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CHARLES W. HAMP Columbia Broadcasting System

January, 1931

Price 25 Cents

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As Christmas draws nigh on the many things that justify feelings of gratitude and joy during the Holiday Season.

Our very satisfactory **Crosley** radio business this season is due to a combination of superlative merchandise at amazingly low prices and to a host of boosters—both dealers and users—we are thankful and we wish you all

A Merry Christmas and A Happy New Year



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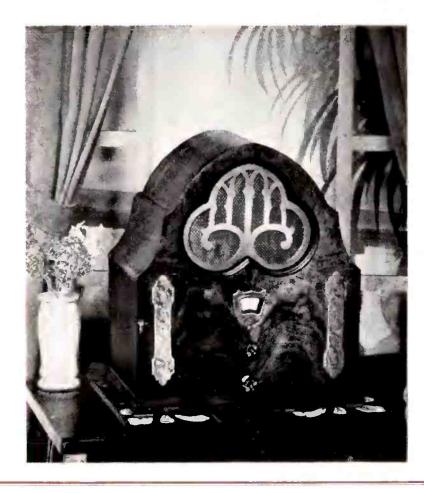
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Technical Editor
Studio Editor

January, 1931

Features In This Issue

	Page
We Applaud	15
For Your Entertainment	16
KFRC's Two Ednas.	17
On Your Right, Ladies and Gentlemen By Jose Rodriguez	-19
Folgeria	20
Variety	21
With the Commission	22
Anent Television	23
DX Prize Contests	-25
'Round the World DX Club By Edward Roth	25
'Round the Dial	26
A 50,000 Watt Broadcast Station By E. H. Schreiber	27
The Super-Heterodyne By K. G. Ormiston	28
Just a Few Rambling Thoughts By Ted Osborne	29
Classified Programs)-34
Chain Programs for January	-39
On Radio Row	42
Radio Goings on Around Town	43
Looking Backward with R. B. Yale	44
As I Was Saying	45

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Now Is the Time

B USINESS lethargy has forced prices to unbelievably low limits during the current year. Every indication, supported by reliable analyses made by those who have no reason to be artificially optimistic, pronounces this to be the greatest bargain time since long before "the good old days."

The dollar has nearly 50% more buying value than a year ago. Amazing bargains are on every hand. And commodities are available that are lastingly useful at the prices which will not again be in vogue for many a year. It makes it worth while to disturb some of those savings with which the banks are glutted and buy more this winter. The yield will, in view of the certain raise in prices within the year, be many times higher than ordinary savings interest rates, particularly in the face of a prospective cut in interest on the part of banks if the present tremendous volume of savings continue. It is common knowledge that savings are swollen by \$250,000,000 over last year and the American Bankers' Association gives even a higher figure.

The picture of the consumer's purchase stimulating retailing, distribution, production and finally his own income is an old one. But the truth and sound logic of it remains. One of the most stable, bargain-priced articles that will furnish pleasure through bad times and good is a radio set. They will never cost you less. And they have not been developed to a higher degree of performance than right now. There are still twenty million families in America without receivers and it is essentially worth the while of those who can possibly afford it to get the latest type radio at the astonishing prices prevailing now. Aside from the profitable buying policy a purchase at this time is a strong and definite step toward the return of prosperity. For prosperity must be bought. Neither talk, political parties nor the climate can bring it back. If we wait for the ordinary course of necessity to again consume normal production there will be a long wait and the prolonging of suffering.

Order that radio set today and do your bit.

VOLUME XVIII

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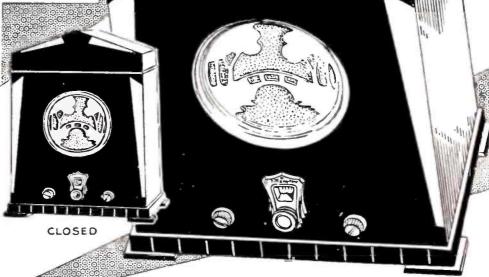
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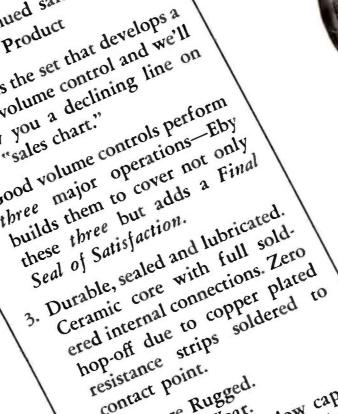
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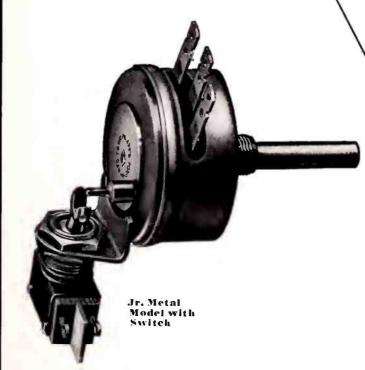
They will wear.

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Model 98

For years the radio trade has looked on Super-heterodyne as the "Rolls-Royce" of radio reception. Now Falck announces a genuine, fully licensed screen grid Super-heterodyne.. at a popular price. For selectivity, tone quality, and distance getting ability no radio in this price field approaches the new Falck 98.

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PILOT MIDGET

This attractive two-tone walnut miniature A. C. receiver has proved the equal of high priced consoles in many locations throughout the country. Because—it embodies console features; 2-224 Screen Grid stages, 1-224 Screen Grid Power detector, 1-227 Audio stage, 1-245 Power Audio output stage and specially designed electro dynamic speaker. A super powered 280 voltage supply gives trouble-free operation from any 110-20 volt house current line.

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For World-Wide Radio Reception

Short and Long Waves, 14 to 500 Meters

PILOT Super-Wasp

Rev. J. W. Nilsen, Bolonque, Congo-Belge Africa says: "Here in the heart of Africa I have received 9LO, JB, 2BL, 5SW, AFK, PCJ, WGY (W2XAF), WRNY (W2XAL) and more stations on loud speaker with my Pilot Super-Wasp."

David W. J. Jones, Brisbane, Australia says: "I have received on my Super-Wasp all the test transmissions between W2XAF (Schenectady, U. S. A.) and VK2ME (Sydney NSW), Aero, ICT Holland, GSSW England and Sydney — London phone service."

Austin R. Baldicin, St. Raphael (Var.) France, says: "I heard from KDKA 25.4 meters, 'We will now rebroadcast a concert from London.' Shortly after the music from London came in clearly, having twice crossed the Atlantic."

Pilot Super-Wasp Comes in KIT FORM which can be assembled in a few hours

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Kit K-110: The battery-operated Super-Wasp. Batteries and Tubes extra. A. C. SET KIT

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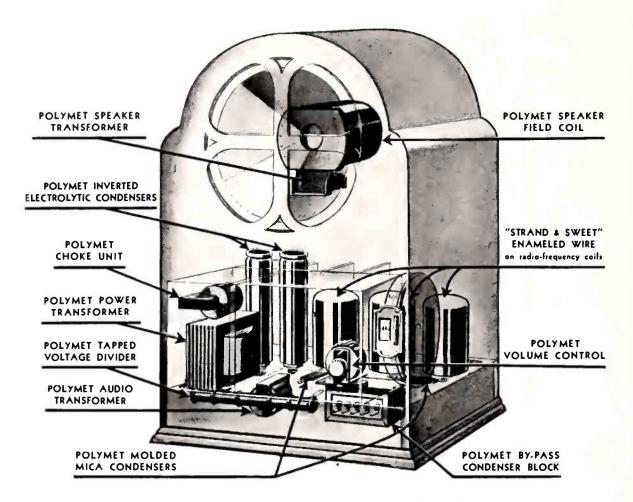
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Three pickups that are leaders in their field



CATALOG No. 107
THE NEW MASTER PHONOVOX
(Illustrated above)

Contains 12 features that make it the greatest value in pick-ups today. List Price \$15.00

CATALOG No. 107 SPECIAL SPECIAL HI-OUTPUT MASTER PHONOVOX

Gives the highest degree of output with extraordinary tone quality of any electric pick-up on the market. WITH the perfection of three new Pacent Phonovoxes, both radio and phonograph dealers have a remarkable opportunity to increase sales.

More than half the new radio sets are now equipped with jacks to hook up phonograph pick-ups. An electric pick-up bearing the name "Pacent" is your guarantee that there is nothing better.



CATALOG No. 108B
THE NEW
OIL-DAMPED PHONOVOX
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This Phonovox provides the finest reproduction available for talking "movies" and broadcast station work. Adjustable needle pressure. Absolutely no rubber. Freezing is impossible.

List Price \$25.00

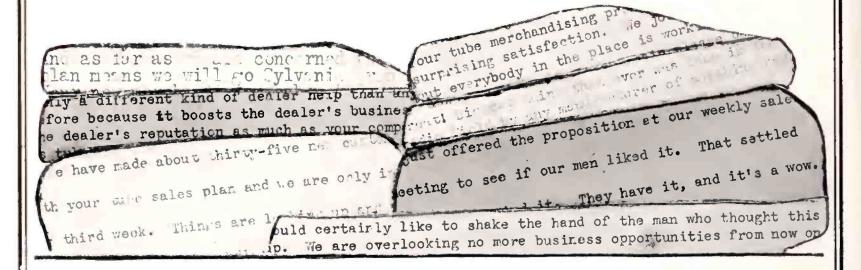
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Pacent Electric Co., Inc., 91 Seventh Ave., New York, N. Y.

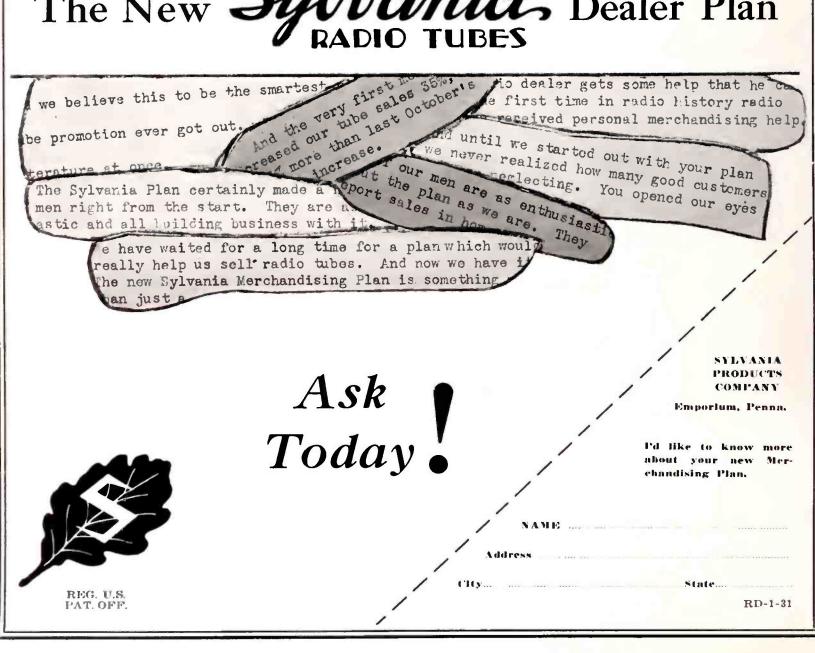
Pioneers in Radio and Electric Reproduction for over 20 Years, Licensee for Canada: White Radio Ltd., Hamilton, Ont.

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The Biggest Sales Making Idea the Tube Business Ever Saw!



The New Sylvania Dealer Plan



WE APPLAUD ...



BORIS KARMARENKO . . . United Broadcasting Company

BECAUSE: Boris Karmarenko was born in that section of China, controlled by Russia, called Manchuria; because in 1925 he came to America and then to Hollywood where he organized his

balalaika orchestra consisting of several musicians from Manchuria who played with him in a famous Siberian Orchestra: because, not only do the Karmarenko entertainers play Russian music, but American fox trots and Spanish music as well; and most of all, because they entertain over the eight members of the United Broadcasting Company every Thursday at 7 p. m.

ENTERTAINMENT FOR YOUR

Charles W. Hamp is home again, and at a salary which has eclipsed every other radio star on the air. It is rumored that for doing his act, Charlie will be rewarded with a salary of \$150,000 a year by the same sponsor who started him out on his meteoric rise to fame and fortune. KHJ will release Mr. Hamp's program to the Columbia Broadcasting System beginning January 2nd. (See page 29 for daily schedule.)

thing, KECA has extended their schedule to thirteen hours daily, which will put them on the air at 8:30 a. m. and sign them off at 11:00 p. m. with a pause between 10:30 and 11:00 a. m. Alexander Bevani, noted operatic coach, singer and pedagog is giving lessons in Italian over KECA on Monday, Wednesday and Friday mornings at 4:00 o'clock.

Opening for the second time with two weekly courses, the Pacific Coast School of the Air will be resumed through the facilities of the National Broadcasting Company on Monday, January 5th. The NBC is firm in its belief that there is a definite need for educational broadcasts of this type to supplement the courses included in the regular school curricula. KGO, KOMO, KGW, KPO, KFI, KFSD, KTAR, KHQ will carry the program.



Another Charlie is back in his home alley and his last name's Wellman. "Thirty minutes of mellowed melody," popularized on the coast by Charlie Hamp, is conducted by Wellman every day in the week except Saturday and Sunday over KNX and KHJ. At the Don Lee station, the schedule is Tuesday and Thursday at 10:30 and over on the Paramount lot, Charlie dispenses

cheer at 9:30 a. m. Monday, Wednesday and Friday.



Capt. Edward Molyneux, leading French couturier, will speak to the women of America direct from his atelier in Paris during an international broadcast on the evening of February 6 next. This will be the first time Paris fashion hints have ever been broadcast from Paris to America and the first commercial broadcast from the French capital to be heard here. Mrs. Edna Woolman Chase, editor-in-chief of Vogue magazine; Michel de Brunhoff, editor of the French magazine Vogue, and a French orchestra will contribute to the remainder of the half-hour broadcast. Capt. Molyneux speaks excellent English. He will go on the air at 3 a.m., Saturday, February 7 (Paris time), and will be heard at 7 p. m. (Pacific time), through CBS coast stations.

Over at KFI-KECA, we picked up quite a bit of news. Remember Harold Isbell who used to announce for KNX? Well he developed the home-coming instinct so popular this month and is now established at KFI-KECA. Another



Up at KHJ the Studio Editor sat on one end of the divan and on the other end sat an attractive blond collegiate looking person who, when Dick Creedon arrived to make introductions, turned out to be Miss Velva G. Darling, California girl, whose column is featured daily in more than 100 metropolitan newspapers and whose "Modern

Girl Philosopher" is an added attraction to KHJ's morning program. Miss Darling is known as the "Modern Girl Philosopher;" in short, her stuff is what is usually called "Advice to the Lovelorn." A few years ago, Miss Darling wrote the only column written by a girl on the student paper of Stanford University. On leaving school she plunged into the newspaper racket. She has flown across the continent with Lindbergh; has worked on murder stories; has interviewed countless celebrities; and calls herself—"a real modern girl." She explains the purpose of her broadcast: "I want to talk to girls and share their confidences. I will invite them to write to me for helpful advice and will answer their letters in my daily talks, using only the initials of their names. I will endeavor to interpret the modern girl to mothers who do not understand their daughters."

Not every radio performer can boast a dual personality that is an asset before the microphone. Stephen Gaylord, KOL's efficient Studio Director, is the possessor of a fine dramatic baritone that is heard to advantage in selections of "The Americans Come" calibre. A few steps toward the mike, a dimenduendo on the accompaniment, and listeners hear a pleasing "croon" rendition



of "Three Little Words" or numbers suited to that type of presentation. Not long ago, Stephen announced the program, sang several numbers and station attaches were bewildered when they were informed that there were NOT three artists, but only Gaylord at the microphone. Such versatility must be applauded!



Merry Christmas and Prosperous New Year to Our Readers



KFRC'S TWO EDNAS

Exhaustive research has revealed that KFRC's two charming Ednas, Edna O'Keefe and Edna Fischer, have only one factor in common: they both are very fond of cauliflower.

Of course, they are both very lovely, very charming young ladies and both are loved for the quality of their respective artistic endeavors. This is what keeps them in their jobs. But otherwise—well, here are the satistics:

	Edna O'Keefe	Edna Fischer
Height	5′ 3″	5 ′
Weight	115	1171/2
Eyes	brown	hazel
Hair	brown	golden red
Married	no	yes
Athletic	yes	no
Age	19	26
Favorite Vegetable	Cauliflower	Cauliflower

And so you see, as you run your eye up and down the two columns, that the only thing the girls really get together on is cauliflower. I suppose we could look further and find that they are both fond of dogs and cats, both read Cosmopolitan (most women do), and very friendly, and both are crazy about football games, but why spoil a good opener for the story. You see, with cauliflower mentioned in the opening paragraph, all cooks, grocers, seed stores, men and truck gardeners may also be inveigled into reading about the girls in addition to their host of admirers.

Edna O'Keefe threw down her school books one night after a hard day at the San Francisco Girls high school and never picked them up again. She had a job on KFRC. Some of her high school chums had dared her to go up to KFRC and try out, and Edna's venturesome spirit couldn't resist. On that horror of horrors (for most candidates) the audition period, she sang "The Desert Song." Why she chose the Desert Song is still one of the mysteries surrounding her. She felt that the wildest African tiger had nothing on that still, non-commital microphone, which threatened at any moment to reach over and bite a chunk out of her right shoulder.



Edna Fischer



Edna O'Keefe

But even that experience was nothing compared to her first appearance on the Golden State Blue Monday Jamboree. She gave up all hope after the first note.

Edna Fischer walked calmly into the KFRC studios one noon time and played "Soliloquy," by Rube Bloom, for Helen O'Neil, the station's program director at that time, and so impressed Miss O'Neil with the quality of her work that she was engaged on the spot.

Unlike Edna Ö'Keefe, Edna Fischer's school had been the show business, which she had embraced at the age of 19 when she joined the Topsy and Eva show of the Duncan Sisters in San Francisco. (She was born in Oakland, the other Edna in San Francisco.) Heart trouble with a purely psychological cause was at the bottom of her desire to leave home. The show broke up shortly after acquiring Edna, but undaunted, she sold her beloved grand piano, slipped the slender roll into the pocket of her gingham dress, and departed for New York, seeking fame. If she couldn't have love she could at least have her name in lights.

(Continued on Page 25)

On Your Right, Ladies and Gentlemen

By JOSE RODRIGUEZ

Gossip, in the radio world, seems to be as necessary to our well-being as lipstick to a co-ed's.

Perhaps it is a little unjust to specify "in the radio world," for gossip is such a universally accepted entertainment that it wouldn't be extravagant to paraphrase the history of mankind with the phrase "they were born, they gossiped and they died."

Last month in Radio Doings, I indulged in some gossip that has been crowding my press-agent's chest for months. I told readers all about several radio personalities as they appear to the candid—if sometimes bilious—eyes of a station executive. Somehow, I not only got away with it, but succeeded in passing the censor with this second itemized list of radio favorites as I see them in KFI and KECA.

So this second installment of official gossip leads off with:



James Burroughs

Almost white hair, lively young, lively manner. A positive danger to confidence men, burglars, defalcating bankers and impressionable movie actresses.



Margaret Kintz-Duncan Pianist

Doomed to sing operettas and songs of light tenderness, he is a devout and fervent student of church music. He looks like a Hussar cadet, but composes masses and motets. Inspires women to the most motherly sentiments.



Nick Harris Detective and Spell-Binder

Plump and cheerful, grown so perhaps from reading intricate scores at first sight for capricious singers. Nothing worries or perturbs her, as if indeed, what could worry or perturb anyone who accompanies Ravel songs at first sight?

Thin, scholarly face, prince-nez glasses, sparse of build. Before he opens his mouth you say to yourself "Tottenham Court road, Picadilly, Plumstead Heath, Hounsditch, Petticoat Lane," so completely a Londoner is he. Still young, but has traveled more than the Wandering Jew.



Harry Hall Assistant Program Director

Happily married to a druggist, she is an incurable match-maker. Her giggle is also incurable. Fiercely loyal to her job—singing ballads. Living in an epoch of disillusion and skepticism, she nourishes a real belief in Santa Claus, the triumph of virtue, the might of truth and the veracity of salesmen.



Baron Keyes The Story Man



Tom Terriss
Raconteur (High hat for storyteller)

Small, slender, not a hair of his head out of place, not an incorrect crease in his immaculate clothing, his crayon-line mustache drawn with uncanny symmetry. Books programs with one hand, pirouettes tap-dances with both feet, holds off ten dozen artists with the other hand, and imitates Eddie Foy with the face—all at once.



Helen Guest

Tall, lanky, soft-spoken, he has the indefinable air of sharing secrets with King Oberon and Titania. (I hope you notice our erudition.)

orange

Blue mascara,

rouge; breaks out into un-

explainable little falsetto hums about Daddy and the

blues, snaps her fingers and

wiggles; all things are either "cute" or "goofy;" spells like Chaucer; a sweet little

grasshopper — and winter

coming on!



Paul Roberts

It's a good thing you can see the picture for yourself, or you wouldn't believe me. It's also a good thing that when she sings no one can see her, for if they could, she would be classed a burning menace to the tranquility of mankind.



Pryor Moore Conductor

Young enough to be saucy and old enough to be sensible. Five feet eight, brown eyes, easy smile, dresses with careful indifference. He loves sentimental ballads, preferably well aged. He's a swell cook. Detests Robert Hurd, but don't tell Robert.



Helen Clive Soprano

Solidly routined and most versatile musician. If he wore a beard, was rude and had an accent, he would rise very high. But he is smooth shaven, cordial and genial. Looks as if he had never been foolish enough to resist temptation.

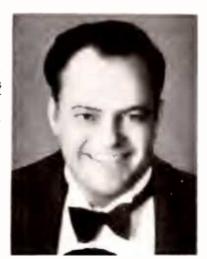


Cactus Kate Stenographer

Looks like Friar Tuck made up to act a business man. Endless repetoire of quartet music that can and endless repertoire of quartet music that can not be sung. The last authority on raisins and specific gravities.



George Liebling
Pianist-Composer



Paul Taylor Baritone

One of the last giants of the Liszt group, he evokes something of the gracious and calm outlook on all things that distinguishes the true aristocrat. His fame and worth are so well established, that he can afford to unbend and crack roguish little jokes.

