# PADIO DONG

THE PACIFIC COAST PROGRAMAND TECHNICAL MONTHLY



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March, 1931

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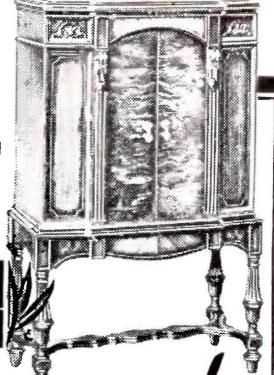
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The Leader

# PADIO DONG!

CLOYD MARSHALL, JR.
G. W. MARSHALL
K. G. ORMISTON
DOROTHY HUMMEL

Editor Business Manager Technical Editor Studio Editor

#### March, 1931

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Page

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VOLUME XX

NUMBER FOUR

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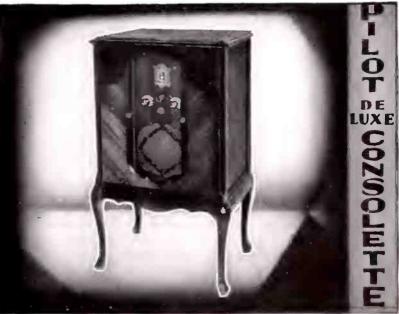
It has double sliding doors. Baffling area of cabinet is ample to bring out lowest tones of the special electrodynamic speaker. Illuminated Dial, Knob Control, Tone Control and Phonograph Connection.

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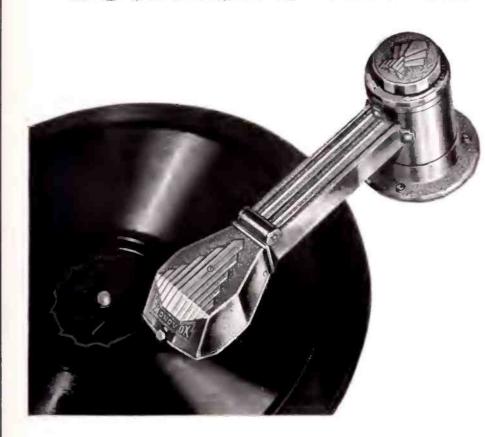
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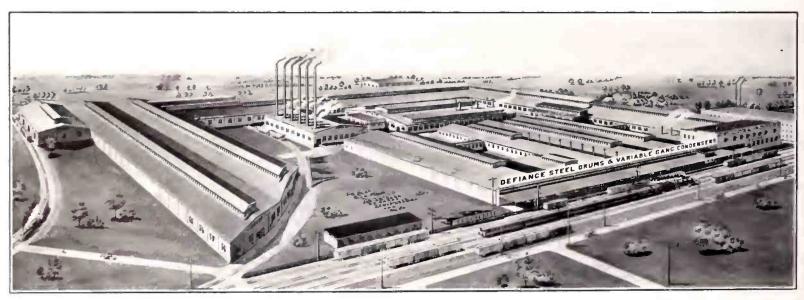
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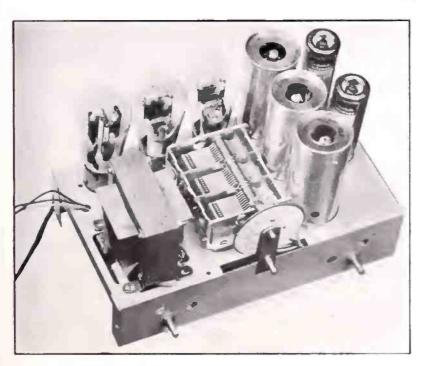
This radio is engineered by one of the fore-most Super-heterodyne engineers in the United

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Page Twelve

#### WE APPLAUD ...



David Hartford and Frances Nordstrom . . . KMTR

BECAUSE: David Hartford old-time director and favorite of the Belasco and Morosco Stock Companies and his wife. Frances Nordstrom, actress and author are presenting a series of fine one-act plays over KMTR on Monday and Thursday evenings at 8:45; because Miss Nordstrom has written these plays; because in the "good old days," David Hartford was largely responsible for

was largely responsible for bringing the original production of "Peg O' My Heart," "Country Boy" and "The Dollar Mark" to Los Angeles; because he has directed such now famous stars as Lewis Stone, Florence Reed, Marjorie Rambeau, Florence Oakley and Richard Bennett; but principally because we are whole-heartedly in favor of more dramas for radio production.

### Outstanding!



Stuart Buchanan

STUART BUCHANAN, director of theatrical performances for the United Broadcasting Company, began his dramatic career under the expert tutelage of no less a person than Otis Skinner, himself. Skinner happened to be in the audience at a college play and was so impressed by the ability of the young student, he offered him an attractive part in one of his plays, thereby opening avenues to a very successful dramatic career. Varied experiences undoubtedly have gone to make of Stuart Buchanan the actor whom Edwin Schallert of the Los Angeles Times gave credit for "the finest piece of acting of the year" in the Pasadena Playhouse production of "Spindrift." Dramatics, however, do not seem to be Mr. Buchanan's only forte. He has been an athlete, playing with Knute Rockne on the Notre Dame football team; has won his letters in track, baseball, basketball, swimming and football: as well as having coached and refereed for the major sports. Mr Buchanan is now playing the part of Louis XV in the "French Miniatures," a series of dramas by Kay Van Riper, written around the romances of the French court, which are being released over the Pacific Coast Network of the United Broadcasting Company every Thursday evening at 8:30 o'clock.





Eddie Holden

A new and joyous picture of Eddic Holden, whose delightful character, Frank Watanabe, Japanese Houseboy, amuses thousands nightly over KNX, is shown here for the first time. And on the right is Reginald Sharland, well known moving picture actor who created the role of the "Honorable Archie." We are aware that we are throwing quite a bomb when we reveal the Honorable Archie's identity. A lot of you thought he was Eddie Holden, didn't you? Frank Watanabe is quite enough of a character for one young and personable man to create at a time. By the way, Frank really learned his Japanese by haunting the Oriental sections of San Francisco, where he counts many charming Japanese as his intimate friends. If you haven't heard Frank and Archie, don't miss another night 7:00 to 7:15 week nights.



Reginald Sharland

#### On Your Right, Ladies and Gentlemen

By MONROE UPTON . . . Publicity Director . . . KFRC

HAVING received from Miss Dorothy Hummel an invitation to write something about the KFRC artists in the same manner that Dick Creedon wrote about the KHJ artists in last month's RADIO DOINGS it has taken me three days to make up my mind—not because I don't like to write about the KFRC artists, but because it's a tough assignment to write like Dick Creedon.

How can I so felicitously mix delightful humor with unstinted praise and convincing revelations of virtue and artistry? How can I make people laugh and at the same time see the halo around the artists' heads? How CAN I write like Dick Creedon. Well, anyway, I can write like Monroe Upton, which will have to do until Dick comes along again.

Not being equal to the "pick-em-out-of-the-hat" gag I'll have to give you as many of our artists as space permits and then try and survive the hard looks of the rest as best I can.

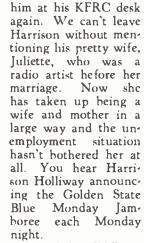
My practical sense moves me to start off with the man to whom I go for a raise every three months (once I got one), Mr. Harrison Holliway. He is five feet eight inches in height, has a blonde mustache which he wears au natural, a boyishly engaging smile, a clean cut profile, smokes a pipe,

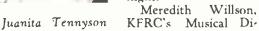
and he never misses a thing that goes out over KFRC when he is at home evenings. He watches the steady stream of programs like a hawk. After KFRC shuts down he breaks out his short wave receiver and listens to the "hams" over in Japan, Australia, South Africa and Turkestan. was a "ham" himself back in 1911, when he was ten years old, and since that time traveled all over the world as a radio operator. He has been



Harrison Holl.way

KFRC's manager since it's inception over five years ago. Well, after he is tired of the "hams" it's about time that Harrison the III, aged seven months, requires some attention. And 9 o'clock finds





rector, also has a very beautiful wife, Peggy Willson. All Meredith does is direct the station's music and conduct the orchestra



The Clarke Sisters

for the most important programs, but Peggy drops in occasionally looking very sweet and lovely, which is a lot more important to us around here. They were married back in Iowa before Meredith found fame as flute soloist with the New York Philharmonic, as director of the Seattle Symphony at the age of 27, as scorer of pictures in Hollywood and as Musical Director of KFRC. His favorite magazine is the New Yorker, which is Peggy's favorite also, and he is well liked by the alleged comedians because he laughs at their gags. I don't know whether he laughs at the blue notes of the alleged musicians or not—anyway they like it when he praises them for any exceptional musicianship.

Oh yes, I forgot to say (as Dick did about KHJ), we're all just one big happy family up here and to know us is to love us. (Wait a minute until I throw three people out of my office who are kicking because they haven't been getting enough publicity lately. One of them has a knife.)

Now, who's next? You don't hear very much about Merle Matthews, but she is one of the powers behind the programs from the KFRC studios. She is our production manager. She is both demure and active. She's the one person KFRC couldn't get along without, not only because she writes plenty of romantic continuity and provides a lot of ideas and sees that the studios function in good shape, but because she's the only one around the shop who is always ready to go to lunch with you. The world could be turned upside down without finding another as agreeable about going to lunch. She's a sweet girl, Merle, and if she doesn't hreak Don Lee huying oil to burn at midnight KFRC will be kept on its feet.

Juanita Tennyson and Margaret O'Dea, our staff soprano and contralto respectively,

belong to the traditions of Bay radio. "Dinty" Doyle of the Oakland Post Enquirer recently gave them first string positions on his Bay radio team. Miss Tennyson on the air is Mrs. Tennyson at home—her husband is Dr. Tennyson, dentist. Miss O'Dea is still Miss O'Dea when she is at home. She lives with her mother and drives around in her car for recreation. Both Juanita and Margaret are native daughters.

I've written so much about "Mac," Harry McClintock, it just isn't funny any more. Mac is just Mac. He's amusing off the air or on. He and his bunch of alleged cowboys are now playing country dances over the week-ends and getting away with it handsomely. The little kids and the old folks come to see Mac while the young ladies come to see Cecil Wright, who plays the guitar, harmonica, sings and has a profile like a Greek God. They're all good clean boys—which is the worst I can say about them. Mac ran away from his Tennessee home at the age of 14 with Gentry's Dog and Pony show. He soldiered in the Philippines, sailored all over the world, railroaded on two continents, mined on three and made a musical vagahond of himself for a good many years before he settled down with radio.

Dick Rickard is now mastering the cere-

monies on Feminine Fancies and reports everything under control. Dick was turned out on an unsuspecting world by the University of Washing. ton-he is the epitome of agreeableness, and his eagerness to see life from all angles and positions has led him to barge around the world as a sailor and to pursue other and less dignified pursuits. Young, honest, good-looking, intelligent and recently married. That's all I can say about HIM.



Margaret O'Dea

Now let's have a look at the tenor department. Robert Olsen, Norman Nielsen, Charles Bulotti and Elbert Bellows are occupying the pedestals. The first two provide the ballads and popular songs, the last

two the classics and semi - classics. Robert Olsen is our prize recording artist. He is also our prize Nordic. Tall and slender, blonde and serious, he only melts when he approaches a microphone. He is a proud and devoted family man, with two interesting children and a lovely wife. He was married long before radio came along and was in the wholesale grocery business. Norman reveals the innermost secrecies of his



"Mac

soul when he clowns daily on the Happy-Go-Lucky Hour. The young ladies like him because of his good looks, the old ladies because they would like to mother him, and both because of his voice. Charles Bulotti is president of the Machinery Dealers' Association and his magnificent voice is just a side line with him. We only use him on the Sunday night Cadillac-La Salle and on the General Paint program on Tuesday nights. Elbert Bellows was on four sectors of the Western front during the war with the light artillery and was initiated into the show business with one of the American army shows that entertained the soldiers in France after the Armistice. He has been



Robert Olsen

studying and working hard ever since. He worked as a black-smith for a year and a half to build up his physique. Although he is new to the KFRC staff his well trained and splendid voice is rapidly gaining him a following.

The two Ednas! Edna O'Keefe and Edna Fischer! We wrote about these two talented young ladies for RADIO DOINGS a couple of months ago so we shall pass over them at present.

The Pearce Broth

ers are next. Al and Cal aren't at all alike. Al is blonde, inclined to be a bit stout, has boundless energy and likes to be at the head of things. Cal is dark complexioned, slender, enjoys taking it easy and doesn't care at all about being at the tiller. The Happy-Go-Lucky-Hour is a testimonial to the powers of Al. He has raised it from a tenor solo.

Speaking of Happy-Go-Lucky, there is Tommy Harris and Charles Cartier, a couple of lads who have come a long way in radio in a comparatively short time. Tommy has that something it takes to make the ladies feel sentimental, Charley intrigues their fancy. Tommy is the senior of the two, he's nineteen. The age of Charley has been variously estimated at from 15 to 17. Just a couple of kids who have made good in a big way—along with Happy-Go-Lucky.

I find I have neglected our announcers. Walter Bunker, Jr., is the chief. Walter is a "good guy" raised to the 10th power. Nothing ever bothers him very much. Life is a sort of a casual proposition to him. He is one of the few persons who can have a good time while having a good time. His

announcing is popular because he is natural, he doesn't try to say more than he feels like he was "speaking a piece." However, he isn't our only popular announcer. There's Lin Church and Fred Lane. Lin attended Harvard, likes to collect old books, and is a student with an appreciation of the artistic aspects of existence. He was selected from a large group of candidates for the job. Fred Lane belongs to the school



Walter Kelsey



Cecil Wright

a great many of us graduated from—the cafeteria system of education. We took what we could get—and afford as we went along. He followed the sea for a good many years as a radio operator—a life conducive to contemplation. Fred is a writer, too.

William H. Wright is the man of many names on KFRC. His versatility has made him the victim of many incognitos. Professor Hamburg is, perhaps, the best known—though he is also, at the present time, Zeb, of Eb and Zeb (Al Pearce is Eb), Reginald Cheerily and Steamboat Bill. At Christmas time he is Santa Claus. Bill is married, lives in Burlingame, and has a cute little daughter who says "mizzable" for miserable. (Something which his wife never is.) He smokes



Al and Cal Pearce

huge black dirigible-like cigars and is a swell fellow, on a party or off.

Walter Kelsey is our Assistant Musical Director, and he runs the music on Feminine Fancies. He plays as many instruments as he has fingers and sings besides, but the violin is his favorite. Walter is still a young man, has always had equal amounts of ambition and energy and has come a long way since his care-free boyhood days in Monterey. He is married, and little Walter, Jr., shows healthy signs of following in the musi-

cal foot-steps of his father- he can sing the popular tunes he has heard over the radio.

There was a story and a picture about Pedro last month, so I'll let him off this time.

Eleanor Allen provides our organ programs. She is a big-hearted girl who refuses to take life too seriously not seriously enough to get married. She'll go on a party with you with practically no urging at all.

The Clarke Sisters are a pair of swell

The Clarke Sisters are a pair of swell blondes who began their radio career over KFI, in Los Angeles several years ago, and since that time have played vaudeville all over the country. They're always on their toes, musically, and off the air they smile a

good deal, which becomes them very much.

Billy Cowles is our master accompanist. If you can't sing when Bill plays for you there is no hope for you. He is also a youth, some place around 23 or 24, unmarried, attended University of Southern California, was with the Hollywood Music Box Revue, helped make some pictures and was accompanist for the Rounders.

We will close with John Moss and Ro-

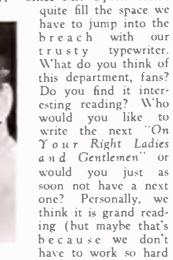


John Moss

nald Graham, basso and baritone respectively. John is a very tall, good-looking, dignified Englishman, who didn't like "toting up accounts," went in for fruit farming, which landed him in Canada, and then drifted down to the U.S.A. He had studied music for several years in England, both voice and piano, and he began to study again after coming to Canada. Ronald Graham comes from London also, of Scotch parentage, but he came while still a small lad (he was in kilts when he arrived) shortly after the war. His father was an army officer in France and the family lived in London. Ronald is 19, and although he is also a talented artist with the brush has chosen music as his

What ho! Darned if I didn't almost leave out Doakes and Doakes of Jamboree fame. Doakes and Doakes are really man and wife, or Hardy and Betty Gibson. They have played every vaudeville circuit in the country and a few in Canada and Australia. Real troopers, are Doakes and Doakes. And now they've settled down in San Francisco to raise their family.

EDITOR'S NOTE Since Mr. Upton didn't



when others do it.)



Norman Neilsen

#### FOR YOUR ENTERTAINMENT



The Empire Builders Go Into Rehearsal ... NBC

#### The Boys on the Cover

HO among you has not heard of De-tec-a-tives Black and Blue, mighty crime crushers of the air, whose feet are not flatter than their skulls; those elastic supporters of law and order whose fame has, in the past few months, stretched from one of the Don Lee chain to the other; and whose myriad daily followers, if placed end to end, would find it difficult to sit down?

That is a rhetorical question, my friends. And there is only one thing to do with one of those things—ignore it. Censors please note.

But who are these slick sleuths, Black and Blue, whose blundering triumphs in the practically unlimited field of crime, aroused such envy and admiration in the heart of William J. Burns that, several weeks ago, he came all the way from Florida to meet them in the studios of KHJ?

This is not a rhetorical question and must be answered.

Blue is none other but only Len Wright, trap drummer in Raymond Paige's KHJ staff orchestra. One day, Mr. Paige (the boys call him, Mr. Paige) sent out a telephone call for orchestra reinforcements. He was chewing salted peanuts at the time and the only intelligible words that came over the phone were, "Trap Drummer." Mr. Wright was immediately trapped. And hereby hangs a tale:

Born in the bull rushes north of Chicago. Father ran a chain of theaters in Illinois tullies. Little Len in short pants played drums in Sawtelle Circus out of New York. At age of 15, went into stock. Show and Little Len flopped in Savannah, Georgia. Flopped



Winnie Fields Moore

again in roller skating act over his Dad's circuit. There are some things Chicago won't stand for. Played repertoire with the famous Jesse Colton Company. Two xylophone acts in independent vaudeville. Had neither agent nor dime. Drums in Rockford Orpheum when orchestras came into picture houses. Had his own orchestra for two years at the Hoff Brau Club, Milwaukee. Beer is thicker than water. Came to California in 1922. Played at KHJ in the old days. Directed cafeteria band here. Organized KEJK orchestra. Disorganized it. Played with Black (Charles Forsythe) at both cafeteria and KEJK. Trapped by KHJ.

Black's biography includes:

Birth in Kansas corn fields. Named Charles Forsythe (if we are to believe him.) Father a theater trap drummer. Minstrel Male Quartet at 16. Stock roles while voice was changing. This gave rise to the term: The Squeaking Stage. Ran motion picture machines in the nikelodean days and spe-



Jay, The Jingle Man ... KNX

cialized in sound effects. Vaudeville. Manager small theater near Los Angeles. Imitated sea lion in first big stage band in motion picture house. Paul Ash so pleased he made Charlie director of comedy and sound effects. Played with big stage presentations in both Oakland and San Francisco. First radio work over KUO on roof of the Examiner building in San Francisco in 1923. Played character roles in movies (Ben Hur) and directed orchestra in Monte Bell's first picture, "Pretty Ladies." Worked for Raymond Paige at the Met. Conductor for Fanchon & Marco. KEJK, KHJ, KMTR and KHJ again. Considered final authority on radio sound effects.

How it all happened:

Earnshaw & Morgan decided to write a small comedy part into "Forgeria" for two dumb detectives, Black and Blue. The dumb nature of the characters was described at a conference in the KHJ studios. Raymond Paige immediately rubbed his hands together three times and pronounced the magic phrase, "Charlie Forsythe." Instantly Charles appeared on the carpet. Just like Aladdin. Only

Charlie had two lamps. One of them was black. Messrs. Earnshaw & Morgan (incorporated, we believe, no doubt) took one look and said, "Read it!"

Mr. Forsythe read his lines.

"Terrible," said the assembled conference.

"Awful," agreed Messrs. E. & M., "Just what we want! You're Black!" Charlie looked at himself in the mirror and disagreed. At the instant, the conference was interrupted by the intrusion of a mild voice and a decollete head.

"What's the matter, Len," asked Mr. Paige.

"Aw, I'm blue. Some guy swiped my pet drum whacker again."

"You're what?"

"I'm blue."

Creedon influence.

Messrs. Earnshaw and Morgan raised their eyes to Heaven and in voices hushed with awe, whispered, "He's Blue. A sign. A portent. . . . Here! Read this!"

And it happened that in the year 1930, in the studios of KHJ, in the City of Los Angeles, that the minor roles of Black and Blue did assume immense proportions—did steal the show and role them in the aisles throughout the length and breadth of California. And it further happened, that the Folger Coffee Company and Messrs. Earnshaw & Morgan (still incorporated, we have no doubt) saw opportunity before she knocked; and put Black & Blue, the two dumb sleuths, in a series of daily mystery-comedy-adventure skits which are broadcast over the Don Lee chain five days each week from 5:30 to 5:45 p. m., not to mention o'clock. And, if in passing down the street, you should see small boys with checkered Sherlock Holmes caps on their heads, you may feel certain that they are following the checkered fortunes of Black & Blue and want to grow up to be great de-tec-a-tives, themselves.

NOTE: Information contained in this story has been obtained from sources which we do not believe to be reliable—from Black & Blue, themselves. EDITOR'S NOTE: Much as we'd like to, we can't take credit for this outburst. You doubtless trace the Dick

For a long time we have wanted to show you some pictures of the Empire Builders and this month we are happy to show you the whole cast as it goes into rehearsal for one of the absorbing dramas of the building of the Empire. About twenty hours of rehearsing are required for each of the playlets which are released by the National Broadcasting Company each Monday night at 7:30 over KGW, KECA, KFSD, KTAR, KOMO, KGO, KHQ. Harvey Hays, known and loved for his portrayal of the "Old Timer" is seen at the microphone. Joseph Koestner, musical director, is seated at the piano. Behind him is Bernardine Flynn, one of the principals and at her right is Don Bernard, the director. Don Ameche, juvenile lead is seen at the extreme right.

This is the first picture we have ever had of Jay the Jingle Man and we have been quite curious about him for many long years. We have wondered what manner of man could dash off the amusing line of chatter in verse day after day and month after month and still keep it from triteness. (We once tried for days to write one single Jingle.) Jay the Jingle Man at KNX every day in the week except Sunday is the big man with the little job as he puts it. He only has



Ted White ... KHJ

to write 660 lines of rhymed continuity for adverts which he supplements with a philosophic rhyme as a sort of garnish (like parsley.) Then in his spare time he turns out an average of three song lyrics weekly as well as a few theme songs for special programs. In other words Jay writes 2 million lines a year or 20 million words. He deserves the title of the One and Only Jingle Man in America. And we thought our job was a hard one!

Quite often it is exceedingly disappointing to see pictures of your favorite radio stars, but in the case of Rose Dirmann and Winnic Fields



Rose Dirmann . . . KFI-KECA

Moore, no illusions are shattered. Miss Moore, whose fascinating Nomad Novelists sketches are a feature of KFI-KECA looks exactly as she should . . . romantic. Rose Dirmann, lyric soprano of KFI-KECA is almost to pretty to be true and, perhaps, that's one good reason she is so popular with immediate audiences as well as radio listeners. MMiss Dirmann's schedule has included concerts before the Friday Morning Club in addition to her regular KFI-KECA recitals. She is also the soloist at the First Church of Christ, Scientists.

