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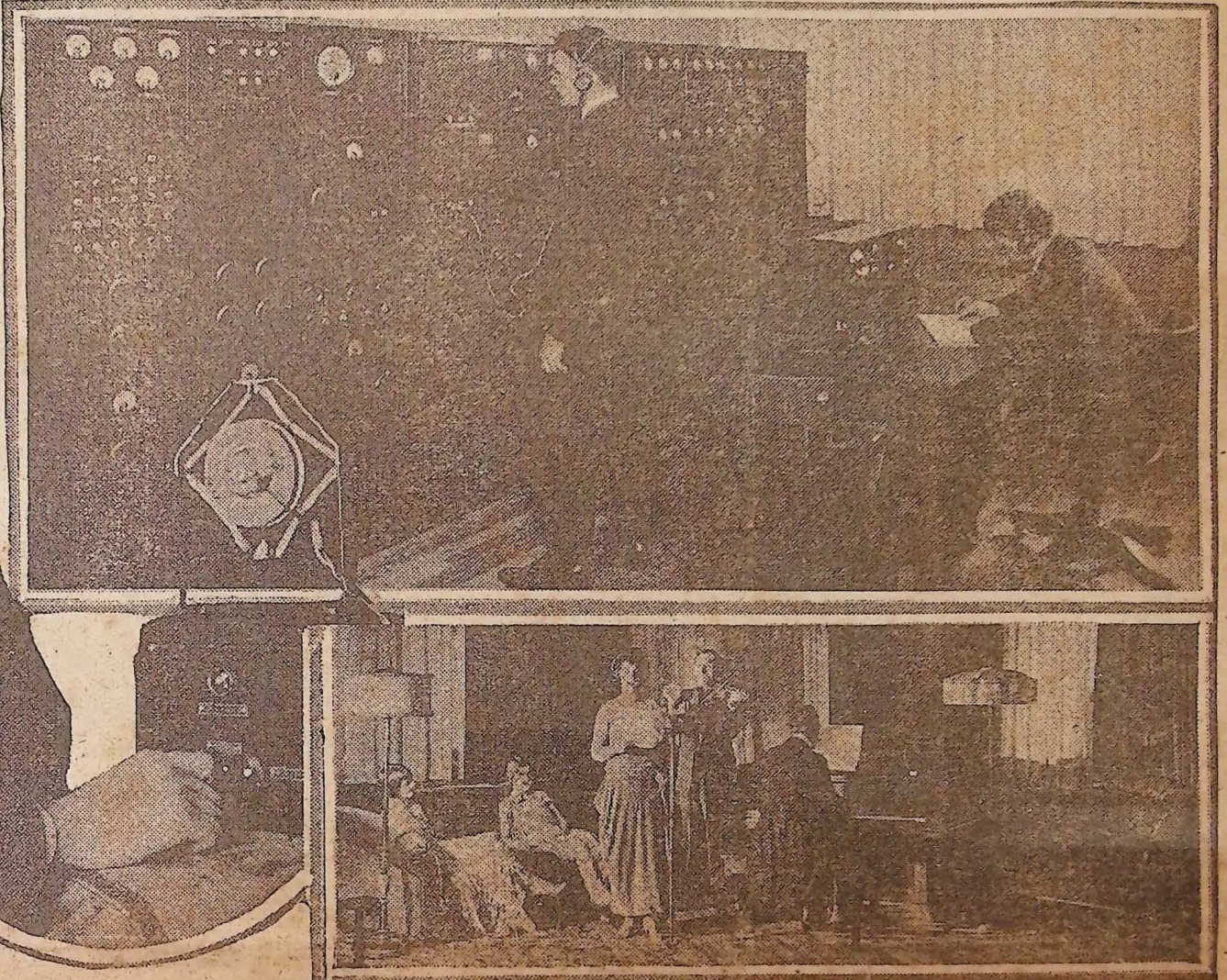
RADIO
MAGAZINE

The Daily News

EVERY
MONDAY

SAN FRANCISCO, MONDAY, MARCH 10, 1924

'THOUGHT' TEST IS FAILURE



Thoughts Can't Be Radioed!

CHICAGO, Mar. 10.—Transmission of thought by radio is practically impossible at this time, according to preliminary examination of letters received by WJAA station following a thought broadcasting experiment by eminent psychologists. One hundred and fifty letters were picked at random out of more than 4000 received and, with the exception of two correct replies to the test, the letters were wide off the mark.

Prof. Robert H. Gault, Northwestern university; Prof. H. B. English of Antioch university, and Prof. Gardner Murphy of Columbia university tested the possibility of projecting their thoughts into the minds of tens of thousands of radio fans.

Pinches Finger
In one test a professor pinched the fourth finger of his left hand and then told his invisible audience he had a pain in one of his hands or arms. Two of the 150 letters located the exact spot; nearly 80 per cent of the total placed it in the left arm.

The professor ate a beet and
(Concluded on Page 3, Column 2)

'THOUGHT' TEST IN L. A. FRIDAY

LOS ANGELES, Mar. 10.—Thought broadcasting, found to be a failure in Chicago trials, will be attempted by radio central station here Friday night.

Thought waves will be broadcasted 469-meter wave length. The trial will be made at 8:30 p. m., Pacific coast time, and "listeners ip" all over the country are invited to join in attempting to make the experiment a success.

The announcer will attempt to send out via thought and radio waves the name of a state, a number less than 100 and a piece of wearing apparel.

Folks, here's "H. M." over at KGO. He's the person you hear say "Pacific Coast Station ... KGO ... General Electric Company ... Oakland, California ... Signing off at 1 a. m." The upper right shows the control room at KGO and below it is the concert studio.

Anybody present who does not know "H. M."?

What? You don't? Go to the foot of the class, dumb-bell. You probably think a transformer is a sheet of carbon paper, too.

Why everybody knows "H. M." He's Howard L. Millholland, studio director and announcer of KGO, the new General Electric broadcasting sta-

tion over in the wilds of Oakland.

Here he is, speaking into what the Office Girl calls a "thing-a-ma-jig" by which name you bugs undoubtedly recognize it. (Note: The Office Girl is one of the kind who laughs every time you try to tell her what a tickler is.)

In the control room, shown above, you see two more Gen-

eral Electric experts of no mean ability. Standing is Walter Kellogg, in charge of technique, and A. Thomas, control board engineer.

Below is the concert studio, one of the finest in the world at large. (Note: When we say "world at large" we mean acreage which has not been annexed to Los Angeles.)

Meet the folks, Howard. Shake hands. That's a boy.

\$20—Radio Prize Awards—\$20

WHY ARE YOU ENTHUSIASTIC ABOUT RADIO?

The Daily News Radio Magazine will give \$20 in prizes for the best replies to that question received before Mar. 21.

Why? Because we want novices to read your opinions. It will bring hundreds of new fans into the field and every recruit strengthens our ranks. So this contest gives you (1) an oppor-

tunity to convert others to the ritual of receiving; (2) a method of expressing your opinion, and (3) a chance at the cash prizes.

The awards will be divided as follows: First Prize \$10, Second Prize \$5, Third Prize \$3 and Fourth Prize \$2.

Here are the rules: Answers must be confined to 50 words or less. They must be written legibly on one side of the paper. They must be original.

The following is printed as a sample to indicate one variety of answer possible:

Rings down the curtain on time and distance as a barrier to enlightenment on world events.

Assures entertainments and education that would otherwise be unattainable except at

great expense.

Destroys dull evenings and gives the unfortunate shut-in an equal chance with everybody.