Looks—and acts—like a heroine of Sir Walter Scott, if his heroines had had brains as well as looks. A little too stately and quiet-voiced for the approval of crooners and Flaming Youth.



Zhay Clark Harpist

An insufferable prig, who thinks he knows everything and imagines himself quite a sad rip with the ladies.



Jose Rodriguez Writer of Editorial Review

FOLGERIA



Richard Graves fixes Zuniga, the Pirate, with a stern and glittering eye while Black and Blue, those fearless "detecatives," look on with burning interest. Lurking in the background, and on the very portals of La Golandrina is Hunfredo, deepdyed villain of Folgeria, that delightful serial comic opera of the air, which is released from KHJ to the Columbia Chain every Thursday at 9:00 p. m. Richard Graves, sterling example of young American manhood is admirably played by Kenneth Niles; Black is Charles Forsythe, KHJ's Sound Technician; Blue is none other than Len Wright, member of KHJ's Orchestra; Zuniga is Lindsay MacHarrie and Bob Swan is particularly diabolical as Hunfredo. Beginning January 5th, from 5:30 to 6:00 p. m. daily except Sunday, Black and Blue will be on the Don Lee Chain with a skit of their own. Some of the weighty problems they will settle are: Who is stealing from the warehouse of Brownstone and Parker? What is the mystery of the old flour mill? Who are the police watching? Who was the man shadowed by Black and lost in the fog? If you like thrills and mystery and menace and intrigue dished up with a lot of humor and human interest, you will not want to miss one of Black and Blue's radio adventures.

VARIETY . . .



Wesley Tourtelotte . . . KNX

Wesley B. Tourtelotte, after a short vacation, returned to devotees of organ music on a recent Sunday evening and will be heard every night except Sunday from 7:00 to 7:30 o'clock.

Mr. Tourtelotte has had an interesting career. He was first started on the piano at the tender age of six years, and he continued his lessons during his school days at Hartford, and Middletown, Connecticut. When he later went to the University of Pennsylvania to study mechanical engineering, he continued his piano study and broadened out to also master the pipe organ with the well-known Ralph Kinder, organist of the Holy Trinity church in Philadelphia.

It was while so employed that he joined the Air Service in Springfield, Mass., and was promptly sent to Arcadia Balloon School in California. When the war ended, Mr. Tourtelotte lent his engineering talents to one of the big local oil companies.

During all this time, he had hammering at the back of his brain, his desire for musical expression. He got in touch with one of the local broadcasting companies and originated the first midnight organ concerts, about two and one-half years ago.

From Mr. Tourtelotte's first radio broadcast, his fame has grown until today he is one of the best known and best liked organists on the air, and KNX feels fortunate in being able to broadcast the new series of Tourtelotte organ concerts.

This is the low-down on why the "Happy Chappies" are happy chappies. Only three short years ago, KFRC started a little propaganda about two lads, who, it was rumored, did harmonizing as it had not previously been done. From KFRC these lads journeyed to KTAB and then decided that Southern California audiences should not be deprived of their entertainment. Soon there was a great furore over at KFI-KECA and the Happy Chappies burst on the horizon with "When the Bloom Is on the Sage," which is still panicking audiences. Now out at KMPC, Nat Vincent and Freddie Howard, the Happy Chappies, are packing them in the studio every day with a noon-day program of harmonizing that is really excellent. Their sixtyminute program is an all request fea-



The Happy Chappies . . . KMPC

ture and apparently the requestees can't get them too old or obscure for the boys. Nat Vincent, peering over Fred Howard's shoulder, plays one of the meanest "by ear" pianos in these parts and Fred Howard writes lyrics and tenorizes with Nat's baritone. These lads have won a secure place in the hearts of shut-ins as well as other listeners by their happy spontaneous and obliging manner. If you aren't Happy Chappies addicts, better tune in KMPC any noon and fall under their spell. And if this phenomenal success isn't something to be happy about, we don't know about happiness.

If there is anyone within KNX's coverage that hasn't enjoyed Bert Butterworth's "Optimistic Do-Nuts" program, we are ashamed of them. Seven years ago the Davis Perfection Bread Company (and that's quite a break, because we are not allowed to mention sponsors in this department) decided to pioneer radio advertising; so Mr. Butterworth went into a huddle with himself and when he emerged he had conceived the "Optimistic Do-Nuts" which holds the record for being the oldest sponsored program in western broadcasting, having had all these seven years, the same sponsor, same time, same idea, same station, etc. And five years ago there appeared Mr. Jasper Weldon, otherwise Windy Whitewash, who came out of the east to sing a most amazing bass along with the other entertainers. Whitewash traveled on the Butterfield circuit (no relation of Bert's) as a member of a male quartet and, perhaps, that's where he perfected such bass voice classics as "When the Bells in the Light-House Ring Ding Dong," "Asleep in the Deep," and "Old Black Joe." During the day Mr. Weldon is employed by a local furniture store and every Friday night at 8:00 o'clock finds him busily managing the male quartet and performing with the "Optimistic Do-Nuts."



Jasper Weldon . . KNX

WITH THE COMMISSION

Twenty Stations on Probation

Pending further investigation of charges of irregularities, twenty broadcast stations, cited for alleged violations of regulations, were granted extensions of licenses until December 31st by the Federal Radio Commission. Two of these stations are on the Pacific Coast: KMPC of Beverly Hills, Calif., and KEPS of Portland, Ore. KGAR, Tucson, Arizona, also is on probation, and the examiners have definitely recommended that this station be refused further renewal on December 31.

KJR Wins Fight for Channel

The KJR-KOMO-KVI controversy which has been waging for some time in the Northwest, has been finally settled by the Federal Radio Commission. It will be remembered that Judge Sykes held court in Scattle last June in this case. Under the decision announced December 12th, KJR will remain on 970 kilocycles and has been granted permission to install on RCA 5000 watt transmitter. The application of KOMO for 15,000 watts on 970 kilocycles was denied, and this station will remain on 920 kilocycles.

Lafount Opposes Channels for Education Only

The apportionment of certain hours on commercial broadcasting stations for educational purposes under the direction of the Federal government would be preferable to the setting aside of 15 per cent of the channels for educational stations in the opinion of Radio Commissioner Harold A. Lafount.

"If every station, including the great nation-wide networks, were required to contribute an hour and fifteen minutes each day, the demands of education might be cared for admirably and nation-wide coverage guaranteed," he said.

The assignment of 15 per cent of the broadcasting channels to education would be unwise economically and technically, he believes. This plan, he said, would not cover the nation as effectively as the scheme he proposes.

Moreover, the granting of certain channels to educational interests would bring similar demands from other groups and organizations.

More Equalization Plans Advanced

The Federal Radio Commissioners are unanimously agreed that something should be done about the unequal distribution of broadcasting facilities, but they are at a loss as to which of the three plans proposed by themselves should be adopted.

Maj. Gen. Charles McK. Saltzman, chairman, and Judge E. O. Sykes have come forward with suggestions following proposals by Judge Ira E. Robinson, former chairman, and Commissioner William D. L. Starbuck. Judge Sykes' plan is, in fact, an indorsement of the scheme offcred by Judge Robinson, while Commissioner Harold A. Lafount has approved Chairman Saltzman's idea.

The line-up is, therefore, two against two with Starbuck sponsoring an independent plan. Unless the commissioners are playing politics, as some of their critics charge, it is likely that a compromise proposal will be adopted.

General Saltzman's suggestion, in brief, is to reduce gradually the "unfit and unworthy" broadcasting stations in the 24 states that are over-quota and at the same time increase the facilities of states that are under-quota. This plan, he believes, will bring about a more equitable distribution of stations, hours, and power "with a minimum of violence or inconvenience to worthy stations now existing." The unfit stations would be eliminated, he suggests, by a strict enforcement of all rules and regulations of the commission.

Judge Sykes not only indorses Judge Robinson's plan for increasing the facilities in under-quota states, but also recommends the withdrawal of stations from over-quota states "because of interference which would be created by allocating to under-quota states their quota."

He proposes that the Engineering Division of the commission make a thorough study of the broadcasting set-up and prepare a schedule of equal distribution of facilities according to population and area for submission to the commission.

Commissioner Starbuck's plan provides for a gradual equalization, first among the Five Zones and then among the respective states. Proper applications from under-quota areas would be accepted, while the over-quota sections would be slowly reduced by mortality.

White Would Kill Third of Stations

Representative Wallace H. White, of Lewiston, Maine, who, after this session of Congress will move to the Senate, returned to the third session of the Seventy-first Congress with blood in his eye for the Federal Radio Commission.

Hardly had the legislative bodies had time to get settled before he introduced a resolution calling for a survey of all broadcasting stations with a view of eliminating from onethird to one-half of them. The proposal was referred to the house committee on Merchant Marine and Fisheries, of which he is chairman.

Giving as his reason for the action that several members of the committee felt that there are too many radio stations, Mr. White criticized the Radio Commission for adding to, rather than reducing, the number of such stations.

"Under the original act, it was the belief of the committee that it would give the Federal Radio Commission a chance to cut down the number of radio stations," he said, "but since that time there has been no decrease.

"In fact, even where a radio station has 'died,' the Radio Commission has not taken advantage of the opportunity to keep a station off the air but instead has issued licenses to fill the gaps."

The "excuse" of the commission that it is "not certain of its power" and consequently is afraid to drive stations off the air, is "not well founded," Mr. White asserted.

"There should be a reduction of from one-third to one-half of the number of stations," he concluded.

Advertising Arouses Commissioner's Wrath

On the warpath on the subject of too much advertising in the air, Commissioner Ira E. Robinson declared:

"Advertising over the radio can be accomplished without disgusting the public, but assuredly it is not so now. If the present overdose continues, no returns from advertising by radio will be received. The method is simply killing the goose that lays the golden egg."

Judge Robinson cited the case of a station in Argentina that was barred from the air for eight days because it was broadcasting more than 250 words of advertising between successive numbers.

ANENT TELEVISION

Commercial television is either several years in the future or else just around the corner, and the odds are on the former.

Just when the foremost industrial engineers in the field and Dr. C. B. Jolliffe, chief engineer of the Federal Radio Commission, had decided that visual broadcasting is still in the experimental stage and is likely so to remain for some time, a 24-year-old radio engineer, backed by his attorney, threw a mild bombshell into a conference on television by announcing that he had developed a tube that will make commercial television possible at once.

The youth, whom his attorney called "one of the ten mathematical wizards of the age," is Philo T. Farnsworth, technical head of the Television Laboratories, San Francisco, Calif. Together with his attorney, Donald K. Lippincott, he was in Washington to attend the conference of television engineers called by Dr. Jolliffe although as yet he has obtained no license to operate even an experimental visual broadcasting station.

This young man was not greeted with wild acclaim either by the industrial or the commission engineers. Instead, his announcement was met with apparent skepticism. The suggestion of his counsel that the commission not provide such a wide band for television experiments as now thought necessary, on the ground that Farnsworth's invention enables a television station to transmit images on a band no wider than the radio broadcast, was immediately quashed.

The Farnsworth system employs a cathode ray tube in which the electron stream is deflected by means of a moving magnetic field. The scanning disc and the accompanying mechanical devices are thus eliminated. Very successful demonstrations have been made in San Francisco for some months past. Dr. Vladmir Zworykin of the RCA Victor Company has been working along the same lines with equal success. Without doubt the Farnsworth system is the most practical and at the same time the most successful method yet developed. In conjunction with a receiver such as the Stenode Radiostat of Dr. Robinson's, the Farnsworth system overcomes the two serious obstacles which have confronted radio television. Namely the motor and scanning disc arrangement which is not acceptable to the public, and the necessity of employing a very wide band of frequencies for transmission. Robinson's receiver (described elsewhere in this issue) permits of the reception of a wide range of modulation frequencies in a very narrow receiver channel.—Tech. Ed.

Following the conference, Commissioner Harold A. Lafount said that the commission would accept the youthful inventor's offer to demonstrate his tube, probably within the next fortnight.

If this demonstration convinces the Radio Commissioners, Farnsworth will likely be granted the application he plans to file for the erection of a station in New York City. If not, his experiments will doubtless be confined to his laboratory for some time.

There was a great deal of mystery about "the revolutionary tube development," and that probably explained much of the antagonism that rebuffed it. A great many assertions about it were made and several written testimonials were offered, but no actual proof of its worth was presented.

After the conference, C. W. Horn, chief engineer of the National Broadcasting Company, expressed the belief that television would not be ready to provide public entertainment for several years.

"Only when it can compete with the talking motion picture can we hope to attain any success with television," he said. "And that is still far off. While we have made great strides in the art during the last two years, we are still far short of the perfection of the motion picture film."

Farnsworth contends that he is able to transmit a television image of 300 lines with far more details than those of 40, 50 and 60 lines now broadcast experimentally by other engineers.

By narrowing the wave bands to 10 kilocycles, whereas television now requires 100 kilocycles, he has increased the sensitivity of his transmitter to a point that direct television pick-up is possible, he said. This would adapt the system for use in visual broadcasting of football games and other sport events.

At the outset of the conference, Dr. Jolliffe announced that the engineers were called only to work out methods of reducing interference between experimental television stations, to determine the progress of the art, to study means of combining visual and voice transmission, and to ascertain what channels are best adapted for television.

Leading radio and television scientists of the nation participated in the parley. Virtually all agreed that they were not ready for commercial visual broadcasting.

Television Stations Reallocated

The Federal Radio Commission this week adopted the recommendation of the recent television engineering conference regarding the reallocation of the assignments of the 19 experimental stations so as to afford greater geographical separations and eliminate interference on the short wave channels

Other proposals of the conference are now being considered by the Engineering Division of the commission and will probably be likewise recommended for approval within the next week or so.

This realignment of visual broadcasting stations is expected to aid in the experiments and to hasten the day when the art will be ready for public entertainment on a commercial scale.

The new reallocation went into effect on December 15th. The assignments are as follows:

illicites are	as ronov	v 3.		
	2,000-2,	100 Kc.		
W3XK	5,000	Wheaton, Md.		
W2XCR	5,000	Jersey City, N. J.		
W2XAP	250	Portable		
W2XCD	5,000	Passaic, N. J.		
W9XAO	500	Chicago, Ill.		
W2XBU	100	Near Beacon, N. Y.		
	2,100-2,2	200 Kc.		
W3XAK	5,000	Bound Brook, N. J.		
W3XAD	500	Camden, N. J.		
W2XBS	5,000	New York, N. Y.		
W2XCW	20,000	South Schenectady, N. Y.		
W8XAV	20,000	East Pittsburgh, Pa.		
W9XAP	1,000	Chicago, Ill.		
W2XR	500	Long Island City, N. Y.		
	2,750-2-8	350 Kc.		
W2XBO	500	Long Island City, N. Y.		
W9XAA	1,000	Chicago, Ill.		
W9XG	1,500	West Lafayette, Ind.		
2,850-2,950 Kc.				
W1XAV	500	Boston, Mass.		
W'2XR	500	Long Island City, N. Y.		
W9XR	5,000	Downers Grove, Ill.		

DX PRIZE CONTESTS

RESULTS OF DECEMBER CONTEST

The night of December 13th was not particularly good for DX. The static level was high and the signal strength of many stations was lower than usual. However, many



Avalon Midget Radio Won by Mr. John Webb

fine logs were submitted in the contest, and the three judges appointed by Mr. Roth, namely Messrs. Armstrong, Hastings and Ormiston, spent several hours carefully considering the relative merit of the lists.

John Webb, of 5153 Rockland avenue, Eagle Rock, Calif., was awarded the prize of an Avalon midget radio. Mr. Webb

used a Crosley Gembox and his equipment comprised a Gosilco aerial, Sunset ground and Sylvania tubes. He logged a total of 83 stations, 15 of which were local. The 68 DX stations were properly listed with time and identification. The list of calls with time is as follows: (other details are omitted here.)

KTAB 6:01, KFSD 6:02, KTAR 6:03, KPO 6:04, CMK 6:05, KGO 6:07, KOA 6:08, WWL 6:11, KLX 6:14, KFWI 6:17, KQW 6:19, KGIQ 6:23, KDYL 6:25, KFBK 6:29, KGB 6:32, KYA 6:33, KSL 6:36, WFAA 6:39, WSB 6:42, WOAI 6:44, KTBR 6:46, KGRS 6:47, KREG 6:48, KFRC 6:50, CMC 6:56, XEN 6:58, KOIN 6:59½, WOC 7:00½, KRLD 7:02, KVOO 7:03, WOWO 7:04, KLO 7:06, KWKH 7:14, KCT 7:15, XEB 7:18, WBAP 7:21, XEJ 7:23, KGA 7:25, KWK 7:31, KOAC 7:36, WBBM 7:42, WCKY 7:47, CHCA 7:51, KHQ 7:56, WJR 7:59, KFNF 8:02, KROW 8:08, CNRV 8:10, KMOX 8:12, KFAB 8:15, KRE 8:17, KFEL 8:26, KXO 8:29, WJZ 8:59½, KOH 9:04, WIBW or KSAC 9:12, KEX 9:47, WCCO 9:50, KVI 10:02, WENR 10:06, KYW 10:10, KMO 10:13, WLW 10:15, CKWX 11:08, KLO 11:15, KGHL 11:28 KJR 11:37.

Other logs worthy of honorable mention were submitted by George Connor, Charles S. Andren, R. E. Doman, E. R. Fantz, George Schmidt, Stuart Walmsley, H. M. Twitchell, Henry C. McCarty, Robert D. Peterson, Stewart E. Korb, Evan V. Jones, P. E. Donnelly, R. M. Eadie, Edward C. Roth, F. L. Healy (of Roberts, Idaho), Constantino Stefani, E. Ellsworth Fearn, Mrs. N. C. Hipp (of Hastings, Nebr.), George E. Tompkins, W. L. Pantier, Charles Mora, Charles W. Rogers, Miss P. Gordie, H. H. Roach, E. L. Decker, Jasper W. Moore and John H. Hinsdale.

The Avalon midget radio was offered as the Grand Prize through the courtesy of the manufacturer, The Avalon Radio Manufacturing Company, of Los Angeles.

ANNOUNCING JANUARY CONTEST

Our purpose in conducting DX Prize Contests is not solely that some enthusiast may win a worthwhile award, but rather that set owners who have not been particularly



Tiffany-Tone Midget Radio January Prize

interested in DX reception may be induced to experience the enjoyment to be derived therefrom New DX fans are made in this way. One need only experience the surprise and thrill of hearing distant stations for the first time to find that the prize is really paid in satisfaction and pleasure and not in the awarding of a midget radio or other trophy.

In support of this belief, we find many letters from new DX fans in each contest; set owners

who have really attempted to build up a DX log for the first time and they invariably thank us for having offered the incentive. However, the old-timers seldom find new surprises or thrills between the hours of 6 p. m. and midnight, since they know with fair accuracy just what stations will be logged. With this in mind, we have decided to hold the next contest during hours which will permit practically everyone to tune in stations they have never heard before. Between 3 and 6 a. m. on a week-day morning, you will find a list of stations to add to your log which contain many surprises.

The DX Contest for this month will, therefore, be held during the early morning of Saturday, January 3rd, from 3 a. m. to 6 a. m. Retire early Friday night, set the alarm for about 2:50 a.m. and put in three hours' work on a brand new log. The Japanese stations first, and then at 3:30 some of the easterners opening up and from 4 to 6 many stations throughout the country that will be new to many DX fans, even the old-timers. List the exact time and names of selections or words of announcers as in other contests; also give the frequency, as this will be an additional requirement hereafter. Letters must be in the office of RADIO DOINGS, 314 East 12th street, Los Angeles, not later than January 8th, and the prize-winning letter as well as several worthy of honorable mention, will be published in the February issue. The grand prize for the best log submitted, all things considered, will be a Tiffany-Tone midget radio, manufactured by the Herbert H. Horn Radio Manufacturing Company, of Los Angeles. This set employs four screen-grid tubes and dynamic speaker; is equipped with tone control and is a real distance getter. This is one of the smallest, and yet most efficient of the midgets, and retails for \$59.50. It will be given free, complete with tubes, to the winner of the contest, through the courtesy of Herbert H. Horn.

'Round the World DX Club News

The Club is now fully organized and is well on the way to a successful future. It is a friendly, sociable, non-profit organization, devoted to the art of tuning in distant stations. The Club holds meetings semi-monthly at 314 East 12th street, Los Angeles, and cordially invites all DX fans to become members.

Applications for membership are being received daily. The Club recently received an application from Mr. Inglis, who lives in far-away New Zealand.

The entrance fee is one dollar with monthly dues of fifty cents. This money is used by the Club to defray the necessary expenses incurred by the Club, such as membership cards, stationery, etc. There are no salaries or rentals paid. The officers gladly donate their time for the benefit of the Club.

The Club membership roll includes DX fans from all walks of life. Radio dealers, housewives, lawyers, advertising men, salesmen and people from many other vocations. They get together with one common interest—the reception of distant stations. An hour of each regular meeting of the Club is devoted to the discussion of DX work by the members. During these informal friendly discussions much valuable DX information is exchanged which is of benefit to all.

Another interesting feature of Club activities is the Prize DX Contest which is held each month. The first was held on the night of December 19, and the results will be published in the next issue of RADIO DOINGS. Valuable prizes are awarded to the two most successful contestants. A Silver Cup has been donated by one of the Club members, and will be presented to the winner each month. Any member who wins the cup for three consecutive contests will thereafter retain the cup as a permanent trophy. The second prize, a Radio Owl, was donated by Taylor-Travers Corp., Ltd., Los Angeles, manufacturers.

The Club charter still remains open for new members. Send in your membership application now. The only necessary qualification is a bonafide interest in DX reception. Enclose a dollar with your application to cover the entrance fee. Address 'Round the World DX Club, 314 East 12th street, Los Angeles, Calif. All applications are placed before the Club at its regular meetings and are voted upon by the members present. The entrance fee is returned in case of rejection.—Edward C. Roth, President.

Standard Signals for Amateurs

The nearly 20,000 amateur radio station operators in the United States are now able to ascertain whether or not they are operating on their precise frequency as the result of an extensive service just started by the American Radio Relay League.

The third standard station W6XK, of Los Angeles, began operations this month, completing the coast-to-coast system, which includes WIXP, of South Dartmouch, Mass., and W9XAN, of Elgin, Ill. They operate on regular schedules.