With the addition to the Columbia Chain of Station KOH in Reno, Nevada, on February 15th, the Silver-State may now hear its own silver-throated song bird, Ted White, who warbles from the Don Lee-Columbia Key Stations... KHJ. Let us romance a bit. Nevada has had two beloved singers; one for each era of the state's colorful history. During the famous Gold Strike at the end of the last Century when the eyes of the world were turned to Virginia City, Nevada, a young musician by the name of Ricardo Jose was melting the hearts of the bold fellows who battled for the treasures mother-earth was offering so lavishly. When this young Spaniard's phenomenally lyrical voice rang over the purple hills on a clear Nevada night, strong men shed briney tears and vowed to return to the girls they had left behind them: such was the sentiment of the songs of that period. And they say, no one sang them like Dick

(Continued on Following Page)

#### (Continued from Preceding Page)

Jose. Nevada's own. Perhaps you have heard himnow a silvery-haired old gentleman-sing

Threads Among the Gold."

But those days are history now, the gold which mounted into billions, and which enriched the port of San Francisco and established the fortunes of many of the leading families of the West, suddenly disappeared as mysteriously as it came, and Virginia City became a deserted village-a ghost town-a name. The adventurous inhabitants moved on and Dick Jose with them-he singing his sweet melodies in almost every county of the world.

Nevada sat back for a few years to figure it all out then came the famous divorce law which again drew the eyes of the world to the romantic Silver-State. And it grew and it grew. Disillusioned partners in wedlock came by the hundreds to get "unlocked." Many of them eschewed a yearly stay in Paris, for three months of typical Western living in Reno. The distinguished, the wealthy, the learned, all came to this gay little city to "take the cure" as divorce is facetiously called there. Great musicians, journalists, statesmen, social leaders, financial wizards, or their wives (most often their wives) came with misgiving only to grow to love the free and easy spirit of the old West which seems to have found a last frontier in

Dude Ranches, estates, lodges for hunting, winter sports, yacht clubs, gambling casinos, racing tracks, and Night Clubs, grew rapidly around Reno and Lake Tahoe under pressure; the distinguished visitors must be entertained.

And for this purpose, Ted White was imported, actually imported, from the famous "Little Club of the Orient" in Shanghai, China, to which he had gone from New York City. Going to Reno was like going home to him; for at "The Willows," where the ritz is put on most heavily, Ted encountered old friends from New York almost nightly. But the atmospheres of 1890 and 1930 had a decided difference—as different as the music of these periods. The sentimentality of Gold-boom days had become the heavy romanticism of an age of freedom. Ted sang songs which mixed love and laughter-songs which amused, songs which quieted and rested, or pulsed with romance and passion; and occasionally, when one of the old timers appeared, some of the old songs which they loved, some of the songs which their beloved Dick Jose had sung to them.

Millionaires, actresses, gamblers, novelists, social leaders, senators, governors, pioneers, they all came to know Ted White and to love him for himself as well as for the melodies which he sang to suit their moods.

Since Ted has been singing from the Los Angeles Studios of the Columbia Chain, he receives word almost daily that some of these Nevada friends have heard his songs of the night before. As one person's letter expressed it—"I wonder if you realize, Ted, that practically the entire town of Reno is listening for you each night now

that our local Station KOH has become part of the Columbia System.



"Warning! . . . Unless you deliver to my radio set every Tuesday night your Memory Lane program, I will KILL every NBC program on my set and will hang crepe on the dial where KGO comes in . . . Now 'lass that off' . . . Yours truly, Ray D. O'Phan, alias Thomas H. Krebs, San Car los." In such violent words did one listener express his outrage at the threatened discontinuance of the Memory Lane program. 9,808 other persons hombarded the studios of the National Broadcasting Company with similar protests. Results? The Memory Lane program, on the air for four



The Keeper and the Little Pig . . KFWB

years, is re-instated a SPONSORED program of the first water. The new time is 8:15 to 8:45 every Tuesday night over KGO, KHQ, KOMO, KGW, KFI, KFSD and KTAR. Who says the public can't get what they want over the air?

The eleven-to-twelve hour on Sundays is put to excellent purposes over at the 24-hour station, KGFJ. At a time when the dial is concerned mostly with broadcasting of church services, KGFJ gives the music lover a concert program of orchestral classics.

Bill Sharples Fans Please Note-KNX has cornered the popular Bill Sharples and his gang for an unlimited engagement and you may hear them every morning from 7:00 to 8:00 over the Hollywood stations (What a lot of telephone calls this is going to spare our telephone girl!)



Raymond Paige's classic, "Vignettes in Symphony," has been shifted to Thursday evenings from 9:30 until 10:00. It is now available to the entire Coast chain of the Don Lee system. Don't make the fatal mistake of missing any of these programs. (We think they are the finest offerings of their type on the air today.)

To Joe Venutti of Paul Whiteman's band goes the credit for introducing a new arrangement of instruments to form a novelty quintet, featuring piano, baritone saxophone, violin, guitar and string bass. Aaron Gonzales modeled his organization after this idea and now has one of the most unique orchestras on the coast. KMPC presents Aaron Gonzales and his Novelty Quintet every Saturday from 9:30 to 10:00 p. m. on the Junior Chamber of Commerce program.

A series of twelve weekly concerts featuring artists of the Metropolitan and Chicago Opera Companies and a 32-piece symphony orchestra composed of members of the New York Philharmonic will be inaugurated over the Columbia network on March 2nd. The new programs will present a different internationally known opera star as guest artist each week. KHJ, KOIN, KOL, KFPY and KDYL will bring this program to the west coast.

And now you Doubters and Skeptics! Here is positive proof that the Little Pig of Pig 'n' Whistle fame is NOT a myth. We have always been able to visualize him perfectly, but we have met some who didn't believe there was a Little Pig at all. Anyway, Harry Jackson. Keeper of the Pig, has the ability to make the Little Pig live so vividly by his tender and indulgent conversations every night at the Pig 'n' Whistle, that we really don't care whether there's a pig in the flesh or not. Get acquainted with Harry Jackson's organization on the air every night from 6:00 to 6:30 over KFWB and we know you'll be as concerned over the Little Pig as we are.



Tom Breneman

**KFWB** 



J. Newton Yates ... KFVD

#### United Broadcasting Co., Ltd., Expands

Satisfying all rumors as to expansion plans of the United Broadcasting Company, Ltd., an announcement was released on February 27th by Louis L. Davis, Jr., chairman of the board of directors, that the new Pacific Coast chain of radio stations had acquired additional outlets which will make the United the most powerful network on the West Coast. Under the new arrangement just completed the UBC, The Silver Network of the Golden West, will comprise the following eleven radio stations: KGB, San Diego, Calif.; KGER, Long Beach, Calif.; KFWB, Los Angeles, Calif.; KYA, San Francisco, Calif.; KMED, Medford, Ore.; KORE, Eugene, Ore.; KEX, Portland, Ore.; KJR, Seattle, Wash.; KVOS, Bellingham, Wash.; KPQ, Wenatchee, Wash.; KGA, Spokane, Wash.

Officials of the United Broadcasting Company are: Louis L. Davis, Jr., chairman of the board; Maurice Cleary, president; Fred C. Dahlquist, vice-president and general manager; Lyndol L. Young, secretary, and Rush Hughes, production manager.

"Bringing into the network the four Northwest stations which are among the most outstanding in importance and power in the country, and the San Francisco station KYA, places the United network in the possession of more power than that of the other two existing chains combined," said Mr. Davis. "The entire Pacific slope will be indisputably blanketed thoroughly from Mexico to Canada.

Headquarters of the chain are located at 2614 W. 7th street, Los Angeles.



That much beloved San Francisco contralto, Hazel Warner, long known to the West through the Blue Monday Jamboree and other KFRC programs is now a member of the KHJ staff. San Francisco can still hear its favorite contralto voice croon the simple melodies of today and yesterday; while Hazel herself can shake the fog of the Bay City from her hair and enjoy some sun-kissed life in the wide open air pockets of Southern California.



Glen Eaton, KJR's popular tenor, came out of the East in a covered wagon and one of his greatest talents is to relate in a fascinating way the adventures which beset his family on the trail. During his years of singing over KJR, Glen has accumulated thousands of fan letters and his duet work with Marjorie Robillard has made the Eaton-Robillard team one of the most popular fixtures on the air.

J. Newton Yates, capable young organist of KFVD, is a local product, having studied here in Los Angeles since early boyhood. Mr.

Yates came to KFVD after a series of successful engagements in Chicago and other eastern cities. His playing is characterized by a splendid technique, and real feeling for the type of music suitable to the organ. If you can stay awake until 12:00 midnight, you will enjoy Mr. Yate's organ recital immensely.

And what more can be said about Tom Breneman? He's getting to be like Amos 'n' Andy. We have exhausted all our superlatives and will be short out for a month or so. But maybe you didn't know that the creator of Tom and Wash, a noon-day feature over KFWB was so nice looking!

Dr. Ralph L Power, radio editor for the Los Angeles Record and the Long Beach Sun, and western editorial representative for Radio Digest magazine, again picks out an All-Southern California radio team. His choice for 1930, arrived at with the help of a committee of three, follows:

Announcer: Bob Swan, KHJ.

Continuities: Tom Breneman, KFWB. Violinist: Calmon Luboviski, KNX. Bands: Long Beach Municipal, KGER

Sports announcers: Zeph Fitzgerald, KGER-KFWB. Speakers: most scholarly, Rabbi Edgar Magnin, KHJ; most sincere, Rev. Charles E. Fuller, KGER; most in-spirational, Burr McIntosh, KFWB; most popular, Hugh Dobbs, NBC.

Vocalists: soprano, Virginia Flohri, KFI; tenor, Carl Omeron, KHJ; contralto, Claire Van Nostrand, KHJ; baritone, Arthur Lang, KFI; crooner, Ted White, KHJ; ballads, Helen Guest, KECA; quartet, Hallelujah Quartet.

Pianist: Claire Mellonino, KNX. 'Cellist: Misha Gegna, KMPC Humorist: John P. Medbury, KHJ. Drama: Georgia Fifield, KNX. Organist: Dick Dixon, KGER.

Old-Time music: Original Hill Billies. Orchestra: Concert, Raymond Paige's, KHJ: dance, Gus Arnheim's, KFWB; philharmonic, Los Angeles, KFI.

#### Robert Hurd, Recovered, Promises Quick Return

Still very pale and decidedly thin, but with a freshened spirit and mischievious smile, Robert Hurd, program director and featured tenor of KFI-KECA, Los Angeles, has returned to his office after a long siege in the hospital, where his death was averted by an operation to relieve a mastoiditis.

Hurd will resume his microphone appearances within a fortnight, it is assured by physicians. Details of the operation, graphically described by the patient, include following: "They had to cut my ear off and paste it back on, you

know. I'm the only tenor living who has bit his own ear."

Lily Pons, latest sensation in the world of music, who in two months has made operatic history at the Metropolitan Opera House and who will go down in the annals of that famous institution as the most significant operatic "find" of the decade, will make her radio

debut on Easter Sunday.

The dazzling new coloratura will bring her voice to an NBC network, including KGW, KGO, KHQ, KFI, KFSD and KTAR, Sunday, April 5, during a program sponsored by the Victor division of the RCA-Victor Company. The broadcast will be heard from 4:30 to 5:00 o'clock.

One afternoon less than two months ago Pons sang "Lucia di Lammermoor" at New York's Metropolitan. Box-holders and Box-holders and galleryites liked her better than any newcomer in years and Pons left the stage that day famous. Still little was known about her. Metropolitan debuts have been dull lately; coloraturas seemed out of vogue. Newspapermen had not thought investigation of this one worth while. Pons in "Lucia" changed their minds.



Glen Eaton . . KJR

#### The Technique of Jound Effects

By CHARLES FORSYTHE

A N epidemic of dramatic and musical plays is with us, and threatens to become chronic. The radio audience throughout the country has shown, very definitely, its preference



Charles Forsythe

for this new type of program. In presenting radio plays, the most essential element seems to be atmosphere which, until television arrives, must of necessity be produced by sound effects. Naturally, the stations producing these plays are forced to use sound effects and, in nearly every case, grope in the dark for means of producing the necessary sounds to lend the desired atmosphere to their productions. It is with that thought in mind that I offer several suggestions which may

help various radio producers to help themselves, and by so doing, I feel sure that better radio drama will be the result. I offer the following "don'ts" for sound effect technicians and radio producers:

DON'T use metal sheet for imitating thunder. As you know, or will learn by experimenting, a sheet of metal reaches the loud speaker exactly like a sheet of metal, and is one of the poorest methods of producing an imitation of thunder. A large thunder or cannon drum is the only manner in which this effect can be obtained. It will prove a valuable asset to all studies going in for dramatics in a big way. The cost is between forty and sixty dollars, depending, of course, upon the size of the skin used for the head. I cannot spare space here to describe the design and specifications, but will cover the matter thoroughly in a later issue of this magazine.

DON'T use the imitation of footfalls at any time except for eerie situations, for thrills, mystery scenes and such as creeping down stairs, or loose squeaking boards in the attic, etc. Footfalls are very seldom practical in foregrounds; never very effective except for distant sounds or someone supposed to be in the next room, or overhead.

DON'T use a bell for European trains. They do not have bells. The whistles should be single tone similar to the compressed air whistles used on an American interurban electric train.

The chug, or exhaust, of a European locomotive should never be strong and thunderous—like American trains. You will get a very accurate example of the sound of a European locomotive by copying the sound of our donkey engines in this country which we use in logging camps and construction camps.

The rail clicks should be in pairs, not in triplets, as is the case with American trains. European coaches have the car wheels, two in the front and two in the rear. Enough for European train effects.

Last month I promised something regarding signal whistles for trains in the United States. One long whistle for a train arriving at yard limits of a station; two long and two short whistles for a train approaching a crossing outside of the

yard limits of a station; a series of short blasts of a whistle for all emergencies such as some obstruction on the track or danger ahead.

When a train departs from a station, be sure that the whistle precedes all other sounds.

DON'T use cocoanut shells on a marble slab or similar substance for horse hoof effects, except when imitating hoof beats on the pavement.

DON'T use a single electric door bell for a telephone bell. Have TWO electric door bells connected so that they will ring simultaneously; then you will get the correct effect. Be sure to have the bell edgewise to the mike, as they are very directional and when used at the wrong angle the microphone will pick up the hammering, and not the bell tone, itself. In ringing a bell for telephone, always remember that modern telephone equipment provides a mechanical device for ringing that bell, and that the impulse of that device is just as rhythmic and methodical as the ticking of a clock.

It might be well to remember . . . getting down to the fine points of it . . . if the locale of your action is in poverty or medium circumstances, it seems highly probable that the telephone would be a party line. In this case, ring the bell in pairs: two bells and a slight pause, and then repeat two bells. In ordinary circumstances, or where your action is in the home of a person of importance, naturally this would be out of place and the ordinary single ring would be in order.

In closing, it is highly advantageous when planning an important program, that sound effects should accompany dialogue. This should be rehearsed just as it is going to be done on the broadcast. This will enable you to accurately balance your sound with your voices, giving it the naturalness which is next to impossible to attain at all times without monitoring. Sound effects very often overload, and in this case when your technician cuts down his gain to protect against that overload, he will fade your voices with it, thereby spoiling your dramatic action. Hence, the obvious necessity of perfectly balancing sound effects with dialogue.

\* \* \*

Military bands, comparatively rare in the concert field, are returning to public favor via radio, according to Pryor Moore, conductor of a brass-and-woodwind ensemble which has recently been signed for a year's contract with KFI-KECA, Los Angeles.

Programs of the new feature will start with a series of concerts over KECA Mondays at 7:00 p. m. (P.S.T.)

\* \* \*

KMTR broadcasts "Strange Facts You Should Know" every Thursday night at 7:30—not to be outdone by the newspaper's "Ripley" drawings and stories — radio must needs have its hand in the enlightening business of unearthing "unusual stories." Listeners are asked to write the strange facts that they have come upon from time to time and these, with the work of the research department of the station make up the most interesting of programs. For instance: in Glasgow, Scotland, the newspapers use their front page to print the classified advertising, whether for convenience or for profit is not told.

#### The March of Radio

#### LAFOUNT SEES ADVERTISING RAP

The recent KFKB decision of the District of Columbia Court of Appeals is interpreted by Commissioner Harold A. Lafount as giving the Federal Radio Commission authority to supervise and restrict advertising over the radio despite its lack of censorship power.

By interpreting the "public interest" clause broadly, the court has indicated that the Commission should step in whenever a station goes beyond certain limits either in the amount or character of the adver-

tising it sponsors.

The court, in upholding the denial of a license renewal to Dr. John R. Brinkley, operator of the Milford, Kans., station, stated that Congress, in enacting the Radio Law, "very evidently had in mind that broadcasting should not be a mere adjunct of a particular business, but should be of a public character."

Station KFKB was put off the air by the Commission because of a "Medical Question Box," conducted by Dr. Brinkley. The court in its opinion, denied that such action was an exercise of censorship

authority by the Federal body.

Commissioner Lafount explains as follows:

"Section 29 of the Radio Act of 1927 expressly prohibits the Commission from exercising any power of censorship over radio broadcasting stations consequently no restrictions have been made on

radio broadcasting advertising by the Commission.

"Broadcasting stations are, however, licensed to serve the public and not for the furthering of private or selfish interest of individuals. The standard of 'public interest, convenience, and necessity' prescribed by the Radio Act of 1927 means nothing if it does not mean this. Since advertising furnishes the economic support for the service a station renders and makes it possible, it must necessarily be an exception to the rule. However, the amount and character of advertising must be rigidly confined within limits consistent with the public service expected of the station."

#### YOST REPORT SEEN AS COMPROMISE

The Federal Radio Commission is expected to adopt the secondary report of Chief Examiner Ellis A. Yost on applications of cleared channel stations for 50,000 watts as a compromise measure with the high power broadcasting advocates. The whole report, in fact, seems designed to appease even the broadcasters who were not among the eight selected for maximum power by recommending that they be granted 25,000 watts.

While not officially announced, it was learned that the recommendations had been reviewed by each of the Commissioners individually before the report was made public. As twenty days were allowed for the filing of objections, the Commission will probably not announce its decision until the expiration of that period.

The Yost report was obviously intended to forestall injunctions and prolonged litigation that had been threatened after the Commission turned down the Chief Examiner's first recommendation to open all

40 cleared channels to 50,000 watt stations.

Granting of 25,000 watts to all stations on the 20 cleared channels not designated for the maximum power is permitted under General Order 42, which established the limitation policy. This order stated that 50,000 watt stations would be permitted to operate on 20 cleared channels while stations on the other 20 cleared channels would be limited to 25,000 watts power.

Some objections and probably some court action are expected even if the report is adopted, but there will not be such a general uprising as would have occurred if the half-maximum power had not been recommended for those applicants that are not among the eight

chosen to fill vacancies under the limitation order.

The eight stations selected by Mr. Yost for maximum power are: WJZ, New York, now operating with 30,000 watts; WCAU, Philadelphia, Pa., 10,000 watts: WSM, Nashville, Tenn., 5,000 watts: WSH, Atlanta, Ga., 5,000 watts: WCCO, Minneapolis, Minn., 7,500 watts: WGN, Chicago, 25,000 watts: KPO, San Francisco, Calif., 4,000 watts, and KOA, Denver, Colo., 12,500 watts.

#### TWO LOGS MUST BE KEPT BY BROADCASTERS

Under the terms of a new general order adopted by the Federal Radio Commission, two accurate logs, one of programs and the other of technical operations, must be kept by broadcasters. The effective date has not been set, but it was said it would probably be March 1st.

The logs, which shall be open at all times to inspections by Radio Supervisors, shall note the use of phonograph records and electrical transcriptions, together with the announcement made in this connection. The operating log shall contain a chronological account of the station's operation.

#### CONGRESS MAY REVISE RADIO LAW

Possibility that the White bill for the revision of the Radio Act in several particulars may be passed by Congress before adjournment loomed when the Senate Committee on Interstate Commerce favorably reported the measure after taking on several amendments.

The basic bill was passed by the House of Representatives last year, but only recently Representative White added on several amendments. These various revisions will have to be adjusted at a conference if the Senate adopts the measure in its present form.

One of the controversial amendments, passed last year by the Senate, but tabled by the House, provides for the transfer of the Radio Division of the Department of Commerce to the Federal Radio Commission. Senator C. C. Dill, of Washington, has been sponsoring the proposal, but friends of W. D. Terrell, Chief of the Radio Division, have been seeking to block it in the House because it fails to place the Department on a par with the Legal, Engineering, and other Divisions of the Commission offices.

Three recommendations of the Radio Commission are embodied in the revisions proposed by both branches of Congress. These give the Federal body authority to suspend a delinquent broadcasting station for a period not to exceed 30 days, exclude territorial possessions from the Five Radio Zones of the United States, and require the illumination and painting of radio towers.

The license period of broadcasters would be reduced from three years to one year under another amendment. The Radio Commission, however, has never taken advantage of the present law in this respect, having issued licenses for only three months.

#### \* \* \* NBC MOVES TO ACQUIRE STATION WENR

The National Broadcasting Company has filed an application with the Federal Radio Commission for the transfer of the operation of Station WENR, Chicago, from the Great Lakes Broadcasting Company to the NBC network.

The Chicago station, which is acquired under a lease arrangement, operates with 50,000 watts on the 870 kilocycle channel, which is shared with WLS, also of Chicago.

An agreement has been reached between NBC and the Prairie Farmer, owner of WLS, whereby the latter will use the WENR facilities during its time on the air. WLS will use its own call letters, however.

#### RADIO RULES MADE MORE STRINGENT

A general tightening up of radio regulations affecting broadcasting stations, intended to eliminate waste time, has been ordered by the Federal Radio Commission to become effective March 1st. A number of new rules for this purpose has been issued.

One of the principal provisions states that stations which are authorized to operate without any time limit must maintain, after May 1st, a regular operating schedule of 12 hours each "broadcasting day." at least three of which shall be between 6 a.m. and midnight Violation of this rule will entail a reduction in the license hours of operation.

#### STATIONS DEVIATING LESS, REPORT SHOWS

One reason for improved reception within the last few months has been traced to better mechanical operation of broadcasting stations by W. D. Terrell, Director of the Radio Division of the department of Commerce.

Excessive frequency deviation, or "wobbling," which until recently was one of the primary causes of interference, has decreased considerably, a check-up by the radio police reveals. Broadcasters are striving more than ever before, according to Mr. Terrell, to stay within their assigned wave lengths.

Out of 339 stations checked during December, 101 showed deviations under 200 kilocycles, while 238 deviated more than 200 kilocycles. Under regulations of the Federal Radio Commission, deviations up to 5000 kilocycles are permitted.

Radio station operators are co-operating with the Radio Supervisors very satisfactorily, Mr. Terrell said, and are striving to adhere as closely as possible to their assigned frequencies.

#### DX PRIZE CONTEST

Here is another RADIO DOINGS DX Contest with a Grand Prize well worth working for. A great nine-tube super-heterodyne receiver will be awarded to the winner—complete with tubes; all ready to plug in and amaze you with the kind of performance you have always wanted in a radio. So much sensitivity that you cannot use all of it, even on the quietest winter night, real 10 kilocycle selectivity, a wallop that will rattle the windows if you're careless with the vol-



Grand Prize . . Angelus Super-heterodyne

ume control, and a tonal fidelity that will probably make your present set blush with shame. Possibly the fortunate DX enthusiast who wins this prize may intend to use it as a secondary set in the home or give to a poor relation, but we rather imagine it will speedily take first place in his (or her) affections. For while this super-heterodyne retails for only \$69.50 it does not have to take a back seat in favor of any of the high-priced receivers from the standpoint of performance. The Angelus super is manufactured in Los Angeles by Davison-Haynes Manufacturing Company, and it is through the courtesy of that company that we are able to offer one of these receivers as the Grand Prize in our March Contest.

Now for the details of the Contest. The time will be Saturday night, March 14th from 8 p. m. until 1 a. m. Five hours of intensive DX-ing. The contest is open to everybody everywhere. The idea is to log as many DX stations during this time as possible, listening to each one long enough to identify it and logging the name of the musical selection heard or exact words of the announcer or other speaker. List

the time heard, the call letters, frequency, and name of selection or other identifying information. Logs must be mailed not later than Monday, March 16. The winner will be announced and log published in our next issue.