Indicates the progress of man.

Remember, you don't have to own a radio set to take a prize. Perhaps you can win an award that will help you buy a set. Let's go, fans!

KROONLAND IS RECEIVING

The steamship Kroonland, which sailed from San Francisco for New York a week ago, is furnished with radio sets and loud speakers, and passengers are entertained by various programs during monotonous sea trips.

HOOVER BANS TAX ON SETS

WASHINGTON, D. C., Mar. 10.—Sec'y of Commerce Hoover has taken the stand that he would oppose any suggestion that the government collect taxes from radio fans owning receiving sets.

In Which We Make Our Bow—

TUNE in on this news bulletin, radio fans!

Here's your own magazine, established solely for the purpose of giving California its first complete UNBIASED account of the activities of its thousands of receivers and broadcasters, together with the latest news of the rapidly broadening field of ether-wave invention.

This magazine has only one axe to grind, one thought in mind, the best interests of the ever-growing army of radio enthusiasts of California.

It will remain semi-technical in character so as to attract as many novices into the magic world of radio as possible for with the growth of interest will come new inventions, better equipment and cheaper facilities for grasping whiffs of the world's doings from the air.

Big KPO Contest Is On Today

Californians Inc., in cooperation with "Big Brother" of KPO, Hale Bros., is offering \$500 in prizes to the children of central California for the best essay on the subject, "Why I Like to Live in Central California." The contest announced over KPO opened today and closes at midnight, Apr. 10.

The winning essay will be read over KPO and listened to by nearly 2,000,000 radio fans throughout the United States and other points reached by the powerful KPO station.

In order that younger children may have a fair basis of competition with older children, the contest has been divided into two parts. One set of prizes will be awarded for the best essay on "Why I Like to Live in Central California," written by boys and girls between the ages of 7 and 16 years, inclusive, and the second set of equally valuable prizes will be awarded to boys and girls between the ages of 13 and 16 years, inclusive, who write the best essay for their group. The contestants will be given the benefit of daily advice by "Big Brother" over KPO during the children's hour.

250-Word Limit

Manuscripts must not exceed 250 words. Every child entering the contest must write the title of the subject, name, address and age on the first sheet. Essays are to be written on one side of the paper.

\$400 SLOGAN PRIZE OFFERED

CINCINNATI, O., Mar. 10.—Station WLW (Cincinnati) wants a slogan. More than 25,000 suggested slogans have been received by the station in answer to a contest with \$400 in prizes for those whose slogans are judged the best.

THIS WEEK'S AIR PROGRAMS

MONDAY, MARCH 10

KLX—OAKLAND TRIBUNE
500 METERS

7:00 to 7:30 p m—News, weather bulletin, market and financial summary.

8:00 to 10:00 p m—Program arranged by Radio club, U. C., broadcast from Stephens Union hall, university campus:
"The University Infirmary," talk by Dr. William G. Donald, superintendent; "Final Plans for Engineer's Day," talk by I. M. Ingerson, 24, chairman student engineering council. Entertainment by U. C. Cosmopolitan club; soprano solos by Miss Carpenter, accompanied by Miss Griffith; whistling solos by George Dyer, 27, and Miss Blanche Adella Hawkins.
"The Cosmopolitan Club, What It Is and Some of Its Activities," talk by M. A. Kelaney, president; the Thalean players will present "Joint Owners in Spain," by Alice Brown.
The Cosmopolitan club; whistling numbers: Dreamy Melody, At Dawning, Three o'Clock in the Morning, by George Dyer and Miss Hawkins; soprano solos by Miss Carpenter, accompanied by Miss Griffith.

KGO—GENERAL ELECTRIC, OAKLAND—312 METERS

6:45 p m—Final reading stock exchange, weather reports and news items.

KRE—BERKELEY GAZETTE
275 METERS

8:00 p m—California Music league, vocal and instrumental selections.

KLS—WARNER BROS., OAKLAND
360 METERS

11:30 to 1:00 p m—Phonograph records.

5:30 to 6:30 p m—Children's hour stories by "Big Brother" of KPO, taken from the Book of Knowledge. His selections: Story of the Pygmies, Snowdrop and the Dwarfs, Some Strange Things About Teeth, Answers to Children's Questions.

Tilly Brown, violinist, pupil of Sigmund Anker, accompanied by Evelyn Biebesheimer, will play: Heide Kall (Hubay); Moonlight on the Lagoon (Priml).

7:00 to 7:30 p m—Dinner concert by Rudy Seiger's Fairmont hotel orchestra, by wire telephony.

8:00 to 9:00 p m—Scots night, under management of Theodore J. Irwin; talk on "Bonnie Scotland," Dr. J. W. Landy; bagpipes, march, Strathpey, Reel, by James Lemon; contralto solos—Border Maidens, Angus MacDonald, by Mrs. Robert Sibbald; medalist Glasgow Musical festival, 1920.

Tenor solos—Annie Laurie, Afton Water, by James Algie, medalist Edinburgh Musical festival, 1922.

Bass solos—My Ain Wee House, Wi a Hundred Pipers, by Alice Sheriffs. Bagpipes—By James Lemon.

Duet—O Wert Thou in the Cauld Blast, by Mrs. R. Sibbald and James Algie.

Piano solo—Scotch Airs, by Theodore J. Irwin.

Contralto solo—Hashmiri Song, by Mrs. R. Sibbald.

Tenor solo—I'll Sing Thee Songs of Araby, by James Algie.

Bass solo—Out on the Deep, by Alice Sheriffs.

8:00 to 10:00 p m—Program by San Francisco Conservatory of Music:
Lecture—Ada Clement.

Piano solo—Scotch Dancers, Elizabeth Sherwood; Slow Movement of Sonata Pathétique, by Herbert Jaffe.

Vocal selection—Two Scotch Songs with trio accompaniment; soprano, Mrs. James Foster; violin, Ruth Arnold; cello, Helen Knox; piano, Walter Levin.

Piano—Moonlight Sonata (first two movements) by Walter Levin.

Vocal duet—Irish Folk Song with trio accompaniment; Mrs. Foster, Mrs. Mello, Ruth Arnold, Helen Knox, Walter Levin.

Piano—Sonata A Major by Helen Bradford.

Vocal—Trios Sicilian and Scotch Folk Songs, with trio accompaniment; Mrs. Foster, Mrs. Mello, Andrew Robertson, Ruth Arnold, Helen Knox, Walter Levin.

Piano—Faldstein's Sonata (first movement) by Ethel Palmer.

10:00 to 1:00 p m—E. Max Bradford's versatile band playing in the Palace hotel rose room bowl.

KZM—HOTEL OAKLAND
360 METERS

6:45 to 7 p m—Code practice.

DISTANT STATIONS

KGW—OREGONIAN, PORTLAND—492 METERS

7:00 to 7:30 p m—Health talk under auspices of U. of C. Medical School, by Dr. A. W. Chance, clinical lecturer; subject, "The Mouth and Teeth in Health and Disease."

7:30 p m—Weather forecast and market reports.

8:00 to 9:00 p m—Solo concert.

9:30 to 10:30 p m—Concert by Beaux Arts Society.

KFI—EARLE C. ANTHONY, Inc., 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.

8:00 to 9:00 p m—Evening Herald concert.

9:00 to 10:00 p m—Examiner concert.

10:00 to 11:00 p m—Ambassador Hotel—Lyman's Coconut Grove orchestra.