Each station uses a thermostatic or temperature controlled piezo crystal type frequency standard having a frequency of 100 kilocycles. With these standards the transmission is accurate to within .01 per cent. Each frequency standard has been checked against the national standard at the Bureau of Standards, which is accurate to within one part in 20,000,000.

The "ham operators" expected to reduce the interference in amateur radio communication by constant checking with these standard stations.

Short, Short Story

Robert Gordon Duncan, the self-styled "Oregon Wild-cat," for some time conducted an objectionable type of broadcasting over Station KVEP, Portland, Oregon, under the guise of anti-chain store propaganda. Besides attempting to vilify the characters of many reputable citizens and officials, he frequently used in the course of his talks profane, indecent and obscene language.

Excerpts of Mr. Duncan's talks were recorded on dictaphone records at the Department of Commerce Frequency Monitoring Station, Portland, and these constituted sufficient evidence to cause the Federal Radio Commission to deny a license renewal to KVEP. The station was forced to close, and later Duncan was indicted by the Federal Grand Jury on five counts for alleged violation of Sections 29 and 33 of the Radio Act of 1927.

Duncan was tried in Medford, Oregon, early in October and was convicted. On November 18, Federal Judge Bean sentenced Duncan to six months imprisonment and also imposed a fine of \$500.

Edwin W. Lovejoy, U. S. Supervisor of Radio for the Seventh Radio District, was one of the principal witnesses in the trial. The dictaphone records were made under his direction at the monitoring station, and it was this evidence which was the basis for both the cancellation of KVEP's license and the indictment and conviction of the "Oregon Wildcat."

The moral to this story is: Be careful what you say in front of a microphone, because the precedent has been established!

KFRC's Two Ednas

(Continued from Page 17)

Her sympathy for jazz and popular songs, and her uncanny skill in the interpretation made it a simple matter for her to find work. She became Duncan Sisters' accompanist and made records with them; played in vaudeville and then rejoined the Duncan Sisters. She returned to her Oakland home, and from there set out on a tour of the world with Oklahoma Bob Albright. In London she stopped off for a good many weeks to fill an engagement at the exclusive Kit Kat Club. Back in New York she played at the Palace and then returned home again. Her next move was to join the staff of KFRC.

Perhaps the most important item in connection with her world girdling vaudeville tour was her meeting with Milton Hayes, purser on the ship upon which she was going to Australia. They were married about two years later.

Edna O'Keefe has had most of her theatrical training right on KFRC. She has a natural talent for impersonation that just won't be downed. In addition to her singing she is a valuable member of the station's dramatic department. The Deep Dramatic Stock Company of the Golden State Blue Monday Jamboree would soon be off the deep and on the rocks without her.

She is a very self-possessed little lady, with a sparkle in her brown eyes. As to her comeliness, we just refer you to the picture which accompanies this story. She dresses becomingly in vivid colors that accentuate her beauty.

Contrasting their personalities again, Lady Fischer is more impulsive than Lady ()'Keefe, and she is subject to rather plaintive, wistful moods. She takes life more seriously. But there is one thing upon which they really do agree. Cauliflower is the king of the vegetables.

PROUND THE DIAL

Two New Japanese Stations

Our Japanese correspondent, M. Nakamura, whose address is Yamate, Oiso, Kanagawaken, Japan, writes that two new stations have been added to the chain of the Broadcasting Corporation of Japan. They are as follows:

CallLocationWave-LengthPowerJOKKOkayama429 meters500 wattsJOLKFukuoha441 meters500 watts

Three more stations will be added within the next three months. These will be JOOK, Kyoto; JOPK, Shizuoka, and JONK, Nagano. Mr. Nakamura adds that all of the BCJ stations are pleased to receive reports of reception from American listeners.

Worth Trying For

Here is some information for the "Round the Dial" page. The following stations can usually be picked up after 4 a.m.:

> WMT (600 Kc.) (830 Kc.) WRUF WWJ (920 Kc.) WJAG (1060 Kc.) **KFH** (1300 Kc.) KSCJ (1330 Kc.) **KMAC** (1330 Kc.) KGNF (1430 Kc.)

XEB (1095 Kc.), XEZ (695 Kc.) and XEM (765 Kc.) may frequently be picked up between 6 and 8 p. m. WCAU (1170 Kc.) has been coming in very good recently between 6 and 9 in the evening. If the weather is very good CFQC (910 Kc.) may be played on Friday from 5:30 to 6 p. m. WFIW (940 Kc.) may be picked up Sunday after KOIN signs off about 11:30 p. m. KGDM (1100 Kc.) can be played daily just before they sign off at 5 o'clock in the evening. WRHM (1250 Kc.) can be picked up daily from 3 to 5 a. m. as during these hours KFOX is off the air. WSAI (1330 Kc.) can be played from 3 to 4 a.m., or until KSCJ comes on. A good catch is WJKS (1360 Kc.) which can be picked up very often on Saturday night after KGER signs off. KGIW (1420 Kc.) may be picked up on Sunday night after KFQU or KGGC signs off. KGKY (1500 Kc.) can be played on Thursday night about midnight.—A. E. Armstrong, 2021 Bonita Drive, Glendale, Calif.

From KFI to KFWB to KTBR

To those who have not as yet added the two Montana stations to their logs, I have some news. Radio stations KGIR and KGCX are on the air with a frolic program every Sunday morning. KGIR is on 'til 3 a. m. (M.S.T) and KGCX is on from 1 a. m. to 3:30 a. m. (M.S.T.) They both come in very good and are well worth logging.

It may be interesting to know that KDYL in Salt Lake City, Utah, is now on the air with a brand new transmitter and when the church stations are not on the air you can get KDYL just as good as KOA or KSL.

Here is something else that is interesting to the Los Angeles, DXer. Radio KTBR in Portland, Oregon, purchased their present 500 watt Western Electric transmitter from our own KFWB when they got their increase to 1000 watts. When KTBR got the former KFWB's transmitter they in turn sold their former little 50 watt transmitter to the man-

ager of KMO and he again in turn took the "little one" to Yakima, Washington. It must be a game. Anyway, KTBR comes in good on Saturday nights.

I wonder how many of you DXers have gotten WMBI in Chicago, Illinois. It is on quite a few times during the late evening hours. I got it for the first time on a Saturday night and they signed off at exactly 1 a. m. (C.S.T.) Here's hoping that many of you can catch them for they are not in many logs. WBT on the channel that WMBI has, is coming in fine every evening.

Station KVOA in Tucson, Arizona, was recently granted permission to broadcast nights. They now run on 500 watts daytime and 250 watts nighttime. Being on a frequency of 1260 Kc., we may be able to get it some night.

I have already received several requests for the information on the Mexican stations and would gladly send more out if requests are received.—George Schmidt, 1642 West 82nd street, Los Angeles, California.

(Ed. Note—It is interesting to recall that the original KFWB 500 watt transmitter now used by KTBR was purchased from KFI when they increased to 5000 watts.)

More Mexican Data

I have some information that I thought might interest some of your readers:

I received station CMBC at Havana, 1070 Kc., after WTAM signed off at 10 o'clock. They used a power of 500 watts and came in with fair volume.

WGBF can be received on Saturday night after 9:30 or 10:00 o'clock.

I played WJAG at 10:30 p. m. on Saturday. They came in good.

WMBI can be heard after 8 or 9 o'clock several nights during the week. I have heard them on Monday and Friday nights.

WGST, the Georgia Tech station, can be heard after 8 p. m. on Sundays. They come in loud even though they use only 250 watts.

KLRA can be heard before 9 p. m. on Sunday evenings. KOY is off the air at this time.

Last Saturday I played WGAR in Cleveland between 11 and 12 p.m. They use a power of 500 watts and broadcast on a frequency of 1450 Kc.

I have quite a hard time trying to identify some of the Mexican stations. Here are the ones that I have received during the past week:

XEN, 720 Kc.; XEW, 780 Kc.; XEJ, 857 Kc.; XES, 890 Kc.; XEG, 890 Kc.; XED, 960 Kc.; XEI 1030 or 1040 Kc.; XER, 1150 or 1160 Kc—this one did not announce in English but the call letters in Spanish sounded like XER.

I also get Spanish stations on 750 Kc., 860 Kc. or 870 Kc. and 920 Kc. Can anyone help me out? -Donald Teague, Jr., R. F. D. No. 2, Santa Paula, Calif.

I have just attempted to log a station which comes in on WHAM's frequency, 1150 Kc. It is a Spanish speaking station, broadcasting a dance program of American music. I could not get the call letters, although they announced after every piece. It sounded like HAKI or HAKR. Do you know of any such station? I played them from 10 to 11:15 p. m., when they signed off.—G. E. Tompkins, P. O. Box 584, Las Vegas, Nevada.



WESTERN ELECTRIC 50 KILOWATT BROADCAST STATION



Excerpts from a paper presented before the Los Angeles Chapter of the Institute of Radio Engineers, December 15, by E. H. Schreiber, Program Service Supervisor, Southern California Telephone Company

There are two important considerations which determine the strength of signal and the service area of a broadcast transmitter. The first of these is the POWER of the transmitter, which is considered as the energy contained in the unmodulated carrier wave. The second is the DEGREE OF MODULATION, or comparative amplitude of the signal with which the carrier is modulated. It is expressed in percent and is defined as the ratio of the signal or voice frequency amplitude to the carrier frequency amplitude.

The power of the transmitter is limited by law, being assigned by the Federal Radio Commission. Operating with the maximum allowable power, it then follows that service area of the station may be increased by use of the maximum modulation, or 100 per cent. With 100 per cent modulation, the power rises to peaks four times as great as with 50 per cent modulation, and gives a signal twice as loud.

The transmitter to be described is rated at 50,000 watts and 100 per cent modulation. Under this maximum modulation, the equipment must provide for an output of 200,000 watts.



Western Electric 50 K.W. Transmitter

The equipment layout of the transmitter proper consists of seven panel units with a screen inclosure.

The first is an oscil-modulator of 50 watts output and 100 per cent modulation. This is followed by three push-pull stages, amplifying the modulated RF power. The first power amplifier unit using two 250 watt tubes occupies the second unit. Third and fourth units contain the second power stage and associated output and has water-cooled tubes. The fifth unit houses the final power stage incorporating six water-cooled tubes each capable of a peak out put of 40 K.W.

The last two units constitute the front of an electrically screened inclosure housing the output circuits for this latter stage. There is a full complement of meters, the cases of which are either grounded or mounted behind glass for protecting the operating personnel.

The power panel which is separate from the others is made up of three units with the control arrangements on the first. A power supply of 250 K.W. at 440 volts is re-

quired. The left panel houses the control arrangement, which is such that the trans. can be started by a single set of push buttons. the various circuits being energized in the proper sequence by means of suitable relays and contactors. The central unit is a three phase, half wave, rectifier supplying power at 1600 volts to the plates of the air-cooled tubes. The six-tube rectifier on the right supplies plate power at 17,000 volts for the water-cooled tubes. The filament and plate transformers for the latter are located in the power room on the floor below. The filter consists of two units, one for each side of the push-pull circuit, employing a 6 mfd condenser and a 12 henry inductance. Two 24 volt, 550 ampere D.C. generators (one spare) supply power to the filament circuits. Grid bias voltages are obtained from a 2 K.W., 300 volt unit which is also installed in duplicate. The large power tubes are cooled by means of distilled water which is conducted to the anodes of the amplifier tubes through insulating hose coils. The total heat transferred by the cooling water is approximately 175 K.W. A flow of 75 gallons per minute is maintained. Four 56 in. by 58 in. radiator units are provided which maintain the water below 180 degrees F, under all atmospheric conditions.

A tract of land about 1200 by 1200 feet is required for a 50 K.W. transmitter. A two-story building is erected near one edge of the property which contains the transmitter equipment. The basement contains the generators, transformers and filters. The main floor has a radiator and fan 100m, a transmitter room housing the equipment units, a speech input control room, and miscellaneous rooms for the attendants.

The actual design of the antenna for this transmitter is determined by the customer's requirements. The tendency has been toward higher structures in an effort to increase the total radiation and localize the signals to some extent. In one instance an 800 foot flat top suspended between two 400-foot towers was used very effectively. Still greater efficiency is anticipated from the use of a single insulated tower over 900 feet in height for a frequency of about 600 Kc. The tower is guyed at a single point at about two-thirds of its full height.

In either case a small copper shielded coupling unit is located directly beneath the antenna. This connects with the transmitter building by means of a 500-foot transmission line, balanced with respect to ground, so as to reduce radiation from it.

The maximum deviation from the prescribed wave length that is permitted by the existing government regulations is 500 cycles—somewhat beyond the capability of the ordinary wave meter. In the absence of adequate frequency control apparatus, very serious beat-note interference has been of frequent occurrence. Considerable improvement has been brought about by the extensive adoption of piezo-electric reference oscillators and automatic piezo-electric control. This system of controls is capable of maintaining the as signed frequency to \pm 30 cycles for long periods. These cry stal control circuits, which are now in general use, are pro-

(Continued on Page 41)

THE JUDER-HETERODYNE

By K. G. ORMISTON

The word "Super-heterodyne" is before the public today in an ever increasing degree. The advertisements of many of the leading radio manufacturers blazon this intriguing word across pages of advertising as though to hypnotize the beholder. And its elegance spellbinds, because even though you may be but casually interested in radio, there is a vague idea in the mind that this word signifies a circuit which represents the acme of perfection in receiving circuits.

It is timely therefore, that we stop and analyze the "super," review its advantages and disadvantages, and gain a mental picture of what the name means when expressed in terms of actual radio performance.

The super-heterodyne system of reception is briefly as follows: The received signal frequency is combined with a second frequency, which is generated within the receiver. The resultant frequency, which is still an inaudible radio frequency, is then amplified through an RF amplifier, the tuning of which is fixed and constant. A second detector and audio channel completes the circuit. This method of reception was patented by Armstrong in 1920. The great advantage of Armstrong's invention was in the fact that the frequency which resulted from the heterodyning or combining of the signal and locally generated frequency, could be made low enough to be amplified with satisfactory efficiency by the tubes of that day. Tubes with an appreciable degree of inter-electrode capacity do not amplify the higher frequencies as well as the low.

As applied to modern practice, the super-heterodyne has three important advantages. First, an RF amplifier may have a vastly greater gain at a frequency such as 175 kilocycles than at broadcast frequencies. Second, an RF amplifier which functions always at but one frequency with accurately tuned circuits may have greater efficiency than one which must be constantly variable over the broadcast band. Third, the receiver may have a greater and more constant selectivity than is possible with other types because of the highly selective circuits which may be used with the amplifier (due to their being fixed and not constantly variable) and because energy of this frequency is obtained by adjustment of the local oscillator as well as tuning to the received signal.

In terms of performance, these features result in a high sensitivity and selectivity. These two vital qualities have ever been the strong points of the "super," but have been

usually acquired only in exchange for certain disadvantages. Chief among the disadvantages is the presence of harmonics, "image frequency" interference, and "repeats" of the locals, due to the many possible combinations of frequencies between the received signals, the locally generated frequency and the harmonics of both. The second important disadvantage is the ability of the local oscillator to reduce heterodyne interference in the neighboring receivers.

The Radio Corporation of America has passed through many years of development work in super-heterodyne receivers, and only now, in conjunction with General Electric and Westinghouse, have they produced a series

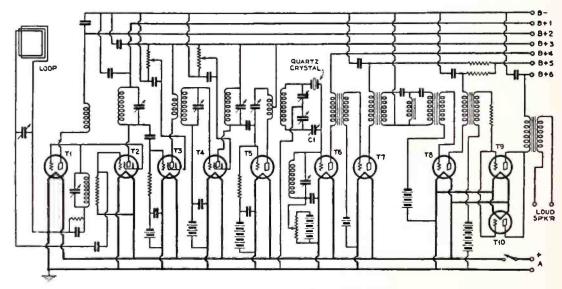
of supers which are devoid of harmonics, do not radiate, possess real 10 kilocycle selectivity and a sensitivity of a fraction of a microvolt per meter. In order to accomplish the satisfactory elimination of the disadvantages of the super-heterodyne they have used a tuned link circuit and a signal frequency amplifier ahead of the first detector or mixing tube. And we do not believe that it can be accomplished in any other way.

It is vitally important that the mass of super-heterodyne receivers which will be sold this year be absolutely free from the radiation evil. If not, it is likely that we will see city ordinances passed prohibiting the sale or use of such sets. It is equally important that there be no harmonics cluttering up the dial, for the public will not stand for this type of interference.

* * *

For the benefit of the technically minded, we are reproducing the circuit diagram of the new Stenode Radiostat receiver perfected by Dr. Robinson of London. This circuit is more or less upsetting modulation theories, and radio receiver design. Heretofore great care has been exercised in receiver design to provide for a band pass of 10 kilocycles width, in order that the sidebands may be passed intact, thereby preserving the tone quality of the set.

Dr. Robinson, working on the basis that modulation constitutes a variation in amplitude of the carrier frequency, and that the side bands are a by-product and unnecessary in the receiver, has inserted a quartz crystal in the last radio frequency circuit of a conventional super-heterodyne. This crystal is arranged in a bridge circuit so that energy reaching the grid of the following tube can come through the crystal only. This crystal passes a frequency band not more than 50 cycles in width. And yet, this set possesses tone quality on a par with our best receivers! It was recently demonstrated to the engineers of the Federal Radio Commission, Bureau of Standards and others in this country. While it is a high priced laboratory experiment at present, it has great promise. Selectivity on the order of 50 cycles or less would not only solve the interference problem, make possible the operation of thousands of stations in the present band without interference, but also meet television's greatest obstacle. The name "Stenode Radiostat" means "narrow-path radio device," and it is surely well named.



Robinson's Stenode Radiostat Circuit

Just a Few Rambling Thoughts By TED OSBORNE . . . KHJ

Here's the low-down on Ted Osborne, whose column will appear each month in RADIO DOINGS and whose presence on KHJ's Hallelujah Hour adds greatly to the fun.

Born February 29th, 1847, in a Walla Walla Walla Walla (vamp 'til ready), Washington, tenement house, just under the large X marking the spot. Was expelled from High school (1861-1865) and flunked out of the University of Oregon (1916). Later president (1879-1893.) Has never attended Harvard and numerous other Universities.

Collaborated with Henry Wadsworth Longfellow on "Hiawatha;" completed by Longfellow.



Ted Osborne

Wrote "The Lady of the Lake," by Sir Walter Scott. "The Vision of Sir Launfaul," by Tennyson, and numerous other short poems. Has written Greta Garbo four times, but all manuscripts have been returned unopened.

Invented the automobile in 1892, the electric light in 1877 and the cotton gin in 1918. (Book of recipes on request.) Invented the radio in 1907. Wounded four times, three of them fatally. Took up writing instead of politics as a profession, for, as he says, he would rather be trite than president.

Has won 17 beauty contests, plays the typewriter entirely by ear, is 104 years old and never uses tobacco except for smoking purposes.

Th' man who keeps his friends is th' one who never gives 'em away.

Marriage is a funny proposition; it makes some men settle down an' enables others t' settle up.

Poverty ain't no disgrace, but just now I can't think of any other argument in favor of it.

A man's pleasures, like his life insurance, cost more th' older he gets.

An optimist is a feller who thinks that a kick in th' pants is meant t' send him forward.

Th' feller who thinks he loses his temper is just kiddin' himself; he only displays it.

To th' average man, livin' within his income is a good deal like tryin' t' dress in an upper berth.

Sometimes little things have a big effect on humanity. If Cleopatra had been cross-eyed, th' history o' th' whole world might o' been different.

Honest confession is good for th' soul, but it's bad for th' reputation.

A woman ain't never satisfied 'til she's got a man for herself; an' when she has, she ain't never satisfied neither.

Th' unwritten law is used so much nowadays, it might just as well be written.

Money doesn't always make happiness. A man with \$10,000,000 isn't any happier than a man with only \$9,000,000.

If your butcher gives you short-weight for your money, return good for evil; give him a long wait for his.

When a girl's heart is broken, she usually spends th' rest of her life distributing th' pieces.



CHAS. W. HAMP

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Index to Features

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	0 -
Dance Orchestras	30
Symphony, Concert and Salon Orchestras	30
Travelogues and Book Reviews	31
Foreign Language Lessons	31
Religious Services and Talks	31
Educational Features	32
Organ Recitals	32
News, Stock Market Reports, Weather	33
Programs for the Housewife	33
Sport Talks	34
Bridge Lessons	34
Plays and Dramatic Readings	34
For the Youngster	34
National Broadcasting Co	35
Columbia Broadcasting Co	37
United Broadcasting Co.	38
S S S S S S S S S S S S S S S S S S S	

Dance Orchestras

IN SOUTHERN CALIFORNIA

KFI—11-12 PM. Hotel St. Francis Dance Orchestra (ex. Sat.)

KHJ—10-12 PM. Earl Burtnett's Biltmore Hotel Orchestra.

KFWB—10-10:30 PM. Al Newman's Orch. from Roosevelt Hotel.

10:30-11:00 PM. George Olsen's Orch. from Club Olsen.

KFVD—11-12 PM. Louie Armstrong's Cotton Club Orchestra.

KNX—11-12 PM. Gus Arnheim's Cocoanut Grove Orch.

KGFJ—6-7 PM. Glenn Edmund's Elks Club Orchestra.

10-11 PM. Mosby's Dixieland Blue Blowers from Apex.

11-12 PM. Lou Hilliker's Rainbow Gardens Orchestra.

12-1 PM. Mosby's Dixieland Blue Blowers from Apex.

12-1 PM. Mosby's Dixieland Blue Blowers.

KFOX—10-11 PM. Topsy's Southern Home Orchestra.

11-30-12 PM. Silver Slipper Orchestra.

11-30-12 PM. Silver Slipper Orchestra.

KHJ—10:10-11 PM. Val Valente's Music from Roof Garden.

KFWB—78:30-9 PM. Al Newman's Hotel Roosevelt Orchestra.

10-10:30 PM. George Olsen's Orchestra.

KGFJ—10:30-11 PM. Mosby's Dixieland Blue Blowers.

12-1 AM. Mosby's Dixieland Blue Blowers.

KGFR—11-11:30 PM. Frick English and his Orchestra.

KFOX—11-1 AM. Toopsy's Cafe Orchestra.