In judging the logs, all things will be considered as here-tofore. The prize winner will not necessarily have the longest log. It is only fair that contestants in isolated sections, removed from local interference should be handicapped. Bringing in 50 stations in one location with set A may well be a greater accomplishment than logging 65 stations in another location with set B, etc. The judges will try to take all of these things into consideration, therefore it is important that you give the address where you operated your set, and make and model of receiver used. You will find the new RADIO DOINGS CALL BOOK (blue cover) invaluable in this contest.

#### KMTR to Move and Install New Transmitter

Mr. Frank Doherty, owner of radio station KMTR, recently returned from Washington, where he presented a case before the Federal Radio Commission in connection with KMTR's application for removal to a new site, the installation of a new transmitter and an increase in power. Permission to move the station and install new equipment was granted, while the power increase application is still under consideration.

KMTR is to move to Cahuenga and Romaine in Hollywood, the site of the old Buster Keaton studio, where a new 1000 watt RCA screen-grid transmitter, crystal controlled and with 100 per cent modulation is to be installed. The station will operate with 500 watts power, however, unless the increase is granted. The difficulty of securing a power increase is due to the fact that California is slightly over its quota in the commission's unit system of rating.

Very elaborate and modern broadcast studios are to be built in the grounds of the United Artists film studios, for the bigger and better KMTR.

#### KTBI Sold to Auburn-Fuller Company

Radio station KTBI has been sold to the owners of KFVD, all that is lacking being the approval of the Federal Radio Commission. The new owners also have requested permission to use all of the time on the 1300 kilocycle channel not used by the sharing station KGEF. KTBI is assigned to use half-time, and KGEF half-time. This purchase gives the Auburn-Fuller people 1000 watts and probably a good split with Shuler on the time division.

#### Mexican Stations Interfere With KWKH

"Old Man" Henderson will have to direct his invectives henceforth at Mexican and Cuban stations for interfering with the broadcasting by Station KWKH, of Shreveport, La., as a report of Dr. C. B. Jolliffe, Chief Engineer of the Federal Radio Commission, has reported that they, and not stations in this country, are largely responsible for interfering with KWKH.

Henderson has made an unsuccessful application to have the power of his station increased to 30,000 watts in order to overcome this interference, which he blamed, however on United States stations. Dr. Jolliffe's analysis of the complaints "show that the cause is in general outside the jurisdiction of the Federal Radio Commission and not due to improper allocation."

#### LINES AND ANGLES

#### ...by... TED OSBORNE . . . KHJ

Th' feller who borrows money borrows trouble. Th' feller who lends money don't have t' borrow trouble he has it already.

There was a young fellow from Ga

Who was taken to court as a fa.

The judge gave him ten,

In the San Quentin

pen;
"Where," he said, "they
will lodge you and
ba."

Opportunity knocks at least once at every man's door, but sometimes th' man is such a knocker himself that Opportunity can't make itself heard



Ted Osborne

The Four Ages of Hair:

Bald, Fuzz, Is,

Was.

Too much o' somethin' is nearly as bad as not enough of it. I know a woman who cleans her house so much that it's nearly allus in a mess.

A satirist is a feller who discovers a lot o' things about hisself, an' says 'em about somebody else.

Most people think a rabbit
Is cowardly and frail.
And yet, though he is timid,
No cook can make him quail.

It'd be easy enough t' be content with little—if nobody hadn't no more.

\* \* \*

Brachelors
Are
Chaps
Hraving
Enough
Luck
Or brains to
Rremain
Single.
\* \* \*

Ev'rybody in th' world has his faults, but th' main difference in folks is whether they're ashamed of 'cm or proud of 'em.

Th' word "Save" simply knocks the "L" out of "Slave."

Love is a good deal like philosophy. Th' more a feller has of it, an' th' less he talks about it, th' better off he is.

#### High Power Distribution

In the Fifth Zone, Examiner Yost has recommended to the Commission that KOA and KPO be granted increase in power to 50,000 watts, in addition to the construction permits already issued to KNX and KFI. He further recommends that KGO and KSL be allowed to increase power to 25,000 watts.

In a summary to his report to the Federal Radio Commission, Mr. Yost, chief examiner, submitted the following tabulation, showing the distribution of all 50,000 watt stations, should his recommendations be adopted:

First	Zone					
WTIC	Hartford, Conn.					
WEAF	New York, N. Y.					
	New York, N. Y.					
	New York, N. Y.					
Second	d Zone					
WCAU*	Philadelphia, Pa.					
KDKA	Pittsburgh, Pa.					
	Cincinnati, O.					
	Cleveland, O.					
Third Zone						
WBAP ) share	(Fort Worth, Tex.					
WFAA) time						
	San Antonio, Tex.					
	Atlanta, Ga.					
WSM*	Nashville, Tenn.					
Fourt	n Zone					
WENR) share	(Chicago, Ill.					
	(Chicago, Ill.					
	Chicago, Ill.					
KMOX	St. Louis, Mo.					
	Minneapolis, Minn.					
Fifth Zone						
	Los Angeles, Calif.					
KNX (C. P.)	Hollywood, Calif.					
	San Francisco, Calif.					
KOA*	Denver, Colo.					

\*—Recommended for 50 K.W.

If the recommendations made are followed, clear channel stations operating with a power output of 25 kilowatts would be as follows:

follows:
First Zone
WBZ†Boston, Mass.
WHAM† Rochester, N. Y.
WOR†Newark, N. J.
Second Zone
WHAS† Louisville, Ky.
Third Zone
WBT†Charlotte N. C.
WAPI† ) share(Birmingham, Ala.
KVOO† ) time(Tulsa, Okla.
Fourth Zone
WBBM-WJBTChicago, Ill.
WMAQ†Chicago, Ill.
WHO-WOC† Des Moines, Iowa
KFABLincoln, Nebr.
(Recommended for 25 kw. in Examiners'
Report No. 42)
Fifth Zone
KSL† Salt Lake City, Utah
KGO† San Francisco, Calif.

† Recommended for 25 K.W.

(C.P.) Construction permit already issued.

#### PROUND THE DIAL

Through the kindness of a friend I have been privileged to read some copies of your magazine, and I must say I have enjoyed its DX columns, together with the short wave notes. I am very interested in short wave reception, and I thought you may like to know of some of my experiences. My receiver is home constructed, being a detector unit coupled to a two-stage transformer-coupled amplifier. The aerial is L type, triple wire about 30 feet high, and badly screened by trees.

Stations I have logged are W6XN, W2XAF, W8XK, W3XAL, W2XE, W9XF, CJRX, LSX, VQ7LO, PCJ, 3LO, 2RO, Zeesen, besides many ship and land phone stations. I have received verifications from all these stations. My biggest thrill was when I heard W6XN, Oakland. This was on the 9th of March, 1930, when I enjoyed a very fine two-hour program. I am sorry to hear the station has closed down. Hoping these few words will interest your readers, I remain, Yours faithfully,

A. E. BEAR,

10 St. Mary's Place, Rotherhithe, London, England.

Last Sunday at 1 a. m. I picked up WTIC. He was broadcasting a test program on WEAF's channel, 660 Kc. I listened to him until 1:30 a. m. at which time he signed off.

Twenty minutes later I picked him up again, this time on his regular frequency of 1060 Kc. He was coming in like a public address system. KWJJ was on 1060 Kc. so I tried the 660 channel and instead of WTIC I got WEAF, although I did not know it at the time. He played three or four phonograph records without making an announcement and I took it for granted it was WTIC, but later, thanks to our good friend George Schmidt, I identified the station as WEAF.

By the way, this is my first contribution to 'Round the Dial, although I have been a constant reader of RADIO DOINGS for the past six years.

--L. G. Chavez, 1263 W. 51st Place, Los Angeles, Calif.

I picked up XEGY Saturday night, February 14th, and they gave their address as P.O. Box 464 or 1087, Mexico City. This station was formerly XEG and broadcasts on 829 Kc.

XEN has been broadcasting during the last few weeks on about 705 KC.

CKLC broadcasts a Canadian National Railway program, using the call letters CNRD, on Tuesday from 6 to 7 p. m. and on Thursday and Saturday from 7 to 8 p. m.

WSMB may be had beginning at 5:30 a.m. on Sunday mornings. KORE until 1:30 or 2 a.m., and KGAR broadcasts an early morning DX program on the second and fourth Sunday of each month. I just received information from the East to the effect that every Saturday and Sunday morning on 1310 Kc. various stations follow each other at half hour intervals broadcasting DX programs for the Newark News Radio Club.

Who can tell me when to get CMW? They seem to be quite an elusive station.

Where are some of our old friends like C. E. Holloway, J. Stanley Lynch, D. M. Boozer and others that wrote into this column last year? We would like to hear from them, wouldn't we, Gang?

-Stuart Walmsley, Los Angeles.

I was interested in Mr. Love's letter in the December issue of RADIO DOINGS. I read where he has been playing 3AR, Melbourne, on 620 Kc. and he states he heard two more stations on 665 and 760 Kc. with a broad English accent. These stations are 2FC, Sydney, 5000 watts and 4QG, Brisbanc, respectively, operated by the Australian Broadcasting Company and owned by the Government. Good scalp-hunting, Mr. Love, and hope to see you hear more of our Southern hemisphere stations.

\* \* \*

—S. Ellis, Okato, Taranaki, New Zealand.

JFAK, Taihoku, Taiwan, radio station, regularly having been on the air with 1 kilowatt, increased the power to 10 kilowatts January 15th. JOAK, well known Japanese radio station to the Coast DX-crs, has commenced the "niju-hoso," what is called "Dual" or double broadcasting service since December 10th last. The second JOAK is being on the air on 490 meters with the power of 10 kilowatts, while the first JOAK is on the air on 345 meters, as usual. This is experimental, and if good results are experienced, other wave-lengths will be used. JOKK, Okayama, is off the air now. He was on the air last Autumn. JOLK is operating regularly now.

- Minoru Nakamura, Yamate, Oisomachi, Kanagawa-Ken, Japan.

After waiting some three or four weeks I finally received a verification from radio station KGBU in Ketchikan, Alaska. It is an exceptionally nice verification and I shall try to tell the readers all that it contains. KGBU maintains a regular schedule of the following hours: Daily from 10:00 a. m. to 2:00 p. m. and nightly from 5:00 p. m. to 10:00 p. m. (P.S.T..) They are having regular DX programs every Thursday morning from 1:00 a. m. to 3:00 a. m. (P.S.T..) This program has been broadcast during the months of January and February and will continue on through March. After the last Thursday in March they will no longer have this very interesting program. Their slogan is "The Voice of Alaska." They operate on a frequency of 900 Kc. and have a power of 500 watts. This station is undoubtedly very much willing to answer all letters received.

From KSOO in Sioux Falls, South Dakota, I have received another nice verification and in it they state they are on the air daily from 6:30 a. m. to their local sunset and on Sundays from 9:00 a. m. to 6:00—8:00 p. m. to 1:00 a. m. (C.S.T.) They have 2,000 watts and operate on 1110 Kc. This is another very good morning catch.

and operate on 1110 Kc. This is another very good morning catch. Station CHYC in Montreal, Canada, is on the air on Sundays from 4:30 to 8:00 p. m. (P.S.T.) They are on 730 Kc. and have 5,000 watts. It is really the same transmitter as CKAC of the same city, power and frequency. However, most DX fans class it as a separate station.

It may be interesting to know that WWJ, the station that comes in so well in the early morning from 3:00 a. m. on 'til KPRC or KFEL comes on, is an associated station with the well known Canadian National Railway Network.

—George Schmidt, 1642 West 82nd St., Los Angeles, Calif.

Here's a little first-hand information that should help some one. At least, I hope it does, as it always pleases me to know that I have helped a brother DXer to enlarge his log.

CHWK, Chilliwack, British Columbia, is now on 665 Kc., or 451 meters, with 50 watts power, soon to be increased to 100 watts or more. He is on the air every evening except Wednesday from 5 to 7 p. m.

CJRW, Fleming, Saskatchewan, is another Canadian who is on 665 Kc., with 1000 watts. He may be heard Mondays 7 to 7:30 and 8 to 9 p. m., also on Wednesdays and Fridays and Saturdays till 9 p. m. I do not know whether its sister station, CJRM, Moose Jaw, Sask., is on 665 Kc. now or not, but if he is, he should be heard, easily.

KUJ up here in Washington, has moved from Longview to Walla Walla, in southeastern Washington. He has been on the air till the very early hours of the morning—later than 3 a. m.—playing records, announcing plainly as "KUJ, in Walla Walla, Washington," and calling for letters from all over the country, Canada, Mexico, Cuba, Japan, Siam and the Philippines, etc. He is broadcasting on a frequency of 1370 Kc. now.

Don't forget, all you DXers, and readers of this column, that I am more than glad to answer your letters and swap information with you.

—Herbert J. McAllister, 913 North Grant Ave., Tacoma, Wash.

Here is a good tip on KUOA, Fayetteville, Arkansas, 1390 Kc. Last night, (Thursday) I picked this station up just before they signed off at 11:30. In signing off they announced that they put on an early morning DX broadcast every Friday, signing off at 1:30. What time they start I don't know, but I should think at midnight This means that KUOA can be picked up here on the Coast every Thursday night from 10 to 11:30.

Here is a tip on a station that is a remarkably good catch. I refer to WCAP, Asbury Park, New Jersey, on 1280 Kc. I picked this station up Saturday night, February 7, just before 11 and played it off and on until 22 minutes past 12. Whether or not it is a regular thing for this station to broadcast at this time I do not know, but it is certainly worth trying for as it is only 500 watts in power.

I was very much surprised to find KRGV in Harlingen, Texas, on this same channel, 1280 Kc., about half past 12 the same night. Previously, the same evening, I had played this station on the regular frequency of 1260 Kc. WTIC had another test program on 660 Kc. and came in even louder than the week before. I was interested in listening for a minute or two to 2YA in Wellington. They were broadcasting names of people who were safe and wanted their friends to know they had not been injured by the earthquake.

-A. E. Armstrong, 2021 Bonita Drive, Glendale, Calif.

#### 'ROUND THE DIAL (Continued)

Below I hope to have listed information which will be found of interest by readers of this column:

CJCA, Edmonton, Alta., is now on 930 Kc.; not 580 Kc. COMK, Moukden, China, is on 420 meters; not 425 meters. JFAK, Taihoku, Japan, is on 900 Kc., and uses 10,000 watts. CPRY, Toronto, Ont., can be logged on Monday, Tuesday, Wednesday, Thursday and Saturday at 7:30-8:00 p. m.

CHNS, Halifax, Nova Scotia, is now on 910 Kc. I have a verification from them.

WMMN, Fairmont, W. Va., 890 Kc., can be logged on Tuesday mornings at 2 o'clock.

WKRC, Cincinnati, Ohio, 550 Kc., is on every morning at 3:45 o'clock, with church services.

KCRC, Enid, Oklahoma, 1370 Kc., is on the air on Wednesday and Saturday at 12:01-5:30 a. m. (C.S.T.)

KGCX, Wolf Point, Montana, 1310 Kc., is on with a DX program on Sunday mornings from 1 to 4:00 o'clock, (M.S.T.)

WCFL, Chicago, Ill., 970 Kc., can be logged after 4 a. m.

WCHI also in Chicago and on 1490 Kc., can be picked up at 9 p. m. on Sunday.

WIID, Mooseheart, Ill., 1130 Kc., is on after 5 a.m.

KTSA, San Antonio, 1290 Kc., signs on the air on Tuesday at 3:48 a. m. (P.S.T.)

WBEN, Buffalo, 9000 Kc., can be had at 4:00 a.m.

CFCA, Toronto, Ont., 840 Kc., is on the air at 7:15 a. m. (E.S.T.)

On January 13, 1931, I succeeded in logging WRC in Washington, D. C. They came in at 3:48 a. m.

KFUO, St. Louis, Mo., 550 Kc., is on at 12-12:30 a. m. (C.S.T.) on Saturday.

WFBR, Baltimore, Md., signs on the air at 7:00 a.m. (E.S.T.) I have some interesting information on the airport stations:

KCU, Fresno, Calif., 1040 Kc. KCAE, Winslow, Ariz., 800 Kc. KCV, Oakland, Calif., 800 Kc.

They are on every hour for about 15 minutes.

-Constantino Stefani, Rt. 1, Box 165, Merced, Calif.

It has been some time since I have seen any one's complete log appear in RADIO DOINGS. I'll try to start the ball rolling and the rest of you fellows come on in with your logs.

I have received 200 stations in 33 states, Cuba, Canada, Mexico, New Zealand, Australia, and Japan. 135 of these are verified in writing, 277 of them are verified by stamps only. And 38 are not verified at all. My verifications are coming in good, received 17 in one week. I have logged every channel except 630 Kc., 910 Kc., and 990 Kc.

Stations received and verified in writing by the broadcasting sta-

tions by card or letter:

tions by card or letter:

CMC, JOBK, KFJF, KSOO, KTSA, CKMO, KGCX, WWJ, KFYR, KMA, KGIQ, KFBB, KXL, WNAX, KVEP, KGO, KJR, KMIC, KHJ, WPG, KTSM, XED, KGHF, KFQU, KOA, KFXF, KFRC, KTM, WGN, KGER, KSL, WMAQ, CFCN, KPO, WHB, WREN, CHLS, WDAY, KIDO, WSMB, KSCJ, 2YA, WOI, KMBC, KOIL, WFIW, KREQ, WKY, WBT, WKRC, KXO, KSD, KGNF, KGBZ, KROW, WOAI, KYA, KGAR, KOIN, CKWX, KOY, KOMO, CNRV, KTHS, KFBK, KGGC, WOC, WHO, KGDM, KZM, KFPL, KTAT, KWJJ, WJR, WOWO, KGW, WBAP, WENR, KFWB, KFSG, KREG, KFOX, KNX, KFSD, KGFJ, KFVD, KRE, KQW, KMMJ, KOB, WLW, KFWI, KJBS, KGFJ, KFVD, KRE, KQW, KMMJ, KOB, WLW, KFWI, KJBS, KDYL, KFXM, WTAM, KTAB, KYW, KMO, KLX, KMTR, KMJ, W2XAG (WGY), KFEL, KTAR, WSB, KGEF, KMPC, KTBI, KGB, KOAC, WLS, WMBI, KVOO, KPPC, KPOF, KFKX, KORE, KDKA, WCBD, WIBW, KFI, KECA, KGKY, WSAI, WHK, KLO, KFKB, KFPY, KFH, KGRS, KWK, 4QG, KTBR, WCHI.

Stations received and verified by the broadcasting stations, by

stamps only:

WFAA, KMOX, WHAS, WCCO, KDB, KEX, WEAR, KGA, KELW, WDAF, KFOW, KWKH, KHQ, KPSN, KRLD, KFAB, WBBM, KLZ, WAAW, WSM, WMT, KPRC, KFNF, WHAM, WOW, WRHM, KSTP.

Stations received but not verified:

WMC, KRGV, KIT, CMK, KGIR, KOH, KVI, XEN, KOL, JOAK, JOCK, XEJ, KGHL, JOGK, JOIK, JOFK, JOHK, KPJM, WEAF, XFX, XEF, WOR, CKX, KFXD, WJZ, WEBC, WGR, WKBW, CKGW, WABC, WTFI, KTNT, WMBD, KWSC, KUSD, WDAG, KFDM, KFKA.

-A. R. Van Compernolle, 618 North Baker, Santa Ana, Calif.



#### 'ROUND THE WORLD DX CLUB **NEWS**

By EDW'ARD C. ROTH, President

Another month has passed and DXers are certainly "doing their From the way the mail is coming in, we feel very proud of the progress of our club.

The club wishes to express its appreciation to George Viliani, our efficient treasurer, for his letter to all members giving us "hot" tips on special broadcasts and on stations that are really DX.

Before we forget, let us welcome a new member whom we are very happy to have with us. We speak of Mrs. I. C. Healy, of Ocean Beach, at San Diego. Mrs. Healy has 233 stations logged since October 25th, 1930. This fair DXer uses a General Electric set. Welcome, Mrs. Healy!

For some reason that we are unable to explain, we are having considerable bad luck in our club DX contests. We have now held two such contests and we regret to say that we cannot give out the names of the winners. This may appear strange, but it remains a fact. However we are not trying to "pull any fast ones" as the saying goes—and we certainly appreciate the patience of the members in this matter. We sincerely hope we can soon announce the winners and award the prizes.

At this time, we wish to make an announcement to clear up a misunderstanding regarding our 'Round the World DX contests. We have received several letters and logs from DX fans submitting logs for our club contests. The prize DX contest sponsored by the Round the World DX Club are open to club members ONLY. The club contests are in no way related to the DX contests sponsored by RADIO DOINGS. We trust we have made this clear in order that DX fans who are not members of our club will not be disappointed in future contests sponsored by the club. All we can say to non-members who wish to try their skill in our contests is to join our club and share the fun with club members in these prize contests. We are in receipt of a letter from John F. Doherty, of Brooklyn,

N. Y., which contains many DX tips and we certainly appreciate the interest shown by our friends in other parts of the United States. We receive many of these letters and only wish that we had the time to answer each and every one.

At this time we have an important announcement to make. We are holding a membership contest during the month of March. This contest is open to all members of the 'Round the World DX Club only. As a prize for the winner who enrolls the most new members we will give a year's paid dues. Second prize, six months' paid dues and third prize, three months' dues.

Now let's see how many new members we can have in our club roll by March 31st. There are plenty of fans who would like to join and all they need is some one to suggest the idea to them.

#### 'Round the World DX Club Visits Wm. MacDonald By GEORGE VILIANI, Treasurer

Before going into the details of the visit, may this opportunity be taken in behalf of the Club, to thank Miss Stelzer, Mr. MacDonald and his lovely mother for the very genial time enjoyed by all.

The night, January 31st, according to Mac, was not such a quiet one. However, what is termed a fair night at Chula Vista, is certainly a well worth while one for the fan who lives around Los Angeles. Getting down to what happened, in going up and down the different channels, Mac would say, "this is WOWO, Ft. Wayne; this is WHAM, Rochester; this is WCAU, Philadelphia." Just about then it would be the quarter-hour, and out would come an announcement of WCAU, which, by the volume, would have been more to our thinking, KOA.

The "Patrol March," from 2YA, Wellington, was played with more volume than could be used at 1:30 a. m.; as were a number of Japanese stations.

Looking through Mac's verifications is just like going through the Call Book. One reads, "we don't see how you can play our station from California, but no one knew of the program in advance up here in Iccland, so we must confirm your report, which is correct in every detail." All I can say is, we hope for another visit.

'ROUND THE W'ORLD DX CLUB 314 East 12th Street, Los Angeles, Calif.

#### DESIGN OF SUPER-HETERODYNE INTERMEDIATE TRANSFORMERS

By RICHARD G. LEITNER

A paper presented before the Electronic Clan, an organization of Los Angeles radio engineers engaged in the design of radio receivers and their integral units. Mr. Leitner is Chief Engineer for the Jackson-Bell Manufacturing Company, Los Angeles

THE imminence of the Super-Heterodyne Receiver as an important factor in radio merchandising this year, and for some time to come makes it important at this time for those engaged in the design of commercial receivers to apply themselves closely to the design problems and fundamental theory associated with this type of

In presenting this paper to this group, the writer has in mind rather than the exposition of new theories and facts, a review of the principles involved, with which you gentlemen are familiar, but such a resume is considered timely. Specific design problems will be considered in the order of their importance.

GENERAL PROBLEMS OF DESIGN

The transformer alone must be considered as a part of a complete radio frequency amplifier from which certain predetermined results are to be obtained. The performance of the amplifier as a whole may be classified under three general headlines; overall voltage amplification to be obtained, selectivity required, and method of control. These will be treated in the order mentioned.