KFAE—STATE COLLEGE, PULLMAN, WASH.—330 METERS

7:30 p m—"Analysis of Commercial Mixed Feeds," Dr. J. L. St. John, chemist. "Hardening and Tempering Tools," Prof. H. Henton, school of mines. Vocal numbers by sextet of high school girls of Pullman. Piano solos, Bernice Metz, Everett. "Belcher Dairying in Snohomish County and Its Effect on the State," R. M. Turner.

TUESDAY, MARCH 11

KPO—HALE BROS., S. F.
423 METERS

12 m—Time signal from the naval observatory. Reading of the Scriptures.

1:00 to 2:00 p m—Rudy Seiger's Fairmont hotel orchestra, by wire telephony.

2:30 to 3:30 p m—Matinee program under the management of Ella Wilson; Baritone solos: Bon Voyage, Grey Days, Ford of Kabul River (Kipling). Paul Weber, accompanied by Hazel Such.

Piano solos, Revolutionary Etude, The Butterfly, Hazel Such.

Soprano solos, The Star, At Parting, A Kiss in the Dark, Ella Wilson, accompanied by Hazel Such.

Whistling solos, Invitation, The Mocking Bird, The Dance of the Honey Bees, Mary E. Hall, accompanied by Theodore J. Irwin.

Duets, Out of the Dusk, I Live and Love Thee, Ella Wilson and Paul Weber.

4:30 to 5:30 p m—Rudy Seiger's Fairmont Hotel orchestra, by wire telephony.

5:30 to 6:30 p m—Children's hour stories by "Big Brother" of KPO, taken from the Book of Knowledge; his selections: The Wonder of the

For Accurate
and Complete
Daily Program

Changes in broadcasting programs frequently are made after the programs are issued by the stations.

For complete programs of all stations in the San Francisco bay district, corrected up to the last minute, radio enthusiasts should get The Daily News EVERY DAY and read the column captioned "In the Air Tonight."

If you are not already a Daily News subscriber, have it delivered regularly to your home. Telephone Circulation Department, Market 400. The price of The Daily News, including this weekly radio magazine section, is only 50 cents a month.

Sun. Another Adventure of Screw-worm and Scramblepie, Familiar Bird Friends, Answers to Children's Questions, Frances Wiener, violinist, pupil of Sigmund Anker, accompanied by Evelyn Biebesheimer; her selections will be: Gypsy Dance, Serenade.

Evelyn Biebesheimer, pianist, will render the following selections: Ballade in G Minor, Valse Improvisé.

7:00 to 7:30 p m—Dinner concert by Rudy Seiger's Fairmont Hotel orchestra, by wire telephony.

8:00 to 10:00 p m—Program by the Adelphi Club of Alameda. Ladies' choral, My Lover Will Come Today, The Thrush, The First Singing Lesson; first sopranos, Mrs. J. H. Merrill, Mrs. A. Manuel, Mrs. J. Hollingshead, Mrs. R. Strehlow, Mrs. C. Ayers; second sopranos, Mrs. W. Meracle, Mrs. C. Greeley, Mrs. F. J. Collar, Mrs. Jean Murk; first altos, Mrs. G. Flumner, Mrs. H. Shires; second altos, Mrs. E. B. Crane, Mrs. R. H. Blake, Mrs. C. Weekes. Director, Mary Carr Moore. Baritone solos, Winter, Call of the Open Sea, Brahma (Mary C. Moore), Phileas Goulet, Mary Carr Moore at the piano. Soprano solo, Song of a Faun, with flute obligato played by William Nankervis; The Trust, Mrs. Charles Stuart Ayres, Mrs. Philip Eberhart at the piano.

Vocal trio, Songs of the Waning Autumn, the Bel Canto Trio, Mrs. C. S. Ayres, Mrs. F. J. Collar, Mrs. E. B. Crane, Mrs. Philip Eberhart at the piano.

Contralto solos—When Thou Art Near Me, Fate, with cello obligato, by Mrs. Elsie Banta Crane, Mrs. Philip Eberhart at the piano.

Soprano solos—The Brooklet, You, by Mrs. Floyd J. Collar, Mary Carr Moore at the piano.

Vocal trio—Wind From the Golden Gate (Mary C. Moore, the Bel Canto Trio); violin obligato by Mrs. G. E. Chambers; Mrs. Philip Eberhart at the piano.

Suite for strings and piano (based upon the poem "Saul" by Robert Browning)—First violin, Mrs. G. E. Chambers; second violin, G. R. Chambers Jr.; viola, Mrs. P. R. Mott; cello, Leon Chamberlin; piano, Mrs. P. Eberhart.

Vocal trios—Husheer, Carry Me Back to Old Virginia by the Bel Canto Trio, Mrs. Philip Eberhart at the piano.

Contralto solo—The Heart of Her, by Mrs. Henry Shires; Mrs. Charles S. Ayres at the piano.

Duet—Gypsy Love Song by Mrs. J. Hollingshead, Mrs. W. Meracle; Mrs. Jean Murk at the piano.

Soprano solos—Hark, Hark, the Lark, At Dawning, by Mrs. John Henry Merrill; Mrs. Philip Eberhart at the piano.

Vocal trios—Win' a-Blowin' Gentle, Sing, Smile, Slumber, (violin obligato by Mrs. G. E. Chambers), by the Bel Canto Trio; Mrs. Philip Eberhart at the piano.

Contralto solo—Gae to Sleep, by Mrs. Charles Weekes; Mrs. Jean Murk at the piano.

Violin solo—Serenade, by Mrs. George Eric Chambers; Mrs. Philip Eberhart at the piano.

Soprano solo—There Let Me Rest, by Mrs. Floyd J. Collar (violin obligato by Mrs. Chambers); Mrs. Philip Eberhart at this piano.

10:00 to 1:00 p m—E. Max Bradford's versatile band playing in the Palace Rose Room bowl.

KGO—GENERAL ELECTRIC, OAKLAND—312 METERS

1:30 p m—New York Stock Exchange and U. S. weather bureau reports.

6:45 p m—Final reading stock exchange, weather reports and news items.

8:00 to 9:45 p m—Comedy-drama, "The Intimate Stranger," from the play by Booth Tarkington; played by the Burnham players; Roger Burnham in triple role.

CAST—The Station Master, William Ames, Henry, the hired man—Roger Burnham; Isabelle Stuart, Mrs. Roger N. Burnham; Florence, Eloise Keeler; Johnny White, Gerald Malsby; Aunt Ellen, Mrs. Carl Rodin; Mattie, Mrs. Nell Monroe.

Instrumental selection—Invincible America (Crosby) by Arion trio.

ACT 1—A railway station on a night in April.

NOTE—During this act chimes will be rung to denote the lapse of a few hours.

Instrumental selections—(a) Beauty's Eyes, (b) Serenade (Tosti), by Arion trio.

ACT 2—The living room at Isabelle's the next morning.

Instrumental selections—(a) Lotus Flower (Schumann), (b) Gypsy John (Clay), by Arion trio.

ACT 3—The same, that evening.

Instrumental selection—The Regiment's Return (Crosby), by Arion trio.

10:00 p m to 1:00 a m—Dance music from orchestra in St. Francis hotel ballroom, San Francisco; Henry Halsestead, leader.

KLX—OAKLAND TRIBUNE
500 METERS

7:00 to 7:30 p m—News items, U. S. weather bureau bulletin, market and financial news.

8:00 to 9:00 p m—Ambassador

Hotel, Lyman's Coconut Grove orchestra.

9:00 to 10:00 p m—Examiner concert.