KFOX—11-1 AM. Toopsy's Cafe Orchestra.

KFOX—11-1 AM. Toopsy's Cafe Orchestra.

IN NORTHERN CALIFORNIA

KFRC—10:20-11 PM. Anson Week's Hotel Mark Hopkins Orch.

(Ex. Tuesday.)

10:20 PM. Val Valente's Orchestra.

11-12 PM. Monday, Wednesday and Saturday. Earl Burtnett's Orchestra from Billmore.

11-12 PM. Thursday. Val Valente's Orchestra.

KPO 16-11 PM. Jess Stafford's Dance Orchestra.

KYA—11-12 PM. Dixie Blue Blower's Band.

IN THE NORTHWEST

KGW—11-12 PM. Thursday. Val Valente's Orchestra.

10-11 PM. Wednesday Multnomah Club Dance.

KVI—11-12 PM. Monday, Wednesday and Saturday. Earl Burtnet's Biltmore Orchestra.

10-11 PM. Wednesday Multnomah Club Dance.

KVI—11-12 PM. Monday, Wednesday and Saturday. Earl Burtnet's Biltmore Orchestra.

10-11 PM. Wednesday and Friday, Anson Weck's Hotel Mark Hopkins Orchestra.

10-11 PM. Wednesday and Saturday. Wike Doty's Orch.

10-11 PM. Wednesday and Friday, Val Valente's Music. IN SOUTHERN CALIFORNIA

Symphony, Concert and Salon Orchestras

Columbia Broadcasting Co.—12:00 Noon. New York Philharmonic Symphony Concert with Arturo Toscanini, conductor. KLZ KDYL KVI KFPY KHJ KFRC. (Sunday.)

11:00 AM. Columbia Little Symphony. (Wed.) KLZ KVI KFPY KHJ.

12:00 Noon. Columbia Salon Orch. (Mon., Tues. and Wed.) KLZ KDYL KVI KOL KFPY

5:30 PM. Toscha Seidel and Concert Orch. (Wed.) KLZ KFRC.

1:00 PM. Columbia Salon Orch. (Fri.) KLZ KDYL KVI

KFRC.

1:00 PM. Columbia Salon Orch. (Fri.) KLZ KDYL KVI KFPY KHJ KFRC.

8:30 PM. Romanelli and His King Edward Orchestra from Toronto. (Fri.) KDYL KOL KFPY KLZ

11:30 AM. Co'umbia Salon Orch. (Sat.) KLZ KDYL KVI 8:30 PM. Romanelli and His King Edward Orchestra

National Broadcasting Co.-4:00 PM. Sunday Concert. KGW KFSD.

10:15 PM. Concert Jewels. (Sun.) KGO KECA KOA
2:30 PM. The Metropolitans. (Mon.) KGO KGW KECA.
8:00 PM. Rudy Seiger's Shell Symphonists. (Mon.) KGW
KHQ KOMO.

KHQ KOMO.

10:00 PM. National Concert Orches. (Tues.) KGW KOA.

7:30 PM. Standard Symphony Hour with Los Angeles Philharmonic Orchestra alternating with the San Francisco Symphony Orch. (Thurs.) KGO KHQ KOMO KGW KFI.

5:00 PM. Cities Service Concert Orch. (Fri.) KGO KHQ KOMO KGW KECA.

6:00 PM. General Electric Orches., Walter Damrosch, director. (Sat.) KGO KHQ KOMO KGW KFI KFSD KTAR.

United Broadcasting Co.-7:00 PM. Concert Orchestra. (Daily Ex. Fri.) UBC affiliated stations.

KFSD-4:00 PM. Sunday Concert NBC.

6:30 PM. Concert. (Sun.)
6:30 PM. Concert Ensemble. (Wed.)
6:00 PM. General Electric Orch. NBC. (Sat.)

KFI-9:50 AM. Pryor Moore's Orch. and Soloists. (Sun.)

50 AM. Pryor Moore's Orch. and Soloists. (Sun.)
10:00 PM. Slumber Hour. (Sun.)
7:30 PM. Los Caballeros Orch. and Soloists. (Mon.)
8:00 PM. Shell Symphonists. (Mon.)
9:30 PM. Concert Orch. (Nightly Ex. Sun., Thurs., at 10.)
7:30 PM. Los Angeles Philharmonic and San Francisco Symphony Orch. alternating. (Thurs.)
9:30 PM. The Vagabonds. (Thurs.)
6:00 PM. General Electric Concert (Orch. (Sat.)

6:00 PM. General Electric Concert Orch. (Sat.)

KIIJ—9:00 AM. Sunday Morning Concert. (Sun.)

12:00 Noon. N. Y. Philharmonic Symphony Orch. (Sun.)

12:00 Noon. Columbia Salon Orch. (Thurs.)

11:15 AM. Columbia Salon Orch. (Wed.)

11:30 AM. Columbia Salon Orch. (Sat.)

KFWB—9:00 PM. Liborious Hauptmann's Orch. UBC. (Sun.)

6:30 PM. Salon Orch. (Wed.)

8:30 PM. KFWB Salon Orch. and Soloist. (Wed.)

8:00 PM. Concert Orch. (Fri.)

8:00 PM. KFWB Concert Orch. and Soloists. (Sat.)

KNX—8:00 PM. Scheu Concert Orch. (Tues.)

12:00 Noon. KNX Ensemble. (Sat.)

KGFJ—12:00 Noon. KGFJ Concert Orch. (Sun.)

1:00 PM. Concert Ensemble. (Sun.)

8:30 PM. KGFJ Salon Orch. with Allan Fairchild. (Daily Ex. Sun.)

KGFJ—12:00 Noon, KGFJ Concert Orch. (Sun.)

1:00 PM. Concert Ensemble. (Sun.)

8:30 PM. KGFJ Salon Orch. with Allan Fairchild. (Daily Ex. Sun.)

KECA—12:00 Noon, Luncheon Concert. (Daily Ex. Sun.)

9:00 PM. KECA String Ensemble. (Mon.)

2:00 PM. The Vagabonds NBC. (Sat.)

KTAB—7:00 PM. UBC Concert Orch. (Daily Ex. Tues.)

3:00 PM. KTAB Melody Masters. (Mon. and Sat. 3:30.)

KFRC—9:00 PM. "Home, Sweet Home Concert." (Sun.)

12:00 Noon, N. Y. Philharmonic Orch.

3:30 PM. Salon Orch. and Soloists. (Sun.)

6:30 PM. Cadillac-LaSalle Concert and Soloists. (Sun.)

5:30 PM. Toscha Seidel and Concert Orch. (Wed.)

5:30 PM. Toscha Seidel and Concert Orch. (Wed.)

5:30 PM. Concert Orch. (Fri.)

8:30 PM. Romanelli and His King Edward Orch. (Fri.)

KPO—8:00 PM. Shell Symphonists. (Mon.)

9:00 PM. Shell Symphonists. (Mon.)

9:00 PM. KPO Melody Masters. (Mon. and Fri.)

NORTHWESTERN STATES

KGW—4:00 PM. Sunday Concert NBC. (Sun.)

8:00 PM. Shell Symphonists. (Mon.)

3:00 PM. Concert Music. (Ex. Mon.)

KONO—4:00 PM. Sunday Concert NBC. (Sun.)

8:00 PM. Shell Symphonists. (Mon.)

10:30 PM. Concert Orch. (Sun.)

1:30 AM and 1:00 PM. Concert Orch. on Monday.

12:30, 3:15 and 6:00 PM. Concert Orch. on Tuesday.

11:35 AM, 2:15 and 6:00 PM. Concert Orch. on Thursday.

2:00 PM. General Electric Orch. NBC. (Sat.)

KJR—8:00 PM. Damski's Imperial Grand Orch. (Sun.)

4:00 PM. Damski's Imperial Grand Orch. (Sun.)

8:00 PM. Damski's Imperial Grand Orch. (Sun.)

4:00 PM. Damski's Nood-Wind Ensemble. (Tues.)

8:00 PM. Henry Damski's Neapolitans. (Wed.)

KEX—8:00 PM. Henry Damski's Neapolitans. (Wed.)

8:00 PM. Henry Damski's Neapolitans. (Wed.)

8:00 PM. Henry Damski's Neapolitans. (Wed.)

8:00 PM. Henri Damski's Neapolitans. (Wed.)

8:00 PM. Henri Damski's Nood-Wind Ensemble. (Tues.)

9:00 PM. Henri Damski's Neapolitans. (Wed.)

8:00 PM. Northwest Salon Orch. (Thurs.)

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Concert and Salon Orchestra

KGA-8:00 PM. Henri Damski's Orch. (Sun.) 4:00 PM. Concert Ensemble. (Sun.) 9:00 PM. Damski's Ensemble. (Tues.) 9:00 PM. Damski's Neapolitan Orch. (Wed.) 8:00 PM. Northwest Salon Orch. (Thurs.)

KVI-12:00 Noon. Columbia Salon Orchestra. (Ex. Fri., Sat. at 11:30 AM.)
12:00 Noon. N. Y. Philharmonic Orchestra. (Sun.)

KOL-12:00 Noon. Columbia Salon Orch. (Ex. Fri. and Sat.)

KSL-6:00 PM. General Electric Program with Walter Damrosch. (Saturday.)

KOA-9:00 PM. Luncheon Ensemble. (Ex. Fri.)

KDYL-(See Columbia Broadcasting Co.)

Sport Talks (Subject to Change During Jan.)

KMTR—7:00 PM. Herald Sport Talks. (Thurs. only.) 7:00 PM. Football Results. (Sat. only.)

KFSD-7:30 PM. NBC, Grantland Rice. (Wed. only.)

KNX-9:45 PM. Broadcasting Main Events from Hollywood Legion Stadium.

KHJ-9:30 PM. Sports Edition of the Air. (Thurs. only.)

KFWH-7:30 PM. R. W. Shirey's Sport Talks. (Mon. and Fri.) 8:30 PM. Mark Kelly's Examiner Sport Period. 9:30 PM. Olympic Auditorium Event. (Tues. only.)

KGER-9:30 PM. Olympic Auditorium event. (Tues. only.) 9:30 PM. Wilmington Bowl. (Wed. only.)

KECA-7:30 PM. NBC, Grantland Rice Interview. (Wed. only.)

KFRC—6:45 PM. Pop Warner's Sport Talks. (Wed. only.)
6:00 PM. Bobs, Noted Sports Authority. (Thurs. only.)
6:45 PM. Pat Frayne's Sports Talk. (Friday only.)
8:45 PM. Dink Templeton and Brick Morse discuss forthcoming football events.

KHQ-5:00 PM. Sport News. (Wed. only.) 7:30 PM. NBC, Grantland Rice's "Topnotchers." (Wed.

5:15 PM. Sport News. (Mon. only.)

KGW-7:30 PM. Grantland Rice's Sport Program, NBC. (Wed. only.)

KMO-9:00 PM. Wrestling Match from Greenwich Coliseum. (Tues. only.)

KJR-5:00 PM. Ken Stuart's Sport Talk. (Daily.)

KEX-5:00 PM. Ken Stuart's Sport Talk.

KGA-5:00 I'M. Ken Stuart's Sport Talk. 9:30 PM. Wrestling Bouts.

KOA-7:30 PM. NBC, Grantland Rice Sport Talk. (Wed. only.)

KSL-7:30 PM. Grantland Rice Sportologues. (Wed. only.)

Travelogues and Book Reviews

WF1-2:30 PM. Winnie Fields Moore, the Nomad Novelist. (Mon.. Wed. and Fri.)
3:00 PM. Los Angeles Public Library Book Reviews.
(Monday.)
12:30 PM. "Seeing Southern California." (Tues. and Fri.)
8:30 PM. Tom Terris, "The Vagabond Movie Director." (Tuesday.)

KHJ-3:30 PM. Margaret Macdonald's Book Review for Jones Book Store. (Wed.) 3:45 PM. Los Angeles Public Library Book Review. 5:00 PM. "Seeing Southern California." (Wed.)

KNX-5:00 PM. Travelogue, (Daily Ex. Sun.)

KTBI-1:30 AM. Book Review, Prof. Howard W. Kellogg. KECA-7:00 PM. Winnie Fields Moore, Nomad Novelist. KTAH-4:00 PM. Books and Drama with Samuel B. Dickson.

(Sunday.) 8:00 I'M. International Adventures with Col. Ed. I'.

Bailey. (Mon.) KFRC—3:15 PM. The Observer About New Books, Monroe Upton.

Light and Comic Opera

Columbia Broadcasting System—2:00 PM. Light Opera Gems.

(Fri.) KLZ KDYL.

9:00 PM. "Folgeria," Don Lee Chain.

United Broadcasting Co.—7:00 PM. Opera Sketches. (Wed.) KGB

KFWB-KTM KTAB KORE KXL KMED KXA KVOS.

KILJ—7:00 PM. "On With the Show." (Wed.)

9:00 PM. "Folgeria," Serial Comic Opera of the Air."

(Thurs)

(Thurs.) KFRC-9:00 PM. "Folgeria." (Thurs.)

Foreign Language Lessons

KFSD—3:30 PM. French Lessons. (Teus. and Thurs.)
KFI—11:45 AM. French Lessons by Annette Doherty. (Mon. and Wed.)
KFI—12:45 PM. German Lessons by Annette Doherty.
KFI—11:45 AM. English Lessons by Ayrta Z. Drew. (Wed. and Friday.)
KFI—9:30 PM. Spanish Lessons. (Thurs. only.)
KECA—3:15 PM. German Lesson, by Annette Doherty (Thurs. only.)

only.)
4:00 PM. Alexander Bevani, on the Italian language.
KFRC—2:45 PM. French Lessons by Dr. Thatcher Clark. (

only.)
KVI-2:45 PM. French Lessons, CBS. (Sat. only.)

Religious Services and Talks for Sunday

National Broadcasting Company—12:00 Noon. National Youth Concert KGO KHQ KOMO KGW KPO 1:00 PM. Dr. S. Parkes Cadman KGO KHQ KOMO KGW KPO.

2:00 PM. National Vespers KGO KHQ KOMO KGW KPO KTAR.

3:00 PM. Catholic Hour KHQ KOMO KGW KECA KTAR.

7:45 PM. Seth Parker's Sunday Evenings.

Columbia Broadcasting Co.-11:00 AM, Cathedral Hour KLZ KVI

KFSD-7:45 PM. Sunday Evenings at Seth Parker's.

KFSD—7:45 PM. Sunday Evenings at Seth Parker's.
KFI—10:50 AM. Temple Baptist Church.
4:36 PM. Lelia Castberg, "Advanced Thoughts."
KMPC—3:00 PM. Church of the Latter Day Saints.
KHJ—11:00 AM. First M. E. Church of Los Angeles.
5:30 PM. Rabbi Magnin.
KNV—9:00 AM. Scriptural Research Bureau.
10:00 AM. Inspirational Bible Recordings.
11:00 AM. First Presbyterian Church of Hollywood.
1:00 PM. Watchtower I. B. S. A. Program.
4:30 PM. Dr. John Mathews; First Radio Church of the Air. Air. 6:30 PM. Dr. Theo Curtis Abel of Hollywood Humanist

Air.
6:30 PM. Dr. Theo Curtis Abel of Hollywood Humanist Society.
8:00 PM. First Presbyterian Church of Hollywood.
8:00 AM. Daily Except Sunday—Inspirational Talk and Morning Prayer.
6:30 PM. Saturday—Announcement of leading Los Angeles Church Services.

KFSG—8:00 AM. Sabbath Sunrise Servicc.
10:30 AM. Sunday Morning.
2:30 PM. Dispensational Message.
6:30 PM. Evangelistic Service.
7:00 AM. Daily Ex. Sunday. Family Altar Service.
2:30 PM. Wednesday and 7:30 Saturday. Divine Healing.
7:30 PM. Thurs. Baptismal Service.
3:00 PM. Thurs. Baptismal Service.
3:00 PM. Thurs. and Fri. Bethesada Hour.

KGEF—9:30 AM. Radio Sunday School.
10:45 AM. Trinity Church Service.
5:00 PM. Vesper Hour.
7:00 PM. Trinity Church Service.
9:00 PM. Tues. South Park Christian Church Bereans.
9:30 PM. Tues. Torrance Methodist Church.
7:00 PM. Wed. Conrey Bible Class.
7:45 PM. Union Rescue Mission.

KTBI—8:00 AM. Church of the Open Door.

KTBI-8:00 AM. Church of the Open Door.
8:15 AM. Daily Except Sunday. Devotional Service.
9:15 AM. Daily Except Sunday. Gospel Song Requests.
2:00 PM. Visiting Pastors.
1:00 PM. Devotional Bible Study. (Ex. Mon. and Sun.)
10:30 AM. Bible Study.

KFOX-11:00 AM. St. Luke's Episcopal Church. 8:00 PM. First Church of Christ, Scientist. KECA-10:50 AM. Third Church of Christ, Scientist. 12:00 Noon. National Youth Conference. 3:00 PM. Catholic Hour.

NORTHERN CALIFORNIA

KTAH—10:00 AM. Bible Class from 10th Ave. Baptist Church.
11:00 AM. Church Services from 10th Ave. Baptist Church
1:00 PM. Church of the Latter Day Saints,
7:30 PM. Church Services.

KPO—10:30 AM. Interdenominational and Non-sectarian Church

KPO—10:30 AM. Interdenominational and Non-sectarian Ch Services.

12:00 Noon. National Youth Conference.
1:00 PM. S. Parkes Cadman Cathedral Hour.
2:00 FM. National Religious Services.
11:59 AM. Daily Except Sunday. Scripture Readings.

KWFI—8:00 PM. Second Church of Christ, Scientist.

KROW—10:15 AM. Watchtower Program.
1:00 PM. Watchtower Program.
6:00 PM. Watchtower Program.
6:00 PM. Watchtower Program.
KQW—10:15 AM. Sunday School Lessons.
11:00 AM. Morning Services, First Baptist Church.
7:30 PM. Evening Services.

NORTHWESTERN STATES

NORTHWESTERN STATES

KTAH—10:30 AM. Old St. Mary's Church Services.

KGW—10:00 AM. International Bible Students.

12:00 Noon. National Youth Conference.

7:45 PM. Seth Parker's Program.

KOMO—11:00 AM. First Unitarian Church.

11:15 AM. Plymouth Congregational Church.

12:15 PM. National Youth Conference.

1:00 PM. S. Parkes Cadman.

2:00 PM. National Religious Service.

3:00 PM. Catholic Service.

8:00 PM. First Church of Christ, Scientist.

KJR—10:00 AM. International Bible Students Association.

INTERMOTATIN STATES

KSL—9:15 AM. International Bible Students.

12:00 Noon. National Youth Conference.

7:15 PM. First Presbyterian Church.

8:15 PM. L. D. S. Service with Great Mormon Organ.

KOA—10:15 AM. First Church of Christ, Scientist, Services.

12:00 Noon. National Youth Conference.

1:00 PM. Dr. S. Parkes Cadman.

3:00 PM. Catholic Hour.

7:45 PM. Sunday Evening at Seth Parker's.

ARIZONA

KTAR—10:00 AM. First Methodist Church Services.
2:00 PM. National Vespers.
3:00 PM. Catholic Hour.
4:15 PM. Church of Jesus Christ of Latter Day Saints.
8:00 PM. Sunday at Seth Parker's.

Educational Features

(National and International Events)

KFSD-5:15 PM. Fifteen Minutes in the Nation's Capital. (Mon. only.) 4:45 PM. Back of the News in Washington, NBC.

KF1-3:00 PM. Better America Federation Speaker. (Thurs. only.) 11:00 PM. Standard School Broadcast. (Thurs. only.)

KMPC-3:00 PM. USC Lectures. (Mon. and Wed.) 9:00 PM. S. C. Lectures. (Mon. and Wed.)

KHJ-5:00 PM. The World's Business. (Sunday.)
1:30 PM. The Times Forum. (Daily.)
3:00 PM. Columbia Educational Features. (Thurs. only.)
1:00 PM. University of the West. (Fri. only.)
3:15 PM. Dr. Walter Hertzog's School Program. (Fri.

only.) only.)
3:45 PM. Council of International Relations. (Fri. only.)
4:15 PM. Romance of American Industry. (Sat. only.)
6:30 PM. National Radio Forum. (Sat. only.)
11:30 AM. Columbia School of the Air. (Mon., Wed., and Friday.)

KNA-7:45 PM. Dr. Mars Baumgardt Talking of "Popular Science." (Wed. only.)
3:30 PM. Federation of Women's Clubs. (Fri. only.)

KGFJ-8:30 AM. Dr. Wiseman's Talk. 11:30 AM. Spanish Program.

KECA-12:00 PM. National Youth Conference, NBC. (Sun. only.) 11:30 AM. California Federation of Women's Clubs. (Mon. only.)

4:15 PM. James G. McDonald, "The World Today." (Mon. only.)

5:15 PM. Fifteen Minutes in the Nation's Capital.

(Mon. only.) 4:15 PM. Laws That Safeguard Society, NBC. (Tues. only.)

NORTHERN CALIFORNIA

KTAB-4:00 PM. Short Story Course, Samuel B. Dickson. (Mon. only.) 12:30 PM. Latin-American Program.

KFRC-5:00 PM. The World's Business. (Sun. only.)
11:30 AM. American School of the Air. (Ex. Sat.)
3:30 PM. Something About Everything. (Mon. and Wed.

only.) 4:00 PM. Current Events, H. V. Kaltenborn, CBS.

4:00 PM. Current Events, H. V. Kaltenborn, CBS.
(Mon. only.)
4:00 PM. The Political Situation in Washington Tonight. (Tues. only.)
3:00 PM. Columbia Educational Features. (Fri. only.)
4:15 PM. Columbia Educational Features. (Sat. only.)
2:45 PM. Columbia Educational Features. (Sat. only.)
6:00 PM. National Radio Forum from Washington.
(Sat. only.)

(Sat. only.)

KPO-4:45 PM. California State Chamber of Commerce Talk.
(Mon. only.)
5:15 PM. Federal Business Association Talk. (Tues.

only.) KFW1-7:00 PM. Judge Matthew Brady on Crime Prevention.

(Mon. only.) 7:00 PM. Rita Murray's Investment Talk. (Thurs. only.) KQW-6:00 PM. Farm Topic Discussions. (Ex. Sat.)

