist.

Flute solo with violin obligato, Legend of a Rose; F. R. Wilkins.

Vocal solos: (a), Chanson Provencale; (b), Jean; Mrs. Phyllis Worden.

Overture by the American Theater Orchestra, Owen Sweeten, director; broadcast from the theater over private leased wires through KLX.

Vocal solos: (a), Bendemeer's Stream; (b), The Nightingale Has a Lyre of Gold; Margaret Nelson Bunting; Mrs. Niles Jacobus, accompanist.

Instrumental selections: (a), Amarrills (with bells); (b), A Perfect Day; Orpheus Instrumental Trio.

Vocal solos: (a), When the Roses Bloom; (b), The Year's at the Spring; Mrs. Phyllis Worden.

Recitation, "Music on the Rappahannock," P. Y. Albright.

Vocal solos: (a) Life; (b), Mood; Margaret Nelson Bunting; Mrs. Niles Jacobus, accompanist.

DISTANT STATIONS

KFI—Earle C. Anthony, Los Angeles (469 Meters)

4:45 TO 5:15 P M—Evening Herald concert.

5:15 TO 5:45 P M—Examiner news bulletins.

6:45 TO 7:30 P M—Concert by Myra Belle Vickers' pupils.

8 TO 9 P M—Evening Herald concert.

9 TO 10 P M—Examiner concert.

10 TO 11 P M—Earl Mecker arranging program.

11 P M TO 12 M—Ambassador-Max Fisher's Coconut Grove Orchestra.

KHJ—Los Angeles Times (395 Meters)

8 TO 10 P M—Program arranged through the courtesy of Louise Gunning, soprano.

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

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.

WBAP—Fort Worth Star-Telegram (Texas), (476 Meters)

9:30 TO 10:45 P M—Concert by Capt. Hart's Trio of Cleburne, Tex. (The Hired Hand announcing).

KFSG—Angels Temple, Los Angeles (278 Meters)

8 TO 9 P M—Crusaders meeting. Address by Judge Carlos S. Hardy,

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

6:40 P M—Weather forecast.

Saturday Only

9:05 A M—Weather forecast.

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

6:40 P M—Weather forecast.

Sunday Only

9:05 A M—Weather forecast.

6:45 P M—Weather forecast.

Additional Friday

6:45 TO 6:00 P M—Health bulletin.

Justice Superior Court.

Madeleine Gilliland.

Santa Monica Choral Society and Community Orchestra of 20 members under direction of J. Lester O'Grady, assisted by Mrs. Mary Clegg, pianist.

Mrs. E. Kotto, president.

Evangelistic address by Aimee McPherson.

9 TO 10 P M—Program by courtesy of Maude Reeves-Barnard and pupils.

Temple Silver Band.

Saturday, June 14

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—Program under direction of Sam Schildkret, flutist:

Our Darling March (dedicated to Hale Bros., Inc.); flute solos, Humoresque; Simple Aveu; Sam Schildkret, flutist; Rognia Sanders, accompanist.

Piano solos, Rhapsodie Fongroise No. 2; Prelude in C Minor; Evelyn Valdez (pupil of Mme. Roma).

Flute solos, a selection of southern melodies; Think of Me; Sam Schildkret, flutist; Rognia Sanders, accompanist.

Piccolo solo (with piano), Fizzicato; Sam Schildkret, flutist; Rognia Sanders, accompanist.

3:30 TO 5:30 P M—Tea dansant, E. Max Bradfield's Versatile Band, playing in Palace Hotel Rose Room Bowl.

pianists. 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).

WBAP—Fort Worth Star-Telegram (Texas), (476 Meters)

7 TO 7:40 P M—Review of the interdenominational Sunday school lesson and radio Bible class by Mrs. W. F. Barnum, leader of the First Methodist Church.

Sunday, June 15

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

11 A M TO 12 NOON—Organ prelude, Theodore J. Irwin. Non-secular church services. H. S. Mueller, baritone soloist.

8:30 TO 10 P M—Rudy Seiger's Fairmont Hotel Orchestra.

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

11 A M TO 12 NOON—Organ prelude, Andantino, Ruth Hall Crandall, soloist; sermon and prayers, Rev. John Snape, First Baptist Church of Oakland, "Unconscious Shining."

3:30 TO 4:30 P M—KGO Little Symphony Orchestra: March, Father of Victory; waltz, Beautiful Blue Danube; overture, Orpheus; symphony, Andante from Leonore.

Soprano solos, Claire Harsha Upshur (a), Romance; (b), To Mary; (c), Spring.

Piano solos, Suzanne Pasmore Brooks (a), Prelude No. 17; (b), Wagon in E Minor.

Soprano solos, Claire Harsha Upshur (a), Ave Maria (with cello obligato); (b), Hold Thou My Hand; (c), A Prayer.