10:00 to 11:00 p m—Moving picture stars.

KHJ—LOS ANGELES TIMES—395 METERS

12:30 to 1:15 p m—Major and his orchestra of The Rendezvous, Ocean Park. Paul Ford, baritone.

2:30 to 3:30 p m—Matinee musicale, Southern California Music Co.

6:45 to 7:30 p m—Weekly vegetable reports.

8:00 to 10:00 p m—Program by Harry James Beardsley, "Cousin Jim," Dr. Thomas Lutman, lecturer, on "The Stone That Turns Everything to Gold."

10:00 to 12:00 p m—Broadcasting Art Hickman's orchestra by line telephony from the Biltmore Hotel.

KGW—OREGONIAN, PORTLAND—492 METERS

11:15 a m—Market basket.

11:30 a m—Weather forecast.

12:30 p m—Concert by Civic Club of Portland.

3:30 to 4:00 p m—Talk by Jeanette P. Cramer, home economics editor of the Oregonian.

7:30 p m—Weather forecast and market reports. Talk for farmers, Oregon Agricultural College extension service.

WPAP—FORT WORTH STAR-TELEGRAM—426 METERS

5:30 to 6:30 p m—Concert by the Texas Women's College.

7:30 to 8:45 p m—Concert by the municipal band, Slaton, Tex.

WEDNESDAY, MARCH 12

KLX—OAKLAND TRIBUNE
500 METERS

7:00 to 7:30 p m—News items, U. S. weather bureau bulletin, market and financial report.

8:00 to 10:00 p m—Studio program:

1—Soprano solos by Mrs. Walter Chesterman, piano accompaniment by Miss Frances Ringholm; (a) I Hear You Calling Me (Marshall); (b) Do Not Go, My Love (Hageman).

2—Accordion solos by Lina Torrano; (a) Light Cavalry, Overture, (Suppe); (b) Medley, La Paloma, March and No. No. No.

3—Soprano solos by Mrs. Walter Chesterman, accompaniment by Miss Ringholm; (a) Spring Is Here (Edith A. Dick); (b) Negro Spiritual "Little David, Play on Your Harp" (Burleigh).

4—Carnet solos by Grace Helen East, Mrs. John B. Hawley, accompanist; (a) Flower Song "Faust" (Goedicke); (b) Rose of Picardy (Wood).

5—Piano solos by Helen Hurni; (a) Spring Showers; (b) Menuet a L'Antique.

6—Talk on "B" batteries by J. A. Ramsey of the National Carbon Co.—"Dry Cells As 'A' Batteries."

7—Soprano solo by Mrs. Walter Chesterman, Miss Ringholm accompanist, Fear Not Ye, O Israel.

8—Carnet solos by Grace Helen East; (a) Debutante; (b) If Winter Comes.

9—Soprano solo by Mrs. Walter Chesterman, Waltz song from "Romeo et Juliet."

10—Piano solos by Helen Hurni; (a) Concert Polonaise; (b) selected.

11—Accordion solos by Lina Torrano; (a) Moonlight Waltz; (b) Medley (Every Night I Cry Myself to Sleep, The Old Game of Mine, A Smile Will Go a Long, Long Way).

12—Piano solo by Helen Hurni, Dream of the Hour, (Left hand alone).

13—Dance music.

KLS—WARNER BROS., OAKLAND
360 METERS

11:30 a m to 1:00 p m—Phonograph records.

KRE—BERKELEY GAZETTE
275 METERS

8:00 p m—The Whistler School of Music, Berkeley.

Miss Dorothy Mack, soprano, Ave Maria, Will o' Wisp, Life, Little Pink Rose.

Elsie Grant, dramatic reader, The House With Nobody in It, Mockery, Sea Fever, To a Little House, The Delinquent.

For the children—The Little Turtle, Old Vagabond Wind, The Blind Men and the Elephant, The Fox and the Gullible Raven, The Priest and the Mulberry Tree.

Natalie Bigelow, violin—Romance, Romance Pondo Elegante.

KGW—GENERAL ELECTRIC, OAKLAND—312 METERS

1:30 p m—New York Stock Exchange and U. S. weather bureau reports.

6:45 p m—Short musical program. Address, Marion Turner, "The New Education in Psychology."

6:45 p m—Final reading stock exchange, weather reports and news items.

KZM—HOTEL OAKLAND
360 METERS

6:45 to 7:00 p m—Code practice.

KUO

KUO—S. F. Examiner (360 meters).

Daily except Saturday and Sunday.

9:05 to 9:20 a m—Weather forecast and news bulletin.

11:00 to 11:30 a m—Market report.

2:30 to 2:45 p m—Sporting news.

3:00 to 3:05 p m—Financial bulletin.

6:45 to 6:50 p m—Sporting news and financial report.

6:40 p m—Weather forecast.

Friday, add to daily schedule:

5:30 to 5:45 p m—Health bulletin.

Saturday only:

9:05 to 9:20 a m—Weather forecast and news bulletin.

2:30 to 2:45 p m—Sporting news.

6:45 to 6:50 p m—Sporting news and financial report.

6:40 p m—Weather forecast.

Sunday only:

9:05 a m and 6:40 p m—Weather forecast.

der auspices of P. A. T. Ass'n on "Garages" by Don Bates of Portland Garage. Talk of "Interesting Facts in Northwestern History," by Ray Conway.

KGW—OREGONIAN, PORTLAND—492 METERS

11:15 a m—Window shopping.

11:30 a m—Weather forecast.

12:30 p m—Concert by Darby's orchestra of Cottillion Hall.

3:30 to 4:30 p m—Children's program.

7:30 p m—Weather forecast and market reports.

8:00 to 9:00 p m—Concert, Columbia Theater orchestra, Harry Linden, director.

9:00 to 10:00 p m—Alexander Hamilton Institute business talk, by James Albert.

10:00 to 11:00 p m—Dance music by George Olsen and his orchestra of the Portland Hotel.

KHJ—LOS ANGELES TIMES
395 METERS

12:30 to 1:15 p m—Program arranged by Huntington Beach Lions Club.

2:30 to 3:30 p m—Matinee musicale by the Southern California Music Co.

6:40 p m—Livestock and vegetable reports.

6:45 to 7:30 p m—Children's program. Bedtime story by "Uncle Jim."

8:00 to 10:00 p m—Program through courtesy of Radio Sales and Service Co. of Los Angeles.

10:00 to 12:00 p m—Broadcasting Art Hickman's orchestra by line telephony from Biltmore Hotel.

KFAE—STATE COLLEGE, PULLMAN, WASH.—330 METERS

7:30 to 8:30 p m—"Purebred Sires," Prof. R. C. Smith. "Sense and Nonsense About Vitamines," Miss Vivian Garrett. Mandoline and guitar duets, Dorothy Gilbert of Yakima and Rex Turner of Huntington Park, Cal.

Soprano solos by Muriel Holloway, La Cross, Kan. "Alfalfa Growing," Prof. Leonard Hegnauer. Heart Disease, Dr. D. T. Ford. Cello solos, Vincent Holden, Rochester.

WPAP—STAR-TELEGRAM, FORT WORTH—426 METERS

5:30 to 6:30 p m—Concert by Mrs. Pearl Cahoun Davis, soprano.

7:30 to 8:45 p m—Concert by George Freeman's Texas Hotel orchestra.

THURSDAY, MARCH 13

KPO—HALE BROS., S. F.
423 METERS

12:00 m—Time signals from Naval Observatory; reading of Scriptures.