KYA-10:15 AM. R. B. Gorton Educational Talk. (Sun. only.) 8:00 PM. Judge Mathew Brady. (Fri. only.) 8:00 PM. R. B. Gorton on Insurance. (Wed. only.)

NORTHWESTERN STATES

KIIQ-12:00 PM. National Youth Conference, NBC. (Sun. only.) 5:00 PM. In the Nation's Capital. (Mon. only.)

KGW-12:00 Noon, National Youth Conference, NBC. (Sun. only.) 11:00 AM. Standard School Broadcast, NBC. (Thurs. only.)

KVI—9:00 AM. Jewish Art Program. CBS. (Sun. only.)
9:30 AM. London Broadcasts, CBS.
10:30 AM. Conclave of the Nations, CBS.
11:30 AM. American School of the Air.
4:00 PM. Current Events, CBS. (Mon. only.)
4:00 PM. The Political Situation in Washington Tonight.
(Tues. only.)

KOMO-12:00 PM. National Youth Conference, NBC. (Sun. only.) 4:15 PM. Laws That Safeguard Society, NBC. (Tues.

only.)
11:00 PM. Standard School Broadcast. (Thurs. only.)
1:30 PM. Profile Coast School of the Air. (Mon. and Wednesday.)

MOUNTAIN STATES

KOA-9:15 AM. National Oratorio Society. (Sun. only.)
12:00 PM. National Youth Conference. (Sun. only.)
1:00 PM. Dr. S. Parkes Cadman from New York.
(Sun. only.)
4:15 PM. The World Today. (Mon. only.)
4:15 PM. Laws That Safeguard Society. (Tues.)

KSL- 12:15 PM. National Youth Conference. (Sun. only.)

KDYL—9:30 AM. CBS London Broadcasts. (Sun. only.)
5:00 PM. The World's Business. (Sun. only.)
2:15 PM. Adventures in Words. (Tues. only.)
12:45 PM. Columbia Educational Features, CBS.
(Fri. only.)

Organ Concerts

National Broadcasting Co.-6:00 PM. Gold Medal Organist. (Wednesday.)

Columbia Broadcasting System—7:00 PM. Jesse Crawford, Royal's Poet of the organ over KDYL KOL KOIN KHJ KFRC. (Sun. only.)

12:30 PM—Ann Leaf at the Organ over KLZ KVI. (Mon. Thurs.)
6:00 PM—Gold Medal Fast Freight Program KLZ KDYL KOL KOIN KHJ KFRC KFBK. (Wed.)

1:00 PM—Ann Leaf at the Organ KLZ KVI KOL KFRC (Sat.)

KMTR-5:15 PM Harold Curtis from the Egyptian Theatre.

KFSD-2:30 PM. Organ Recital from Balboa Park. (Ex. Mon.)

KFI-3:30 PM. Aeolian Organ Recital. (Sun. only.)

KELW-12:30 PM. Ray Metcalf at the Organ.

KMPC-9:00 PM. Organ Recital. (Thurs. and Fri.)

KTM-3:00 PM. Dorothy Dee's Organ Recital.

KHJ—7:00 PM. Jesse Crawford, Poet of the Organ. (Sun. only.)

11:00 PM. Leigh Harline at the Organ. (Sun.)

12:00 PM. Leigh Harline at the Organ. (Nightly.)

11:00 AM. Nell Larson at the Organ. (Mon.)

12:45 PM. Ann Leaf CBS. (Thurs.)

5:00 PM. Organ Recital. (Thurs.)

4:30 PM. Nell Larson. (Wed.)

12:45 PM. Ann Leaf. (Sat.)

KFSG-10:00 PM. Organ Recital. (Sun.) 11:00 AM. Organ Recital. (Daily Ex. Sun. and Mon.)

KFWB-10:00 AM. Wade Hamilton at the Organ. (Thurs.)

KFWB—10:00 AM. Wade Hamilton at the Organ. (Thurs.)

KNX—6:00 PM. Wesley Tourtelotte, noted organist. (Daily.)

KFOX—10:30 AM. Organ Recital, Vera Graham.

3:30 PM. Organ Recital, Vera Graham.

10:00 AM. Angelus Abbey Organ Recital. (Sun.)

KGFJ—10:00 AM. Archie Fritz. (Sun.)

12:00 PM. Organ Recital.

4:00 PM. Organ Recital by Archie Fritz.

10:30 PM. Organ Melodies, Gilbert Jaffy, violinist.

KFVD—2:00 PM. Organ Recital by J. Newton Yates. (Sun.)

10:00 PM. J. Newton Yates, organist.

12:00 PM. Ballads, Old and New, by J. Newton Yates.

KTBI—6:30 PM. Organ Program. (Sun.)

9:15 PM. Organ Program. (Wed. and Fri.)

KGER—11:00 PM. Dick Dixon at the Organ.

KECA—8:30 AM. NBC Organ Recital. (Sun.)

NORTHERN CALIFORNIA

NORTHERN CALIFORNIA

KTAB—7:30 PM. Alice Blue at the Organ. (Ex. Sat. and Sun.)

KFRC—8:90 AM. "Good Morning Organ Recital." (Sun.)

3:90 PM. Organ Recital. (Sun.)

7:90 PM. Jesse Crawford. (Sun.)

11:90 PM. Organ Recital. (Sun.)

6:90 PM. Gold Medal Organist, CBS. (Wed.)

1:95 PM. Ann Leaf at the Organ. (Sat.)

KPO—3:90 PM. Organ Recital. (Sun.)

3:15 PM. Mormon Tabernacle Organ. (Daily Ex. Monand Sat.)

KVA—10:15 PM. Organ Recital, Dollo Sargent, organist.

NORTHWESTERN STATES

KGW—9:30 AM. Organ Recital. (Sun.)

11:00 AM. Organ Recital. (Sun.)

12:00 PM. Organ Recital. (Mon.)

11:45 PM. Organ Recital. (Wed.)

11:30 PM. Organ Recital. (Fri.)

12:30 PM. Organ Recital. (Sat.)

KMO—10:30 AM. Organ Recital from Fox Broadway.

KOMO—7:00 AM. Organ Recital. (Ex. Sun.)

12:00 Midnight. Fox 5th Ave. Theatre Organ Recital. (Ex. Sunday.) Sunday.)

NJR—7:45 AM. Organ Concert. (Ex. Sun.)

2:30 PM. Organ Concert. (Ex. Sat. and Sun.)

4:00 PM. Organ Recital. (Ex. Sun., Mon. and Tues.)

KEX—8:00 AM. Organ Concert.

2:30 PM. Organ Concert. (Ex. Sun.)

KGA—8:00 AM. Organ Concert.

2:30 PM. Organ Concert. (Sun. at 2:00 PM.; Sat. at 4:00 PM.)

KVI—8:00 AM. Organ Recital. (Sun.)

12:30 PM. Ann Leaf at the Organ. (Mon.)

12:00 Midnight. RKO Organ Recital. (Mon.)

11:30 AM. Ann Leaf at the Organ. (Tues.)

12:30 PM. Ann Leaf at the Organ. (Sat.)

KOL—6:00 PM. Gold Medal Organist. (Wed.)

7:00 PM. Jesse Crawford. (Sun.)

12:30 PM. Ann Leaf at the Organ. (Mon.)

12:30 PM. Ann Leaf at the Organ. (Sat.)

KOL—6:00 AM. Organ, Daily on "Hallelujah Hour."

INTERMOUNTAIN STATES

INTERMOUNTAIN STATES

INTERMOUNTAIN STATES

KOA—8:30 AM. Organ Melodies. (Mon.)

12:00 PM. Organ Program. (Mon.)

11:15 AM. Organ Recital. (Wed. and Fri.)

7:15 AM. Organ Melodies. (Fri.)

KSL—8:15 PM. Mormon Tabernacle Great Organ. (Sun.)

9:00 PM. Organ Melodies. (Tues. and Thurs.)

11:00 PM. Organ Concert. (Wed.)

KDYL—7:00 AM. Organ Vignettes. (Daily.)

11:30 AM. Ann Leaf at the Organ. (Tues.)

6:00 PM. Gold Medal Organist. (Wed.)

12:30 PM. Ann Leaf at the Organ. (Thurs.)

10:15 PM. Organ Melodies. (Fri. and Sat.)

ARIZONA

KTAB-7:30 AM, Pipe Organ Recital. (Da 12:00 Noon, Organ Recital. (Sun.)

News, Stock Market Reports, Weather

SOUTHERN CALIFORNIA

KMTR-12 PM. World in Review. 5:45 PM. Reporter of the Air.

KFSD-5:45 PM. San Diego Union News Report.

KFI-10 AM. Wall Street Financial News.
12 PM. U. C. & U. S. Dept. of Agriculture.
12:15 PM. Federal and State Market Reports.
4 PM. KFI-KECA Editorial Review.
5:45 PM. Closing Stock Market Reports.

KMPC-12 PM. Livestock Report.

KHJ-12:30 PM. World-Wide News (L.A. Times.) 4:45 PM. World-Wide News. 10:00 PM. World-Wide News.

15 PM. Monday. Lost and Found Reports. 3:25 PM. Tuesday. Lost and Found Reports. 3:00 PM. Wednesday and Friday. Lost and Found Reports. 3:30 PM. Thursday, Lost and Found Reports.
1:25 PM. Saturday, Lost and Found Reports.
8:00 PM. Nightly Frost Warnings for Citrus Growers.

KGFJ-5:00 PM. Market Reports.

KFXM-11:15 AM. News Report. 6:15 PM. Los Angeles Record News Report.

KFON—7:15 AM. Early News Report. 11:30 AM. Press Telegram News Report. 4:00 PM. Press Telegram News Report.

KGFR -4:00 PM. News Brevities.

KPSN-8:00 AM. World Wide News. 12:30 PM. World Wide News. 6:00 PM. World Wide News.

KECA-10:30 PM. KFI-KECA Editorial Review.

NORTHERN CALIFORNIA

KFRC— 7:30 AM. N. Y. Stock Quotations.
11:25 AM. S. F. Call-Bulletin News Items.
1:00 PM. Closing Stock Market Reports.
1:05 PM. S. F. Call-Bulletin News Items.
5:50 PM. S. F. Call-Bulletin News Items.

KPO-1:50 PM. Ye Towne Crier. 5:45 PM. News Digest with Scotty Mortland.

KQW-9:30 AM. Weather Report.
12:30 PM. Market Report.
6:00 PM. U. S. D. A. Farm Flashes.
6:30 PM. S. F. Market Place.
7:00 PM. Farm Bureau Radio News.
7:15 PM. News Dispatches.

KYA-1:30 PM. News casting 6:45 PM. Delivery of Stock Yard Prices and Quotations.

NORTHWEST

KGW-1:00 PM. Town Crier,

KMO-10:00 AM. Town Crier. 11:45 AM. News Casting.

KOMO-12 PM. Farm Talk; Grain and Food Reports. 10:45 PM. News Flashes.

KJR-7:40 AM. Stock Reports. 12 PM. World in Review. 3:30 PM. News Casting. 5:30 PM. Market Reports.

KEX-7:00 AM. Oregon Journal News. 12:00 PM. Weather Reports. 11:30 PM. Police Reports.

KGA-6:45 AM. News. 12:00 PM. World in Review. 3:00 PM. News Casting.

MOUNTAIN STATES

11:30 AM. Monday, weather, stocks, markets, livestock.

(P. S. T.)

10:50 AM. Tuesday, weather, stocks, markets, livestock.

11:00 AM. Wednesday and Thursday, weather, stocks, markets, livestock.

10:55 AM. Friday, weather, stocks, markets, livestock.

10:45 AM. Saturday, weather, stocks, markets, livestock.

5:00 PM. Monday & Wednesday, weather, stocks, etc.

3:15 PM. Tuesday, stocks, market reports, etc.

3:45 PM. Thursday and Friday, stocks, weather, etc.

4:30 PM. Saturday, stocks, market reports, etc.

KI-7:20 AM. N. Y. stock market report and market letter. 11:20 AM. News Casting. 3:30 PM. Ye Olde Towne Crier.

ARIZONA

KTAR—8:45 AM. Radio Newspaper. 1:45 PM. Radio Newspaper. 9:00 PM. Radio Newspaper.

Programs for the Housewife

SOUTHERN CALIFORNIA (Dally Unless Indicated)

KMTR-9:00 AM. Mildred Kitchen Home Economics Expert. KFSD-9:15 AM. Amy Lou Shopping Hour. 10:50 AM. NBC Woman's Magazine of the Air. (Thurs. 10:00 AM.)

KFI-9:00 AM. Helpful Hints to Housewives, Bess Kilmer.
10:30 AM. NBC Woman's Magazine of the Air. (Thurs.
10:00 AM.)
10:15 AM. Josephine Gibson Food Talks. (Monday and
Wednesday only.)
10:00 AM. Color Harmony NBC. (Tuesday only.)

KMPC-10:15 AM. Violet Schramm, Shopping Service.

KTM-2:00 PM. Over the Tea Cups with Nell Cleary.

KHJ-9:00 AM. Velva Darling, Girl Philosopher.
9:30 AM. Feminine Fancies. (Ex. Saturday.)
10:30 AM. Pure Food Talks. (Ex. Tuesday.)
6:00 PM. Peggy Hamilton, Romance of Fashion.
(Tuesday only.)

KFWB-10:00 AM. Prudence Penny. KFVD-2:00 PM. Hints to Housewives.

KNX-9:00 AM. Radio Shopping News. C. P. R. 10:30 AM. Home Economics Talk by Kate Brew Vaughn

NORTHERN CALIFORNIA

KTAB-10:00 AM. Household Hour with Alma La Mar.

KFOX-9:00 AM. Beauty Talk.

only.)

KFRC-9:30 AM. Feminine Fancies. (Ex. Saturday.) 11:05 AM. Mary Lewis Haines Domestic Science Talk

(Monday.)

11:15 AM. Mary Lewis Haines Domestic Science Talk.
(Wednesday.)

9:00 AM. Mildred Kitchen's Household Talk. (Tuesday and Thursday only.)

3:00 PM. Colonial Dames Beauty Talk. (Monday only.)

KPO-10:30 AM. NBC Woman's Magazine of the Air. (Thursday 10:00 AM.)

11:30 AM. Julia Hayes' Helpful Hints to Housewives. (Thursday at 11:45 AM.)

11:45 AM. Helen Gordon Barker Art Talk. (Monday

KROW-2:45 and 3:00 PM. Betty, the Shopper.

KYA-12:15 PM. Parent-Teachers' Association. (Monday only.)

NORTHWEST

KHQ-10:30 AM. Woman's Magazine of the Air. Thursday at 10:00 AM.)
10:15 AM. Josephine Gibson's Food Talk. (Monday and Friday only.)
10:15 AM. Mary Hale Martin. (Wednesday only.)
12:45 AM. Home Decorator. (Ex. Tuesday.)

KGW-9:15 AM. Cooking School.

10:15 AM. Josephine Gibson's Food Talk. (Monday & Wednesday only.)

10:30 AM. Woman's Magazine of the Air. (Thursday at 10:00 AM.)

11:30 AM. Julia Hayes Talk. (Monday and Tuesday only.)

only.) KVI-9:30 AM. Feminine Fancies. (Ex. Saturday.)

KMO-11:00 AM. Tips on the Shoppe Market.

KOMO-10:30 AM. Woman's Magazine of the Air. (Thursday at 10:00 AM.)

9:15 AM. Julia Hayes Helpful Hints to Housewives.
(Monday and Wednesday only.)

9:45 AM. Way to a Man's Heart.

KJR-8:30 AM. Thrift Home of the Air. 9:15 AM. Mary From Proctors. 10:15 AM. Beauty Talks.

KEV-9:15 AM. Julia Hayes Talk. (Ex. Saturday.)

KOL-9:00 AM. Shopping Service. 9:30 AM. Feminine Fancies. (Ex. Saturday.) KGA-9:20 AM. "Mary" over the NBS System.

MOUNTAIN STATES (Pacific Standard Time)

KOA-10:30 AM. Woman's Magazine of the Air. (Thursday at 10:00 AM.)
8:00 AM. Your Child. (Tuesday only.)
10:15 AM. Mary Hale Martin. (Wednesday only.)
2:30 PM. A Recipe a Day. (Monday only.)

KSI-9:00 AM. Home Economics Program.
9:30 AM. Housewives Program.
10:00 AM. A Visit with Mrs. Jennie Lee.
9:45 AM. Dietary Discussions. (Monday and Thursday

only.) 10:30 AM. Helen Webster. (Monday and Wednesday only.)

10:50 AM. Ann Holden. (Monday and Thursday only.) 10:15 AM. Favorite Recipes of Mary Hale Martin. (Wednesday only.)

ARIZONA

KTAR—8:00 AM. Aunt Helen's Home Hints.
 10:15 AM. NBC Josephine Gibson. (Monday and Wednesday only.)
 10:50 AM NBC Magazine of the Air. (Thursday at 10 AM.)

Health Talks and Exercises

SOUTHERN CALIFORNIA (Daily Ex. Where Indicated)

KUTR-8:45 AM. Health Man.

KFSD-7:30 AM. Start O' the Day NBC.

KFID-7:30 AM. Start O the Pay ARC.
2:45 PM. Women's Health Exercises. (Monday and Friday only.)
5:30 PM. Dr. H. Edward Myers "Care of the Teeth."
(Monday only.)
19:20 PM. Dure Food and Drug Speaker. (Thur. only.)

12:30 PM. Pure Food and Drug Speaker. (Thur. only.)

KNA-6:45 AM. Earlybirds Exercises by D. P. M. Seixas. 7:15 AM. Pep and Vigor Exercises by D. P. M. Seixas. 7:45 AM. Home Folks Exercises by D. P. M. Seixas. 9:15 AM. Golden Rule Health Service Program.

KGFJ-8:30 AM. Dr. Wiseman's Health Talk.

KFOA-1:50 PM. Dr. Harbottle. 8:00 PM. Treatments of "Harmonious Suggestions," by Dr. J. F. Raush. (Monday and Friday only.)

KECA-8:30 AM. Health Exercises, Louis Rueb. 10:45 PM. Health Exercises, Louis Rueb.

NORTHERN CALIFORNIA

KTAB-1:30 PM. Dental Clinic.

°C-8:55 AM. Health Man.

KPO-7.30 AM. Start O' the Day.

KFWI-10:30 AM. Health Talk by Dr. T. G. Linebarger.

KROW-1:30 PM. Health Program by Dr. R. H. McLain.

KQW-11:30 AM. La Vida Health Program.

KJBS-10:45 AM. The Health Man.

KYA-7:00 AM. Drury's Daily Dozen, 3:15 PM. Health Talk on Mon., Tues. and Sat.

NORTHWEST

KIIQ-7:30 AM. Start O' the Day, 1:00 PM. Dental Hygiene. (Ex. Thurs.) KGW-7:30 AM. Start O' the Day.

KGW-7:30 AM. Start O' the Day.

KMO-12:45 PM. Tacoma Dairy Health Program.

KOMO-7:30 AM. Start O' the Day. 9:30 AM. Safeguarding the Nation's Food and Drug Supply. (Thursday only.)

KJR-1:15 PM. Dental Lecture. (Ex. Sat.)

(Ex. Sat.)

KEX-8:00 AM. Dr. Dean Clinic. 1:15 PM. Dental Lecture. (Ex 7:00 AM. Alarm Clock Hour.

KOL-5:30 PM. Tooth Talk, Dr. Hobson.

KGA-1:15 PM. Dental Lecture. (Ex. Sat.)

MOUNTAIN STATES (Pacific Standard Time.)

KOA-7:30 AM. Safeguarding Your Food and Drug Supply. (Monday only.)

ARIZONA

KTAR-6:00 AM. YMCA Health and Happiness Hour.

For the Youngsters

SOUTHERN CALIFORNIA (Daily Except Where Indicated)

National Broadcasting Co. 2 PM-Maltine Program. (Mon.) KGO KOMO KGW KFL

United Broadcasting Co. 7:00 PM—Children's Hour KTAB KORE KXL KMED KXA KGB KVOS KFWB-KTM.

KFI-4:14 PM. Big Brother Don (Ex. Sat.) 5:00 PM. Baron Keyes, The Story Man. (Ex. Sat.)

KMPC-9:30 AM. Bob, Bunny and Junior. 4:15 PM. Just Kids Club (Ex. Mon. and Sat.)

KNN-5:15 PM. Big Brother Ken's Kiddies Hour.

KFSG--4:00 PM. Kiddies' Hour (Fri. only.)

KTBI-6:00 PM. Aunt Martha's Children's Program. (Sun.)

NORTHERN CALIFORNIA

KTAB-5:00 PM. The Story Man and His Air Castle. (Ex. Sat.)

KPO-5:00 PM. Big Brother (Ex. Mon.)

KLA-5:00 PM. Big Brother's Club.

KQW-4:55 PM. Baron Keye's Story Castle.

NORTHWEST

KGW-4:45 PM. Clickety-Clack of the Air Castle.

KJR-5:15 PM. Baron Keyes and His Air Castle.

KEA-2:00 PM. Children's Program.

KGA-5:15 PM. Baron Keyes and His Air Castle.

MOUNTAIN STATES (Pacific Standard Time)

KSL-3:00 PM. KSL Kiddies' Club.

ARIZONA

KTAR -4:00 PM. Baron Keyes and His Air Castle.

Plays, Stories, Dramatic Readings

(United Broadcasting Company)

8:00 PM—Dramatic Program. (Tues.) KGB KFWB-KTM KTAB KORE KXL KMED KXA KVOS

8:00 PM—Detective Stories. (Thurs.) KGB KFWB-KTM KTAB KORE KXL KMED KXA KVOS

Columbia Broadcasting Company

5:30 PM—Arabesque, a Desert Play. (Mon.) KLZ KDYL.
7:00 PM—Hank Simmon's Show Boat. (Sat.) KLZ KDYL KOL
KFPY KHJ KFRC.
7:30 PM—Don Amaizo. (Mon.)

6:00 PM-Majestic Curiosity Shop. (Sun.)

National Broadcasting Company

2:00 PM—NBC Matinee Period. (Wed.) KGO.
9:00 PM—The Story Teller. (Thurs.) KGO.
1:00 PM—Radio Guild. (Fri.) KGO KOMO KECA KFSD KTAB.
10:00 PM—Mystery Serial. (Fri.) KGO KSL KOA
9:30 PM—NBC Drama Hour. (Sat.) KGO KFSD KOA.