Piano solo, Suzanne Pasmore Brooks, Concert Waltz.

KGO Little Symphony Orchestra. Selection, Lucia di Lammermoor (a), Evening Devotion; (b), cello solo, Lamento, played by Margaret Avery.

7:30 P M—Organ prelude, In Summer, Martha Dukes Parker.

Trio, Protect Us Through the Coming Night.

Quartet, Ho! Everyone That Thirsteth.

Sermon, "Spectrum Analysis or the Source of Light," Rev. John Snape.

KLX—Oakland Tribune (509 Meters)

9:30 TO 10 A M—Church services, Rev. John Snape, pastor of First Baptist Church of Oakland.

RADIO \$4.95

Wonderful, guaranteed receiving set! Complete, including phone, lead-in, aerial, etc. Nothing more to buy.

Simple and easy to operate. Brings in local and distant broadcast entertainments clear and loud within a 50-mile radius. Mail orders filled. Local orders filled at sales office.

R. & O. MANUFACTURING CO., 661 Pacific Bldg. San Francisco

RADIO FANS GIVEN TIPS FOR SUMMER

With greater efforts than ever by broadcasters, manufacturers and other interests in the radio industry to attain perfection for radio reception, it is believed this will be the campers' greatest radio summer.

In an effort to have the results as nearly perfect as possible, suggestions for radio users have been made by the Associated Manufacturers of Electrical Supplies. Connections should be gone over and tightened, batteries should be replaced and a good set of tubes installed, it says.

When camping with a radio the aerial of an antenna type should be erected to a branch of the tallest tree in the vicinity. If thunderstorms are prevalent, an additional antenna should be erected not more than 10 to 20 feet off the ground. During periods of atmospheric disturbance the sensitiveness of the receiver should be reduced by reducing the filament temperature or by loosening the coupling.

Care should be used to see that a good ground connection is made when the aerial is used. Receiving apparatus should be protected from moisture and dampness. The electrical constant of aerials erected at seashore or in camp may be quite different from that used at home, but can be adjusted easily.

With head telephones, the headset cord should be practically new. The connections at the back of the head phone, and the caps, should be tight.

WAVELETS

Uruguay is showing keen interest in radio.

Possibility of state monopoly of radio is being considered in Ireland.

John Coolidge, father of the president, has become a radio fan.

Connect stator plates of the variable condenser to the grid.

Listeners in Great Britain have to pay \$3.75 for a license.

Great Britain had issued 636,000 receiving licenses by Jan. 1, 1924.

There are eight main broadcasting stations in England.

Small 100-watt relay stations are planned for local broadcasting in Great Britain.

Much trouble is caused by poor connections from the storage battery.

Most powerful broadcasting station, 25 kilowatts, is planned for building close to London.

In one month one radio corporation sold more than \$2,000,000 worth of material recently.

In one year nearly 3000 entertainers took part in programs from KSD, St. Louis.

Station KDKA has 35 lines out to places from which it broadcasts their programs.

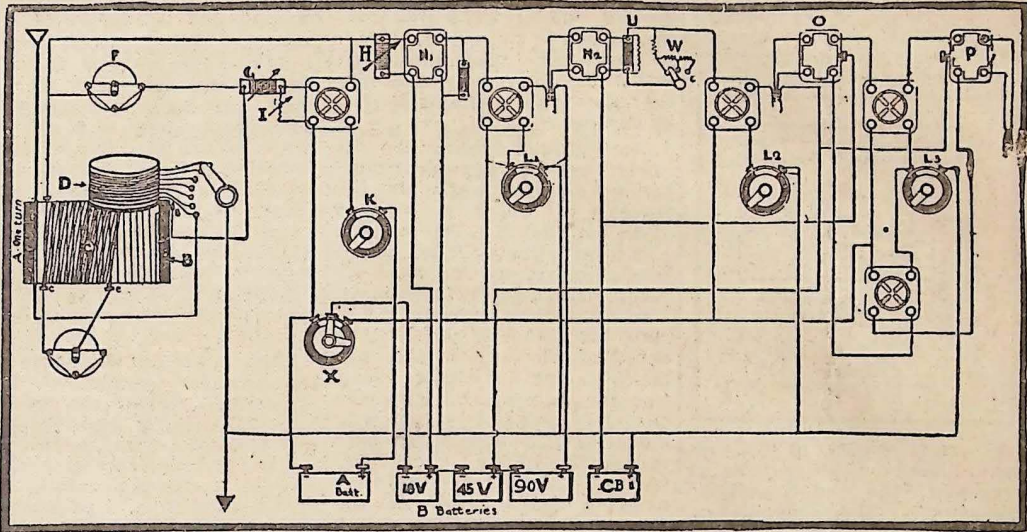
Station WGN, Chicago, has been heard in Hobart, Tasmania, 9670 miles away.