1:00 to 2:00 p m—Rudy Seiger's Fairmont hotel orchestra, by wire telephony.

2:30 to 3:30 p m—Banjo solos—The World Is Waiting for the Sunrise; Echoes from the South, Peter J. Butchi, accompanied by A. Lieb.

Early selections—The Sea Pieces, Lotus Land, Impromptu, A Flat, by Walter Wenzel.

Soprano solos—Song of the Soul, The Year's at the Spring, Aria from "Lucia," Song of the Robin, Mrs. Jean Edwards, accompanied by Mrs. Nadine Sheppard.

Solos—Friend of Mine, Morning, Laddie Mine, This Is the House That Jack Built—Annie Blotcky.

Sullivan, accompanist, Elsie Crater, Address—"The Opening of EGO"

Harry Sadenwater. (a) Marcheta, (b) Down the Lane to Beginning Again—Oakland Mazda Lamp division, jazz orchestra.

Tenor solo—Ernest R. Moeller. Address—"The Woes of a Salesman"—W. J. Delehanty.

Contralto solo—His Lullaby—Ida Simpson.

Piano solos—A. V. Thompson. Bass solos—George Barr.

Address—"The Human Element in Business"—Raymond M. Alvord. Saxophone solos—(a) Vanity, (b) Velma—Clarence Moore.

Tenor solo—The Gypsy Trail—Jennings Pierce.

A talk on "The Radiophon"—H. G. Stanley.

Trumpet solos—(a) My Heart at Thy Sweet Voice, (b) Mighty Lak a Rose—Mark S. Miller.

Duet—Life's Dream Is O'er—Messrs. Anderson and Pierce.

Stories—James Gallagher. Vocal selection—The G. E. male chorus.

Instrumental selections—(a) Poor Relation Blues, (b) Sunshine of Mine.

KLX—OAKLAND TRIBUNE
500 METERS

7:00 to 7:30 p m—News items, U. S. weather bureau bulletin, market and financial news.

KLS—WARNER BROS., OAKLAND
360 METERS

11:30 a m to 1 p m—Phonograph records.

DISTANT STATIONS

KGO In 6-Station Synchronized Test

NEW YORK, Mar. 10.—In what is considered one of the most remarkable tests ever held, stations in New York, Schenectady, East Pittsburgh, Pa.; Hastings, Neb.; San Francisco and London have succeeded in broadcasting in synchrony.

Speakers at the dinner of the alumni of the Massachusetts Institute of Technology here Friday night were heard in London before they were heard in the dining room where their words were uttered, for radio waves flying through the ether span oceans faster than sound waves go across a room.

Three American and one British firm contributed to the success of the experiment—Western Electric, General Electric and the Radio Corp'n for the United States and the British Broadcasting Co.

Microphones in the dining room carried voices of speakers and music to WJZ, which transmitted them on its regular 455-meter wave length. WGY at Schenectady was connected with WJZ amplifying apparatus by land wires and transmitted synchronously on 385 meters.

KDKA, East Pittsburgh, intercepted WGY on special receiving apparatus and transmitted through two stations.

Listeners with the range of KDKA were on the longer length with the shorter station 2AC, Manchester, Eng., linked with seven others of the Metropolitan-Vickers Co. in Great Britain.

Hastings broadcasted and relayed to KGO, San Francisco, which repeated on a different wave length.

The first speaker at the dinner at 10:30 p m was heard in San Francisco at 7:30 (owing to difference in time), and in

England at 2:30 a m, Greenwich mean time.

Scores of messages from England and all over the United States poured in, attesting the success of the experiment.

CATCH PITTSBURGH

WJZ's program was caught directly from KDKA, Pittsburgh, according to KGO, General Electric Co. in Oakland. KGO failed to find KFKG, Hastings, Neb. in the air but did manage to tune in on KDKA.

The music and speeches were faint and of poor quality. In Oakland they say the chances are KGO was heard signing off in New York because of the little interference in the East early in the morning.

THOUGHT TEST IN EAST FAILS

(Concluded From Page 1)

announced he was eating a morsel of food. Nearly everything except beets was mentioned.

The professor then announced he was thinking of a number—664. Not a single answer was correct.

Then the professor thought of a walrus and asked his audience to think of the animal pictured in his mind. Nearly every animal in a well-stocked zoo was named, but not one thought of the walrus. Zebras and elephants led the procession.

All the letters will be opened, indexed and compared in the hope of showing a higher batting average for thought transmission and reception. Whatever the result of the tests, they will not be regarded as conclusive and the experiments will be carried further.

145,000 Sets on Farms

According to a recent census by the Department of Agriculture, there are more than 145,000 radio sets on the farms of the United States.

AIR PROGRAM—CONTINUED

(Concluded From Page 2)

11:30 a m—Weather forecast.
12:30 p m—Concert.
3:30 to 4:00 p m—Lecture by Esther B. Cooley, clothing specialist, extension service, Oregon Agricultural College; subject, "Ostrich Tendencies in Hat Choice."

7:30 p m—Weather forecast and market reports.

8:00 to 8:15 p m—Accordion solos by John Sylvester.

8:15 to 9:00 p m—Studio program of dance music by George Olsen's Metropolitan orchestra of the Hotel Portland; Herman Kenin, director.

9:00 to 10:00 p m—Educational lecture provided by University of Oregon, extension department.

10:30 to 12:00 p m—Hoot Owls.

KIL—LOS ANGELES TIMES 395 METERS

12:30 to 1:15 p m—News items. Weather report. Music.

2:30 to 3:30 p m—Matinee musicale through the courtesy of the Southern California Music Co.

6:40 p m—Livestock and vegetable reports.

6:45 to 7:00 p m—Children's program presenting Richard Headrick, screen juvenile.

7:00 to 7:30 p m—Organ recital from First Methodist Episcopal church; Arthur Blakeley, organist.

8:00 to 10:00 p m—Program presented by Studebaker Radio orchestra of Long Beach. Henry Uhr, bass. Walter F. McEntire, lecturer, will talk on "History."

10:00 to 12:00 p m—Broadcasting Art Hickman's orchestra by line telephony from Baltimore Hotel.

WBAP—SEA-TEL—PORT WORTH 396 METERS

5:30 to 6:30 p m—Concert arranged by Ted Roy, with assisting artists, from Ardmore, Okla.

7:30 to 8:45 p m—Monthly concert by the College of Industrial Arts, Denton, Tex.

KFI—EARLE C. ANTHONY, 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—Jean Smalley, whistler; Lloyd Head, vocalist.

8:00 to 9:00 p m—Evening Herald concert.

9:00 to 10:00 p m—Examiner concert.

10:00 to 11:00 p m—Vocal and instrumental concert.

11:00 to 12:00 p m—Ambassador Hotel, Lyman's Coconut Grove orchestra.

KFAE—STATE COL., PULLMAN, WASH.—230 METERS

7:30 p m—"Ice Cream as a Food Dish." Prof. E. V. Ellington, head dairy department. "Traits of Childhood." Dean A. A. Cleveland, education department. "Influences Producing Strange Forms in Plants." Charles F. Lackey, Touchet. Soprano solos by Constance Grace, Aberdeen.

Piano numbers, Miss Jean Fulmer. "Handling Sheep in the Spring." Prof. C. M. Hubbard. "Book Chat." Miss Alice L. Webb.

SATURDAY, MARCH 15

KPO—HALE BROS., S. F. 423 METERS

1:00 to 2:00 p m—Rudy Selger's Fairmont hotel orchestra, by wire telephony.