In order to obtain sensitivity of the order of one microvolt per meter, which is necessary to make the Super-Heterodyne Receiver worthy of its name and reputation, voltage amplification in the intermediate frequency amplifier should be from 4000 to 7000. This can be accomplished easily with two cascade stages, each having a gain of from 65 to 85. Some receivers are being built with but one I. F. stage, and the lack of gain in the low frequency amplifier is partly compensated by additional audio or signal frequency amplification or both. However, the two stage I. F. amplifier is almost universal at the present time, and will be considered as the accepted standard. The same general theory of design, of course will apply to any number of stages.

**SELECTIVITY** 

Selectivity in this type of amplifier, as well as all other types, opcrating at high frequency, in order to meet the ideal standard, would be such that the interference ratio would be infinite at ten kilocycles off resonance, and zero over a band exactly ten kilocycles wide. This, of course, has never actually been accomplished, but in a low frequency amplifier for use as the I.F. unit of a Super-Heterodyne Receiver it can be more nearly approached than in any other type of receiver circuit. For reasons that become more apparent as the discussion proceeds, the best form of transformers for the purpose is one in which both primary and secondary are tuned. The frequency of resonance for either one of the tuned circuits will be

When circuit one, whose frequency we will designate as  $w_i$ , is coupled to circuit two, whose frequency we will designate as w2, magnetically, due to mutual inductance, the system will respond to two frequencies which will hereafter be designated as w' for the lower frequency and w'' for the higher frequency. The solutions for these

$$\omega' = \sqrt{\frac{\omega_1 z + \omega_2 z^2 - \sqrt{(\omega_1 z - \omega_2)^2 + 4\kappa^2 \omega_1 z \omega_2 z}}{z(1 - r^2)}}$$
 (2)

and

$$\omega = \sqrt{\frac{\omega^{-2} + \sqrt{\frac{2}{3}(1-\omega_{1})^{2} + 4^{2}(\omega_{1}+\omega_{2})^{2}}{(1-\omega_{1})^{2}}} \dots (3)$$

Equations (2) and (3) apply to cases where  $w_1$  and  $w_2$  are tuned alike. Since we are interested only in cases where they are tuned alike when w equals  $w_1$  equals  $w_2$  we may use the greatly simplified

$$W' = \begin{pmatrix} W \\ \sqrt{1 + K} \end{pmatrix} - \dots (4)$$

$$W'' = \begin{pmatrix} W \\ \sqrt{1 + K} \end{pmatrix} - \dots (5)$$

and

Figure 1 shows how these peaks, widely separated for large values of K, gradually merge into one as K is reduced, the value of w' - w'' varying between zero and infinity. The value of  $l_2$  between peaks falls less sharply than 11. With a fixed current in the primary, the value of 12 rises slightly as K is reduced since energy in the circuit becomes more nearly confined to one frequency. A critical value of K will be found where the two peaks will be so spaced that a fairly uniform flat top response will be observed. The steepness of the sides of the response may be controlled more easily than any other way by the shielding material introduced into the fields of the coils as illustrated in some of the accompanying curves. Let us assume now that a band width of 5 kilocycles is desired for maximum selectivity (This may be broadened in favor of fidelity for local reception by the introduction of resistance.) We first select two peaks about 3 kilocycles apart. Then, for 175 kilocycles as the center of the band we get from (4) and (5).

$$K = \frac{W'' - W'}{W} \qquad (6)$$

and a value of K in the neighborhood of .02. for the determination of K, we have

$$K = \frac{M}{\sqrt{L_1 L_2}} \qquad (7)$$

Or

$$M = K \sqrt{\frac{L_1 L_2}{L_1 L_2}}$$
 (8)

and where 
$$L_1$$
 equals  $L_2$ , which is the usual case, then
$$M = KL_1 \text{ or } L_2$$
(8)

To measure M first measure L1, then L2, then connect L1 and L2 in series, assisting and call this L3. Then

$$M = \begin{array}{c} L_3 - L_1 - L_2 \\ - \end{array}$$
 (10)

Or where L1 equals L2

$$M = - \frac{L_3 - 2L_1}{2} - \dots$$
 (11)

The band width may then be predicted by

$$W'' - W' = WK \qquad (12)$$

Figure 2 shows coupling too loose. This transformer would attenuate high frequencies and be extremely critical to tune. Figure 3 shows the same transformer with coupling slightly increased. Note the flat top, not quite wide enough in this case for good fidelity. Figure 4 shows the same transformer with same adjustments, but with a copper shield in place. The band width has been slightly increased, and the sides of the resonance curve are more uniform. Figure 5 shows the transformer with slightly increased coupling again, and with one of the circuits slightly mistuned. Figure 6 shows the result of correct alignment under the same conditions as Figure 5. Figure 7 shows the effect of adding an iron shield with the circuit adjusted as in figure 6. Figure 8 shows the effect of further increasing the coupling with the same shielding as Fig. 7. In this Fig. K is too large. and we find w' and w" beginning to spread, destroying the band pass effect obtained in Figure 7.

In the case of two stages operating in cascade, great care must be exercised in properly shielding all portions of the amplifier carrying high frequency current. The presence of regeneration may easily change the shape of the overall response curve of the I. F. amplifier from the solid curve of Figure 7 to the dotted curve shown in the same Figure.

#### SELECTIVITY OF SINGLE CIRCUIT

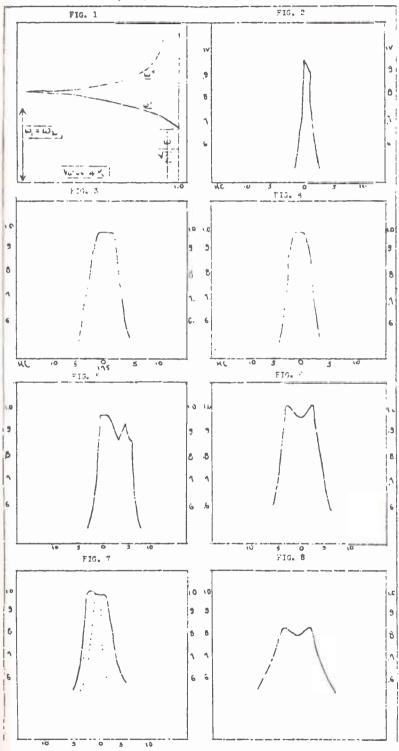
In a series resonance circuit maximum selectivity, that is the sharpest resonance curve, is obtained when

$$\frac{WL}{R} \quad \text{Or} \quad \frac{1}{WCR} \quad \text{is small}$$

By maintaining R and LC constant and increasing L with respect to C, then w WL/R is increased in value and the response becomes broad.

In a parallel resonance circuit these expressions become w LR and R/w C so that the variation of these ratios has the opposite effect. Since we are dealing in this case with parallel resonance, greater selectivity will be obtained with small values of L and larger values of C. Incidentally, as L is reduced, R automatically drops due to the lower DC resistance and also reduced distributed capacity.

At 175 kilocycles the high frequency resistance does not climb nearly as rapidly as at the broadcast signal frequencies. The principal increase in resistance is due to the distributed capacity of concentrated inductances. In a layer wound coil the distributed capacity is actually lower when the coil is wound in many layers than if the same number of turns were wound in two layers, due to the fact that the capacities of the individual layers may be considered in series. Thus, when the number of layers is increased for a given number of turns, the coil approaches a single layer solenoid. The exact ratio of width to number of layers will vary in individual cases and can best be determined by experiment for any given set of conditions.



GAIN OF A SINGLE STAGE

In a parallel resonance circuit the equivalent series resistance is expressed

$$r = \frac{L}{CR}$$
 (13)

Where L is in Henries

C is in Farads

R is the high frequency resistance in Ohms.

With the usual range of L and C used at 175 kilocycles in inter-

#### The New KFI

Interesting details of the 50-kilowatt transmitter being constructed by Earle C. Anthony, Inc., under authority of a federal permit authorizing that power for KFI have been released by the broadcaster in an official announcement.

The giant station will be located in a 30-acre tract in the vicinity of Northham, Los Angeles county, near the Orange county line at an approximate distance of twenty miles. This location was decided upon after exhaustive field strength tests by engineers, which proved that a perfect "circular pattern" was obtained at that point, insuring equal radiation in all directions.

The exterior, visible features of the new station consist mainly of the two towers and the building that houses the transmitter. The towers will be 400 feet high, placed 700 feet apart, and placed so that they form, with the building, an almost equilateral triangle, the building being 495 feet from the middle point between the towers. Double insulation is a feature of the towers which have been purchased from and will be erected by the Pacific Iron and Steel Company at a cost of \$17,600.

The towers will be lighted in compliance with the Department of Commerce regulation for air traffic.

The ground system, elaborate and advanced in design, includes the feature of having 20 miles of copper wire plowed into the ground.

The transmitter itself, costing \$153,000 is built by the RCA Victor Corporation and will be installed by them. It is of 50-kilowatt power with 100 per cent modulation. The electrical contract is handled by the General Electric Company.

The prices quoted above for building, transmitter and towers do not represent the total investment. Costs of the propery, telephone installation, equipment, housing facilities for employees will appreciably increase the total.

When television becomes a practical factor in broadcasting, the new KFI transmitter can accommodate the new art by the addition of a minor unit. These plans do not include studio facilities which will be handled separately. Programs will continue to originate in the Earle C. Anthony building at Tenth and Hope streets, telephone cables taking the programs to the transmitter in the same manner that KECA programs are now handled to the transmitter at Eighth and Beacon streets.

According to engineering tests completed, the most appreciable result of KFI's increase of power will result in a much more refined and clear tuning, due to the difference between "noise level" and "signal level." At 5000 watts, for instance, the "signal level" is high enough over the "noise level" so that tuning is only rarely affected with extraneous noise. But with the 50,000 watts the "signal level" is so high above the noise level" that it is possible to tune down without receiving noise to an extent impossible with the smaller wattage. This will be specially noted during daylight reception which will be materially improved.

mediate frequency amplifiers and assuming high frequency resistances of from 50 to 100 ohms for the primaries, load impedances from 300,000 to 1,000,000 ohms may be realized, resulting in very great voltage amplification when 224 tubes are used.

It will be noted here that while a reduction in the value of L will favor selectivity, it will result in a considerable reduction in the equivalent series resistance, thus reducing the gain per stage. In practice, a compromise may easily be effected, since the gain changes more rapidly than the selectivity. The gain of a single stage may be varied easily between 40 and 300 with values of L from 5 to 15 milhenries and with values of R from 40 to 150 ohms.

Thus, it will be seen that the selection of the exact values will depend upon the conditions to be fulfilled in the individual case of design

#### Directory of Western Stations

	Portland, Ore.—1420 Kc., 211.1 mtrs., 100 w.—Benson Polytechnic School.
KDB——	Santa Barbara, Calif 1500 Kc., 199.9 mtrs., 100 w Dwight Faulding. owner; Eddie Conners, Studio-Mgr.
	Salt Lake City, Utah—1290 Kc., 235.5 mtrs., 1000 w.— Intermountain Broadcasting Corp., S. S. Fox, Gen. Mgr.
KECA—	Los Angeles, Calif.—1430 Kc., 209.7 mtrs., 1000 w.—Tel. WE 0331. Earl C. Anthony, Inc., Carl Haverlin, Mgr.
	Burbank, Calif.—780 Kc., 384.4 mtrs., 500 w.—Union Bank & Trust Co. Tel. 1603 and GR 3193.
KEX——	Portland, Ore1180 Kc., 254.1 mtrs., 5000 w Western Brdcstg Co., William Norvell, Mgr. Tel. At 3111.
KFBK—	Sacramento, Calif 1310 Kc., 228.9 mtrs., 100 W James McClatchy Company.
	Los Angeles, Calif.—640 Kc., 468.5 mtrs., 5000 w.—Earl C. Anthony, Inc., Carl Haverlin, Mgr. Tel. WE 0331.
KFIO——	Spokane, Wash.—1120 Kc., 267.7 mtrs., 100 w.—Spokane Broadcasting Company.
KFJI——	Astoria, Ore.—1370 Kc., 318.8 mtrs. 100 w.—KFJI Broadcasters, Inc.
KFOX—	Long Beach, Calif.—1250 Kc., 239.9 mtrs., 1000 w.— Nichols & Warriner, Inc., H. G. Nichols, Mgr. Tel. 672-81.
KFJR	Portland, Ore.—1300 Kc., 230.6 mtrs., 500 w.—Ashley C. Dixon and Son.
KFQU—	Holy City, Calif 1420 Kc., 211.1 mtrs., 100 w.— W. E. Riker, owner.
KFPY—	Spokane, Wash.—1340 Kc. 223.7 mtrs. 1000 w.—Symons Broadcasting Company.
KFRC—	San Francisco, Calif.—610 Kc., 491.5 mtrs., 1000 w.—Don Lee, Inc., Harrison Holliway, Mgr. Tel. Prospect 0100.
KFSD—	San Diego, Calif.—600 Kc., 499.7 mtrs., 1000 w. Airfan Radio Corp., Leslie Adams, Mgr. Tel. Franklin 6353.
KFSG—	Los Angeles, Calif.—1120 Kc., 267.7 mtrs., 500 w.—Echo Park Evan. Asso., Aimee McPherson, Pres. EX 1141.
KFVD—	Culver City, Calif.—1000 Kc., 299.8 mtrs., 250 w.—Auburn-Fuller Co., J. W. Swallow, Mgr. Tel. Empire 1171.
KFWB	Hollywood, Calif.—950 Kc., 315.6 mtrs., 1000 w.—War- ner Bros. Brdcstg Corp., Gerald King, Mgr. HO 0315.
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KFWI— KFXM— KGA— KGB— KGDM— KGEF— KGGC— KGGC— KGGR— KGFJ— KGO— KGW—	Hollywood, Calif.—950 Kc., 315.6 mtrs., 1000 w.—War- liner Bros. Brdcstg Corp., Gerald King, Mgr. HO 0315.  San Francisco, Calif.—930 Kc., 322.4 mtrs., 500 w.—Ra- lio Entertainment, Inc., J. B. Geisen, Mgr. Franklin 0200.  San Bernardino Calif.—1210 Kc., 247.8 mtrs., 100 w.—J. C. and E. W. Lee, owners. Tel. 4761.  Spokane, Wash.—1470 Kc., 204.1 mtrs., 5000 w.—North- west Broadcasting System Inc. H. E. Studebaker, Mgr.  San Diego, Calif.—1330 Kc., 225.4 mtrs., 250 w.—Pick- wick Broadcasting Corp. Tel. Franklin 61512.  Stockton, Calif.—1100 Kc., 272.6 mtrs., 250 w.—  E. F. Peffer.  Los Angeles Calif.—1300 Kc., 230.6 mtrs., 1000 w.—  Trinity Methodist Church, Bob Schuler, Pres. WE 8887.  San Francisco, Calif.—1420 Kc. 211.1 mtrs. 100 w.—  The Golden Gate Broadcasting Company.  Long Beach, Calif.—1360 Kc., 220.4 mtrs., 1000 w.—C. Merwyn Dobyns, owner; Bill Ray, Mgr. Tel. 632-75.  Los Angeles, Calif.—1200 Kc., 249.9 mtrs., 100 w.—Ben S. McGlashan, owner and manager. Tel. WE 7788.  San Francisco, Calif.—790 Kc., 379.5 mtrs., 7500 w.—Na- tional Brdcstg. Co., Inc. Tel. Sutter 1920.  Portland, Oregon—620 Kc., 483.6 mtrs., 1000 w.—Thc Morning Oregonian, Paul R. Heitinyer, Mgr.  Los Angeles, Calif.—900 Kc., 333.1 intrs., 1000 w.—Don Lee, Inc., Lewis A. Weiss, Mgr. Tel. VAndykc 7111.  Spokane, Wash.—590 Kc., 508.2 intrs. 2000 w.—Louis
KFWI— KFXM— KGA— KGB— KGDM— KGEF— KGGC— KGGC— KGGW— KGW— KHJ— KHQ—	Hollywood, Calif.—950 Kc., 315.6 mtrs., 1000 w.—Warder Bros. Brdcstg Corp., Gerald King, Mgr. HO 0315.  San Francisco, Calif.—930 Kc., 322.4 mtrs., 500 w.—Ralio Entertainment, Inc., J. B. Geisen, Mgr. Franklin 0200.  San Bernardino Calif.—1210 Kc., 247.8 mtrs., 100 w.—J. C. and E. W. Lee, owners. Tel. 4761.  Spokane, Wash.—1470 Kc., 204.1 mtrs., 5000 w.—Northwest Broadcasting System Inc. H. E. Studebaker, Mgr. San Diego, Calif.—1330 Kc., 225.4 mtrs., 250 w.—Pickwick Broadcasting Corp. Tel. Franklin 61512.  Stockton, Calif.—1100 Kc., 272.6 mtrs., 250 w.—  E. F. Peffer.  Los Angeles Calif.—1300 Kc., 230.6 mtrs., 1000 w.—  Trinity Methodist Church, Bob Schuler, Pres. WE 8887.  San Francisco, Calif.—1420 Kc. 211.1 mtrs. 100 w.—  The Golden Gate Broadcasting Company.  Long Beach, Calif.—1360 Kc., 220.4 mtrs., 1000 w.—C. Merwyn Dobyns, owner; Bill Ray, Mgr. Tel. 632-75.  Los Angeles, Calif.—1200 Kc., 249.9 mtrs., 100 w.—Ben S. McGlashan, owner and manager. Tel. WE 7788.  San Francisco, Calif.—790 Kc., 379.5 mtrs., 7500 w.—National Brdcstg. Co., Inc. Tel. Sutter 1920.  Portland, Oregon—620 Kc., 483.6 mtrs., 1000 w.—Thc Morning Oregonian, Paul R. Heitinyer, Mgr.  Los Angeles, Calif.—900 Kc., 333.1 intrs., 1000 w.—Don Lee, Inc., Lewis A. Weiss, Mgr. Tel. VAndykc 7111.  Spokane, Wash.—590 Kc., 508.2 intrs. 2000 w.—Louis Wasmer, Inc. Tel. Main 5383.  San Francisco, Calif.—1070 Kc., 280.2 mtrs., 100 w.—
KFWI— KFXM— KGA— KGB— KGDM— KGEF— KGGC— KGGC— KGFJ— KGO— KGW— KHJ— KHQ— KJBS—	Hollywood, Calif.—950 Kc., 315.6 mtrs., 1000 w.—Warfner Bros. Brdcstg Corp., Gerald King, Mgr. HO 0315.  San Francisco, Calif.—930 Kc., 322.4 mtrs., 500 w.—Ralio Entertainment, Inc., J. B. Geisen, Mgr. Franklin 0200.  San Bernardino Calif.—1210 Kc., 247.8 mtrs., 100 w.—J. C. and E. W. Lee, owners. Tel. 4761.  Spokane, Wash.—1470 Kc., 204.1 mtrs., 5000 w.—Northwest Broadcasting System Inc. H. E. Studebaker, Mgr. San Diego, Calif.—1330 Kc., 225.4 mtrs., 250 w.—Pickwick Broadcasting Corp. Tel. Franklin 61512.  Stockton, Calif.—1100 Kc., 272.6 mtrs., 250 w.—  E. F. Peffer.  Los Angeles Calif.—1300 Kc., 230.6 mtrs., 1000 w.—  Trinity Methodist Church, Bob Schuler, Pres. WE 8887.  San Francisco, Calif.—1420 Kc. 211.1 mtrs. 100 w.—  The Golden Gate Broadcasting Company.  Long Beach, Calif.—1360 Kc., 220.4 mtrs., 1000 w.—C.  Merwyn Dobyns, owner; Bill Ray, Mgr. Tel. 632-75.  Los Angeles, Calif.—1200 Kc., 249.9 mtrs., 100 w.—Ben S. McGlashan, owner and manager. Tel. WE 7788.  San Francisco, Calif.—790 Kc., 379.5 mtrs., 7500 w.—National Brdcstg. Co., Inc. Tel. Sutter 1920.  Portland, Oregon—620 Kc., 483.6 mtrs., 1000 w.—The Morning Oregonian, Paul R. Heitinyer, Mgr.  Los Angeles, Calif.—900 Kc., 333.1 mtrs., 1000 w.—Don Lee, Inc., Lewis A. Weiss, Mgr. Tel. VAndykc 7111.  Spokane, Wash.—590 Kc., 508.2 mtrs. 2000 w.—Louis Wasmer, Inc. Tel. Main 5383.  San Francisco, Calif.—1070 Kc., 280.2 mtrs., 100 w.—Julius Brunton and Sons Co. Tel. Ordway 4148.  Seattle, Wash.—970 Kc., 309.1 mtrs., 5000 w.—North-
KFWI— KFXM— KGA— KGB— KGDM— KGEF— KGGC— KGGC— KGFJ— KGO— KGW— KHJ— KHQ— KJBS— KJR—	Hollywood, Calif.—950 Kc., 315.6 mtrs., 1000 w.—Warner Bros. Brdcstg Corp., Gerald King, Mgr. HO 0315.  San Francisco, Calif.—930 Kc., 322.4 mtrs., 500 w.—Ralio Entertainment, Inc., J. B. Geisen, Mgr. Franklin 0200.  San Bernardino Calif.—1210 Kc., 247.8 mtrs., 100 w.—J. C. and E. W. Lee, owners. Tel. 4761.  Spokane, Wash.—1470 Kc., 204.1 mtrs., 5000 w.—Northwest Broadcasting System Inc. H. E. Studebaker, Mgr. San Diego, Calif.—1330 Kc., 225.4 mtrs., 250 w.—Pickwick Broadcasting Corp. Tel. Franklin 61512.  Stockton, Calif.—1100 Kc., 272.6 mtrs., 250 w.—E. F. Peffer.  Los Angeles Calif.—1300 Kc., 230.6 mtrs., 1000 w.—Trinity Methodist Church, Bob Schuler, Pres. WE 8887.  San Francisco, Calif.—1420 Kc., 211.1 mtrs. 100 w.—The Golden Gate Broadcasting Company.  Long Beach, Calif.—1360 Kc., 220.4 mtrs., 1000 w.—C. Merwyn Dobyns, owner; Bill Ray, Mgr. Tel. 632-75.  Los Angeles, Calif.—1200 Kc., 249.9 mtrs., 100 w.—Ben S. McGlashan, owner and manager. Tel. WE 7788.  San Francisco, Calif.—790 Kc., 379.5 mtrs., 7500 w.—National Brdcstg. Co., Inc. Tel. Sutter 1920.  Portland, Oregon—620 Kc., 483.6 mtrs., 1000 w.—Don Lee, Inc., Lewis A. Weiss, Mgr. Tel. VAndykc 7111.  Spokane, Wash.—590 Kc., 508.2 intrs., 2000 w.—Louis Wasmer, Inc. Tel. Main 5383.  San Francisco, Calif.—1070 Kc., 280.2 mtrs., 100 w.—Julius Brunton and Sons Co. Tel. Ordway 4148.  Seattle, Wash.—970 Kc., 309.1 mtrs., 5000 w.—Northwest Brdcstg Systems, Inc., T. F. Smart, Mgr. Main 2495.  Oakland, Calif.—880 Kc., 340.7 mtrs., 500 w.—The Tri-
KFWI— KFXM— KGA— KGB— KGDM— KGEF— KGGC— KGER— KGFJ— KGO— KGW— KHJ— KHQ— KJBS— KJR— KLX—	Hollywood, Calif.—950 Kc., 315.6 mtrs., 1000 w.—Warner Bros. Brdcstg Corp., Gerald King, Mgr. HO 0315.  San Francisco, Calif.—930 Kc., 322.4 mtrs., 500 w.—Ralio Entertainment, Inc., J. B. Geisen, Mgr. Franklin 0200.  San Bernardino Calif.—1210 Kc., 247.8 mtrs., 100 w.—J. C. and E. W. Lee, owners. Tel. 4761.  Spokane, Wash.—1470 Kc., 204.1 mtrs., 5000 w.—Northwest Broadcasting System Inc. H. E. Studebaker, Mgr. San Diego, Calif.—1330 Kc., 225.4 mtrs., 250 w.—Pickwick Broadcasting Corp. Tel. Franklin 61512.  Stockton, Calif.—1100 Kc., 272.6 mtrs., 250 w.—  E. F. Peffer.  Los Angeles Calif.—1300 Kc., 230.6 mtrs., 1000 w.—  Trinity Methodist Church, Bob Schuler, Pres. WE 8887.  San Francisco, Calif.—1420 Kc. 211.1 mtrs. 100 w.—  The Golden Gate Broadcasting Company.  Long Beach, Calif.—1360 Kc., 220.4 mtrs., 1000 w.—C. Merwyn Dobyns, owner; Bill Ray, Mgr. Tel. 632-75.  Los Angeles, Calif.—1200 Kc., 249.9 mtrs., 100 w.—Ben S. McGlashan, owner and manager. Tel. WE 7788.  San Francisco, Calif.—790 Kc., 379.5 mtrs., 7500 w.—National Brdcstg. Co., Inc. Tel. Sutter 1920.  Portland, Oregon—620 Kc., 483.6 mtrs., 1000 w.—The Morning Oregonian, Paul R. Heitmyer, Mgr.  Los Angeles, Calif.—900 Kc., 333.1 mtrs., 1000 w.—Don Lee, Inc., Lewis A. Weiss, Mgr. Tel. VAndykc 7111.  Spokane, Wash.—590 Kc., 508.2 mtrs., 2000 w.—Louis Wasmer, Inc. Tel. Main 5383.  San Francisco, Calif.—1070 Kc., 280.2 mtrs., 100 w.—Julius Brunton and Sons Co. Tel. Ordway 4148.  Seattle, Wash.—970 Kc., 309.1 mtrs., 5000 w.—Northwest Brdcstg Systems, Inc., T. F. Smart, Mgr. Main 2495.  Oakland, Calif.—880 Kc., 340.7 mtrs., 500 w.—The Tribune Publishing Company.  Oakland, Calif.—1440 Kc., 208.2 mtrs., 250 w.—War-