KFSD-2:00 PM. Matinee Story Time. (Daily Ex. Sat.) 1:00 PM. Radio Guild. (Fri.)

KFI-6:00 PM. Radio Guild. (Fr.)

KFI-6:00 PM. "Sketches in the Trenches." (Mon.)

9:15 PM. "D-17, Emperor," James Carden and Cast. (Mon., Wed. and Fri.)

4:45 PM. Raine Bennett, Poet of the Air. (Tues. and Fri.)

8:30 PM. Tom Terris, "The Vagabond Movies Director." (Tues.)

4:45 PM. Noreen Gammill, Original Character Sketches. (Wed.)

KMPC-9:00 PM. Mystery Play. (Tues.)

KHJ-6:30 PM. Prof. Lindsley and Leigh Harline, Reading with Organ. (Thurs.)
9:00 PM. "Folgeria," Serial Comic Opera of the Air.

(Thurs.)
7:00 PM. "Behind the Words—a Drama of Thoughts.
CBS. (Fri.)
7:00 PM. Hank Simmon's Show Boat. (Sat.)
7:30 PM. Don Amaizo. (Mon.)

KFWB-6:00 PM. Majestic's Old Curiosity Shop.

KNN-1:30 PM. Eddie Albright's Reading of Late Fiction,

(Daily.) 8:00 PM. KNX Players directed by Georgia Fifield. (Mon.) 8:00 PM. "Mr. and Mrs." Dramatic Sketch. (Thurs.)

KFOA -9:30 PM. Detective Story. (Thurs.)

KECA-6:00 PM. Nick Harris Detective Story Program. (Sun.)

8:30 PM. Raine Bennett, Poet of the Air. (Sun.) 7:30 PM. NBC Empire Builders, Dramatization of the West. (Monday.)

9:30 PM. NBC Memory Lane. (Tues.)

NORTHERN CALIFORNIA

KTAB-7:45 PM. Dramatic Sketch from UBC. (Sat.)

KFRC-5:30 PM. Fred Benioff Players. (Sun.)
9:00 PM. "Folgeria," Comic Opera of the Air. (Thurs.)
7:00 PM. Hank Simmon's Show Boat. (Sat.)
6:00 PM. Majestic's Curiosity Shop. (Sun.)
KQW-4:30 PM. Story Time. (Daily Ex. Sun.)

KVA-9:15 PM. KYA Players. (Mon.) 8:00 PM. KYA Players. (Tues.)

NORTHWESTERN STATES

KGW-9:15 PM. "On to Oregon," Dramatization. (Fri.) 7:30 PM. Empire Builder's Program, NBC. (Mon.) 9:30 PM. Memory Lane. (Tues.)

KOMO-7:30 PM. Empire Builder's Program, NBC. (Mon.) KVI-9:00 PM. "Folgeria," Comic Opera of the Air. (Thurs.)

KOL-9:00 PM. "Folgeria," Comic Opera of the Air. (Thurs.)
7:00 PM. Hank Simmon's Show Boat. (Sat.)
7:30 PM. Don Amaizo's Adventures. (Mon.)
6:00 PM. Majestic's Old Curiosity Shop. (Sun.)

INTERMOUNTAIN STATES

NOA-9:30 PM. Empire Builders. (Mon.) 10:00 PM. Mystery Serial, NBC. (Fri.) 9:30 PM. Drama Hour, NBC. (Sat.)

KSL-2:00 PM. Radio Matinee, (Daily Ex. Sun.) 9:30 PM. Dramatic Readings and Music. 7:30 PM. Empire Builders, NBC. (Mon.)

7:30 PM. Empire Builders, NBC. (Mon.)

KDVL.—6:00 PM. Majestic's Old Curiosity Shop. (Sun.)
5:30 PM. Arabesque, a Desert Play. (Mon.)
7:30 PM. Don Amaizo. (Mon.)
7:90 PM. CBS Graybar's "Mr. and Mrs." (Tues.)
9:90 PM. "Folgeria." (Thurs.)
7:00 PM. Hank Simmon's Show Boat. (Sat.)

KTAR—6:00 PM. Majestic's Curiosity Shop. (Sun.)
7:30 PM. The Empire Builders. (Mon.)
9:30 PM. Memory Lane, NBC. (Tues.)

Bridge Lessons

KFSD-4:00 PM. Bridge Lessons. (Tues. only.)
KFWB-8:00 PM. Bridge Lesson. (Tues.)
KPO-4:00 PM. Bridge Game. (Tues. only.)
KYA-1:45 PM. Willis Boardman Zink, Authority on Contract
Bridge. (Wed. and Fri.)
KMO-9:00 PM. Bridge Game. (Wed. only.)
KJR-8:00 PM. Bridge Game. (Wed. only.)
KOA-4:45 PM. Bridge Lessons. (Tues. only.)

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Chain Programs for January

National Broadcasting Co.

8:30 AM-NBC Organ Recital KGO

8:30 AM—Breakfast with Sperry KH KOMO KGW KPO KFI KFSD KHO

9:00 AM-John Barclay and Dagmar Rybner KGO.

9:15 AM—National Oratorio Society KGO KOMO KGW KECA

10:15 AM-Piano Capers KGO

10:30 PM—Neapolitan Days KG() KFSD KECA

11:00 AM-12:00 PM-

KECA

11:00 AM—Grace Cathedral Service KGO

12:00 PM—National Youth Conference
KGO KHQ KOMO KGW KPO

1.00 PM—Dr. S. Parkes Cadman KGO
KHQ KOMO KGW KPO

2:00 PM—National Vespers KGO KHQ
KOMO KGW KPO KTAR

3:00 PM—Catholic Hour KGO KHQ
KOMO KGW KTAR KECA

4:00 PM—Sunday Concert KGO KOMO
KGW KFSD

5:00 PM—Enna Jettick Melodies KHQ
KOMO KGW KPO KFI KFSD
KTAR

KTAR
-The Vagabonds KGO KECA

5:00 PM—The Vagabonds KGO K
5:15 PM—Collier's Radio Hour
KOMO KGW KPO KF1
6:00 PM—News Service KGO
6:15 PM—Atwater Kent Hour
KGW KPO KFI KHQ
6:15 PM—Evening Reveries KGO
6:15 PM—The Olympians KGO KT

6:15 PM—Evening Reveries KGO
6:45 PM—The Olympians KGO KTAR
7:15 PM—Studebaker Champions KGO
KHQ KOMO KGW KFI
7:30 PM—Kaffee Hag Slumber Music
KPO KECA KFSD KTAR
7:45 PM—Sunday at Seth Parker's KGO
KGW KFSD KTAR
8:15 PM—The Entertainers KGO KFSD

KTAR

KTAK

Gunnar Johansen, Pianist KGO

KFSD KTAR KGW

Borden Program KGO KHQ

KOMO KGW KFI KTAR KSL 9:00 PM-KOA

Enna Jettick Melodies KGO KOMO KGW KECA KTAR 9:30 PM-Enna KHQ

9:45 PM—The Reader's Guide KGO 10:15 PM—Concert Jewels KGO KECA

KOA 11:00 PM—The Vagabonds KGO KFI KSL

MONDAY

7:30 AM—Sunrise Serenaders KGO
7:30 AM—Quaker Start O' the Day KHQ
KOMO KGW KPO KFSD KFI
8:00 AM—Shell Happytime KHQ KOMO
KGW KPO KFI KSL
8:00 AM—Financial Service Program KGO
8:15 AM—Morning Melodies KGO
8:30 AM—Cross-Cuts of the Day KGO
9:00 AM—Vermont Lumberjacks KGO
9:00 AM—Vermont Lumberjacks KGO
9:15 AM—Morning Glories KGO
9:45 AM—Radio Ramblings KGO
10:15 AM—Josephine B. Gibson Food Talk
KGO KGW KFI KFSD KTAR
KOMO KHQ
10:30 AM—Woman's Magazine of the Air

KOMO KHQ

10:30 AM—Woman's Magazine of the Air
KGO KHQ KOMO KGW KPO
KF1 KFSD KSL KOA KTAR

11:30 AM—California Federation of Women's Clubs KGO KECA KFSD

12:00 PM—Luncheon Concert KGO KGW
KFSD KECA

1:00 PM—Hotel Cosmopolitan Dance Orchestra KGO KFSD KTAR

KECA.
-Piano Capers KGO KGW KFSD 1:30 PM-

KTAR KECA.

2:00 PM—Maltine Story Program KGO
KOMO KFI KFSD KGW

2:30 PM—NBC Matinee KGO KGW KECA

3:00 PM—What's in a Name? KGO KGW

KPO
3:15 PM—Mormon Tabernacle Choir and Organ KGO KOMO KGW KPO KFSD KTAR
3:45 PM—Parisian Quintet KGO KPO
4:15 PM—The World Today by James G. McDonald. KGO KECA KFSD 4:30 PM—Phil Cook, the Quaker Man KGO KHQ KOMO KGW KECA KFSD KTAR
4:45 PM—News Service KGO
5:00 PM—How's Business? Merle Thorpe KGO KHQ KOMO KGW KECA

5:15 PM—Fifteen Minutes in the Nation's
Capital KGO KHQ KOMO
KECA KFSD
5:30 PM—The Olympians KGO KGW
1:00 PM—Special Philos Program KGO
KHQ KOMO KGW KPO KFI
KFSD KTAR
6:00 PM—Maytag Orchestra KGO KHO

6:00 PM—Maytag Orchestra KGO KHQ
KOMO KGW KECA
6:30 PM—General Motors Family Party
KGO KHQ KOMO KGW KFI
7:00 PM—Stromberg - Carlson Program
KGO KHQ KOMO KGW KFI
KFSD KTAR
7:30 PM—Empire Builders KGO KHQ
KOMO KGW KECA KFSD

KTAR

8:00 PM—Popular Tunes KGO 8:15 PM—Sportshots KGO 8:00 PM—Rudy Seiger's Shell Symphon-ists KPO KFI KHQ KOMO KGW

8:30 PM—Amos 'N Andy KGO KHQ
KOMO KGW KECA KFSD
8:45 PM—Southern Harmony Four KGO
9:00 PM—World Wanderings KGO KTAR
9:30 PM—Pacific National Singers KGO
KSL KOA
10:00 PM—Musical Echoes KGO KECA
KOA KSL
10:30 PM—Yir Frien' Scotty KGO KSL
KOA
10:45 PM—Walter Ferner, cellist KGO

10:45 PM—Walter Ferner, cellist KGO
KSL KOA
11:00 PM—Laughner-Harris Hotel St.
Francis Dance Orchestra KGO
KGW KFI

TUESDAY

7:30 AM—Sunrise Serenaders KGO
7:30 AM—Quaker Start O' the Day KHQ
KOMO KGW KPO KFSD KFI
8:00 AM—Shell Happytime KHQ KOMO
KPO KFI KSL
8:00 AM—Financial Service Program

8:00 AM—Financial Service

KGO 8:15 AM—Morning Melodies KGO 8:30 AM—Cross-Cuts of the Day KGO

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714 West Tenth Street WEstmore 5055 LOS ANGELES

-Vermont Lumberjacks KHQ KOMO KGW KECA 9:00 AM -Vermont

9:15 AM-Meet the Folks KGO

9:30 AM-William Don KGO

9:30 AM—William Don KGO
9:45 AM—The Entertainers KGO
10:00 AM—Color Harmony Program KGO
KHQ KOMO KGW KFI
10:30 AM—Woman's Magazine of the Air
KGO KHQ KOMO KGW KPO
KFI KFSD KTAR KSL KOA
11:30 AM—NBC Philharmonic Organ Recital KGO KECA
12:00 PM—Hotel Sir Francis Drake Orchestra KGO KFSD KECA
1:00 PM—Pacific Vagabonds KGO KFSD
KTAR KOA KGW KECA
2:00 PM—NBC Matinee KGO KTAR KHQ
KOMO KGW KFI
3:00 PM—Black and Gold Room Orches-

KOMO KGW KF1
3:00 PM—Black and Gold Room Orchestra KGO KGW
3:30 PM—Who's Behind the Name? Edwin Alger KGO KOMO
3:45 PM—Black and Gold Room Orchestra KGO KGW

4:00 PM—Organ Recital KGO
4:15 PM—Laws That Safeguard Society
KGO KHQ KOMO KECA
4:30 PM—Phil Cook, the Quaker Man
KGO KHQ KOMO KGW KECA
KFSD KTAR

KFSD KTAR
4:45 PM—Sarah Kreindler, Violinist KGO
5:00 PM—Brazilian - American Program
KGO KHQ KOMO KGW KECA
5:30 PM—Bits of Melody KGO KGW
5:45 PM—News Service KGO 17GW
6:30 PM—Happy Wonder Bakers KGO
KHQ KOMO KGW KECA
7:00 PM—Westinghouse Salute KGO
KHQ KOMO KGW KECA
KFSD KTAR
7:30 PM—B. A. Rolfe and His Lucky

Rolfe and His Lucky 7:30 PM—B. A. Orchestra KGO KGW KECA Strike

KHQ KOMO KFSD KTAR Violet Ray KOMO -violet Ray Music Box KGO KHQ KOMO KGW KFI KFSD KTAR 8:00 PM-

8:30 PM-

KTAR
-Amos 'N Andy KGO KHQ
-KOMO KGW KECA KFSD
-Sperry Smiles KGO KHQ
-KOMO KGW KECA KFSD
-Florsheim Frolic KGO KHQ
-KOMO KGW KECA KFSD 8:45 F'M-

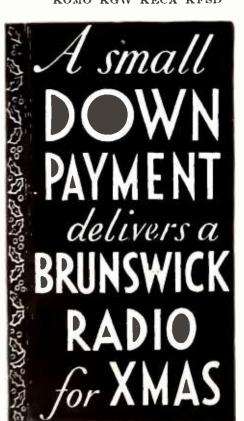
KTAR Memory

9:30 PM—Memory Lane KGO KGW KECA KFSD KTAR KOA 10:00 PM—National Concert Orchestra KGO KOA KGW 11:00 PM—Laughner - Harris Hotel St. 11:00 PM—Laughner · Harris Hotel St. Francis Dance Orchestra KGO

AVA WE SUGGEST

WEDNESDAY

7:30 AM—Sunrise Serenaders KGO
7:30 AM—Quaker Start O' the Day KHQ
KOMO KGW KPO KFSD KFI
8:00 AM—Shell Happytime KHQ KOMO
KGW KPO KFI KSL
8:00 AM—Financial Service Program 8:00 AM—Financial Service Program KGO
8:15 AM—Morning Melodies KGO
8:30 AM—Cross-Cuts of the Day KGO
9:00 AM—Vermont Lumberjacks KGO
KHQ KOMO KGW KECA
9:15 AM—The Recitalists KGO
9:30 AM—Betty Crocker Gold Medal
Home Service Talks KGO KHQ
KOMO KGW KFI KFSD
9:45 AM—Morning Glories KGO
10:15 AM—Mary Hale Martin's Household
Period KGO KHQ KOMO KGW
KFI KSL KOA
10:30 AM—Woman's Magazine of the Air
KGO KHQ KOMO KGW KFO
KFI KFSD KTAR
11:30 AM—Organ Recital KGO KECA 11:30 AM—Organ Recital KGO KECA 11:45 AM—Sisters of the Skillet KGO KECA KECA
12:00 PM—Luncheon Concert KGO KECA
12:30 PM—Evening Stars KGO KECA
1:00 PM—Blue Aces KGO KTAR KECA
2:00 PM—NBC Matinee KGO
2:00 PM—Series of Talks KTAR KECA
2:15 PM—Green and De Rose KTAR
KECA 2:00 PM—Series of Talks KTAR KECA
2:15 PM—Green and De Rose KTAR
KECA
3:00 PM—Horace Heidt and His Hotel
New Yorker Orchestra KGO
KGW KTAR
3:25 PM—John B. Kennedy Talk KGO
KGW KTAR
3:30 PM—Horace Heidt and His Hotel
New Yorker Orchestra KGO
3:45 PM—Arion Trio KGO
4:00 PM—El Tango Romantico KGO
4:15 PM—Science KGO KOMO KPO KFSD
KTAR KECA
4:30 PM—Phil Cook, the Quaker Man
KGO KHQ KOMO KGW KECA
KFSD KTAR
4:45 PM—Back of the News in Washington, William Hard KGO KOMO
KECA KFSD
5:00 PM—Rodheaver Sing KGO
5:15 PM—Radiotron Varieties KGO KHQ
KOMO KECA KFSD KTAR
5:30 PM—Bits of Melody KGO
5:45 PM—News Service KGO
6:00 PM—Halsey, Stuart Program KGO
KHQ KOMO KGW KFI
6:30 PM—Palmolive Hour KGO KHQ
KOMO KGW KFI
7:30 PM—Coca Cola Program KGO KHQ
KOMO KGW KECA KFSD
8:00 PM—S and W Forum of the Air KGO
KECA KFSD KTAR
8:00 PM—Let's Get Associated KHQ
KOMO KGW KPO KFI
8:30 PM—Amos 'N Andy KGO KHQ
KOMO KGW KECA KFSD



RADIO DOINGS 8:45 PM—Jolly Time Revue KGO KHQ KOMO KGW KFI KTAR 9:00 PM—Miniature Biographies KGO 9:30 PM—Camel Pleasure Hour KGO
KHQ KOMO KGW KECA
KFSD KTAR KSL KOA

10:30 PM—Parisian Quintet KGO KOA

11:00 PM—Laughner-Harris Hotel St.
Francis Dance Orchestra KGO
KGW KFI THURSDAY 7:30 AM—Sunrise Serenaders KGO
7:30 AM—Quaker Start O' the Day KHQ
KOMO KGW KPO KFSD KFI
8:00 AM—Shell Happytime KHQ KOMO
KGW KPO KFI KSL
8:00 AM—Financial Service Program KGO 8:15 AM—Morning Melodies KGO
8:30 AM—Cross-Cuts of the Day KGO
9:00 AM—Vermont Lumberjacks KGO
KHQ KOMO KGW KECA
9:15 AM—The Entertainers KGO
9:45 AM—Safeguarding the Nation's Food and Drug Supply KGO

10:00 AM—Woman's Magazine of the Air
KGO KHQ KOMO KGW KPO
KFI KTAR KSL KOA KFSD

11:00 AM—Standard School Broadcast 11:00 AM—Standard School Broadcast
KGO KHQ KOMO KGW KPO
KFI KFSD

11:45 AM—Organ Recital KGO KECA
12:00 PM—Hotel Sir Francis Drake Orchestra KGO KSL KFSD KECA
2:00 PM—NBC Matinee KGO 2:00 PM—NBC Matinee KGO
2:00 PM—In the Spotlight KFSD KGW
KECA KTAR
2:30 PM—Ballads KECA KTAR
3:00 PM—Black and Gold Room Orchestra KGO KGW
3:45 PM—The Vagabonds KGO
4:15 PM—News Service KGO KFSD
4:30 PM—Phil Cook, the Quaker Man
KGO KHQ KOMO KGW KECA
KFSD KTAR
4:45 PM—Friendly Five Footnotes KGO
KHQ KOMO KECA KFSD
KTAR
5:00 PM—Fleischmann Hour KGO KHQ

KTAR
5:00 PM—Fleischmann Hour KGO KHQ
KOMO KGW KECA KTAR
6:00 PM—Arco Birthday Party KGO
KHQ KOMO KGW KECA
6:30 PM—Maxwell House Ensemble KGO

KHQ KOMO KGW KECA

B. A. Rolfe and His Lucky
Strike Dance Orchestra KGO
KHQ KOMO KGW KFI KFSD

KHQ KOMO KGW KFI KFSD KTAR

7:30 PM—Standard Symphony Hour KGO KHQ KOMO KGW KFI

8:30 PM—Amos 'N Andy KGO KHQ KOMO KGW KECA KFSD

8:45 PM—Sperry Smiles KGO KHQ KOMO KGW KECA KFSD

9:00 PM—The Story Teller KGO

9:00 PM—Horace Heidt and His Hotel New Yorker Orcestra KPO KOMO

9:30 PM—The Vagabonds KGO KFI

9:30 PM—The Vagabonds KGO KFI 10:00 PM—Piano Paintings KGO 10:30 PM—Yir Frien' Scotty KGO KOA 10:45 PM—Sarah Kreindler, violinist KGO

KOA

11:00 PM—Laughner - Harris Hotel St. Francis Dance Orchestra KGO KGW KFI KSL

FRIDAY

7:30 AM—Sunrise Serenaders KGO
7:30 AM—Quaker Start O' the Day KHQ
KOMO KGW KPO KFSD KFI
8:00 AM—Shell Happytime KHQ KOMO
KGW KPO KFI
8:00 AM—Financial Service Program KGO
8:15 AM—Morning Melodies KGO
8:30 AM—Cross-Cuts of the Day KGO
9:00 AM—Vermont Lumberjacks KGO
8:15 AM—Morning Glories KGO
9:30 AM—Betty Crocker Gold Medal
Home Service Talks KGO KHQ
KOMO KGW KFI KFSD
9:45 AM—Rembrandt Trio KGO KGW
10:15 AM—Josephine B. Gibson, Food
Talk KGO KHQ KOMO KGW
KFI KGO

10:30 AM-Woman's Magazine of the Air KGO KHQ KOMO KGW KPO KFI KFSD KTAR KSL

11:30 AM—NBC Philharmonic Organ Recital KGO KECA

12:00 PM—Luncheon Concert KGO KECA
12:30 PM—Chicago Serenade KGO KFSD
1:00 PM—Radio Guild KGO KOMO KECA
KFSD KTAR
2:00 PM—NBC Matinee KGO KECA KGW
3:00 PM—The World in Music KGO KGW
KTAR
2:15 PM—Pleak and Cold Room Orehoge

3:15 PM—Black and Gold Room Orchestra KGO KGW KTAR
3:45 PM—William Don KGO
4:00 PM—Spotlights in Drama and Literature KGO KOMO KFSD
4:15 PM—College Memories KGO KHQ
KOMO KECA KFSD KTAR

KGW
4:30 PM—Phil Cook, the Quaker Man KGO KHQ KOMO KGW KECA KFSD KTAR

KFSD KTAR
4:45 PM—News Service KGO
5:00 PM—Cities Service Concert Orchestra KGO KHQ KOMO KGW tra K KECA