2:30 to 3:30 p m—Contraalto solos: At Dawning, The Unfinished Song, Daddy, That Is Why—Edna May Hamilton, accompaniment by Mrs. Clyde C. White.

Piano solos—Bustle of Spring, Hebrauma, Nocturne, F Sharp Major—Bernard Katz, pupil of Prof. L. Raynaud.

3:30 to 5:30 p m—E. Max Bradfield's versatile band playing in the Palace hotel rose room bowl.

8:00 to 12:00 p m—Dance music by Art Weidner and his popular dance orchestra. This orchestra plays at the Fairmont hotel every Saturday night and the music is broadcast by

wire telephony over KPO. Those wishing special numbers played should send them to Art Weidner, Fairmont hotel, or phone them in on Saturday mornings. During the intermissions of this orchestra the KPO Trio will sing popular songs. This trio is a regular feature at KPO every Saturday.

KGO—GENERAL ELECTRIC, OAKLAND—312 METERS

12:30 p m—New York Stock Exchange and U. S. weather bureau reports.

8:00 p m—Feature numbers furnished by faculty of the Conservatory of Music, College of the Pacific, San Jose.

Instrumental selections for two pianos, (a) Romance, (b) Waltz—Misses Miriam H. Burton and Jessie S. Moore.

Contraalto solos—(a) Lungi dal caro bene, (b) I Bring You Heartsease—Miss Nella Rogers.

Violin solos—(a) Pavane, (b) Srenade Espagnole—Miles A. Dresskell.

Piano solos—(a) Movement, (b) Nymphs at the Spring—Miss Bozema Kalas.

Baritone solos—(a) Summer Rain, (b) Pilgrim's Song—Charles M. Dennis.

Readings—(a) The Mocking Bird, (b) Barter, (c) Cupid's Football Game—Miss William Hinsdale.

Violin solos—(a) Soir, (b) Guitare—Miles A. Dresskell.

Soprano solos—(a) O Sleep Why Dost Thou Leave Me, (b) Depuis le jour, (c) Danny Boy—Miss Helen Fletcher Riddell.

Piano solos—(a) Prelude in E minor, (b) Concert Study in F sharp, (c) Cracovienne Fantastique—Allan Bacon.

Vocal solo—Widow Scene from Elijah—Helen Fletcher Riddell and Charles M. Dennis.

Instrumental selection—Sonata in A major for violin and piano—Miriam H. Burton and Miles A. Dresskell.

10:00 p m to 1:00 a m—Dance music from the orchestra in the St. Francis hotel ballroom, San Francisco; Henry Halstead, leader.

KLX—OAKLAND TRIBUNE 509 METERS

7:00 to 7:30 p m—News items, U. S. weather bureau bulletin.

KLX—WARNER BROS., OAKLAND 300 METERS

11:45 am to 1:00 p m—Phonograph records.

DISTANT STATIONS

KHJ—LOS ANGELES TIMES 395 BETERS

12:30 to 1:15 p m—News items. Weather report. Music.

2:30 to 3:30 p m—Matinee musicale through the courtesy of the Southern California Music Co.

6:40 p m—Livestock and vegetable reports.

6:45 to 7:30 p m—Children's program. Helen Pirie, screen juvenile. Clinton and Hays Coddington, pianists. Bedtime story by "Uncle John."

8:00 to 10:00 p m—Kathryn Stillwell, mezzo-soprano. Silver Gate Trio of San Diego.

1:00 to 12:00 p m—Broadcasting Art Hickman's orchestra by line telephony from the Baltimore Hotel.

KGW—OREGONIAN, PORTLAND 492 METERS

11:30 a m—Weather forecast.

3:30 to 4:00 p m—Children's program. Story by Aunt Nell.

10:00 to 12:00 p m—Weather forecast. Dance music by George Olsen's orchestra by telephone from the Portland Hotel.

SUNDAY, MARCH 16

KLX—WARNER BROS., OAKLAND 300 METERS

12:00 m to 1 p m—Church services by Rev. George R. Chambers, Radio Church Service of America.

KGO—GENERAL ELECTRIC, OAKLAND—312 METERS

3:30 p m—Concert by KGO "Little Symphony Orchestra."

MOVIE FAVORITES TO "APPEAR"



Tune in Wednesday night, fans, and hear Mary and Doug for the first time over the air. In the movies we see 'em but we can't hear 'em. Now it's the other way around.

Mary and Doug' On N. Y. Bill

Mary Pickford and Douglas Fairbanks will make a long awaited radio debut from station WJZ (New York) Mar. 12. An informal chat with the radio audience by these two movie stars will be broadcasted.

The two movie idols are now in New York city, preparing for a long vacation trip in Eprope.

This will be their first "appearance" before the hundreds of thousands of fans throughout the United States, and the event is arousing considerable interest in the east.

Have Been Shy

Heretofore the public has known both Mary and Doug visually only, for neither Mr. nor Mrs. Fairbanks have felt free from "radio fright" and have steadfastly avoided the microphone.

At the luncheon tendered Thomas A. Edison at the Ritz-Carlton recently Mary and Doug found WJZ's microphones before them on the speaker's table and had an excellent opportunity to see first-hand just how simple an operation broadcasting really is.

Consequently movie fans throughout the country will be able to meet them via voice for the first time on March 12, for Mary and Doug will drop into the WJZ studio at Broadcast Central, W. 42nd-st, New York city, for an informal chat with the radio audience.

Experts Will Reply To Your Questions

What do you want to know?

The Daily News Radio Magazine stands ready to serve enthusiasts to the fullest degree possible. One feature of great practical value will be a "Question and Answer" department where experts will solve the problems of fans.

Address your query to the Radio Magazine Editor, The Daily News, 340 Ninth-st, in writing and mail it. State the question concisely. Watch the "Question and Answer" column and your pet peeve may be solved there for some other fan, saving you the trouble of writing. Telephoned queries will not be answered.

Here are typical questions and the style you should use:

Q. "The induction coil on my set is wound on a cardboard tube about three inches in diameter with 180 turns of No. 20 wire. Could I get the same results by putting the same

amount of wire on a flat piece of bakelite panel? My reason for doing this is to conserve space."

A. Your results with this type inductance will be practically the same.

Q. "I am using a single circuit tuner with a 25-plate condenser. What kind of variocoupler should I use?"

A. Any standard variocoupler having at least 70 turns on the primary.

Q. "How many turns of wire should I use on the stator and rotor of a standard variocoupler?"

A. Seventy turns on the stator and 35 turns on the rotor.

Q. "Can a two-stage audio amplifier be hooked up to a single circuit set?"

A. Yes.

RAILROAD BROADCASTS

The Canadian National Railway, government-owned, is installing a chain of radio broadcasting stations clear across the continent. It arranges to put a receiving set in the hands of each of its 100,000 employees. They'll pick up regular concerts and incidentally keep in touch with their employer—new suggestions, etc. President of the railroad will talk to them every week.

This is prophetic of the future when radio, now mainly a scientific toy, will become as useful as auto, telephone and watch.

L. A. Harmony Sent Around the World

California enthusiasts are awaiting eagerly complete returns of the attempt to rebroadcast California harmony around the civilized world Saturday night.

First reports were that the program was a success as far the United States is concerned, at least.