Help Hints

It is possible to use more than one set of phones on a vacuum tube set, but not on a crystal set. The signal strength while using more than one set of phones with a crystal detector will cut the incoming signals to 50 per cent of their usual value.

The new 201-A tubes will become paralyzed if the filament is burned at a higher voltage rate than designated on the instruction sheets provided with the tube. If in any case one of your tubes becomes paralyzed, burn the filament at the required rate for 15 or 20 minutes, without the "B" battery. This having been done, the tube should work.

HERE'S FINE SET FOR DX



Hookup Diagram of the Four-Circuit Tuner

BY ISRAEL KLEIN

NEA Service Radio Editor

Experienced radio fans dabbling with hookups during the summer months, might try putting together the improved four-circuit tuner designed by Laurence M. Cockaday, famous radio engineer.

It is well worth the time and trouble, for reports from users of this circuit are highly encouraging. The receiving range is said to be over 3400 miles, the tuning unusually selective and the volume proportionately high. Besides, these advantages are claimed for the set:

Wavelength range from 150 to 675 meters.

Ease of tuning.

Truthful reproduction.

Automatic tuning.

Simple construction.

Adjustable circuit valves.

This means that any novice may be able to work the set with the least difficulty. Oscillation of the detector tube may be controlled to a fine degree so that the set may be put into critical, regenerative condition.

Special Coils

The parts for the set should cost about \$95. They should be the best pieces of apparatus obtainable. They consist of the following:

Four-circuit coil unit, consisting of coils A, B, C and D, which may be built as follows:

A—Primary winding, consisting of a single turn of bus wire.

B—Secondary, consisting of 65 turns of No. 18 D.S.C. copper wire.

C—Stabilizer, consisting of 34 turns of No. 18 D.S.C. copper wire, over first part of B. These three are wound on a 3 1/4-inch tube 5 9-16 inches long.

D—Antenna tuning coil, consisting of 43 turns of No. 18 D.S.C. copper wire. This is double bank wound and tapped at every sixth turn. It is on a 3 1/4 inch tube 1 1/2 inches long and is placed above B and at right angles to it.

Other Parts

E, F—Vernier variable condensers, .0005 mfd. capacity.

G, H—Small variable grid condensers.

I—Variable grid leak, 1/4 to 10 megohms.

K—Filament rheostats, 6 ohms.

L1, L2, L3—Rheostats, 20 ohms each.

N1 and N2—Audio-frequency amplifying transformers.

O—Input push and pull transformer.

P—Output push and pull transformer.

T—Fixed condenser, .0005 mfd.

U—Variable grid leak and fixed condenser, .00025 mfd.

W—Three fixed resistances, 48,000 ohms.

X—Potentiometer, 400 ohms.

Five tube sockets.

Two closed circuit jacks.

One open circuit jack.

Two switch levers and knobs.

Eleven switch points.

Operation

The tubes consist of one UV-200 or C300 for detector, and three UV201-A or C301-A, for amplifiers.

Once the set is put into oscillation, there is no trouble tuning in any station desired. To do this, the two variable grid condensers, G and H, are turned until the oscillation point is reached.

These condensers are made so that the plates are pressed together by the turning of a knob or thumbscrew, increasing or decreasing the capacity. Both are set by turning the knob counter-clockwise. If the set oscillates too much, the knob of the second grid condenser might be turned back a little.

Now, by operating the switch lever to D, and the two variable condensers, the set can be tuned in easily.

RADIO MAY ELECT PRESIDENT

BY EDWARD G. LOWRY

Presidential campaign year 1924 brings with it a brand-new puzzle for the politician. The puzzle is the radio fan. Politics is largely a matter of publicity. Since the 1920 campaign, radio broadcasting has developed into one of the greatest mediums of publicity in the land. Hence the politician's concern.

In 1920 there were but 15,000 radio receivers in the country. Now there are 5,000,000, and with loudspeakers and extra headsets probably 10,000,000 people listen in every day. To a political spellbinder, eager to sell his wares, that is an audience such as no man before, even in his wildest dreams, ever hoped to reach. Indeed, through the magic of radio, either of this year's candidates, if his line is connected with a chain of broadcasting stations, can talk through his own home or office telephone to an audience of greater possibility than the total number of people who heard the voices of every presidential candidate since the time

of Lincoln!

Ordinarily, 18,000,000 votes in a presidential campaign is a fine record, though in 1920, due to the heat of the campaign, almost 25,000,000 votes were cast. Take either number, and 10,000,000 radio fans are a powerful element, a fact that has convinced the managers of both leading parties that radio is a campaign bet that cannot be overlooked.