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Tacoma, Wash.—1340 Kc., 223.1 mtrs., 500 w.-
Inc., owner; Carl E. Hammond, Mgr. Main 4144.
KMO—
                   Beverly Hills, Calif. - 710 Kc., 422.3 mtrs., 500 w -
                   millan Petroleum Co., Glenn Rice, Mgr. CRestview 3101,
KMTR—Hollywood, Calif.—570 Kc., 526 mtrs., 500 w.—KMTR Radio Corp., V. G. Freitag, Mgr. Tel. Hollywood 3026.
                   Hollywood, Calif.—1050 Kc., 285.5 mtrs., 5000 w.—West-
ern Broadcasting Co., Naylor Rogers, Mgr. Tel. HE 4101.
KNX-
                   Denver, Colo. -830 Kc., 361.2 mtrs., 12,500 w. -General
Electric Co., Freeman H. Talbot, Mgr. Tel. York 5090.
                    Corvallis, Ore. -550 Kc., 545.1 mtrs., 1000 w. - Oregon
                  State Agricultural College.
KOIN—Portland, Ore. -940 Kc., 319.0 mtrs., 1000 w. - KOIN Inc. Tel. Atwater 4151.
                   Seattle, Wash.—1270 Kc., 236.1 mtrs., 1000 watts.—
Seattle Brdcstg. Corp., L. F. Van Schuck, Mgr. Main 2312
KOL—
                   Seattle, Wash.—920 Kc., 325.9 mtrs., 1000 w.—Fisher's Blend Sta., Inc., O. D. Fisher, Pres. Tel. Elliot 5809.
KOMO—
                   Marshfield, Ore.—1370 Kc., 318.8 mtrs. 100 w.—H. H.
KOOS—
                   manseth, Inc.
                    Eugene, Ore. -1420 Kc., 211.1 mtrs., 100 w. - Eugene
KORE—
                   Broadcasting Station.
KPCB—Seattle, Wash.—650 Kc. 461.3 mtrs., 100 watts.—West Coast Broadcasting Co. Tel. Main 7997.
                   San Francisco-680 Kc. 440.9 mtrs., 5000 w.-Hale Bros. and The Chronicle, J. W. Laughlin, Mgr. Garfield 8300.
KPPC——Pasadena, Calif.—1210 Kc., 247.8 mtrs., 50 w.—Pasadena
Presbyterian Church. Tcl. Terrace 1163.
                   Pasadena, Calif. -1360 Kc., 220.4 mtrs., 1000 dena Star-News Publ. Co. Tel. Wakefield 3111.
                    San Jose, Calif.-1010 Kc., 296.6 mtrs.,
                    Farm Bureau, F. J. Hart, Mgr. Tel. Columbia 777,
                   Berkeley, Calif.—1370 Kc., 218.8 mtrs., 100 w.—First Congregational Church of Berkeley.
                    Santa Ana, Calif.—1500 Kc., 199.9 mtrs., 100 w.—Paci-
fic-Western Broadcasting Federation, Ltd.
KREG—
KROW—Oakland, Calif.—930 Kc., 322.4 mtrs., 1000 w.—Educational Brdcstg. Corp. Tel. Glencort 6774.
                    Salt Lake City, Utah—1130 Kc., 265.3 mtrs., 5000 w.—Radio Serv. Corp. of Utah., E. Glade, Mgr. Wasatch 3901.
KSL—
                    Santa Maria, Calif.-1220 Kc., 249.9 mtrs., 100 w.-
Santa Maria Valley R. R. Co.
KSMR—
                    San Francisco, Calif.—560 Kc., 535.4 mtrs., 1000 w.—As sociated Brdcsters, Inc., Bob Roberts, Mgr. Garfield 4700.
KTAB—
                    Phoenix, Arizona—620 Kc., 483.6 mtrs., 1000 w.—KTAR
Brdcstg Corp., Richard O. Lewis, Mgr.
KTAR—
                    Los Angeles, Calif.—1300 Kc., 230.6 mtrs., 1000 w.—Purchase by Auburn-Fuller Co., pending approval by Federal Radio ('ommission.
KTBI-
                    Portland, Ore.—1300 Kc., 230.6 mtrs. 500 w.—M. E. Brown, owner.
KTBR—
                    Los Angeles, Calif.—780 Kc., 384.4 mtrs., 1000 w.—Pick-wick Brdcstg Corp., Glenhall Taylor, Mgr. Tel. EX 1341.
KTM-
                    Seattle, Wash. - 1270 Kc., 236.1 intrs., 1000 w. - First
KTW---
                    Presbyterian Church of Scattle.
                    Tacoma, Wash.—760 Kc., 394.5 mtrs., 1000 w.—Puget Sound Brdcstg Co., Inc., E. M. Dorenbecker. Brdwy 42111.
                    Bellingham, Wash.—1200 Kc., 249.9 mtrs., 100 w.-KVOS.
KVOS---
                    Inc. owner.
                    Stockton, Calif. -1200 Kc., 249.9 mtrs.. 100 w.-Portable Wireless Telephone Company, Inc.
KWG---
KWJJ____Portland, Ore.—1060 Kc., 282.8 mtrs., 500 w.
                   Pullman Wash.—1220 Kc., 245.8 mtrs., 2000 w.—State College of Washington,
KWSC-
KXA____Seattle, Washington-570 F.c., 526.0 mtrs., 500 w.
                     Portland, Ore. -1420 Kc., 211.1 mtrs., 100 w - KXL
 KXL----
                     Broadcasters.
                    San Francisco, Calif.—1230 Kc., 243.8 intrs., 1000 w.—
Pac. Brdcstg Corp., Lewis Lacey, Mgr. Prospect 3456.
 KYA-
                    Hayward, Calif.—1370 Kc., 218.8 mtrs., 100 w.—Universal Brdcstg Co., Leon A. Fry, Mgr. Tel. 1185.
 KZM-
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#### For The Service Man

# Fig.1

#### TO MAKE a D.C. VOLTMETER a MULTI-RANGE VOLTMETER.

R<sub>v</sub> = resistance of voltmeter in ohms, or, if ohms per volt is given, then

 $R_{\Psi}$  = ohms per volt x maximum reading, in volts.

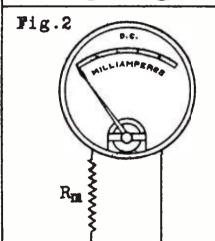
V1 = original maximum reading, in volts.

 $V_2$  = desired new maximum reading, in volts.

 $\frac{V_2}{V_1} = N = \text{multiplying factor.}$ 

R = resistance of multiplier needed, in ohms.

Then  $R_m = (N-1)x R_v$ 



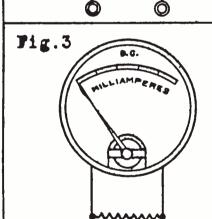
#### TO MAKE a D.C. MILLIAMETER a D.C. VOLTMETER.

I - original maximum reading, in milliamperes.

V = desired maximum reading, in volts.

Rm = resistance of multiplier required, in ohms.

Then 
$$R_m = \frac{1,000 \times V}{I}$$



#### TO FIND THE SHUNT REQUIRED TO MAKE ANY D.C. MILLIAMETER A HIGHER RANGE MILLIAMETER.

Rm = resistance of meter, in ohms.

Im = original maximum reading, in milliamperes.

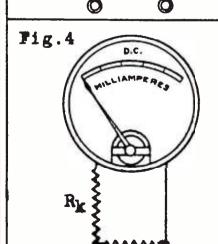
I = desired new maximum reading, in milliamperes.

 $\frac{I}{I_{\bullet}} = \mathbf{M} = \mathbf{multiplying factor}.$ 

R<sub>B</sub>=resistance of shunt required, in ohms.

Then 
$$R_8 = \frac{R_m}{N-1}$$

If the meter resistance is not accurately known, greater accuracy in scale conversion may be had by the use of two Precision Wire Wound Resistors, as shown in Fig. 4.



Rm = approximate meter resistance, as from manufacturer's catalog.

Rk=a resistor, equal, in ohms, to 9 times Rm.

Then  $R_s = \frac{R_k + R_m}{N-1} = \frac{10 R_m}{N-1}$ 

Note: For intermittent use, it is recommended that the load on any Precision Wire Wound Resister should not exceed 2 watts.

#### SCHEDULE OF DX STATIONS

#### **EVENING HOURS ONLY**

#### PACIFIC STANDARD TIME

Call Letters	Location   Kc.	W.L.	Power	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
KLZ	Denver, Colo	535.4	1000	4. 9:30	4-10:00	4-11:00	4-11:00	4-11:00	4-11:00	4-11:00
W.O.W.	Omaha, Neb 590	508.2	1000	4-10:00	4-10:00	4-10:00	4-10:00	4-10:00	4-10:00	4-10:00
W'DAF	Kansas City, Mo 610	491.5	1000	4. 9:00	4-10:30	4-10:30	4-10:30	4-10:30	4-10:30	4-10:30
WFLA-WSUN	Clearwater, Fla 620	483	2500	4. 8:30	4. 9:00	4. 9:00	4. 9:00	4. 9:00	4- 9:00	4. 9:00
WSM	Nashville, Tenn	461.3	5000	4. 8:00	4. 9:00	4. 9:00	4. 9:00	4. 9:00	4. 9:00	4. 9:00
WMAQ .	Chicago, Ill 670	447.5	5000	4-10:00	4-12:00	4-12:00	4-12:00	4-12:00	4-12:00	4-12:00
W'OR	Newark, N. J	422.3	5000	4. 9:00	4. 9:00	4. 9:00	4- 9:00	4-9:00	4. 9:00	4. 9:00
WGN	Chicago, Ill	416.4	25KW	4-10:30	4-10:30	4-10:30	4-10:30	4-10:30	4-10:30	4-12:15
W'SB	Atlanta, Ga 740	405.4	5000	4. 9:00	4. 9:00	4. 9:00	4. 9:00	4. 9:00	4. 9:00	4. 9:00
W'JR	Detroit, Mich	400	5000	4-11:00	4-11.00	4-11:00	4-11:00	4-11:00	4-11:00	4-12:00
KFAB	Lincoln, Neb	389.4	5000	8. 9:00	8- 9:15	8- 9:15	8- 9:15	8-9:15	8- 9:15	8. 9:15
W'BBM	Chicago, Ill	389.4	25KW	4. 8:00	4. 8:00	4. 8:00	4. 8:00	4. 8:00	4. 8:00	4. 8:00
W'BAP	Fort Worth, Texas 800	374.8	10KW	7:30-10	7-10:00	4- 7:00	6:30-10	4. 7:00	7-10:00	4. 7:00
W.CCO	Minneapolis, Minn	370.2	7500	4. 9:00	4-10:00	4-10:00	4-10:00	4-10:00	4-10:00	4-11:00
WHAS	Louisville, Ky 820	365.6	10KW		4. 9:00	4. 9:00	4- 9:00	4. 9:00	4. 9:00	4. 9:00
KOA	Denver, Colo	361.2	12KW		4-11:00	4-11:00	4-11:00	4-11:00	4-12:00	4-12:00
WENR	Chicago, Ill	345	50KW	6-12:00	6:30-11	6:30-11	6:30-11	6:30-11	6:30-11	10-12:00
WLS	Chicago, Ill	345	5000	4- 6:00	5. 6:30	5. 6:30	5- 6:30	5- 6:30	5- 6:30	5-10:00
WCFL	Chicago, Ill 970	309.1	1500	4- 6:45	4- 6:45	4- 6:45	4- 6:45	4- 6:45	4. 6:45	4- 6:45
WBZ	Springfield, Mass	302.8	15KW	*	4. 9:00	4. 8:15	4- 9:00	4- 9:00	4. 9:00	4. 8:30
WOC-WHO	Davenport, Des Moines 1000	299.8	5000	4-9:00	4-10:00	4-10:00	4-12:30	4-10:00	4-10:00	4-10:00
KYW	Chicago, III	294	10KW	1	4-11:00	4-11:00	4-11:00	4-11:00	4-11:00	4-12:00
KTHS	Hot Springs, Ark  1040	288.3	10KW	7. 8:30	8- 9:00	8. 9:00	7-10:00	7:30-10	7-10:00	8. 9:00
WBAL	Baltimore, Md   1060	283	10KW	·	Off at 4	4. 9:00	Off at 4	4. 9:00	Off at 4	4. 9:00
WTIC	Hartford, Conn	282.8	50KW		4. 9:00	silent	4- 9:00	silent	4. 9:00	silent
WTAM	Cleveland, Ohio	280.2	50KW	<u> </u>	4-10:00	4-10:00	4-10:00	4-10:00	4-10:00	4-10:00
WBT	Charlotte, N. C	277.6	5000	4. 9:00	4. 9:00	4- 9:00	4. 9:00	4. 9:00	4. 9:00	4. 9:00
WRVA	Richmond, Va	270.1	5000	4- 8:30	4-10:00	4-10:00	4-10:00	4. 9:00	4. 9:00	4. 9:00
KSL	Salt Lake City 1130	265.3	5000	4-12:00	4-12:00	4-12:00	4-12:00	4-12:00	4-12:00	4-12:00
W'API	Birmingham, Ala	263	5000	5:15-9	6- 8:00	6- 9:00	4-11:00	4-11:00	4. 6:00	4. 6:00
WHAM	Rochester, N. Y	260.7	5000	4. 8:30	4- 8:45	4- 8:00	4. 8:00	4. 9:00	4. 8:00	4. 8:30
wowo	Fort Wayne, Ind	258.5	10KW	4. 8:00	4- 8:00	4- 8:00	4. 9:00	4. 8:00	4- 8:35	4. 6:00
WOAI	San Antonio, Texas  1190	252	50KW	4. 8:30	4- 9:15	4- 9:15	4. 9:15	4. 9:15	4. 9:15	4. 9:15
KDYL	Salt Lake City 1290	232.6	1000	4-12:00	4-12:00	4-12:00	4-12:00	4-12:00	4-12:00	4-12:00
KWK	St. Louis, Mo	222.1	1000	4. 9:02	4-11:00	4-11:00	4-11:00	4-11:00	4-11:00	4-11:30
KSTP	Saint Paul, Minn	205.4	10KW	4-10:00	4-11:00	4-11:00	4-11:00	4-11:00	4-11:00	4-11:00
WCKY	Covington, Ky 1490	201.6	5000	4- 6:00	4. 8:00	4. 8:00	4. 8:00	4. 8:00	4-8:00	4. 8:00

#### Delinquent Broadcasters Warned

Broadcasting stations which fail to comply with the engineering regulations requiring 75 per cent modulation have been warned by the Federal Radio Commission that their power will be arbitrarily reduced unless the order is complied with.

The step was taken because of the interference caused by these stations whose equipment is not up to standard.

#### Tables Turned on "Hello World"

Turn about is fair play, and so Loyola University, which operates Station WWL, at New Orleans, La., is seeking to oust W. K. Henderson and his Hello World Broadcasting Corporation, which operates Station KWKH, at Shreve-port, La., from the channel which they now share.

In an application just filed with the Federal Radio Commission, WWL asks an increase in power from 5,000 to 10,000 watts and full time on the 8500 kilocycle channel. Henderson recently asked for full time on the same frequency and in increase in power from 10,000 to 30,000 watts.

While the Radio Commission has not yet acted, Examiner Elmer W. Pratt recommended, following a hearing, that

Henderson's application be denied because KWKH was not operating in the public interest.

During the hearing last Fall, some priests from Loyola University expressed themselves as shocked at some of the language used by Henderson over the radio.

#### To Record "Bad" Station Programs

Broadcasters who are summoned to hearings on charges of violations of regulations or failure to operate in the public interest, will be confronted in the near future with phonograph records of their programs.

The Federal Radio Commission is making inquiries among manufacturers to find the best recording device for the purpose of taking down verbatim reports of stations under investigation. Ordinary home models are not adaptable to this sort of work, it was said, and something like the standard unit used in making master phonograph records is needed.

Heretofore, the Commission has relied upon stenographic transcripts of certain portions of broadcasts, but this method has been found cumbersome and not unquestionable.

#### Telephony's Part in Broadcasting

Despite the popular impression that radio programs are carried long distances, say from New York to a small city in the Midwest, through the ether, the truth is that broadcasting, strictly speaking, plays only a small part in bringing the entertainment to its listeners.

This is pointed out by H. A. Bellows, vice-president of the Columbia Broadcasting System and former Federal Radio Commissioner, in an article on "Broadcasting: A New Industry," in the current edition of the Harvard Alumni Bulletin.

"Most of the long-range work of broadcasting is done, not by radio or wireless at all, but by wired telephony," he says.

"Broadcasting, or radio in the popular sense of the term, is really nothing but a very economical and moderately efficient means of local distribution. The long-distance listener, the 'radio fan' of earlier days, is happily, almost extinct. Most people will tell you that long-distance listening, like the old gray mare, is not what it used to be, and will lay the blame at the door of the Federal Radio Commission, or sun spots, or the tariff. The real fact is that listeners will no longer tolerate the hodge-podge of squeals and squawks which used to delight them. They demand quality, day and night, at least comparable to that of a first-class phonograph record, and such quality is not dependably deliverable by any broadcasting station in the world over a radius of more than a couple of hundred miles.

"In the broadcast studio you will find no radio equipment whatsoever, except perhaps a receiving set for use in checking the transmitter output. Microphones, amplifiers, controls, rectifiers, speakers, all belong to the domain of telephony, not to radio. The microphone translates sound waves into electrical impulses, much as the ordinary telephone transmitter does; wires convey these impulses to the amplifier, and thence to the radio transmitter, generally miles away from the studio. It is to the telephone, not to radio that we owe the development of the equipment whereby speech and music are made available for broadcasting.

"More than this, it is the telephone wire, not radio, which carries programs the length and breadth of the country. John Smith, in San Francisco, listens of a Sunday afternoon to the New York Philharmonic Orchestra playing in Carnegie hall. For 3,200 miles the telephone wire carries the program so faithfully that scarcely an overtone is lost; for perhaps fifteen miles it travels by radio to enter John Smith's house. And then he marvels at the wonders of radio.

"But what of programs from overseas? Here, indeed, wireless telephony steps in, but not broadcasting in the ordinary sense. The program from London is telephoned across the Atlantic by radio, but on frequencies entirely outside of the broadcast band. And the time may be near at hand when even this service will come over the wire, eliminating the interference which so far has imperilled all long distance use of wireless telephony

"Broadcasting, then, is the child of the telephone: in America it is certainly the child of the American Telephone and Telegraph Company. The whole structure of commercial chain broadcasting as we know it today has grown out of the pioneer work done prior to 1926 at 195 Broadway, New York; the commercial policies adopted in those early days, when chain broadcasting was regarded merely as a means for utilizing telephone wires after the peak load was off, still influence, both for good and for evil, the whole structure of broadcasting, although the conditions which produced those policies have been revolutionized.

"For better or worse, American broadcasting has entered the advertising field. The broadcasters in general are fully aware of the perils of too much advertising, but they feel that the situation will automatically correct itself. No advertiser, and above all, no advertising agent, will knowingly create public ill-will and disapproval by broadcasting programs the sole purpose of which is to create exactly the opposite.

"The unanswerable argument is that broadcasting on its present advertising basis has been responsible for the fact that 13½ million radio receiving sets are now in use in the United States. In no other country in the world does broadcasting play so large a part in the national life; in no other country is there such a wide variety of broadcasting service.

"It is impossible to estimate accurately the total amount of money spent by advertisers on broadcasting, but a guess of between 80 and 100 million dollars for 1930 would probably not be far wrong. In 1924, this business was absolutely non-existent; most of its present volume has been the creation of the past three years."

#### U. S. Scientists to Study Fading

Some of the most baffling problems of radio, among them static and fading, will be tackled with new equipment with the erection of two new experimental stations for the use of the United States Bureau of Standards. A bill authorizing the expenditure of \$147,000 for their erection has just been passed by Congress and signed by President Hoover. Efforts are now being made to put through an appropriation at the current session.

The authorization covers the purchase of additional land and equipment for the setting up of a special Radio Research Laboratory and the erection of a transmitting and receiving station at some distance from each other.

Detailed study will be made of the variations which radio waves undergo between the transmitter and receiver, according to Dr. George K. Burgess, Director of the Bureau of Standards. The work will be under the direction of Dr. J. H. Dellinger, Chief of the Radio Section.

"The studies most urgently needed on radio waves have to do with fading, one of the most serious limitations on broadcasting; changes in direction, of great importance in navigation of ships and aircraft; and the behavior of short waves or high frequencies," Dr. Burgess said.

Research will thus be conducted in both the communication and the broadcasting fields.

Two additional transmitters will be made available by the fund, also for extending the standard frequency service, by which broadcasters may check their frequency stability and prevent "wobbling," to make it continuous.

This service would do much to eliminate much of the present interference, according to Dr. Dellinger, and would serve to improve the technical operation of broadcasting stations.

#### Congressman Asked to Ban "Stadick"

The high mark of faith in the omnipotence of Congress was expressed in a letter received recently by a Representative from a village in his district. While declining to permit his name to be used for political reasons, the congressman revealed the following letter:

"Dear Congressman: We, the citizens of \_\_\_\_\_, have a little radio and we have so much trouble with Stadick, it is no pleasure for anyone so we wish you would use your influence and see if you can clear the air for us."

#### Classified Directory of Western Programs

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FAVORITE FEATURES AND WHERE THEY ARE Arizona Wranglers—Mon., Tues., Thurs. and Sat. 10 PM., Sun. 7:30 PM., Fri. 9:15 PM. Amos 'n' Andy (nigh(ly Ex. Sun.)—8:00 PM over KGO KHQ KOMO KGW KECA KFSD. (Thurs. at 8:30.)
Beverly Hill Billies (ugtly Ex. Mon.)—10 PM over KMPC
Bert Butterworth and his Optimistic Dounts (Fri.)—8:00

PM over KNN.

Bill Sharpless and His Gang, 7:00 AM. (daily.) KNN.

Black and Blue (nightly Ex. Sun.)—5:30 PM over KHJ.

Cecil and Sally in Person (nightly Ex. Sun.)—6:15 PM over KPO.