The method of sending our music around the world was this:

KFI, Los Angeles station of Earle C. Anthony, staged a program which was picked up by the receiving set of KGO in Oakland and rebroadcasted on the

1000-watt transmitter of that station to KDKA in Pittsburgh. The Pittsburgh station flashed the music across the ocean to 2LO in London, which in turn sent the California syncopation speeding across Europe. This made it possible to receive the program as far east as Australia, while United States, Mexico, Canada, Alaska, Cuba, Hawaii and Europe were all able to tune in.

Because of the difference in time, although the transmission was practically instantaneous, the program was heard at 9:30 p m here, 2:30 a m in Europe and 10:30 a m in Australia.

HERE, YOU RADIO FANS!

Our Washington Bureau has prepared another bulletin especially for you. It gives a complete up-to-date revised list of all broadcasting stations in the United States and Canada, giving the stations alphabetically by call letter, the owner, location and wave length.

This bulletin is separate from another, which tells where and how to get any information you may want about radio. This second booklet contains also a map of radio districts, the international Morse code and other valuable information.

If you want one or both of these bulletins, fill out the coupon below. If you send for only one, enclose five cents in postage stamps; if you want both, send eight cents in stamps.

CLIP COUPON HERE

RADIO EDITOR, Washington Bureau, San Francisco Daily News, 1322 New York-av, Washington, D. C.
Send me the bulletin (or bulletins) I have checked below, for which I enclose cents in loose postage stamps.
(Send 5 cents for one bulletin; 8 cents for the two.)

[] RADIO BROADCASTING STATIONS.

[] SOURCES OF RADIO INFORMATION.

NAME

STREET and NUMBER.....

CITY STATE

WRITE PLAINLY—USE PENCIL, NOT INK.
Send to Washington, D. C.

Radio For Union Labor

CHICAGO, Mar. 10.—The Chicago Federation of Labor is planning to open a radio broadcasting station, it is reported here. Leaders say they think that they ought to have a radio station in order to help present their side of public questions.

Buenos Aires Has Fever

WASHINGTON, Mar. 10.—Vice Consul Heulahan estimates that there are about 9000 amateur radio sets in use in the city of Buenos Aires. He says that practically all well-known American apparatus has been introduced there.

Balkans to Get Radio

The first large broadcasting station in the Balkans is being built near Belgrade, Serbia. It will be operated by the postal service and will afford dissemination of news and other information in that area.

HERE ARE FOUR SIMPLE SETS

Programs Received On Train

Radio is fast becoming a popular form of entertainment on board passenger trains.

This was illustrated when a group of prominent San Francisco railroad officials and shipers leaving here to attend the California Growers' convention at Ukiah carried a radio receiving set aboard their special car and listened in to music broadcast from stations thousands of miles away.

A loop aerial receiving set of the sleeper monotron type was used for the naval experiment, which proved a success. It was installed on the train by A. S. Lindstrom and F. S. Travis, radio engineers of San Francisco.

Clear and Loud

C. J. McDonald, superintendent of perishable freight for the Southern Pacific company, who was in charge of the party, stated that the radio music came in clear and loud. The many stations picked up during the evening included KPO, Hale Bros., Inc.; KFL, Earle C. Anthony, Los Angeles; KGW, Portland Oregonian; KHJ, Los Angeles Times; KGO, General Electric Co., Oakland; KLLX Oakland Tribune, and CFCN, Calgary, Can.

Members of the party included Wilmer Seig, manager, California Fruit Distributors; Jos. Guidara, sales manager, Pacific Fruit Exchange; W. W. Jenne, sales manager Earl Fruit Co.; H. M. Remington, general manager, California Growers and Shippers' league; F. H. Fletcher, vice-president, Pioneer Fruit Co., and C. F. Hoover, Interstate Commerce Commission representative, all of San Francisco.

The fruit men were astonished at the possibilities of radio and are considering it as a means of broadcasting market prices to farmers and members of their associations.

BIG KPO PRIZE CONTEST IS ON

(Concluded From Page 1)

side of the paper only. Credit will be given for neatness, phraseology and paragraphing. Essays should be mailed to Big Brother of radio KPO, Hale Bros., San Francisco, and marked "Essay Contest."

Included in the list of prizes to be awarded to the first division of children from 7 to 12 years old, inclusive, are: One \$65 set of the Book of Knowledge, 20 volumes, given by Knowltons Inc.; order for 12 art photographs, value \$50, given by Moore & Clark studio; one Lee Commonwealth tennis racquet and balls, value \$6, given by Palace Hardware Co.; three dozen motor fans, value \$25, given by Universal Toy & Novelty Mfg. Co.; one boy's printing outfit, value \$3, donated by Moise Klinker Co.

Some of the second division prizes are as follows: One Kennedy portable radio receiving set, complete, value \$75, donated by E. A. Portal Co.; one banjo-mandolin, donated by Rudolph Wurlitzer & Co.; one boy's Gibraltar knicker suit with two pairs of pants, value \$15, donated by Roos Bros.; one Moore fountain pen and one Moore pencil, value \$10, donated by Cardinal Vincent; two scrip books, good for the California, Granada and Imperial theaters, donated by Rothchild Entertainment, Inc., value \$12; one set of game known in China as mah jongg, donated by art department, Pacific Commercial Corp'n, value \$20.

The judges of the contest will be Dr. B. M. Rastall, manager of Californians, Inc.; L. R. Tucker, "Big Brother" of radio KPO, who conducts the children's hour regularly over KPO, and Judge Thomas F. Graham of the San Francisco superior court.

Californians, Inc., in collaboration with Mr. Tucker of KPO, hopes in this way to supplement its efforts in presenting the advantages of life in central California to the rest of the United States.

Dietz Tells Us How To Make Them

BY DAVID DIETZ
Science Editor of The Daily News

FOUR one-tube circuits are shown in the accompanying diagram. These are the simple circuits for which requests are most frequently received by this department.

Figure 1 is generally referred to as the ultra-audion circuit, although it has a number of other names.

Figure 2 shows the familiar Copp circuit.

Figure 3 is the Armstrong three-circuit regenerative set.

Figure 4 is a variation of the three-circuit set, the grid variometer being replaced by a variable condenser.

The ultra-audion circuit, exclusive of phones, tube and batteries, can be built for about \$8; the Copp circuit for about \$10, and either of the regenerative circuits for about \$20.

A "peanut tube" can be used in either of the first two circuits. This will keep down the battery cost, as a dry cell can then be used for the "A" battery.

While a "peanut tube" can be used with the three-circuit sets, better results will be obtained by using other types of tubes and a storage battery for the "A" battery.

The range of the sets shown in Figures 2, 3 and 4 will be found to be about 1500 miles, providing a good aerial and ground and sensitive phones are provided.

The range of the set shown in Figure 1 is less.

We would urge amateurs not to build the set shown in Figure 1 unless they cannot afford to build any of the more expensive ones.

The reason? This set, unless carefully controlled, will reradiate energy and interfere with all the other broadcast listeners in the neighborhood.

The same thing goes for the Copp circuit, although not to so great an extent.

The Copp circuit frequently does interfere with other sets. But if the amateur will tune carefully and watch his set he can keep it from reradiating energy.

Apparatus Needed

Letters are used to indicate the various instruments needed for the ultra-audion circuit shown in Figure 1.

L is a tapped coil. The amateur can make this himself by winding 60 turns of No. 22 cotton-covered wire on a cardboard tube 4 inches in diameter. It should be tapped every 10 turns and the usual sort of rotary switch and switch-points arranged for tuning.

C-1 is a variable condenser. Either 23 or 43-plate types can be used.

C-2 is the grid condenser. One of .0001 mfd. capacity is about right.