KECA
6:00 PM—Interwoven Pair KGO KHQ
KOMO KGW KFI KFSD KTAR
6:30 PM—Armour Program KGO KHQ
KOMO KGW KFI
7:00 PM—Armstrong Quakers KGO KHQ
KOMO KGW KFI
7:30 PM—Radio-Keith-Orpheum Program
KGO KHQ KOMO KGW KFSD
KTAR KFI
8:00 PM—Thelma Brown KGO KFSD

KTAR KFI

8:00 PM—Thelma Brown KGO KFSD

8:15 PM—Brownbilt Footlites KGO KHQ
KOMO KGW KFI KFSD KTAR

8:30 PM—Amos 'N Andy KGO KHQ
KOMO KGW KECA KFSD

8:45 PM—Tone Pictures KGO KHQ
KOMO KGW KFI

9:15 PM—Hill Billy Boys KGO

9:30 PM—Metropolitans KGO KFSD KOA

10:00 PM—National Players KGO KSL
KOA

10:30 PM—Pacific Nomads KGO KOA KSL

10:30 PM—Pacific Nomads KGO KOA KSL 11:00 PM—Laughner - Harris Hotel St. Francis Dance Orchestra KGO KFI KSL

SATURDAY

7:30 AM—Sunrise Serenaders KGO
7:30 AM—Quaker Start O' the Day KHQ
KOMO KGW KPO KFSD KFI
8:00 AM—Shell Happytime KHQ KOMO
KGW KPO KFI KSL
8:00 AM—Financial Service Program

KGO

KGO

8:15 AM—Morning Melodies KGO
8:30 AM—Cross-Cuts of the Day KGO
9:00 AM—Vermont Lumberjacks KGO
KHQ KOMO KGW KECA
9:15 AM—Meet the Folks KGO
9:30 AM—National Farm and Home Hour
KGO KHQ KOMO KFI KFSD
KGW KPO

10:30 AM—Woman's Magazine of the Air
KHQ KOMO KGW KPO KFI
KFSD KTAR KGO
11:10 AM—Morning Concert KGO
11:30 AM—Sisters of the Skillet KGO
KGW KECA
12:00 PM—Hotel Sir Francis Drake Orchestra KGO KTAR
1:00 PM—The Hollywaiians KGO KECA

KTAR

KTAR

1:15 PM—Pacific Feature Hour KGO
KTAR KECA

2:00 PM—The Vagabonds KGO KGW
KECA KTAR

3:00 PM—The Jameses KGO KGW KTAR

3:15 PM—Black and Gold Room Orchestra KGO KGW

3:45 PM—Bits of Melody KGO

4:00 PM—Peter Van Steeden and His Orchestra KGO

4:30 PM—The Silver Flute KGO KGW

4:30 PM—The Silver Flute KGO KGW 5:00 PM—Rodeheaver Sing KGO 5:15 AM—Radiotron Varieties KGO KHQ KOMO KGW KECA KFSD

KGO KHQ

5:30 PM—The Fuller Man KGO KHQ KOMO KGW KECA 6:00 PM—General Electric Hour KGO KHQ KOMO KGW KFI KFSD KTAR



- 7:00 PM—B, A. Rolfe and His Lucky Strike Dance Orchestra KGO KHQ KOMO KGW KFI KFSD KTAR
- 8:00 PM-Rainbow Harmonies KGO KECA KTAR
- 8:00 PM—Gilmore Circus—K()M() KGW KPO KF1
- 8:30 PM—Amos 'N -Amos 'N Andy KGO F KOMO KGW KECA KFSD
- 8:45 PM—Sperry Smiles KGO KHQ KOMO KGW KECA KFSD
- 9:00 PM—El Sidelo Ministrels KGO KHQ KOMO KGW
- 9:30 PM-NBC Drama Hour KGO KFSD
- 10:30 PM—Spotlight Review KGO KOMO KFI KOA KGW KFSD

Columbia Broadcasting System

- 9:00 AM—Jewish Art Program, Ta Script and Music KVI KLZ Talks,
- 9:30 AM-London Broadcast KLZ KDYL KVI KFPY
- -H. M. Canadian Grenadier Guards Band from Montreal KLZ KVI KFPY 9:45 AM-H.
- 10:30 AM—Conclave of Nations, music di-rected by Channon Collinge KFPY KLZ KVI
- 11:00 AM—Cathedral Hour. All musical presentation of a cathedral service KLZ KVI KFPY
- 12:00 Noon—New York Philharmonic Orch. KLZ KDYL KVI KHJ KFRC
- 2:30 PM—The French Trio KLZ KDYL KVI KFRC
- The World's Business KLZ KDYL KOL KHJ KFRC KFPY 5:00 PM-The
- 5:15 PM-U. S. School of Music KLZ KOL KFPY
- 5:45 PM—The Gauchos, Vincent Sorey and his Orch. WLAC KLZ KDYL KOL
- 6:00 PM—Majestic Curiosity Shop, "A Pack of Cards" KLZ KDYL KVI KOL KFPY KOIN KHJ KFRC
- 6:30 PM—Tone Pictures, Domenico Savi-no, Director KLZ KDYL KFPY 7:00 PM—Jesse Crawford, Royals' Poet of the Organ KLZ KDYL KOL KOIN KHJ KFRC

MONDAY

- 5:45 AM—The Old Dutch Girl, Newsy Jingles in Rhyme and Song KLZ KDYL
- Something for Everyone, Music, News, Humor, Poetry, etc. KDYL
- 6:30 AM—U. S. Navy Band KLZ KDYL
 9:00 AM—Paul Tremaine and His Yoeng's
 Restaurant Orchestra KLZ KVI
 KFPY KFRC
 9:30 AM—Columbia Revue, Emery
 Deutsch and his Orchestra,
 KDYL
- KDYL
- 11:00 AM—Columbia Artists Recital KLZ
 KVI KOL KFPY
 11:30 AM—Rhythm Ramblers KLZ KDYL
 KVI KOL KFPY KOIN KHJ
 KFRC
- 12:00 Noon—Columbia Salon Orchestra, Emery Deutsch, director KDYL
- 12:30 AM—Ann Leaf at the Organ KLZ
 KDYL KVI KOL KFPY
 1:00 PM—Ballad Hour KDYL KVI KHJ
 KFRC
- 1:30 PM-Wardman Park Hotel Orches tra, dance music KRLD KDYL KVI KOL KFPY KFRC

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- 2:00 PM—Gypsy Music Makers. Emery Deutsch and his Orchestra KDYL
- 2:45 PM-Virginia Arnold, pianist KLZ KDYL
- 3:00 PM-WSPD Commodores, dance music KDYL KOL KFRC
- 3:45-Tony's Scrap Book KLZ KOL KFRC
- 4:00 PM—Current Events, H. V. Kalten-born KVI KOL KFRC
- 4:15 PM—The Vagabonds KVI KFRC
- 5:30 PM-Arabesque, Desert Play KLZ KDYL
- 6:30 PM-Bourjois, An Evening in Paris KLZ KFPY KOL KDYL KOIN KHJ KFRC
- 7:00 PM—Guy Lombardo and his Orchestra KLZ KDYL KVI KOL KIPY KOIN KHJ KFRC
- 7:30 PM—Don Amaizo KLZ KDYL KOL KOlN KHJ KFRC KNX
- 8:15 PM-Columbia Radio Column, Heywood Broun KOL
- -Fletcher Henderson and His Orch. KLZ KDYL

TUESDAY

- 6:15 AM—Something for Everyone, sic, News, Humor, P KDYL Poetry
- 6:30 AM—Morning Moods, Nat Brusiloff and his Orchestra KDYL
- 6:45 AM--Morning Moods KDYL
- 7:00 AM—Ocean Spray Foods, "Cape Cod Dumplings" KVI KOL KFPY KHJ KFRC
- 8:00 AM-Famous Folks KDYL
- 8:30 AM-Party House, KDYL
- 9:00 AM—Paul Tremaine and his Yoeng's Restaurant Orchestra, dance music KLZ KDYL KVI KOL KFPY KHJ KFRC
- 9:30 AM—Columbia Revue KDYL
- 11:00 AM—The Four Clubmen KLZ KVI KFPY KHJ KFRC
- 11:30 AM—American School of the Air,
 "Music and Works" KLZ KDYL
 KVI KFRC

 12:00 Noon—Columbia Salon Orchestra,
 Emery Deutsch, director KLZ
 KDYL KVI

 12:30 PM—Pancho and his Orchestra,
 dance music KLZ KDYL KVI

 1:00 PM—Fighters of Fate KLZ KDYL
 KVI

 1:15 PM—Italian Idyl Vincent Sorey and

- 1:15 PM—Italian Idyl, Vincent Sorey and his Orchestra KLZ KDYL KVI
- KFRC 1:30 PM—Columbia

- KFRC

 1:30 PM—Columbia Artists' Recital
 KLZ KDYL KOL KFPY KFRC
 WORC KVI

 2:00 PM—Rhythm Kings, Nat Brusiloff
 and his Orchestra KLZ

 2:15 PM—Adventures in Words. Dr.
 Frank H. Vizatelly KDYL KLZ

 2:30 PM—Bert Lown and his Biltmore
 Orchestra, dance music KDYL
 KLZ KLZ
- National Security League Broadcast KLZ KOL KFPY -National KFRC
- 3:15 PM-Harry Tucker and His Barclay

- KFRC

 3:15 PM—Harry Tucker and His Barclay
 Orchestra, concert music KDYL
 KOL KFPY KHJ KFRC

 3:30 PM—The Crockett Mountaineers,
 Hill-billy Numbers KFRC

 3:45 PM—Tony's Scrap Book KLZ KOL
 KFRC KFPY

 4:00 PM—Columbia Educational Features
 The Political Situation in
 Washington KFRC KFPY KVI

 4:15 PM—Musical Aviators Orchestra,
 Tom Truesdale, director KFRC

 5:45 PM—Premier Salad Dressers. Colin
 O'More. tenor and Premier
 Chef KLZ KDYL KVI KOL
 KFPY KOIN KHJ KFRC

 7:00 PM—Graybar's Mr. and Mrs. KLZ
 KDYL KVI KOL KFPY KOIN
 KHJ KFRC

 7:15 PM—The Gypsy Trail KLZ KOL
 KFPY KFRC

 7:30 PM—Paramount Publix Radio Playhouse, Guest Screen Stars KLZ
 KDYL KVI KOL KFPY KOIN
 KHJ KFRC KNX

 8:00 PM—Paul Tremaine and His Yoeng's
 Orch KLZ KOL

 8:00 PM—Johns Manville Program KHJ
 KOIN KFRC KOL KFPY

 8:30 PM—Morton Downey with Jack
 Pettis and Orch. KLZ KDYL
 KOL KFPY

- 8:30 PM—Morton Downey with Jack Pettis and Orch. KLZ KDYL KOL KFPY

WEDNESDAY

- 6:00 AM-Something for Everyone, music. news, humor, poetry KDYL KHJ
- 6:30 AM—Morning Moods, Vincent Sorey and his Orchestra KDYL
- 9:15 AM-Paul Tremaine and his Yoeng's Restaurant Orchestra, dance music KDYL KOL KFRC
- 9:30 AM—Columbia Revue, E m e r y
 Deutsch's Orchestra with Harriet Lee KLZ
- rickie Packers Program KVI KOL KHJ KFRC 10:30 AM-Pickle Packers
- 11:00 AM—Columbia Little Symphony and Frank Ruhf, tenor KLZ KVI KOL KFPY CFRB
- 11:30 AM—American School of the Air.
 "Robinson Crusoe" KLZ KDYL
 KVI KOL KOIN KHJ KFRC
- 12:00 Noon-Columbia Salon Orchestra Emery Deutsch, director KLZ KDYL KVI
- Silhouettes, 12:30 PM—Syncopated Brusiloff and his Orchestra KLZ KDYL KVI
- 1:00 PM-Musical Album, Columbia Salon Orchestra KLZ KDYL KVI KOL KFPY KFRC CFRB
- 2:00 PM—Asbury Park Casino Orchestra, dance music KLZ KDYL
- 2:45 PM-Eddie Connors KLZ KDYL
- 3:00 PM—"Bill Schudt's Going to Press." special program KLZ KDYL KOL
- Paul Tremaine's Orchestra, dance music KDYL KOL KFRC
- 3:45 PM—Tony's Scrap Book KVI KOL KFRC KFPY

- KFRC KFPY

 4:00 PM—Musical Aviators Orch. KVI
 KOL KFRC

 5:15 PM—U. S. Marine Band KDYL KOL
 KFRC KFPY

 5:30 PM—Toscha Seidel and Concert Orchestra KDYL KFRC

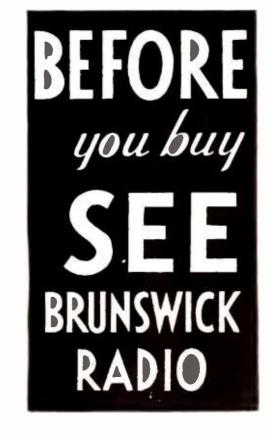
 6:00 PM—Gold Medal Fast Freight KLZ
 KDYL KOL KOIN KHJ KFRC
 KFBK KMJ

 8:00 PM—MJB Coffee Program, George
 Olsen's music KLZ KDYL KVI
 KOL KFPY KOIN KHJ KFRC

 8:30 PM—California Melodies, orchestra,
 Biltmore Trio, soloists, and
 guest stars KLZ KDYL

THURSDAY

- 5:45 AM—Morning Minstrels KDYL 6:00 AM—Something for Everyone KDYL 9:00 AM—Paul Tremaine and his Yoeng's Restaurant Orchestra KHJ KFRC KLJ KDYL KOL 9:30 AM—Columbia Revue KLZ KOL
- 10:00 AM—Ocean Spray Foods KVI KOL KFPY KHJ KFRC



- 11:00 AM—Columbia Artists Recital, Ben Alley, tenor, and Marie Garard, soprano KVI KFPY KFRC
- 11:30 AM—American School of the Air.
 "Schubert" KLZ KDYL KVI
 KHJ KFRC
- —United States Navy Band KLZ KDYL KVI KOL KHJ 12:00 Noon-
- 1:00 PM-Asbury Park Casino Orchestra, dance music KLZ KDYL KVI KFRC
- 1:30 PM—The Crockett Mountaineers. Hill-billy Numbers KLZ KDYL KVI KOL KFPY KFRC
- 2:00 PM—WSPD Commodores, dance music KLZ KPYL
- 2:45 PM—Bert Lown and his Biltmore Qrchestra KLZ KDYL
- -Columbia Educational Features KLZ KVI KOL KFRC 3:00 PM-
- 3:15 PM—Ozzie Nelson and his Barbizon Plaza Orchestra, dance music KLZ KDYL KFRC
- -Tony's Scrap Book KLZ KOL KFRC KFPY KHJ 3:45 PM-
- 7:00 PM—The Lutheran Hour—Dr. Walter A. Maier, large choir and organist KLZ KDYL KOL KOIN KHJ KFRC
- Melody Moment KLZ KDYL 7:30 PM-KFPY
- 8:00 PM-Ben Bernie and his Orchestra, $8\!:\!30~\mathrm{PM}\mathrm{--Ted}$ Weems and His Orchestra KLZ KOL
- 9:00 PM—Folgeria comic opera of the air KDYL KVI KOL KFPY KOIN KHJ KFRC

FRIDAY

- 6:00 AM—Something for Everyone KDYL 6:30 AM—Morning Moods KDYL 9:15 AM—Paul Tremaine's Orch. KLZ KDYL KLZ KVI KFPY 11:00 AM—Columbia Artists Recital KLZ KVI KFRC 11:00 AM-

- KVI KFRC

 11:30 AM—American School of the Air KLZ KDYL KVI KOL KOIN KHJ KFRC

 12:00 Noon—U. S. Marine Band Concert KLZ KDYL KVI KOL

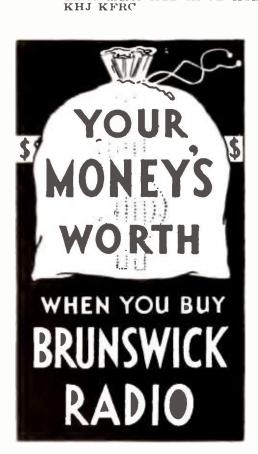
 12:45 PM—Columbia Educational Features "Cold Light" KLZ KDYL KVI 1:00 PM—Columbia Salon Orch. KLZ KDYL KVI KOL KFRC

 1:45 PM—Thirty Minute Men, Nat Brusiloff and his orchestra KDYL KVI KFRC KLZ

 2:00 PM—Light Opera Gems KLZ KDYL

 2:45 PM—Ebony Twins, piano duo KDYL

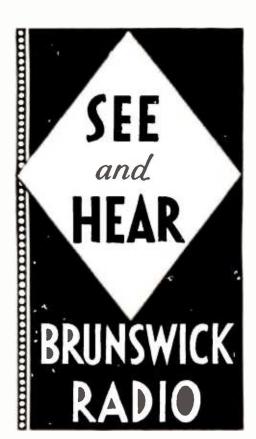
 3:00 PM—Paul Tremaine's Orchestra. dance music KLZ KDYL KOL KHJ KFRC



- 3:45 PM-Tony's Scrap Book
- 4:00 PM—Howard's Lanin's St. Moritz Orchestra KLZ KOL KFPY KFRC
- -National Employment Commit-tee KFRC
- -Grand Opera Miniatures KDYL. KFPY KOIN KHJ KFRC 5:15 PM-
- 7:00 PM—Armenian National Art Chorus KDYL KVI KOL KFPY KOIN KHJ
- 7:30 PM—Behind the Words KLZ KDYL KVI KOL KOIN KHJ
- 8:00 PM—Musical Aviators Orchestra. dance music KLZ KDYL KOL
- 8:30 PM—Romanelli and his King Ed-ward Orchestra from Toronto, dance music KLZ KDYL

SATURDAY

- 6:00 AM—Something for Everyone, music, news, humor, poetry, etc KDYL
- -Morning Moods, Vincent Sorey, director KDYL -Land O' Make Believe Chil-dren's Play KFRC 6:30 AM-
- 8:00 AM-
- 8:30 AM-Columbia Revue KHJ KFRC
- 9:00 AM-Paul Tremaine's Orch. KLZ KDYL KVI KFPY KHJ KFRC
- -Columbia Artists' Recital KLZ KVI KFPY 11:00 AM-
- 11:30 AM—Columbia Salon Orch. KDYL KVI KHJ KFPY KLZ
- -The Four Clubmer KDYL KVI KOL KFPY 12:00 Noon—The Clubmen KLZ
- 12:30 PM—Saturday Syncopators KL KDYL KVI KOL KFPY KHJ



- I:00 PM-Ann Leaf at the Organ KLZ KDYL KVI KOL KFPY KHJ KFRC
- Spanish Serenade, Vincent Sorey and his Orchestra KLZ KDYL KVI KOL 1:30 PM--Spanish
- 3:15 PM—Columbia Educational Fea-tures KLZ KVI KOL 5:15 PM—Dixie Echoes KFH KDYL KFRC
- Fletcher Henderson and H Orch KLZ KDYL KHJ KFRC -Fletcher 5:30 PM-
- -('olumbia Educational features KLZ KDYL KOL KFPY KHJ KFRC
- 7:00 PM—Hank Simmons' Show Boat KLZ KDYL KHJ KFRC KOL 8:00 PM—Jack Denny and his Mt. Royal Orchestra from Montreal, dance music KLZ KDYL KOL
- 8:30—Guy Lombardo and his Royal Can-adians, dance music KLZ KOL

United Broadcasting Co., Limited

SUNDAY

8:00 AM—Bill Sharples and His Gang KGB KFWB-KTM (alternat-ing) KTAB KORE KXL KMED KXA KVOS



- 7:00 PM—Sunday Echoes (Liborius Hauptman and orchestra(KGR KFWB KTM (alternating) KTAB KORE KXL KMED KXA KVOS
- 7:30 PM—Daily News Digest KGB KFWB-KTM (alternating) KTAB KORE KXL KMED KXA KVOS
- 7:45 PM—Evensong (inspirational music) KGB KFWB-KTM (alternat-ing) KTAB KORE KXL KMED KXA KVOS
- -Staff Soloists' KFWB KTM KTAB KORE KXA KVOS 8:15 PM-Recital KGB (alternating) KXL KMED
- Hotel Roosevelt Orch KGB KFWB KTM (alternating) KTAB KORE KXL KMED 8:30 PM—Hotel KTAB KOI KXA KVOS
- -On Parade (Orch and Soloist.) KGB KFWB-KTM (alternating) KTAB KORE KXL KMED KXA KVOS 9:00 PM-
- TAN KVOS

 -Traumerei (orchestra & vocalists) KGB KFWB-KTM (alternating) KTAB KORE KXL

 KMED KXA KVOS 9:30 PM-

- 8:00 AM—Bill Sharples and His Gang
 KXA KVOS
 7:00 PM—Composer's Hour (Liborious
 Hauptman's Orchestra) KGB
 KFWB KTM (alternating)
 KTAB KORE KXL KMED
 7:30 PM—Daily NewsDigest KGB KFWBKTM (alternating) KTAB
 KORE KXL KMED KXA
 KVOS
- KORE KVOS
- -Lyre and Mask KGB KFWB-KTM (alternating) KTAB 7:45 PM-(alternating) KTAB KXL KMED KXA KORE KVOS
- 8:00 PM-Screen Snapshots KGB KFWB-KTM KORE (alternating) KTAB KXL KMED KXA
- KVOS 8:30 l'M—Hour of Musical Gems KGl3 KFWB KTM (alternating) KTAB KORE KXL KMED KXA KVOS
- United Popular Ensemble KGB KFWB KTM (alternating) KTAB KORE KXL KMED 9:30 PM-KTAB KO KXA KVOS

TUESDAY

8:00 AM—Bill Sharples and His Gang
KGB KFWB - KTM KTAB
KORE KXL KMED KXA KVOS
7:00 PM.—Realm of Terpischore KGB
KFWB-KTM KTAB KORE
KXL KMED KXA KVOS
7:30 PM—D a i l y N e w s Digest KGB
KFWB-KTM KTAB KORE
KYL KMED KXA KVOS
7:45 PM—Murray and Harris KGB
KFWB - KTM KTAB KORE
KYL KMED KXA KVOS
8:00 PM—Dramatic Program (G. Donald