Bugs Baer (Sat.) 5:15 PM., over KGO KHQ KOMO KGW KECA KFSD KTAR. Cecil and Sally (nightly Ex. Sun.)—6:45 PM over KFWB.

Charles W. Hamp (Tues, and Thurs.)—10:30 AM over KIIJ.

Charles W. Hamp (Fri.)—7:30 PM over same stations as

Charles W. Hamp (Sun.)—8:30 PM over KHQ KWG KFBK KMJ KFRC KOIN AVI KOL KFPY. Charles W. Hamp (Tues.)—7:15 PM over same stations

as above.

Charles W. Hamp 9:00 PM. (Thurs.) KNX.
Frank Watanube, (nightly Ex. Sun.) 7:00 PM. over KNX.
Charlie Wellman (Mon., Wed., and Fri.)—10:00 AM over
KGO KHQ KOMO KGW KFI KECA KFSD KTAR
Discount Standard McWebster (Thurs.)—8:30 PM over

KNX.

Empire Bullders (Mou.) 7:30 PM., KGO KHQ KOMO KGW KECA KFSD KTAR. "Jo and Vi" (Tues.)—7:00 PM over KHJ KFRC KOL KDYL KLZ

KIM Ranch Band (nightly—9:00 PM over KTM. Nick Harris Detective Stories. (Thurs.) 6:00 PM., KFL. Shell Happy Time (daily Ex. Sun.)—8:00 AM over KHQ KOMO KGW KPO KFI KSL

Tom Brenneuran presents "Tom and Wash." (Daily)—12:00 noon over KFWB.
Sun.)—7:00 AM over KMTR.

Zoro (daily) 9:00 AM, over KGER. Tow Murray and his Hollywood Hill Billies (daily Ex. Tom Terriss, (Mon.) 10:00 PM., KF1.

#### Dance Orchestras

National Brondensting Co.—5:00-5:30 PM. Rudy Vallee and Orchestra. (Thurs.) KGO, KHQ, KOMO, KGW, KECA, KTAR.

chestra. (Thurs.) KGO, KHQ, KOMO, KGW, KECA, KTAR.

5:00 PM—Paul Whiteman's Painters. (Tues.) KGO KHQ KOMO KGW KFSD KTAR.

6:00-6:30 PM. Maytag Orchestra. (Mon.) KGO, KHQ, KOMO, KGW, KECA.

7:00-7:30 PM. Lucky Strike Orchestra. (Thurs. and Sat.) KFSD, KGO, KTAR, KHQ, KOMO, KGW, KFI 7:30-8:00 PM. Lucky Strike Orchestra. (Tues.) KGO, KHQ, KOMO, KGW, KFSD, KECA.

9:00-9:30 PM. Gus Arnheim and Cocoanut Grove Orch. (Thurs.) KGO, KHQ, KOMO, KGW, KFI, KFSD, KTAB, KOA.

9:00-9-30 PM. Anson Weeks and Orch. (Tues.) KGO, KHQ, KOMO, KGW, KECA, KFSD, KTAR.

11:00-12:00 PM. Laughner-Harris Hotel St. Francis Orch. (Ex. SUN.) KGO, KGW, KFI.

Columbia Broadcasting Co.—7:00-7:30 PM. Guy Lombardo's Orch-tra. (Mon.) KLZ KDYL KFPY KFBK KOL KOIN KHJ KFRC.

8:00-8:30 PM. Guy Lombardo's Orch. (Wed.) KLZ KOL KFPY KFRC KHJ KMJ KFBK.

8:00-9:00 PM. Ben Bernie and Bobbie Mecker and their orchestras. (Thurs.) KLZ KMJ KFBK KDYL.

1:45 PM. Rhythm Ramblers. (Fri.) KLZ, KVI.

4:00 PM. Morton Downey Orch. KOL KFPY KFRC KHJ KOH KMJ.

8:00 PM. Jack Denny's Orch. KOL KFPY KDYL KLZ KMJ KFBK.

United Broadcasting Co.—8:00-8:30 PM. English Gibson Orch.
(Sun. and Thurs. 7:45 PM. Sat.)
SOUTHERN CALIFORNIA
KMTR—10:00 PM. Abe Lyman's Roosevelt Hotel. (Nightly Ex.

Sun.)

KFSD-11:00-11:30 PM. Douglas Night Club. (Mon., Tues. & Fri.)
10:00-10:30 PM. Kennedy's Cafe. (Nightly. Sat. at 10:30.)
9:45 PM. Kennedy's Cafe. (Sun.)
12:30-1:00 PM. Douglas Nite Club. (Nightly Ex. Sun.

and Mon.)
KF1--11:00-12:00 PM. Hotel St. Francis Dance Orch. (Ex. Sat. and Sun.)

KMPC—9:30-10:00 PM. Aaron Gonzales and His Novelty Quintet.

(Sat.) K11J-9:30-10:00 PM. Val Valente and his Roof Garden Orch.

10:10-11:00 PM. Vai Valente and his Roof Garden Orch. (Sun) 10:05-10:20 PM. Earl Burtnett's Biltmore Hotel Dance

10:05-10:20 PM. Earl Burtnett's Biltmore Hotel Dance Orch. (Mon.)
7:00 PM. Guy Lombardo's Canadians. (Mon.)
8:00 PM. Guy Lombardo's. (Wed.)
10:20-11:00 PM. Anson Weeks Orch. (Mon.)
11:00-12:00 PM. Earl Burtnett's Orch. (Mon.)
10:05-12:00 PM. Earl Burtnett's Biltmore Orch. (Nightly Ex. Sun. and Mon.)
9:30 PM. Jimmy Bittick's Town House Orch. (Fri. and Sat.)

Sat.)

KFWB—10:00-12:00 PM. Gus Arnheim and his Ambassador Hotel
Orch. (Nightly. Tues. 10:30 PM.)
3:30-4:00 PM. English Gibson Orch. (Daily Ex. Sun.)
4:00-6:00 PM. Jerry Joyce's Orch. (Daily Ex. Sun.)

KFVD—11:00-12:00 PM. Louie Armstrong and his Cotton Club

Orch. (Ex. Sun.)

KGFJ—6:00-7:00 PM. Glenn Edmund's Orch.
9:30-10:00 PM. Jack Dunn's Orch. (Ex. Sun.)
12:00-1:00 PM. Mosby's Blue Serenaders. (Ex. Sun.)
11:00-12:00 PM. Murray Smith's Montmarte Orch.

(Ex. Sun.)

(Ex. Sun.)
8:00 PM. Dixie Aces. (Nightly Ex. Sun.)
KFO V—10:00-11:00 PM. Silver Slipper Orch. (Ex. Sun.)
11:00-12:00 PM. Majestic Ballroom.
12:00- 1:00 PM. Silver Slipper Orch.
4:30- 5:00 PM. Len Nash's Orch.
KGER—10:00 PM. English Gibson's Orch. (Nightly Ex. Mon.)
5:15 PM. Deacon McDaniel's Orch. (Ex. Sun.)
KGB—6:00-7:00 PM. Paul Kendall's Little Club Orch. (Ex. Sun.)
and Mon.)

and Mon.)
NORTHERN CALIFORNIA
KTAB-8:30-9:00 PM. English Gibson's Orch. (Thurs.)

KTAB-8:30-9:00 PM. English Gibson's Orch. (Thurs.)
(Thurs.)
7:45 PM. Brick English's Orch. (Sat.)
KFR(-9:30-11:00 PM. Val Valente's Roof Garden Orch. (Sun.)
7:00-7:30 PM. Guy Lombardo's Orch. (Mon.)
10:15-11:00 PM. Anson Wek's and His Hotel Mark Hopkins' Orch. (Nightly Ex. Sun.)
11:00-12:00 PM. Earl Burtnett's Biltmore Orch. (Mon.,

11:00-12:00 PM. Earl Burtnett's Bittmore Orch. (Mon., Wed., Sat.)

12:00-1:00 AM. Dance Music. (Ex. Sun.)

10:20-11:00 PM. Val Valente's Roof Garden Orch. (Tues.)

11:00 PM. Val Valente's Music. (Thurs. and Fri.)

KFWI—11:30 PM. ('inderella Dance Orch. (Thurs. and Sat.)

KPO—10:00-11:00 PM. Jess Stafford's Dance Orch. (Ex. Sun.)

KYA—11:00-12:00 PM.Dance music.

NORTHWEST

KHQ—11:00-12:00 PM. Best Steppers' Dance. (Ex. Fri. Sat. and Sun.)

and Sun.)

11:00 PM. Hotel Davenport. (Fri. and Sat.)

KGW—11:00-12:00 PM. Del Milne's Orch. (Ex. Sun.)

KVI—9:00-11:00 PM. Val Valente and his Roof Garden Orch.

(Sun.)
10:30-11:00 PM. Anson Week's and his Orch. (Mon., Thurs. and Fri.)
10:30-12:00 PM. Val Valente and his Orch. (Thurs. 10:00-10:15 PM. Val Vanente's and his Roof Garden Orch.

11:00-12:00 PM. Earl Burtnett's Orch. (Mon., Wed.

KMO-12:00 PM. Earl Burthett's Orch. (Mon., Wed. and Sat.)

KMO-9:00-10:00 PM. Leon Mills and Orch. (Sat.)

KOMO-11:00-12:00 PM. Olympic Hotel Varsity Vagabonds. (Ex. Sun., Thurs. and Sat.)

KJR-11:00-12:00 PM. Vic Meyer's Club Orch. (Ex. Sun. & Mon.)

KEX-11:30-12:00 PM. Vic Meyer's Club Victor Orch. (Ex. Sun. & Mon.) Mon.)

MOUNTAIN STATES
KOL-10:15-12:30 PM. Varied Dance Orchestras.
KGA-11:00-12:00 PM. Vic Meyer's Club Victor. (Ex. Sun and

Mon.)

Mon.)

KLZ—10:00-11:00 PM. Dance Orch. (Ex. Sun.)

KOA—1:00-2:00 PM. Hotel Cosmopolitan Orch. (Mon.)

7:30-8:00 PM. Lucky Strike Orch. (Tues.)

5:00-6:00 PM. Rudy Vallee and Orch. (Thurs.)

5:00-6:00 PM. Rudy Vallee and Orch. (Thurs.)

7:00-8:00 PM. Lucky Strike Orch. (Thurs. and Sat.)

9:00 PM. Gus Arnheim's Orch. (Thurs.)

9:00-9:30 PM. Rudy Vallee and Orch. (Sat.)

5:30-6:00 PM. Anson Week's and Orch. (Tues.)

KSL—5:30-6:00 PM. Anson Week's and Orch. (Tues.)

5:00-6:00 PM. Rudy Vallee and Orch. (Thurs.)

7:00-8:00 PM. Lucky Strike Orch. (Thurs.)

7:00-8:00 PM. Lucky Strike Orch. (Thurs. and Sat.)

KDYL—7:00-7:30 PM. Guy Lombardo and Orch. (Mon.)

9:45-10:15 PM. Dick Forscutt and his Orch. (Mon.)

Tucs.)

Tucs.) 8:00- 8:30 PM. Guy Lombardo and Orch. (Wed.)

#### Programs for the Housewife

SOUTHERN CALIFORNIA (Daily Ex. Sun. Unless Indicated)

KMTR-9:00 AM. Mildred Kitchen Home Economics Expert.

KFSD-9:15 AM. Amy Lou Shopping Hour.
10:30 AM. NBC Woman's Magazine of the Air. (Thurs.
10:00 AM.)
9:00 AM. Mary B. Murray. (Mon.)

KFI-9:00 AM. Helpful Hints to Housewives, Bess Kilmer. 10:30 AM. NBC Woman's Magazine of the Air. (Thurs. 10:00 AM.)

10:10 AM.)
10:15 AM. Mary Hale Martin. (Wed. only.)
10:15 AM. Josephine Gibson Food Talks. (Monday and Fri. only.)
10:00 AM. Color Harmony NBC. (Tuesday only.)

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

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

KHJ-9:15 AM. Kathleen Clifford Beauty Talks.
9:30 AM. Feminine Fancies. (Ex. Saturday.)
6:00 PM. Peggy Hamilton, Romance of
(Tuesday only.) of Fashion.

KFWB-10:00 AM. Prudence Penny.

KFVD-10:30 AM. Hints to Housewives.

KNX—9:00 AM. Radio Shopping News. C. P. R.
10:30 AM. Home Economics Talk by Kate Brew Vaughn
(Ex. Fri.)
KFOX—9:00 AM. Beauty Talk.
KGER—10:30 AM. Polly and Gene.
10:45 AM. Beauty Chat.

KGB-10:00 AM. Blanche Wood's Shopping Tour.

KECA-11:30 AM. California Federation of Women's Clubs.

(Monday.) 9:15 AM. Grace Hale, speaker. (Ex. Wed. and Thurs.)

9:15 AM. Mary Murray Recipes. (Mon.)

#### NORTHERN CALIFORNIA

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

KFRC—9:30 AM. Feminine Fancies. (Ex. Saturday.)
9:00 AM. Mildred Kitchen's Household Talk. (Tues.)
3:00 PM. Colonial Dames Beauty Talk. (Moonly.) (Monday

10:45 AM. Barbara Gould Talk. (Thurs.) 1:00 PM. Julia Hayes' Helpful Hints. (Tues. and Thurs.)

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.)

KROW-3:00 PM. Shopping Hour.

KQW-10:00 AM. Helpful Hints. 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.)
9:30 AM. Betty Crocker Talks. (Wed.)
10:15 AM. Josephine Gibson's Food Talk. (Monday and Friday only.)
10:15 AM. Mary Hale Martin. (Wednesday only.)
12 Noon. Edna Wallace Hopper Beauty Talks. (Wed. & Fri)

Fri.)

WGW-9:15 AM. Cooking School.
9:30 AM. Betty Crocker. (Wed.)
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.)

KV1-9:30 AM. Feminine Fancies. (Ex. Saturday.)

KMO-10:00 AM. Shopping Hints.

KOMO-10:30 AM. Woman's Magazine of the Air. (Thursday at 10:00 AM.)
11:45 AM. Barbara Gould. (Thurs.)
10:00 AM. Color Harmony. (Tues.)

12 Noon. Prudence Penny. 9:45 AM. Way to a Man's Heart.

KJR—8:30 AM. Thrift Home of the Air.
9:15 AM. Mary From Proctors.
KEX—9:15 AM. Julia Hayes Talk. (Ex. Saturday.)
KOL—9:30 AM. Feminine Fancies. (Ex. Sat.)
KGA—9:15 AM. "Mary."

#### 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.)
8:15 AM. Radio Household Institute. (Wed.)
10:15 AM. Mary Hale Martin. (Wednesday only.)
2:30 PM. A Recipe a Day. (Monday only.)

10:00 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 A

AM. Helen Webster. (Monday and Wednesday

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

#### Organ Concerts

National Broadcasting Co.—10:15 PM. Paul Carson, Organist.

(Sun.) KGO KECA KOA.

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

12:30 PM. Ann Leaf. (Mon.) KOL KOIN KDYL KLZ KOH.

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 KOL KFRC KHJ KDYL KOH. (Sat.)

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

8:05 AM. Old Favorites. Organ. (Daily Ex. Sun.)

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

KFI—3:30 PM. Organ Recital. (Sun.)

9:30 PM. Organ Recital. (Sun.)

1:00 PM. Organ Recital. (Sun.)

1:30-3:00 and 4:15 PM. Organ Recitals. (Daily Ex. Sun.)

KHJ—7:00 PM. Leigh Harline at the Organ. (Sun.)

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

1:00 PM. Ann Leaf. (Sat.)

KFSG—11:00 AM. Organ Recital. (Daily Ex. Sun. and Mon.)

KFWB—11:30 AM. Wade Hamilton at the Organ. (Daily Ex. Sun.)

10:00 PM. J. Newton Yates. (Nightly Ex. Sun.)

11:00 PM. J. Newton Yates. (Nightly Ex. Sun.)

KNA-6:00 PM. Wesley Tourtelotte, noted organist. (Daily Ex. Sun.)

KVX—6:00 PM. Wesley Tourtelotte, noted organist. (Daily Ex. Sun.)

11:00 PM. Wesley Tourtelotte, (Nightly Ex. Sun.)

KFOX—10:30 AM. Organ Recital, Vera Graham. (Daily Ex. Sun.)

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

KGFJ—10:00 AM. Archie Fritz. (Sun.)

1:30 PM. Organ Recital. (daily Ex. Sun.)

4:00 PM. Organ Recital. (daily Ex. Sun.)

KGER—11:15 PM. Dick Dixon at the Organ.

KECA—2:00 PM. NBC Organ Recital. (Sun.)

10:15 PM. Paul Carson, Organist. (Sun.)

NORTHERN CALIFORNIA

KTAB—7:30 PM. Alice Blue at the Organ. (Mon., Wed. and Fri.)

KFRC—8:00 AM. "Good Morning Organ Recital." (Sun.)

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

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

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

1:15 PM. Ann Leaf at the Organ. (Sat.)

KPO—3:15 PM. Mormon Tabernacle Organ. (Mon.)

6:30 PM. Organ Recital. (Thurs., Fri. & Sat.)

KYA—10:15 PM. Organ Recital. (Thurs., Fri. & Sat.)

KYA—10:15 PM. Organ Recital. (Thurs., Fri. & Sat.)

2:30 PM. Organ Recital. (Thurs., Wed. & Sat.)

11:30 AM. Organ Recital. (Mon., Tues., Wed. & Sat.)

11:30 AM. Organ Recital. (Sun.)

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

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

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

Sunday.)

9:30 AM. Organ Recital. (Sun.)

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

3:00 PM. Organ Concert. (Ex. Sat. and Sun.)

10:30 PM. Organ Concert. (Ex. Sat.)

KEX—8:30 AM. Organ Concert. (Daily Ex. Sun.)

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

10:30 AM. Organ Concert. (Sun.)

KGA—8:00 AM. Organ Concert. (Sun.)

KGA—8:00 AM. Organ Concert. (Sun. at 2:00 PM.: Sat. at 4:00 PM.)

KVI—8:00 AM. Organ Recital. (Sun.)

12:00 Midnight. RK() Organ Recital. (Sun.)

1:00 PM. Ann Leaf at the Organ. (Sat.)

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

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

1:00 AM. Ann Leaf at the Organ. (Sat.)

INTERMOUNTAIN STATES

KOA—8:30 AM. Organ Melodies. (Mon. & Sat.)

KOA-8:30 AM. Organ Melodies. (Mon. & Sat.)

12:15 PM. Organ Program. (Mon. and Tues.) 10:30 AM. Organ Recital. (Wed.) 11:15 PM. Organ Recital. 7:15 AM. Organ Melodies. (Fri.)

K\*L-9:30 PM. Mormon Tabernacle Great Organ. (Sun.) 9:00 PM. Organ Reveries. (Tues.) 10:30 PM. Organ Concert. (Wed. & Fri.)

KDYL-7:00 AM. Organ Vignettes. (Daily.) 6:00 PM. Gold Medal Organist. (Wed.) 10:15 PM. Organ Melodies. (Fri.)

#### Foreign Language Lessons

KF\*D-2:30 PM. French Lessons. (Mon. 2:00 PM. Fri.)

KFI-11:45 AM. French Lessons by Annette Doherty. Mon. and Wed.)

KFI 9:45 AM, Spanish Lessons, (Thurs, 11:45 AM, Sat.) KFI-9:30 AM, Spanish Lessons, (Thurs, 11:45 AM, Sat.) KECA-3:15 PM, German Lesson, by Annette Doherty

only.) 4:00 PM. Alexander Bevani, on the Italian language. (Mon.)

Thurs.

See Page 28 for Western Station Directory

#### **Educational Features**

(National and International Events)

National Broadcasting Co.—5:15 PM. 15 Minutes in the Nation's capital. KGO, KHQ, KOMO, KECA, KFSD. (Mon.) 8:15 PM. This Amazing Universe. KGO. (Mon.) 3:45 PM. John B. Kennedy Talk. KGO KGW. (Wed.) 4:15 PM. Science Talk. KGO, KOMO, KPO, KECA, KFSD KTAP. (Wed.)

KTAR. (Wed.)

4:45 PM. Back of the News in Washington, KGO, KOMO, KECA KFSD. (Wed.)

11:00 AM. Standard School Broadcast. KGO, KHQ. KOMO, KGW, KPO, KFI, KFSD. (Thurs.)
1:30 PM. Pacific Coast School of the Air. KGO, KHQ, KOMO, KGW, KECA. KFSD, KTAR. (Mon & Wed.)

12:15 PM. Western Farm and Home Hour. KGO, KHQ. KOMO, KGW. KECA. KFSD. KSL, KTAR. (Ex. Sat. and Sun.)

Broadcasting Columbia

7:50 AM. Columbia Educational Series. (Sun.) KDYL.
11:30 AM. Columbia School of the Air. (Ex. Sat. and Sun.)
KFRC KHJ KVI KLZ KDYL.
6:30 PM. Columbia Educational Series. KLZ KOL KFRC
KHJ KDYL. (Sat.)
4:00 PM. Political Situation in Washington Tonight.
(Tues.) KOL KFPY KFRC KHJ KOH
12:45 PM. Columbia Educational Series. (Fri.) KFPY
KDYL KLZ KOH

KDYL KLZ KOH.

KMTR-7:30 PM. Strange Facts you should know. (Thurs.) KFSD-5:15 PM. Fifteen Minutes in the Nation's Capital. (Mon

only.) 4:45 PM, Back of the News in Washington, NBC. (Wed. only.) See NBC list.

KF1-3:00 PM. Better America Federation Speaker. (Thurs. only.)

11:00 AM. Standard School Broadcast. (Thurs. only.)
(See NBC list.)

KMPC-3:00 PM. USC Lectures. (Mon. and Wed.)
9:00 PM. U. S. C. Lectures. (Mon. and Wed.)
5:00 PM. Norbert Savoy. author, lecturer, etc. (Sun.)

KHJ-1:30 PM. The Times Forum. (Daily.) 12:45 PM. University of the West. (Fri. only.) 3:15 PM. Dr. Walter Hertzog's School Program. (Fri. only.)

3:45 PM. Council of International Relations. (Fri. only.) 6:30 PM. National Radio Forum. (Sat. only.)

11:30 AM. American School of the Air. (Ex. Sun., Thurs., and Sat.) See CBS List.

NNA-3:30 PM. Federation of Women's Clubs. (Fri. only.)

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

KECA-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. Science National Research Council. (Wed.) 4:15 PM. Laws That Safeguard Society, NBC. (Sat. only.)

KGB-9:30 AM, Ninth Dist. Parent-Teachers Association. (Tues.)

NORTHERN CALIFORNIA
KTAB-6:00 PM. The Voice of Psychology. (Sun.)
4:30 PM. Short Story Course, Samuel B. Dickson.

(Mon. only.)
12:30 PM. Latin-American Program. (Daily.)
KFRC-11:30 AM. American School of the Air. (Ex. Sat.)
4:00 PM. Current Events, H. V. Kaltenborn, CBS.

(Mon. only.) 4:00 PM. The Political Situation in Washington Tonight.

(Tues. only.)
6:30 PM. National Radio Forum from Washington.
(Sat. only.) See CBS List.
KPO-4:15 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.)

1:00 PM. Dr. Heady, Psychologist. (Mon., Tues. and Fri.)

KQW-6:10 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. Mr. Brunson, Psycho-Analyst.

8:00 PM. Mr. Brunson, Psycho-Analyst.

NORTHWESTERN STATES

KHQ-5:00 PM. In the Nation's Capital. (Mon. only.)

KGW-11:00 AM. Standard School Broadcast, NBC. (Thurs. only.)

9:00 AM. Jewish Art Program, CBS. (Sun. only.)

9:30 AM. London Broadcasts, CBS. (Sun.)

10:30 AM. Conclave of the Nations, CBS. (Sun.)

11:30 AM. American School of the Air. (Daily Ex. Sun.)