However, there are many practical problems connected with the use of radio in a political campaign. National broadcasting, involving the tying up of important telephone trunk lines, is tremendously expensive. Also, radio fans have become so used to being supplied with pure entertainment that there is no way of knowing how they will receive a heavy fare of politics. The radio listener-in, if he wearies of the speaker, can tune him out and tune in a jazz band from another station. It will take more than cold politics to hold him. A new technique in spellbinding will have to be developed if the radio fans are to

be won. Possibly the radio orator may have to follow the lead of radio advertisers and provide a band or a jazz orchestra to offer entertainment as an inducement to listeners-in to hear him.

The speaker with a good string of funny stories has the advantage over the man with heavy logic. The man with a brief message, full of interesting facts, is listened to, where the windbag with an hour of flowery oratory talks to empty space, for radio puts the acid test on policies, issues, and men. Volume of voice, graceful gestures, or the all but hypnotic effect of a powerful personality will not make up for lack of logic, coherence and a clear-cut, convincing message in a radio speech.

All signs point to radio exerting a most profound influence in the presidential campaign of this year, and wider use of radio for political purposes can be predicted for the future. Each year there will be more radio receivers; hence, a larger audience for the radio spellbinder. Radio may elect our next president, and who dares say that through radio, through the better understanding of politics and political issues that it will bring to the average man, some day may not be realized the long existing dream of patriots—a perfect government?

Austria Broadcasts

Austria will soon join the other nations of the world in broadcasting. Beginning July 1, it is planned to broadcast general programs, comprising musical performances, lectures, educational units and financial reports. Owners of radio sets will be taxed a small fee to cover expenses of the broadcasting station.

There are about 290 radio stations in Russia.

WESTERN FANS MAY NOT HEAR G. O. P. MEET

NEA Service
NEW YORK, June 9.—Citizens west of the Rockies are out of luck.

No way has been discovered by which they may enjoy the Republican and Democratic conventions that will be broadcast by a dozen or more stations throughout the east and middle west.

Unless—
1. Some enterprising broadcaster attempts to catch the broadcasting of station WDAF at Kansas City or some other middle west station from which convention proceedings will be transmitted and rebroadcast it after amplifying the program received.

2. Fans have ultra-powerful sets that can negotiate beyond the mountains and through the dead spots over the western wastes.

Of course, say officials of the American Telephone & Telegraph and the Western Electric companies, in charge of the broadcasting, there will be attempts to reach the coast by powerful transmission, but no arrangement has been made to send the convention speeches and other sounds by direct line beyond Omaha and Kansas City.

The only other arrangement, outside of direct line communication with Cleveland and New York, will be that made by KDKA broadcasters in Pittsburgh, Pa., for transmission of the convention proceedings on a 100-meter wave length to KFKX at Hastings, Neb., for transmission on a higher wave length farther west.

Since KFKX has been heard regularly on the coast and beyond, it is expected many fans with at least three-tube receivers may be able to listen in on the conventions, by this method.

This, however, is the only way coast radio fans will be able to hear the conventions.

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.

Subscriber asks:

(1) Explain how radio waves travel between two coils in a loose coupler. (2) What will make a crystal set louder?

(1) Radio waves travel on the surface of the first coil. By induction, the radio waves of the first coil are said to be induced into the second coil. A coil of this type, while not as efficient for long distance reception, is many times more selective. In this manner it has advantages over other types. (2) Add a two-stage audio frequency amplifier.

Alvin Muhlebach, 225A Dolores-st., asks:

Is the enclosed diagram correct? Yes.

Subscriber "Z" asks:

(1) Would I obtain better results if I tapped the stator of my variocoupler with the units and tens method? (2) What material is necessary to make a wave trap? (3) Give specifications for coil on crystal set.

(1) Yes. (2) Specifications for wave trap are 60 turns No. 26 DCC on coil, 3 1/2 inches OD. This is shunted with a .0005 variable condenser. After insulating the coil with several layers of Empire cloth or fiber, wind five turns same size wire in center of coil. Connect one end of this coil to aerial and the other end of coil to aerial post on receiver. (3) Use 75-turn spider web coil and tap the same as you did before.

Baseball Booster

Contrary to former belief, baseball magnates of Atlanta have finally admitted that radio has increased their gate receipts. This was done by maintaining interest among those who could not attend regularly and creating many new fans.

Radio Call System

A system of bell calls, similar to the telephone apparatus, has been devised by Lewis M. Clement, Western Electric engineer. Radio fans may soon be installing it on their sets.

An Australian experimenter reports he has heard some 500 American amateur stations.

GET IT NOW!

There is only one way to be certain of getting the best of the news of the radio world as it occurs daily. That is by having The Daily News sent to your home each afternoon. If you are not a regular subscriber, mail this coupon to the Circulation Department and receive The Daily News. The price is only 50c a month.

Name

Street and number

Send this coupon to The Daily News, 340 9th-st, San Francisco; or just telephone and say, "I want The Daily News."