8:00 PM—Dramatic Program (G. Donald Gray) KGB KFWB - KTM KTAB KORE KXL KMED KXA KVOS



8:30 PM—Phantoms of Broadway (studio orchestra) KGB KFWB-KTM

KTAB KORE KXA KVOS 9:30 PM—Land of Dreams (orchestra and vocalists) KGB KFWB-KTM KTAB KORE KXL KMED

WEDNESDAY

8:00 AM—Bill Sharples and His Gang KGB KFWB - KTM KTAB KORE KXL KMED KXA KVOS

Opera Sketches (orchestra)
KGB KFWB - KTM KTAB
KORE KXL KMED KXA 7:00 PM—Opera KGB KVOS

7:30 PM—Daily News Digest KGB KFWB-KTM KTAB KORE KXL KMED KXA KVOS 7:45 PM—Musical Brevities KGB KFWB-

7:45 PM—Musical Brevities KGB KFWBKTM KTAB KORE KXL KMED
KXA KVOS
8:00 PM—Ted Dahl and His Orchestra
(originating at the studios of
KFWB) KGB KFWB-KTM
KTAB KORE KXL KMED
KXA KVOS
9:00 PM—O'er Land and Sea. (Orchestra
and soloist) KGB KFWB-KTM
KTAB KORE KXL KMED
KXA KVOS
9:30 PM—Dancing Strings KGB KFWBKTM KTAB KORE KXL
KMED KXA KVOS

THURSDAY

8:00 AM—Bill Sharples and His Gang KGB KFWB - KTM KTAB KORE KXL KMED KXA KVOS

7:00 PM—Boris Kramarenko's Russian Orchestra and Tenor Soloist KGB KFWB - KTM KTAB KORE KXL KMED KXA

KVOS
7:30 PM—Daily News Digest KGB
KFWB-KTM KTAB KORE
KXL KMED KXA KVOS

7:45 PM—Artists' Recital (staff vocalists)
KGB KFWB - KTM KTAB
KORE KXL KMED KXA KVOS

Orchesta 8:00 PM-

8:30 PM—Hotel Roosevelt Orchestra, Hollywood KGB KFWB · KTM KTAB KORE KXL KMED KXA

KTAB ROKE KAL KMED KAA KVOS 9:00 PM--Modernistic (program originat-ing at KFWB, Hollywood) KGB KFWB - KTM KTAB KORE KXL KMED KXA KVOS

9:30 PM—Radio Periscope (light comedy)
KGB KFWB - KTM KTAB
KORE KXL KMED KXA KORE KVOS

FRIDAY

Bill Sharples and His Gang KGB KFWB - KTM KTAB KORE KXL KMED XXA 8:00 AM-Bill KYOS

7:00 PM-Children's Hour (orchestra and child features) KGB KTM KTAB KORI KGB KFWB-KORE KXL

child features) KGB KFWBKTM KTAB KORE KXL
KMED KXA KVOS
7:30 PM-Daily News Digest KGB
KFWB - KTM KTAB KORE
KXL KMED KXA KVOS
7:45 PM-Novelty Program KGB KFWBKTM KTAB KORE KXL
KMED KXA KVOS
8:00 PM-Ventian Liberious Hauntman

8:00 PM—Venetian (Liborious Hauptman and orchestra) KGB KFWB-KTM KTAB KORE KXL KMED KXA KVOS



RADIO TODAY!



8:30 PM—United Popular Ensemble KGB KFWB-KTM KTAB KORE KXL KMED KXA KVOS 9:00 PM—Musical Paintings KGB KFWB - KTM KTAB KORE

KXL KMED KXA KVOS

-Jimmie Bittick's Town House
Orch. KGB KFWB-KTM KTAB
KORE KXL KMED KXA KVOS

8:00 AM—Bill Sharples and His Gang KGB KFWB - KTM KTAB KORE KMED KXA KVOS

7:00 PM-Reflections (Liborious Hauptman and small orchestra)
KGB KFWB - KTM KTAB
KORE KXL KMED KXA

Digest Kub TAB KORE KVOS 7:30 PM—Daily

KVOS
7:30 PM—Daily News Digest KGB
KFWB-KTM KTAB KORE
KXL KMED KXA KVOS
7:45 PM—Murray and Harris Piano and
Songs KGB KFWB-KTM
KTAB KORE KXL KMED KXA KVOS

8:00 PM Weekly Review KGB KFWB-KTM KTAB KORE KXL KMED KXA KVOS 9:00 PM-Jimmie Bittick's Town House Orch, KGB KFWB-KTM KTAB KORE KXL KMED KXA KVOS

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(Continued from Page 27)

vided in duplicate and are designed to give the proper frequency at about 50° cent. The final adjustment is made by temperature control which gives a change of from 30 - 100 parts in a million per degree.

As long as music and entertainment continue to hold a prominent place on broadcasting programs, fidelity of transmission will probably remain the most sought-for characteristic, not only for the radio transmitter itself, but for all of the apparatus units in the system. A very high standard of performance has now been attained in this respect. The overall frequency characteristic is substantially flat between 30 and 10,000 cycles—the greatest departure being less than one DB—an amount that could not be detected in ordinary listening tests by a skilled musician. The attainment of such high standards for fidelity leaves little opportunity for progress and it is improbable that significant advances in this direction will be made in the near future. Accordingly fu-

ture developments will be toward the elimination of noise and other interference, which in the past has so seriously impaired the artistic effect of programs, except in the immediate vicinity of the transmitting stations.

The 50 K.W. transmitter will cover an area ten times greater than a 5 K.W. At a distance of one mile there is a field strength of 5 volts per meter. A study of 5 K.W. transmitters compared with 50 K.W. sets indicated that the former costs about \$40 per square mile per year whereas the latter costs only about \$7 per square mile per year a reduction of about six to one. A coverage radius (night) of about 500 miles is secured from a 50 K.W. transmitter depending upon actual local conditions.

The improvement of quality for distant listeners is the principal justification for the present movement toward higher power outputs. It has also resulted in increased emphasis on the maintenance of a high average degree of modulation, a development which is rapidly bringing about a very perceptible improvement in general broadcasting conditions.

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ON RADIO ROW

The Office Boy Sez:

Ye office boy was driving along La Brea the other morning and noticed a large billboard which carried this message:

FOOL AND SAP REALTORS

Is not this the height of asiniuity. Business is not good, so why "kid" ourselves. We are like a bunch of small boys passing a cemetery on a dark night, whistling as loud as possible so that fear will not get the best of them and start them running wildly for home.

The whole country is in the grip of fear. Pessimism is mounted on a big horse and riding rough shod over business. The well-known backbone has become jelly, the intestinal fortitude has faded like a spring snow in the sunshine.

The difference between good and bad times, between profits and losses is confidence.

Let's all get "old man confidence" back on our side. Use a few of the hoarded dollars for necessary purchases and before you know it Optimism will be in the saddle instead of fearsome Pessimism. Let's go!

Who would think that we had a real magician in our radio crowd. Of course some people think that the men who are doing a fair radio business these days are magicians, but then—that's getting away from the original subject.

Tom Churchill is not only an old-time radio fan, but an old trouper. He started playing around in radio back in 1907 when an amateur had to make nearly all his own equipment. He took a large house key, a salt box, a hammer, a couple of feet of bell wire, a few other odds and ends and presto-chango he had a wireless set. This remarkable

metamorphosis caused Tom to change his vocation. He reasoned that if he was as good as that he should really let people see his wizardry and pay for the privilege.

For many years Tom toured the country demonstrating his skill to large audiences. He should have been contented and happy, but because the radio bug had entered his system years before he always harbored a desire to get back to his first love. Finally "Master Radio" won out and Tom started in pounding "brass." From there he went into retailing parts and sets for one of the big department stores, then into manufacturing radio receivers, then managing a

wholesale house and now he is touring around Orange and San Bernardino Counties calling on dealers.

Radio now has the former magician firmly in his grasp and we doubt if Tom will ever get away again.



Jimmy Dean has the reputation of being a fast, clever salesman. He can make sales where others fail. Bringing in the distant stations through the locals, without interference and with just the right volume and clarity is easy for this master dial spinner.

He can carry around this reputation if he wants to, it's O.K. with us, but what we are interested in is his culinary expertness. This baby from Long Beach is the finest purveyor of trout in the world; bar none! Rainbow trout, done to a turn. Brown and crispy on the outside, virgin white on the inside—so tasty, sweet and

tender that it fairly melts in your mouth. Delectable, oh boy; more, more.

A chef is good when he can cook a few trout this way, but when he can serve enough for twenty big, husky radio men and have some of them consume five apiece, he is a wizard

Rest assured that in the future Master James Dean will be on every hunting and fishing trip with the gang.

Jerry King, the veteran sports announcer and chief impresario of KFWB. His vivid descriptions of football and baseball games have thrilled the radio audiences and partially compensated them for their absence and not seeing all the action. Jerry puts all the youthful enthusiasm of an undergraduate in to his portraiture and tries to have his unseen audience visualize the plays through his forceful description.

"He's off, he's away running fast around left end, with beautiful interference—the opponent's right end is cutting in on him forcing him between end

and tackle—he's getting through—No, he didn't—the secondary defenses nailed him. Smith, right halfback, ran with the ball. Jones' fullback made the tackle. One yard—second down—nine yards to go. Ball is on State's forty-yard line. Now they are in a huddle," etc., until the final whistle.

Clear, precise and peppy. A joy to the football enthusiasts who have to stay at home.

Keep it up, Jerry. Let's have more.

RADIO GOINGS ON ABOUT TOWN

The Crowe Name Plate and Manufacturing Company of Chicago, manufacturers of escutcheons, dials and name plates, introduced several new types of escutcheon plates this last week. Even though Crowe products are being used by most of the local manufacturers Crowe artists continue to produce new designs so as to always keep ahead of their competitors. W. Bert Knight, Western representative, is kept busy supplying the Western market with these products. He just returned from San Francisco a few days ago and, as this is being written, he is on his way to Salt Lake and points north.

The Herbert H. Horn Manufacturing Company is now installed in its new factory on West 17th street, Los Angeles. All of the Tiffany Tone and Horn Midgets, consoles and radio-phonograph combinations will be assembled in this new plant and with the up-to-date machinery and production methods it has a capacity of 1,000 sets a day.



Mr. Horn reports that orders are still coming in from the Eastern and middle-Western territories and that the small type radio set is holding its popularity.

A new model of the Handi-Mike has been produced from the Inglewood Laboratories of Universal Microphone Company especially for use in home recording. Home recording has become a popular type of home entertainment, and various devices are now on the market for this purpose. The Handi-Mike can be used in conjunction with practically any of the devices.

A new small six-tube AC screen grid set in three styles of finish, to be known as the "Little General" and priced at \$57.50, without tubes, has just been announced by General Motors Radio at Dayton, Ohio.

Four, type '224, screen grid tubes are employed, three being used in the radio frequency stages and one as a power detector. One type '245 tube is used in the power output stage, while the rectifier tube is of the '280 type. The new set uses four tuned circuits and dual volume control.

L. C. Warner, Western manager for the General Motors Radio Corp., stated that the factory was in production and that the sets would soon be in the hands of their dealers.

The ARRC, the club conducted by the radio amateurs of Southern California, gave a large get-together banquet on December 6th at which Dr. Lee DeForest was the guest of honor and principal speaker.

The Radio Supply Company of 912 South Broadway has just completed one of the finest radio parts catalogues ever compiled. Perry Demarest says that this catalogue is of great assistance to the amateur, experimenter and serviceman. Write to the Radio Supply Company and they will send you one of these catalogues free of charge.

The very active sales organization of Kierulff and Ravenscroft, Crosley distributors for California, welcomed two new faces this George T. last month. Vance, formerly of the General Motors Corporation, is now on the San Bernardino and Orange County territory. O. B. Scott, formerly of the General Electric Corporation, has been appointed specialty radio salesman and is doing a fine job.

K & R have also acquired two new lines of merchandise. The Chicago Electric



A. E. Ravenscroft

Company, manufacturers of toasters, flat irons and other electrical appliances, and the Emerson-Brantingham Company, manufacturers of circulating air electric heat machines, have both announced the appointment of Kierulff and Ravenscroft as California distributors.

Bert Hassler, sales manager of the Advance Electric Company, with factory and offices at 1260 West Second street, Los Angeles, announces the appointment of C. O. Coblentz as special sales representative in the middle-Western territory.



Mr. Coblentz is unusually fitted for the position as he covered this territory for many years for the Steinite Radio Company. In his position as promotional sales manager for that company he came in contact with all the jobbers and most of the dealers in the East and middle-West.

The Falck receivers, manufactured by the Advance Electric Company, have been popular sellers on the Pacific Coast for many years. "We believe that they will be just as popular in the East," said Mr. Hassler.

LOOKING BACKWARD

With R. B. YALE

THE CHARGE OF THE LIGHT BRIGADE

Onward, still onward
Rode the six hundred.
Midgets to right of them,
Midgets to left of them
Volleyed and thundered.

So might that old poem, "The Charge of the Light Brigade" be brought down to date and applied to the radio industry. One might almost say that with extreme bravery Western manufacturers have led the country in developing the so-called midget set. Many articles have been written concerning the phenomenal growth of this small set business and what it has accomplished in the radio industry as a whole, but the one thing that is puzzling most of us is how did it all start and what brought it about.

Looking backward five and one-half years ago or thereabouts, the Radio Communications Company, Ltd., in England saw the need of a small compact radio receiver that would operate a loud speaker. The company proceeded to develop a very small set approximately seven inches square in size, tuned with a single condenser, and using two one and one-half volt tubes. Tuning inductances were interchangeable, and part of the set equipment was an assortment of small coils similar to the old style honeycomb. With this set and loud speaker and batteries, or as they called them over there, "high and low tension accumulators," it was possible to pick up most of the European stations regardless of wave length and play them on a loud speaker. The set was known as the "Polar Twin."

Here in America, you will remember, several manufacturers followed suit. Crosley, for example, brought out a small job called the "Crosley Pup," followed by the Radiola 3A, and still later a host of so-called portable sets using loop antenna with self-contained batteries and speaker. It seems that this might be taken as the background or forerunners of the present day mantel type radio—manufacturers ever striving to reduce cost to satisfy a market that could not be reached with large expensive sets and to present a complete radio receiver as small in size as possible. Those in the West who were early in the midget game were building two and three tube compact sets of the Harkness variety, using a crystal detector and eliminating the usual batteries with one or two doorbell transformers. True they did hum and they were not very selective, and if a door slammed in the house the cat whisker had an annoying habit of losing the sensitive spot on the crystal detector and one's ears were assailed by a series of howls and squeals that would have done credit to a steam shovel. These early manufacturers came to be known among the trade as "bologna" manufacturers. No doubt this appellation was swiped from the meat trade as in the packing business it is customary for small sausage manufacturers to buy from the packing house the needed meat, from another source cereal, from still other sources spice, sausage casing, and in a small store put the whole together—the result being bologna.

After the advent of the so-called midget set a new name was given to the set and to the manufacturer. As radio along with practically all other industries has acquired a slang all its own, the sets were called "Jaloppes" and the manufacturer a "Jaloppe Manufacturer." To trace down the source of this new name one must go back to the Ziegfeld Follies of 1925 or 1924. At that time W. C. Fields, the comedian, was putting on a Field act in the Follies of that

year in which he drove a very dilapidated Ford out on the stage. During the progress of the comedy skit Henry's pride was made to fall apart, blow up, etc., and also the car was referred to by the comedian as a "Jaloppe." The use of this name spread among second-hand automobile dealers in referring to cars of the small type that, perhaps, were none too good in appearance. And some wag appropriated the name and in a joking way tacked it on to the midget set. This, to say the least, is rather unfair as many very fine midget or mantel type sets have been developed by the Western manufacturer. So much for background and history.

While it is impossible to give with any degree of accuracy facts and figures, a recent estimate indicated that there are more than ninety-five concerns manufacturing midget sets; approximately two-thirds of them are located in California, and until recently Southern California produced for local and national consumption 90 per cent of all the midget sets being sold throughout the country. As many manufacturers make from one to four or five different brand sets, it is reasonable to assume that there are upwards of 125 different midgets sold under various names.

Due to a better knowledge of the game as a whole, costs have come down, appearance has improved along with an added improvement in tone quality and performance. Sixteen national manufacturers have now added midget sets to their line, several of them are featuring it over and above even their large standard type consoles. A number of manufacturers here in Southern California intend to release midget model superheterodyne sets around the first of the year. The tendency on the part of these local manufacturers is to increase the number of tubes, but on the other hand the Eastern concerns are working in the other direction and endeavoring to obtain maximum performance and tone with a fewer number of tubes. Estimates vary as to the proportion of midget sets sold to the total number of radio sets now being sold. The most conservative place it at 50 per cent of the total volume, and some as high as 80 per cent of the total volume of sales.

One can only say that the midget set has forced the radio industry to develop an entire new technique of production and merchandising. Whether the industry likes it or not, the midget has undoubtedly come to stay as it provides radio entertainment at the smallest possible cost and has opened a hitherto untouched market composed of thousands of purchasers who are simply financially unable to buy radio sets retailing for one hundred and twenty-five dollars and up.

It will be interesting in a year or two to again look backward and see in retrospect just what eventually happens in the radio industry on account of the introduction of the so-called midget clock or mantel type radio. In the meantime, large radio manufacturers secure in their position a year or so ago, have, we will wager, lost a few sleepless nights because of a desire on the part of the public for radio entertainment in a compact form at a low price.



AS I WAS SAYING

The Modern Radio Receiver By L. E. TAUFENBACH*

Until this year, broadcasting has not aided true appreciation of music. Reproduction of music in the home via the radio receiver of the past decade bore little or no resemblance to the concert hall original.

True perhaps, the melody was there, but as heard after being sent through the old carbon type microphone and telephone land lines and distorted by limited range circuits abetted by horn and magnetic cone type speakers, it was practically a caricature of the original, a black and white photograph taken with a poorly focused camera, losing not only color, but its lines and movement as well.

Not only did the radio receiver of yesterday fail to build up an understanding of fine music, but it had a far more reaching effect, for it broke down true tone appreciation to such an extent that an owner of a receiver of perhaps the 1927 vintage has to have his ear re-educated before he is able to truly hear the full range of the reproduction brought to him by a radio receiver of today, such as the Brunswick. The man about to buy a 1930 receiver feels much the same as a man attending the concert of an orchestra that he has been hearing broadcast for several years. He feels as though an augmented group of musicians has been rung in on him. The kettle drums become echoes, the bull fiddles, rasps and French horns, diabolical blasts, all calculated to destroy the ear that has become adapted to hearing blurs and hisses instead of true low and high notes.

Musicians all over the world are hailing the new 1930 radio receivers, not in the form of "paid endorsements," but by word of mouth. Through them, they feel they can bring to the great masses real appreciation of fine music. The appreciation which is necessary before music lovers can be developed in any country.

*-- President Western Radio, Inc., Southern California Brunswick Distributors.

The Need of a Super-Heterodyne Midget By F. W. FALCK*

Many people have questioned me as to why I went into production on a super-heterodyne midget. To me this is a very easy question to answer for I have several very definite reasons which to me seem important.

As a radio engineer and experimenter I have always felt that the super-heterodyne principle was the ultimate in radio receiving circuits from the standpoint of selectivity, sensitivity and tone quality. As a manufacturer I am, of course vitally interested in consumer trends and changes in broadcasting conditions. I am also aware of the fact that the receivers of 1931 to meet competition and to meet the demands of the discriminating fans must be vastly superior to those made in the past.

The prospective radio purchaser today demands a compact, powerful sensitive, selective receiver housed in a beautifully finished cabinet and at a reasonable price. Using the super-heterodyne principle we can give them a small radio set that will do all that the large receivers will do and still be able to house the complete chassis and speaker in a midget cabinet.

The Federal Radio Commission has under advisement the request of some twenty-eight new 50,000 watt broadcasting

stations. If the commission authorizes the erection of these stations the radio fan will need a super-selective receiver to be able to cut through these powerful transmitters and pick stations which they wish to hear.

I have spent many months working on the super-heterodyne and the final result is a receiver which I firmly believe will meet the new era of radio reception which is unquestionably being ushered in.

*-President of Advance Electric Company.

Shall I Handle Refrigeration?

By GEORGE G. LANE*

Ninety per cent of the radio business of Southern California is done in the fall, winter and spring months.

And the coasting period, of fewer sales, and lesser activity, comes during summer.

The high point of sales in some other businesses is during the summer months. Among them is electrical refrigeration.

These two assorted bits of information ought to spell something of keen interest to every radio dealer. If they can somehow be brought together, they should mean profits

The idea is no new one. There are several companies doing a good deal of talking about the possibilities, and I suspect that practically every radio dealer has been approached on the idea.

The strange thing to me is that I occassionally hear of a dealer who has not seen the possibilities, who believes that "maybe in the spring" he'll consider electrical refrigeration.

Perhaps it's too cruel to suggest that "maybe in the spring" he'll find himself without the opportunity of considering the matter, either through not having the chance to get the representation that he wants, or, perhaps even through his not being in the business by that time.

What I mean by that is simply this: the live and alert radio dealers, good merchants, have seen the possibilities of this hook-up between radio and refrigeration, and they are actively on the job making it work for them.

There is, however, something to be said for the cautious. Naturally, with the fast thinkers catching the significance of the idea, there have been some fast workers developing. There is a good reason for the radio dealer, approached on electrical refrigeration, to tread cautiously, even though he be firmly convinced that the idea is a sound one.

There are three things which mean the difference between profitable electrical refrigeration and an unprofitable mistake. These are: a sound and reputable manufacturer with experience and ability in the refrigeration field; aggressive manufacturer and jobber support of dealer activity, and a competitive price which assures ability to do a job in a field which will soon be crowded with dealers for various boxes now being manufactured and new ones coming into the field.

In fact, I'm convinced that a favorable answer to the question, "should I install electrical refrigeration as a supplement to my radio business?" should be answered largely on the basis of these three points which I have just outlined. They are the real measure of success.

^{*--}Collins-Lane Co., Southern California Distributors of Leonard Refrigerators.

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