4:00 PM. Current Events, CBS. (Mon. only.)

4:15 PM. The Political Situation in Washington Tonight.

(Tues. only.)

KOMO 4:00 PM. Laws That Safeguard Society, NBC. (Tues only.)

11:00 AM. Standard Schol Broadcast. (Thurs. only.)

#### MOLNTAIN STATES

KOA 10:00 AM. National Oratorio Society. (Sun. only.)
12:00 PM. National Youth Conference. (Sun. only.)
4:15 PM. The World Today. (Mon. only.)
KSL-12:15 PM. National Youth Conference. (Sun. only.)

#### 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 KOH KMJ. (Sun.) 6:30 PM. Detroit Symphony Orch. KOL KFPY KOIN KHJ KDYL KLZ KFBK KFRC.
7:30 PM. Toscha Seidel and Concert Orch. KDYL KLZ KOH KMJ.

1:00 PM. Curtis Institute of Music. (Fri.) KLZ, KVI KFPY KHJ KFRC KOIN KOH.

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

National Broadcasting Co.—5:00 PM. Sunday Concert. KGO.
6:15 PM. Atwater Kent concert. (Sun.) KHQ KOMO
KGW KGO KFI.
1:00 PM. Concert Jewels. (Sun.) KGO.
2:30 PM. NBC Matinee. (Mon.) KGO KGW KECA.
8:00 PM. Rudy Seiger's Shell Symphonists. (Mon.) KGW

8:00 PM. Rudy Seiger's Shell Symphonists. (Mon.) KGW 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 Orch., Walter Damrosch, director. (Sat.) KGO KHQ KOMO KGW KF1 KFSD KTAR.

6:00 PM. McKesson Musical Magazine. (Tues.) KGO KHQ KOMO KGW KECA KRSD KTAR. 1.00 PM. Eastman School Symphony Orch. (Wed.) KGU

United Broadcasting Co.—7:30 PM. Sunday Screnade. 8:00 PM. Boris Kramarenko and Orch. (Mon.) Fri.) UBC affiliated stations.

KMTR-8:30 PM. Concert Orch. (Sun.)

KECA KTAR.

KFSD—4:00 PM. Sunday Concert NBC.
6:00 PM. General Electric Orch. NBC. (Sat.)
KF1—10:00 PM. Slumber Hour. (Sun.)
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.)
6:00 PM. General Electric Concert Orch. (Sat.)

KTM-10:00 PM. Concert Orch. (Sun.)

KHJ-9:00 AM. Sunday Morning Concert. (Sun.)
6:30 PM. Detroit Symphony Orch. (Sun.)
12:00 Noon. N. Y. Philharmonic Symphony Orch. (Sun.)
8:45 PM. Concert Orch. (Sun.)
8:30 PM. Don Lee Symphony Orch. (Thurs.)
12:00 Noon. Biltmore Concert Orch. (Daily Ex. Saturday

and Sunday.)

KFWB—9:00 PM. Liborious Hauptmann's Orch. UBC. (Sun.)
2:30 PM. Salon Orch. (Mon.)
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.)

KNN-9:00 PM. Calman Luboviski and Claire Mellonino. (Sunand Thurs.)
9:00 PM. Calman Luboviski Violin Choir. (Mon.)
7:30 PM. Pacific Concert Orch. (Thurs.)
12:00 Noon. KNX Ensemble. (Sat.)

KGFJ-11:00 AM, KGFJ Concert Orch. (Sun.)
1:00 PM. Concert Ensemble. (Sun.)
8:30 PM, KGFJ Salon Orch. with Allan Fairchild. (Daily Ex. Sun.)

KGB-5:15-6:00 PM. Dinner Diversities. (Ex. Mon., Thurs. and Sun.)
11:00-12:00 Noon. With the Masters. (Sun.)
6:30-7:00 PM. Bits from the Classics. (Sun.)

KECA—12:00 Noon. Luncheon Concert. (Daily Ex. Sun.)
2:30 PM. NBC Matinee. (Mon.)
9:00 PM. KECA String Ensemble. (Mon.)
1:00 PM. Eastman Symphony Orch. (Wed.)
9:30 PM. KECA String Ensemble. (Sat.)
2:00 PM. The NBC Matinee.

#### NORTHERN CALIFORNIA

KFR('-9:00 AM. "Home, Sweet Home Concert." (Sun.)
12:00 Noon. N. Y. Philharmonic Orch. (Sun.)
6:30 PM. Detroit Symphony Orch.
8:00 PM. Cadillac La Salle Concert Orch. (Tues.)
8 PM. Symphony Orch. (Sat.)

KPO-10:00 PM, KPO Salon Orch. (Sun.) 9:00 PM. Philadelphia Symphony Orch. (Tues.) 9:30 PM. Packard Concert Orch. from KFI. (Nightly Ex. Sun., Mon. and Thurs.) 4:00 PM. KPO Salon Orch. (Sat.)

#### NORTHWESTERN STATES

KGW —8:00 PM, Shell Symphonists, (Mon.)
(See NBC for other features.)
12:00 Noon, Luncheon concert. (Wed.)
KOMO—8:15 PM, Shell Symphonists, (Mon.)
10:30 PM, Concert Orch. (Sun.)
3:15 and 6:00 PM, Concert Orch, on Tuesday.
12:15 and 2 PM, Concert Orch, on Thursday.
2:00 PM, Concert Orch, (Fri.)
2:00 and 6:00 PM, General Electric Orch, NBC. (Sat.)

#### Symphony Concerts—Cont.

KJR-8:00 PM. Damski's Imperial Grand Orch. (Sun.) 4:00 PM. Damski's Imperial Grand Orch. (Sun.) 9:00 PM. Concert Ensemble. (Mon.) 9:00 PM. Damski's Wood-Wind Ensemble. (Tues.) 8:00 PM. Northwest Salon Orch. (Thurs.) 9:00 PM. Henry Damski's Neapolitans. (Wed.)

KEX-8:00 PM. Henri Damski's Orch. (Sun.) 4:00 PM. Concert Ensemble. (Mon.) 9:15 PM. Damski's Wood-Wind Ensemble. ( 9:00 PM. Henri Damski's Ensemble. (Wed.) 8:00 PM. Northwest Salon Orch. (Thurs.)

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

IST-12:00 Noon N. Y. Philharmonic Orchestra. (Sun.) (See CBS Program for other features.) ISOL-6:30 PM. Detroit Symphony Concert. (Sun.) (See CBS

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

(Saturday.) KOA-8:30 PM. General Electric Concert Orch. (Tues.)

KDYL-(See Columbia Broadcasting Co.)

#### Health Talks and Exercises

SOUTHERN CALIFORNIA (Daily Ex. Where Indicated)

KFSD -3:15 PM. Dental Clinic.

KTM-1:45 PM. The Health Man. (Daily Ex. Sun.)
5:30 PM. Dr. H. Edward Myers "Care of the Teeth."
(Monday only.)

KNN-8:30 AM. Clinic of the Air. (Tues.) 9:15 AM. Golden Rule Health Service Program. (Mon. & Thurs.)

6:45 AM. Early Bird Exercises. 7:15 AM. Pep and Vigor. 7:45 AM. Home Folks' Exercises.

KFVD-Health Talk and Records

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

KFOV—1:00 PM. Dr. Clark, Health and Efficiency. (Thurs.)
8:00 PM. Treatments of "Harmonious Suggestions," by
Dr. J. F. Raush. (Monday and Friday only.)
KGB—9:00 AM. Chiropractic Talk.
6:45 PM. Associated Chiropractors. (Tues and Fri.)

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

NORTHERN CALIFORNIA

KTAB-10:30 AM. Dr. B. L. Corley. (Ex. Sun.)

KFW1-10:30 AM. Health Talk by Dr. T. G. Linebarger.

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

KIBS-10:45 AM. The Health Man.

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

NORTHWEST

KIIQ-5:45 PM. Health Hints. (Mon. & Wed.)
1:00 PM. Dental Hygiene. (Ex. Thurs.)
KVI-3:30 PM. Dental Clinic of the Air. (Ex. Sun. & Sat.)
KJR-1:15 PM. Dental Lecture. (Ex. Sat.)
5:30 PM. Health Talk. (Ex. Sat. & Sun.)

KEX-1:15 PM. Dental Lecture. (Ex. Sat.) KOL-5:30 PM. Tooth Talk, Dr. Hobson. (Ex. Wed.) KGA-1:15 PM. Dental Lecture. (Ex. Sat.)

MOUNTAIN STATES (Pacific Standard Time.) 150 1 -7:00 AM. Safeguarding Your Food and Drug Supply. (Monday only.)

ARIZONA

KTAR-6:00 AM. Y.M.C.A. Health and Happiness Hour.

#### Travelogues and Book Reviews

National Broadcasting Co .- 9:45 PM. The Reader's Guide. (Sun.) KGO.

Broadcasting Co.—5:30 PM. Alexander Woollcott's Early Bookworm. (Sat.) KFPY KFRC KHJ KDYL Columbia KLZ.

KF1—2:30 PM. Winnie Fields Moore, the Nomad Novelist. (Mon.) 2:15 PM. The Nomad Novelist. (Wed.) 3:00 PM. Los Angeles Public Library Book Reviews. (Monday.)

3:00 PM. "Seeing Southern California." (Tues. and Fri.) KILI—3:30 PM. Los Angeles Public Library Book Review. (Wed.) 4:45 PM. "Seeing Southern California." (Tues. and Fri.) 3:45 PM. Margaret Macdonald. (Thurs.) 5:30 PM. Alexander Wollcott, the Early Bookworm. (Sat.)

1:30 PM. Travelogue. (Daily Ex. Sun.) 1:30 PM. Eddie Albright reading late fliction.

KGER-11:30 AM. Seeing Southern California. (Tues. and Fri.) KECA-7 00 PM. Winnie Fields Moore, Nomad Novelist. (Thurs.)

KFRC-3:15 PM. The Observer About New Books, Monroe Upton. (Wed.) 5:30 PM. Early Bookworm. (Sat.)

KVI-5:30 PM. The Early Bookworm. (Sat.) KLZ-5:30 PM. The Early Bookworm. (Sat.)

#### Plays, Stories, Dramatic Readings

(I nited Broadcasting Company)

8:30 PM. Dramatic Program. (Mon., Tues. & Thurs.) KORE KXL KMED KXA KVOS 8:00 PM—Detective Stories. (Fri.) 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—"Jo and Vi." KLZ KDYL KOL KHJ KFRC.

7:00 PM—Hank Simmon's Show Boat, (Sat.) KLZ KDYL KOL KFPY KHJ KFRC.

7:30 PM—Don Amaizo. (Mon.) KLZ KDYL KOL KFPY KHJ KFRC KNX.

#### **National Broadcasting Company**

7:30 PM, Empire Builders. (Mon.) KGO KFSD KOMO KHQ KGW KECA KTAR.

8:15 PM, Memory Lane, KGO KHQ KOMO KGW KFI KFSD KTAR. 9:15 PM. NBC Drama Hour. KGO KOMO KGW. (Wed.)

9:30 PM. The Story Teller, (Thurs.) KGO.

1:00 PM-Radio Guild. (Fri.) KGO KOMO KECA KFSD KTAB.

9:30 PM-Mystery Serial. (Fri.) KGO KSL KOA.

9:00 PM—Adventures of Sherlock Holmes. (Mon.) KGO KHQ KOMO KGW KFI KFSD KTAR. 9:30 PM. Jack and Ethyl. KGO KHQ KOMO KGW KFI. KMTR—8:45 PM. Dramatic Play. (Mon. and Thurs.)

KFSD-1:00 PM. Radio Guild. (Fri.) KFI-9:15 PM. "D-17, Emperor," James Carden & Cast. (Mon., Wed. and Fri.) 8:15 PM. Memory Lane. (Tues.)

8:45 PM. Adventures of Sherlock Holmes. (Tues. Thurs. and Sat.)

10:00 PM-Tom Terriss, "Vagabond Movie Director." (Mon.)

KTM-1:00 PM. Dramatic Readings. (Sun.)

4:30 PM. Dramatic Reading. (Daily Ex. Sat. & Sun.)

KHJ-6:00 PM. Prof. Lindsley and Leigh Harline, Reading with Organ. (Thurs.)

7:00 PM. Jo and Vi. (Tues.)

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

6:30 PM. Times Pershing Program. (Fri.)

7:00 PM. Hank Simmon's Show Boat. (Sat.)

7:30 PM. Don Amaizo. (Mon.)

5:30 PM. Black and Blue. (Daily Ex. Sat.)

KFWB-6:45 PM. Cecil and Sally. (Daily Ex. Sun.)

KNA-1:30 PM. Eddie Albright's Reading of Late Fiction. (Daily.)

9:00 PM, KNX Players directed by Georgia Fifield.

KFOX-9:30 PM. Ghost House.

KECA-5:00 PM. Nick Harris Detective Story Program. (Sun.)

7:30 PM. NBC Empire Builders, Dramatization of the West. (Monday.)

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

#### NORTHERN CALIFORNIA

KTAB-8:30 PM. Dramatic Sketch from UBC. (Mon., Tues. & Thurs.)

KFRC-5:30 PM. Fred Benioff Players. (Sun.)

7:00 PM. "Jo and Vi." (Tues.)

9:00 PM. "Folgeria," Comic Opera of the Air. (Thurs.) 7:00 PM. Hank Simmon's Show Boat. (Sat.)

KQW-4:30 PM. Hank Simmon's Show Boat. G KQW-4:30 PM. Story Time. (Daily Ex. Sun.) KPO-6:15 PM. Cecil and Sally. (Daily Ex. Sat.) 4:00 PM. KPO Drama Guild. (Tues.) 8:00 PM. KPO Drama Guild. (Fri.) KHQ-7:30 PM. Empire Builders. (Mon.) KFWI-4:30 PM. Drama Period. (Sun.) KYA-9:15 PM. KYA Players. (Mon.) 8:00 PM. KYA Players. (Tues.)

#### NORTHWESTERN STATES

NORTHWESTERN STATES

KGW-9:00 PM. "On to Oregon." Dramatization. (Fri.)
7:30 PM. Empire Builder's Program, NBC. (Mon.)
8:15 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.)
7:00 PM. Jo and Vi. (Tues.)
7:30 PM. Don Amaizo's Adventures. (Mon.)

#### INTERMOLNTAIN STATES

KOA-9:30 PM. Empire Builders. (Mon.)
9:30 PM. Mystery Serial, NBC. (Fri.)
KSL-2:00 PM. Radio Matinee. (Daily Ex. Sun.)
7:30 PM. Empire Builders, NBC. (Mon.)
KDVL-7:30 PM. Don Amaizo. (Mon.)
7:00 PM. CBS Graybar's "Mr. and Mrs." (Tues.)
9:00 PM. "Folgeria." (Thurs.)
7:00 PM. Hank Simmon's Show Boat. Sat.)

#### 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

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 KFPY KDYL.
7:00 PM. Lutheran Hour. (Thurs.) KOL KFPY KOIN KFRC KHJ KDYL KLZ KFBK.
8:00 PM. Back Home Hour KFPY KFBK
KFSD—7:45 PM. Sunday Evenings at Seth Parker's.
KFI—10:50 AM. Third Church of Christ.
4:00 PM. Lelia Castberg, "Advanced Thoughts."
KMPC—3:00 PM. Church of the Latter Day Saints.
KTM—9:00 AM. I. B. S. A. Watch Tower.
KHJ—11:00 AM. First M. E. Church of Los Angeles.
5:30 PM. Rabbi Magnin.
KVN—10:00 AM. Religious Lecture

KNA-10:00 AM. Religious Lecture

11:00 AM. First Presbyterian Church of Hollywood. 1:00 PM. Watchtower I. B. S. A. Program. 5:00 PM. Dr. John Mathews; First Radio Church of the

6:30 PM. Dr. Theo Curtis Abel of Hollywood Humanist Society

Society.
7:00 PM. Dr. Aked, All Soul's Church.
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.
11:30 AM. First Radio Church of the Air. (Mon.)

Geles Church Services.

11:30 AM. First Radio Church of the Air. (Mon.)

KFSG—8:00 AM. Sabbath Sunrise Service.

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.
10:00 AM. Bible Study.
10:45 AM. Trinity Church Service.
5:00 PM. Vesper Hour.
7:00 PM. Tinity 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.
7:00 PM. Radio Revival. (Thurs.)

KTBI—8:00 AM. Daily Except Sunday. Gospel Song Requests.
8:15 AM. Daily Except Sunday. Devotional Service.
8:45 AM. Gospel Message. (Daily Ex. Sun.)
2:00 PM. Visiting Pastors.
1:00 PM. Devotional Bible Study. (Ex. Mon. and Sun.)
10:30 AM. Bible Study. (Dally.)

KGER—9:30 AM. Bible Class.
1:00 AM. Calvary Church.
5:30 PM. Catholic Church.
7:00 PM. Calvary Church.
8:00 PM. Salvation Army Program.
8:00 PM. Salvation Army Program.
8:00 PM. Salvation Army Program.
8:00 PM. Erst Church of Christ, Scientist.

KFXM—8:00 AM. Sunshine Hour. (Wed. only.)
4:00 PM. Rev. Olsen's Bible Class.

KGB—6:00 PM. L. D. S. Service.
3:30 PM. L. D. S. Service.
1:00 AM. Sible Stories.
3:00 PM. Catholic Hour.

NORTHERN CALIFORNIA

KTAB—10:00 AM. Bible Stories.
3:00 PM. Catholic Hour.

#### NORTHERN CALIFORNIA

KTAB-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.
9:00 AM. Daily-Morning Prayers.
KPO-10:45 AM. Interdenominational and Non-sectarian Church

KPO—10:45 AM. Interdenominational and Non-sectarian Ch Services.

1:00 PM. S. Parkes Cadman Cathedral Hour.
3:00 PM. Catholic Service.
12:00 AM. Daily Except Sunday. Scripture Readings.

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

KROW—10:00 AM. Watchtower Program.
1:00 PM. Watchtower Program.
6:00 PM. Watchtower Program.
9:00 PM. Watchtower Service.
8:00 PM. Watchtower Service. (Tues. and Thurs.)
2:30 PM. Watchtower Program. (Wed.)

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

KYA 10:45 AM. Old St. Mary's Church.
8:00 PM. Old St. Mary's Church.

#### NORTHWESTERN STATES

KHQ--10:00 AM. Bible Students. 12:00 PM. National Youth Conference. 1:00 PM. National Sunday Forum. 3:00 PM. Catholic Hour. 8:00 PM. New Episcopal Church.

KGW-10:00 AM. International Bible Students.

12:00 Noon. National Youth Conference.

3:00 PM. Catholic Hour.

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.

K.IR-10:00 AM. International Bible Students Association.

KEX-1:00 PM. Family Altar Hour.

4:30 PM. Radio Gospel School.

#### INTERMOUNTAIN STATES

KSL-9:15 AM. International Bible Students.
12:00 Noon. National Youth Conference.
1:00 PM. L. D. S. Services from Tabernacle.
7:15 PM. First Presbyterian Church.
8:30 PM. L. D. S. Service with Great Mormon Organ.

KOA— 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.
KLZ—9:00 AM. I. B. S. A. Watchtower Services.
11:30 AM. Cathedral Hour.
KDVL—11:30 AM. Cathedral Hour.

#### Sport Talks, Athletic Events

National Broadcasting Co.-5:00 PM. Bobby Jones Golf Talks. (Every Wednesday.) KHQ KOMO KECA KFSD KTAR.

('olumbia Broadcasting Co.—3:00 PM. Ted Husings Sportslants (Sat.) KOL KFPY KFRC KHJ KDYL KLZ KOH KMJ. KILJ—3:00 PM. Ted Husings Sportslants. (Sat.) 5:00 PM. Bobby Jones. (Wed.)

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

KFWB-7:30 PM. R. W. Shirey's Sport Talks. (Mon.) 9:30 PM. Olympic Auditorium Event. (Tues. only.)

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

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.) 5:00 PM. Bobby Jones Golf Chats. (Wed.)

KFRC—6:00 PM. Bobs, Noted Sports Authority. (Thurs. only.) 6:45 PM. Pat Frayne's Sports Talk. (Friday only.) 3:00 PM. Ted Husings Sportslants. (Sat.) 7:45 PM. Sport Shots by Ernie Smith. (Wed.)

KHQ—5:00 PM. Bobby Jones Chat.
7:30 PM. Bobby Jones Chat.
5:00 PM. Bobby Jones. (Wed.)
5:15 PM. Sport News. (Mon. only.)
KGW—7:30 PM. Grantland Rice's Sport Program, NBC. (Wed.)
only.)

only.)
5:00 PM. Bobby Jones Chat. (Wed.)
KOMO—7:30 PM. Grantland Rice's Topnotchers. (Wed.)
5:00 PM. Bobby Jones. (Wed.)
KMO—9:00 PM. Wrestling Match from Greenwich Coliseum.
(Tues. only.)
KJR—5:00 PM. Ken Stuart's Sport Talk. (Daily.)
KGA—5:00 PM. Ken Stuart's Sport Talk.
9:30 PM. Wrestling Bouts.
KOA—7:30 PM. NBC, Grantland Rice Sport Talk. (Wed. only.)
5:00 PM. Bobby Jones Talk. (Wed.)
KSL—7:30 PM. Grantland Rice Sportologues. (Wed. only.)
5 PM. Bobby Jones Sport Chat. (Wed.)

#### For the Youngsters

SOUTHERN CALIFORNIA (Daily Except Where Indicated)

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

KFSD-2:00 PM. Maltine Story Time. (Mon.)

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. 4:30 PM. Just Kids Club. (Ex. Mon., Wed. & Sat.) KHJ-5:30 PM. Black and Blue. (Ex. Sun.)

KNA-5:00 PM. Big Brother Ken's Kiddies Hour.

KGSF-6:00 PM. Mrs. Tom Murray, Children's Hour. (Thurs.)

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

KFWI-7:00 PM. Child Guidance Forum. (Tues.)

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

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

KQW-4:30 PM. Story Time.

#### NORTHWEST

KOIN-5:30 PM. Prize Kiddie's Club. KGA-5:15 PM. Uncle Frank's Story Hour. (Sat. 3:15.)

KGA-5:15 PM. Uncle Frank's Story Hour. (Ex. Sat.)

MOUNTAIN STATES (Pacific Standard Time) KSL-1:00 PM. Story Hour. (Mon.)

See Page 28 for Western Station Directory

### News, Stock Market Reports, Weather

Financial Reports. (Dally Ex. Sunday.)

National Broadcasting Co.-8:00 AM. Financial Service. (Daily). KGO.

4:45 PM. News Service. KGO (Mon., Thurs. & Fri.) 5:45 PM. News Service. KG. (Tues. & Wed.) 5:00 PM. News Service. KGO (Sat.)

I nited Broadcasting Co .- 10:00 PM. Hughespaper of the Air.

#### SOUTHERN CALIFORNIA

KMTR-11:45 AM. Public and City Officials. 8:00 AM. Stock Quotations. 12 Noon. World in Review. 5:45 PM. Reporter of the Air.

KFSD-5:45 PM. San Diego Union News Report. (Tues., Thurs.

Sat.) 5:15 PM. News Report. (Mon. and Fri.) 4:30 PM. News Service. Thurs.)

KFI-7 30 AM. Opening Stock Market Quotations.
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.

KTM-7:00 PM. News.

KMPC-12 PM. Livestock Report. 9:00 AM. Radio News Service. 1:15 PM. Radio News Service. 5:00 PM. Radio News Service.

KHJ--12:30 PM. World-Wide News (L.A. Times.) 4:35 PM. World-Wide News. 10:00 PM. World-Wide News. 7:00 AM. News Briefs.

KNA-3:15 PM. Monday. Lost and Found Reports. 3:25 PM. Tuesday. Lost and Found Reports. 3:00 PM. Wednesday, Lost and Found Reports.

3:25 PM. Friday, Lost and Found.3:30 PM. Thursday. Lost and Found Reports.1:25 PM. Saturday. Lost and Found Reports.