R-1 is the grid leak. It should be about 2 megohms.

R-2 is the rheostat.

The vacuum tube, phones and batteries are indicated in the usual way in the diagram.

A "peanut tube" can be used in this circuit if the amateur wishes to employ one.

The Copp-Circuit Set

The Copp circuit is shown in Figure 2. This circuit is frequently used with the "peanut tube" and consequently is known to many amateurs as the "peanut tube" set.

Letters in the diagram refer to the following apparatus:

L-1 and L-2 refer to the primary and secondary, respectively, of the vario-coupler.

C-1 is the variable condenser. Either a 23-plate or 43-plate one can be used.

C-2 is the grid leak and condenser.

R is the rheostat.

Tube, batteries and phones are indicated in the usual way.

The vario-coupler can be made at home, if the amateur wishes.

Wind the primary on a cardboard tube four inches in diameter and five inches high. It should consist of 60 turns of No. 22 wire tapped every 10 turns.

Wind the secondary on a cardboard tube three inches in diameter and two inches high. It should consist of 30 turns of No. 24 wire.

A shaft must be provided so that the secondary revolves at the top of the primary.

Figure 3 shows the Armstrong

Catch KGO in South Seas

Islands of the South Pacific ocean have reported listening in on radio programs broadcast from the powerful station of the General Electric Co., Oakland.

This station of 1000 watts, broadcasting on a frequency of 312 meters, was heard two evenings out of five at Apia, British Samoa, a distance of 4750 miles.

DeForest Is Called Tube Wiz

NEA Service

NEW YORK, Mar. 10.—Were it not for the invention by Lee De Forest of the three-electrode vacuum tube, there would be no broadcast radio reception today.

This is the conclusion made here from a statement by Charles Gilbert, vice president of the De Forest Radio Telegraph & Telephone Co., to clear up points in litigation between his company and the Radio Corp'n of America.

According to Gilbert, the vacuum tubes sold today by the R. C. A. are licensed under De Forest patents, and the litigation concerns merely a phase of marketing the tubes.

The De Forest company, he says, will continue to manufacture its own tubes.

Complete stock of parts for Cockaday, Fada and Workrite Neutrodyne sets. Complete line R. C. A. sets.

General Repair and Electric Co.

708 Mission St.
Near Third St.

New York Batteries

for Your Radio Set

6 V.-100 Amp. \$12.50
6 V.-200 Amp. \$18.50

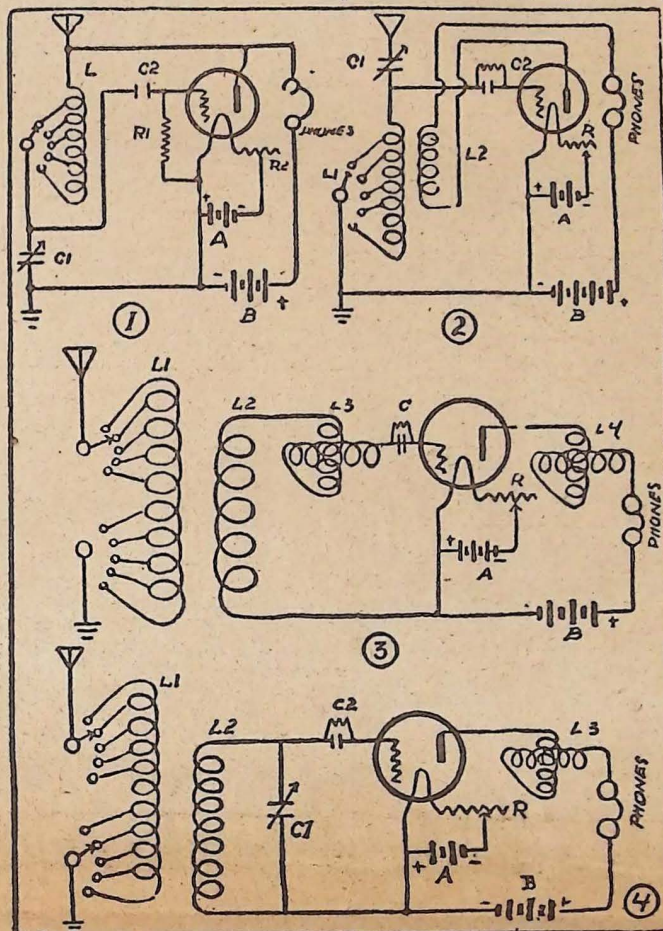
Storage "B" Batteries

25 Volt, \$10
50 Volt, \$18
100 Volt, \$34

Including chemical charger.

New York-Pacific Battery Company

881 Post St.
Prospect 4130



three-circuit regenerative set. It is an old favorite with amateurs who have been at the radio game for some time.

It possesses many advantages. Among them are extreme selectivity, clear signals, and the fact that the circuit never sets up interference which troubles other amateurs in the neighborhood.

The apparatus is lettered as follows:

L-1 and L-2, the primary and secondary, respectively, of the vario-coupler. It will be noticed that a vario-coupler equipped with two sets of taps is necessary. If a coupler with only one set of taps is used, a variable condenser should be inserted in the aerial circuit.

L-3 and L-4, variometers.

C, grid leak and condenser.

R, rheostat.

Phones, tube and batteries are shown as usual.

Most critical tuning can be obtained with this circuit, using the UV200 or C300 tubes. However, the set will give excellent results and tune easier, if the UV201-A or C301-A tubes are used.

Modification of Armstrong Circuit

Figure 4 is a modification of the circuit just described. It substitutes a variable condenser for the variometer in the grid circuit.

The apparatus is lettered as follows:

L-1, vario-coupler primary.

L-2, vario-coupler secondary.

L-3, variometer.

C-1, variable condenser.

C-2, grid leak and condenser.

R, rheostat.

Phones, tube and battery are shown in the usual way.

This circuit is considered by many amateurs as easier to tune than the regular three-circuit set.

Many amateurs are puzzled about the proper set of rheostats and batteries to use with various tubes. The following data will solve this problem:

WD11 or WD12 tube: Use six-ohm rheostat. One dry cell for "A" battery. Use 22½-volt "B" battery.

UV199 or C299 tube: Use 30-

ohm rheostat. Three dry cells for "A" battery. Use 45-volt "B" battery.

UV200 or C300 tube: Use six-ohm rheostat. Six-volt storage battery for "A" battery. Use 22½-volt "B" battery.

UV201-A or C301-A tube: Use 15-ohm rheostat. Six-volt storage battery for "A" battery. Use 45-volt "B" battery.

RADIO SHOW HERE AUG. 16

San Francisco's fifth radio show will be held in the Exposition Auditorium during the week of Aug. 16-22, under the auspices of the Pacific Radio Trade Ass'n.

Radio fans will see more than 150 exhibits, and demonstrations will be given of both transmitting and receiving equipment.

The prime purpose of the show is to be educational, and the radio public will be given an opportunity to study the latest ideas in construction and operation.



Radio Studio of the Hansen Electric Co., 530 Valencia St., San Francisco, Cal.

We invite the public to inspect our radio studio. It is complete in every detail. Come in any Thursday or Saturday evening, or any evening by appointment and we will demonstrate to you as you would hear it in your own home. We sell and install up-to-date Radio Receiving Sets—nothing but the best.

R. C. A. Atwater Kent De Luxe Radiola Super Heterodyne Sleeper Monotron Radyne

HANSEN ELECTRIC CO.

620-630 Valencia St., Between 17th and 18th Sts.