KGFJ-5:00 PM. Market Reports.

KFXM-11:15 AM. News Report.

6:15 PM. Los Angeles Record News Report.

KFOX-7:15 AM. Early News Report.

11:30 AM. Press Telegram News Report. 4:00 PM. Press Telegram News Report. KGB-2:45 PM. News Flashes.

5:00 PM. Lost and Found ads.

KGER -4:00 PM. News Brevities. 6:30 AM. News, weather, etc.

KPSN-8:00 AM. World Wide News. 12:45 PM. World Wide News. 6:00 PM. World Wide News.

KECA-10:30 PM. KFI-KECA Editorial Review. 3:00 PM. Federal and State Market Report.

#### NORTHERN CALIFORNIA

KFRC- 7:30 AM. N. Y. Stock Quotations.

11:25 AM. S. F. Call-Bulletin News Items. (11:10 AM. Mon. & Thurs.)

1:00 PM. Closing Stock Market Reports. (1:15 PM. Mon.)

1:05 PM. S. F. Call-Bulletin News Items. (1:20 PM. Monday.)

5:50 PM, S. F. Call-Bulletin News Items. (5:45 PM. Monday.)

KPO-2:50 PM. Ye Towne Crier. (Sat. 3:00 PM.) 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.
7:05 PM. News Dispatches.

KVA-12:45 PM. News casting. 6:45 PM. Delivery of Stock Yard Prices and Quotations.

#### NORTHWEST

hliq-7:00 AM. The Towne Crier. 1:15 PM. Farm Markets. KGW-1:00 PM. Town Crier, KMO-10:00 AM. Town Crier.

KOMO-4:00 PM. Stock Quotations, (Fri, Wed. and Sat.) 4:45 PM. Stocks. (Mon. and Tues.) 5:50 PM. Financial Outlooks and Stock Summaries. (Mon. and Wed.)

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

KEX-7:15 AM. Oregon Journal News. 12:00 PM. Weather Reports. 11:30 PM. Police Reports.

IxGA-6:45 AM. News.

#### MOUNTAIN STATES

1804—11:30 AM. Monday, weather, stocks, markets, livestock (P. S. T.) 10:50 AM. Tuesday, weather, stocks, markets, livestock, 11:30 AM. Wednesday, weather, stocks, markets, live-stock.

11:00 AM. Thursday, weather, etc.
10:55 AM. Friday, weather, stocks, markets, livestock.
3:45 PM. Tuesday, weather, stocks, etc.
3:45 PM. Wed., Thurs., Fri. & Sat. weather, stocks, etc.
4:00 PM. Monday, weather, stocks, markets, livestock.

KSL-7:20 PM, New York Stock Market Reports.

KDYL-7:30 AM. News Flashes, Police Bulletins.

#### Light and Grand Opera

Vational Broadcasting Co.—9:00 PM, Chase and Sanborn Comic Opera program. (Sun.) KGO, KHQ, KOMO, KFL KFSD, KTAR, KSL, KOA.
6:30 PM, Maxwell House Ensemble. KGO, KHQ, KOMO, KGW, KECA, KFSD, KTAR.
11:30 AM, Harry Kogen's Orch, KHQ KGW KPO KECA KFSD KTAR.

Columbia Broadcasting System—2:00 PM. Light Opera Gems. (Fri.) KLZ KDYL.
9:00 PM. "Folgeria," Don Lee Chain. (Thurs.)
5:30 PM. Metropolitan and Chicago Opera Co. (Mon.)
KHJ KOIN KDYL KFPY.

KHJ—9:00 PM. Folgeria. (Thurs.)
KFVD—1:00 PM. Light Opera Records. (Sun.)
KGB—7:00 PM. Opera Sketches. (Wed.)
KTAB—1:30 PM. Grand Opera. (Sun.)
KFRC—9:00 PM. "Folgeria." (Thurs.)



# FOR SALE

# 500-Watt Station

crystal controlled, 100% modulation, screen grid, double studios, very modern, money maker. Address Box A, Radio Doings.



FOR COMPLETE STATION DIRECTORY SEE PAGE 28!

# Chain Programs for March

#### National Broadcasting Co.

Sunday, March 1, 8, 15, 22, 29

8:00 AM—Neapolitan Days KGO KECA KFSD KOMO
8:30 AM—Popular Symphony Concerts KGO KOMO KGW KECA KFSD
9:00 AM—Breakfast with Sperry KHQ KOMO KGW KPO KFI KFSD
9:00 AM—Miniature Recital
9:45 AM—Echoes of the Orient KGO KGW KECA KFSD
10:00 AM—National Oratorio Society KGO KOMO KGW KECA
11:00 AM—Grace Cathedral Service KGO
11:30 AM—Harry Kogen's Orch, KHQ KPO KOMO KGW KECA KFSD

12:00 PM—National Youth Conference KGO KHQ KGW KPO 1.00 PM—Dr. S. Parkes Cadman KGO KHQ KOMO KGW KPO

KHQ KOMO KGW KPO

1:00 PM—Concert Jewels KGO
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—Musical Moods KGO KOMO
KFSD

4:30 PM—RCA Victor Program KGO
KHQ KOMO KGW KFI KFSD
KTAR

5:00 PM—Sunday Concert KGO

5:00 PM—Sunday Concert KGO 5:00 PM—Enna Jettick Melo

Enna Jettick Melodies KHQ KOMO KGW KPO KFI KFSD

KHQ

5:15 PM—Collier's Radio Hour KOMO KGW KPO KFI 6:00 PM—The Vagabonds KGO KTAR

KTAR

6:15 PM—Atwater Kent Hour KOMO
KGW KPO KFI KHQ

6:15 PM—The Vagabonds KGO

7:00 PM—Hotel St. Francis Orch. KGO
KGW KECA KFSD KTAR

7:45 PM—Sunday at Seth Parker's KGO
KGW KFSD KTAR

8:15 PM—Heel Hugger Program KGO
8:15 PM—This Amaginz Universe KGO
KFSD KTAR

8:30 PM—Gunnar Johansen, pianist, alternates with Walter Ferner
KGO KFSD KTAR KGW

9:00 PM—Chase & Sanborn Program
KGO KHQ KOMO KFI KTAR

4:30 PM—Enna Jettick Melodies KGO
KOMO KGW KECA KTAR

8:45 PM—The Pagador's Unide KGO

KOMO KGW KECA KTAR
KHQ
9:45 PM—The Reader's Guide KGO
10:15 PM—Paul Carson. Organist KGO
KECA KOA
11:00 PM—The Vagabonds KGO KFI KSL
Monday, March 2, 9, 16, 23, 30
7:30 AM—Sunrise Serenaders KGO
7:30 AM—Van and Doon. Two Professors
KHO KOMO KGW KPO KFI
KFSD
8:00 AM—Shell Happytime KHO KOMO

KFSD

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—Arion Trio KGO
9:45 AM—The Entertainers KGO
10:00 AM—Charlie Wellman, Prince of
Pep KGO KHQ KOMO KGW
KTAR KTAR

KTAR

10:15 AM—Josephine B. Gibson Food Talk

KGO KGW KFI KFSD KTAR

KOMO KHQ

10:30 AM—Woman's Magazine of the Air

KGO KHQ KOMO KGW KPO

KFI 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

Luncheon Concert KGO KGW
KFSD KECA

12:15 PM Western Farm and Home Hour
KGO KHQ KOMO KGW KTAR
KFSD KSL

1:00 PM—Hotel Sir Francis Drake Dance
Orchestra KGO KFSD KTAR

KECA. Pacific Coast School of the Air KGO KGW KFSD KTAR KECA 1:30 PM

Program KGO -Maltine Story

KOMO KFI KFSD KGW 2:30 PM—NBC Matinee KGO KGW KECA 3:00 PM—What's in a Name? KGO KGW

3:15 PM—Mormon Tabernacle Choir and Organ KGO KOMO KGW KPO KFSD KTAR

8:45 PM—Parisian Quintet KGO KPO
4:15 PM—The World Today by James G.
McDonald. KGO KECA KFSD
4:30 PM—Bits of Melody KGO
4:45 PM—Fifteen Minutes in the Nation's
Capital KGO KHQ KFSD KOMO

Capital KGO KHQ KFSD KOMO KECA

5:00 PM—How's Business? Merle Thorpe KGO KHQ KOMO KGW KECA

5:15 PM—Gypsy Strings KGO KECA KGW

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

7:30 PM—Empire Builders KGO KHQ KOMO KGW KFI

KFSD KTAR

7:30 PM—Empire Builders KGO KHQ KOMO KGW KECA KFSD KTAR

-Rudy Seiger's Shell Symphonists KPO KFI KHQ KOMO 8:00 PM-

8:00 PM—Amos 'N Andy KGO KHQ
KOMO KGW KECA KFSD
8:15 PM—Tom Mitchell KGO
8:30 PM—Sparklets KGO
9:00 PM—Adventures of Sherlock Holmes
KGO KHQ KOMO KGW KFI
KFSD 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, March 3, 10, 17, 24, 31
7:30 AM—Surrise Serenaders KGO
7:30 AM—Van and Doon KHQ KOMO
KGW KPO KFSD KFI

The Adventures of Detectives

# BLACK and BLUE

5:30 to 5:45 P. M. Daily (Except Saturday and Sunday)

KFRC—KHJ—KMI

## **FOLGERIA**

Every Thursday, 9 to 9:30 P. M.

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# **TAPESTRIES** OF LIFE

(FOREST LAWN)

Every Tuesday, 8 to 9 P. M.

KHJ

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RADIO PROGRAMS THAT CLICK!

8:00 AM—Shell Happytime KHQ KOMO

KPO KFI KSL
8:00 AM—Financial Service Program

KGO

8:10 AM—Financial
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—Mary B. Murray, recipes KGO
KHQ KOMO KGW KTAR
KFSI) KECA KOA
9:30 AM—The Entertainers KGO KECA
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—Luncheon Concert KGO KECA

KGW 12: 15 PM—Western Western Farm Hour KGO KOMO KGW KECA KFSD KSL KTAR

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-

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—Voter's Service KGO KGW
4:30 PM—The Vagabonds KGO
5:00 PM—Paul Whiteman's Painters KGO KGW KHQ KOMO KFSD KHQ KOMO

KTAR
5:30 PM—Bits of Melody KGO KGW
5:45 PM—News Service KGO KGW
6:00 PM—McKesson Musical Magazine
KGO KHQ KOMO KGW KECA
KFSD KTAR
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

-B. A. Rolfe and His Lucky Strike Dance Orchestra KGO KHQ KOMO KGW KECA 7:30 PM-KHQ KOMO KFSD KTAR Amos 'N And

KFSD KTAR

8:00 PM—Amos 'N Andy KGO KHQ
KOMO KGW KECA KFSD

8:15 PM—Memory Lane KGO KHQ KOMO
KGW KFI KFSD KTAR

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

9:00 PM—Florsheim Frolic KGO KHQ
KOMO KGW KECA KFSD

KTAR

KOMO KGW KECA KFSD
KTAR

9:30 PM—Hill Billy Boys KGO KGW
KECA KFSD KTAR KOA

10:00 PM—National Concert Orchestra
KGO KOA KGW

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

Wednesday, March 4, 11, 18, 25

7:30 AM—Sunrise Serenaders KGO
7:30 AM—Van and Doon KHQ KOMO
KGW KPO KFSD KFI
8:00 AM—Shell Happytime KHQ KOMO
KGW KPO KFI KSL
8:00 AM—Financial Service Program

KGO

-Morning Melodies KGO

8:15 AM—Morning Melodies KGO
8:30 AM—Cross-Cuts of the Day KGO
9:00 AM—Verinont 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 KPO
10:00 AM—Charlie Wellman, Prince of Pep
KGO KHQ KOMO KGW
KFSD KTAR
10:15 AM—Mary Hale Martin's Household
Period KGO KHQ KOMO KGW
KFI KSL KOA

KFI KSL KOA

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

11:30 AM-Organ Recital KGO KECA

11:45 AM-Sisters of the Skillet KGO KECA

12:00 PM-Edna Wallace Hopper KGO KOMO KGW KECA KHQ KFSD

12:15 PM—Western Farm and Home Hour KGO KHQ KOMO KGW KECA KFSD KTAR

FOR COMPLETE STATION DIRECTORY SEE PAGE 28!

Fastman School Symphony Orchestra KGO KOMO KGW Symphony 1:00 PM-Fastman KECA KTAR

1:30 PM—Pacific Coast School of the Air
KGO KHQ KOMO KGW KPO
KECA KFSD KTAR 2:00 PM-NBC Matinee KGO

2:00 PM—NBC Matinee KGO
2:00 PM—Series of Talks KTAR KECA
2:15 PM—Soloists KECA KTAR
2:30 PM—The Vagabonds KECA
3:00 PM—Saltzman Restaurant Orch.
KGO KGW KTAR
3:30 PM—Black and Gold Room Orch.
KGO

KGO
3:45 PM—Talk KGO KOMO KGW
4:00 PM—Salon Singers KGO
4:15 PM—Science KGO KOMO KPO KFSD
KTAR KECA
4:30 PM—Sarah Kreindler, Violinist KGO
KGW

KGW
4:45 PM—Back of the News in Washington, William Hard KGO KOMO KECA KFSD
5:00 PM—Bobby Jones Golf Chat KGO
5:15 PM—Radiotron Varieties with Bugs Baer KGO KHQ KOMO KECA KFSD KTAR
5:30 PM—Spratt's Program KGO
5:45 PM—News Service KGO

5:45 PM—News Service KGO
6:00 PM—Halsey, Stuart Program KG()
KHQ KOMO KGW KFI
6:30 PM—Palmolive Hour KGO KHQ
KOMO KGW KFI

KOMO KGW KFI
7:30 PM—Coca Cola Program KGO KHQ
KOMO KGW KECA KFSD
8:00 PM—Amos "N Andy KGO KHQ
KOMO KGW KECA KFSD
8:15 PM—Camel Pleasure Hour KGO
KHQ KOMO KECA KFSD
9:15 PM—Tom Mitchell KGO

9:15 PM—Tom Mitchell KGO
9:15 PM—Modern Melodies KGW KOMO
KOMO
10:00 PM—NBC Drama Hour KOMO KGO
KGW
10:30 PM—Pacific Nomads KGO
11:00 PM—Laughner-Harris Hotel St.
Francis Dance Orchestra KGO
KGW KFI

KGW KFI Thursday, March 5, 12, 19, 26

7:30 AM—Sunrise Serenaders KGO
7:30 AM—Van and Doon 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—Rembrandt Trio KGO
10:00 AM—Woman's Magazine of the Air
KGO KHQ KOMO KGW KFO
KFI KTAR KSL KOA KFSD
11:00 AM—Standard School Broadcast
KGO KHQ KOMO KGW KFO
KFI KFSD

11:45 AM—Organ Recital KGO KECA
12:00 PM—Luncheon Concert KGO KSL
KFSD KECA
12:15 PM—Western Farm and Home Hour
KGO KHQ KOMO KGW KECA
KFSD KSL
1:00 PM—Hotel Sir Francis Drake Orch.
KGO KFSD

1:30 PM—Dancing Melodies KGO KECA KFSD

2:00 PM—NBC Matinee KGO 2:00 PM—The Lady Next Door KGO 3:00 PM—Black and Gold Room Orches-tra KGO KGW

-John B. Kennedy Talk KGO

3:45 PM—John B. Kennedy Talk KGO
3:45 PM—The Vagabonds KGO
4:15 PM—News Service KGO KFSD
4:45 PM—Friendly Five Footnotes KGO
KHQ KOMO KECA KFSD
KTAR

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
7:00 PM—B. A. Rolfe and His Lucky
Strike Dance Orchestra KGO
KHQ KOMO KGW KFI KFSD
KTAR
7:30 PM—Standard Symplony Hour KGO

Standard Symptony Hour KGO

KHQ KOMO KGW KFI 8:30 PM--Amos 'N Andy KGO K KOMO KGW KECA KFSD KHQ

8:45 PM—Sperry Smiles KGO KHQ KOMO KGW KECA KFSD 9:00 PM—Demi-Tasse Revue KGO KHQ KOMO KGW KFI KFSD KTAR

9:30 PM-The Story Teller KGO KOA KHQ

10:00 PM-Parisian Quintet KGO KFI

KOA

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, March 6, 13, 20, 27

7:30 AM—Sunrise Serenaders KGO

7:30 AM—Van and Doon, The Two Pro-fessors 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

 $8:30~AM{\leftarrow}Cross{-}Cuts$  of the Day  $K{\rm G}{\odot}$ 

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

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9:30 AM - Betty Crocker Gold Medal Home Service Talks KGO KHQ KOMO KGW KFI KFSD Gold

The Entertainers KGO KECA 9:45 AM

Charlie Wellman, Prince of Pep 10:00 AM KGO KGW KHQ KOMO KECA KFSD KTAR

B. Glbson, 10:15 AM--Josephine Talk KGO KHQ KOMO KGW KF1

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

Carson, Organ Recital 11:30 AM-Paul KGO KECA

Edna Wallace Hopper KGO KHQ KOMO KGW KECA KESD

12:15 PM—Western Farm and Home Hour KGO KGW KOMO KECA KFSD KTAR 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 3:15 PM—Black and Gold Room Orches-12:15 PM-

KTAR

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

3:45 PM—Bits of Melody KGO
4:00 PM—Major Bowes' Family KGO
KHQ KOMO KGW KECA KFSD
4:15 PM—College Memories KGO KHQ
KOMO KECA KFSD KTAR
KGW

4:20 PM—Pits of Melody

4:30 PM—Bits of Melody 4:45 PM—News Service KGO 5:00 PM--Cities Service Con Orches Concert tra KGO KHQ KOMO KGW 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—Amos 'N Andy KGO KHQ

Amos 'N Andy KGO KOMO KGW KECA KFSD

8:15 PM—Brownbilt Footlites KGO KHQ KOMO KGW KFI KFSD KTAR 8:30 PM—S. & W. Mellow'd Mellodies KGO KHQ KOMO KGW KFI KFSD KTAR

9:00 PM—House of Color KGO KHQ KOMO KGW KFI 9:30 PM—Mystery Serial KGO KSL KOA 10:00 PM—The Coquettes KGO KOA 10:15 PM—Metropolitans KGO KSL KOA 11:00 PM—Laughner - Harris Hotel St. Francis Dance Orchestra KGO KFI KSL

#### Saturday, March 7, 14, 21, 28

7:30 AM—Sunrise Serenaders KGO
7:30 AM—Van and Doon, The Two Professors KHQ KOMO KGW KPO KFSD KFI
8:00 AM—Shell Happytime KHQ KOMO KGW KPO KFI KSL
8:00 AM—Financial Service Program KGM

KG® 8:15 AM—Morning Melodies 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—Sax Appeal KGO KECA
9:30 AM—National Farm and Home Hour
KGO KHQ KOMO KFI KFSD
KGW KPO

KGW KPO

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

11:30 AM—Organ Recital KGO KECA

12:00 PM—Hotel Sir Francis Drake Orchestra KGO KTAR

1:00 PM—Piano Capers KGO KECA

KTAR
1:15 PM—Pacific

Pacific Feature Hour KGO KTAR KECA NEC Matinee KGO KGW KECA KTAR 2:00 PM

KTAR

KTAR
3:00 PM—Black and Gold Room Orchestra KGO KGW
3:45 PM—Bits of Melody KGO
4:00 PM Soloists KGO
4:15 PM—Laws That Safeguard Society KGO KHQ KOMO KECA KTAR
4:30 PM—Snoop and Peep KGO KGW
4:45 PM—The Highroad of Adventure KGO KGW KFSD KTAR
5:00 PM News Service KGO
5:15 AM—Radiotron Varieties KGO KHQ KOMO KGW KECA KFSD KTAR

SEE PAGE 28 FOR WESTERN STATION DIRECTORY

City..... State.... State.

National Broadcasting Co.—Cont.

5:30 PM—The Fuller Man I 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 Orch, KGO KHQ KOMO KGW KFI KFSD KTAR 8:00 PM—Amos 'n' Andy KGO KHQ KOMO KGW KECA KFSD 8:15 PM—Gilmore, Circus, KOMO, KGW

8:15 PM—Gilmore Circus KOMO KGW KPO KFI

8:15 PM—Tom Mitchell, the Rainier Ric-key Man KGO 8:30 PM—Bluebird Melodies KGO KFSD

KTAR

8:45 PM—Sperry Smiles KGO KHQ KOMO
KGW KECA KFSD
9:00 PM—El Sidelo Minstrels KGO KHQ
KOMO KGW KECA
9:30 PM—Associated Spotlight Revue
KGO KHQ KOMO KGW KFI
11:00 PM—Laughner-Harris Hotel St. Francis Dance Orch, KGO KFI

#### **Columbia Broadcasting** System

Sunday, March 1, 8, 15, 22, 29

6:00 AM—Morning Musicale KDYL 7:00 AM—Tony's Scrap Book KDYL 7:15 AM—Adventures of Mary and Helen

KDYL
7:50 AM—Columbia Educational Features

KDYL 9:00 AM—Jewish Art Program KOL KLZ KOH

-London Broadcast KOL KDYL

10:30 AM-

9:30 AM—London Broadcast KOL KDYL KLZ KOH

9:45 AM—H. M. Canadian Grenadler Guards' Band of Montreal KOL KFPY KDYL KLZ KOH

10:30 AM—Conclave of Nations KOL KFPY KDYL KLZ KOH

11:00 AM—Cathedral Hour KFPY KLZ

12 Noon—New York Philharmonic Symphony Orchestra, Arturo Toscanini, Conductor KOL KFPY KFRC KHJ KDYL KLZ KOH KMJ I1:00 AM-12 Noon—New KMJ

KMJ
5:00 PM—"Devils, Drugs and Doctors"
KOL KVI KFPY KOIN KFRC
KHJ KDYL KLZ
5:45 PM—Piano Pals KFPY KOH
6:00 PM—Arabesque KOL KFPY KFRC
KDYL KLZ KOH KMJ KFBK
6:30 PM—Graham-Paige Hour — Detroit
Symphony Orchestra KOL
KFPY KOIN KFRC KHJ KDYL
KLZ KFBK
7:00 PM—Royal's Poet of the Organ,
Jesse Crawford KFPY KOIN
KFRC KHJ KDYL KLZ KFBK
KOL

KOL 8:00 PM—Back Home Hour From Buffalo KFPY KFBK

Monday, March 2, 9, 16, 23, 30 5:45 AM—The Old Dutch Girl KDYL KLZ 7:15 AM—Harmonies and Contrasts

KDYL
7:45 AM—Melody Parade KDYL
8:00 AM—What I Am Trying to Do—KOL
KFPY KFRC KOH
8:15 AM—The Madison Singers KOL
KFPY KFRC KOH
8:30 AM—Uneeda Bakers KOL KVI
KFPY KOIN KFRC KDYL KLZ
8:45 AM—Three Modern Maids KOL
KFPY KFRC KDYL KOH
9:00 AM—Paul Tremaine and His Yoeng's
Restaurant Orch, KOL KOZ
KOH

KOH

9:30 AM—Columbia Revue KDYL KOH
KQH

11:15 AM—Columbia Artists Recital KEPY
KLZ KOH

11:30 AM—American School of the Air
KOL KEPY KFRC KDYL KLZ
KOH KMJ

12:00 Noon—Columbia Salon Orchestra

12:00 Noon—Columbia Salon Orchestra
KOL KFPY KDYL KLZ KOH
12:30 PM—Ann Leaf at the Organ with
Frank Ruhf, tenor KOL KOIN
KDYL KLZ KOH
1:00 PM—Radio Listening Test, Dick and
Denny KOL KVI KFPY KOIN
KFRC KHJ KDYL KLZ KOH
1:15 PM—U. S. Army Band KFPY KHJ
KDYL KLZ KOH
1:30 PM Wardman Park Hotel Orch

Wardman Park Hotel Orch KOL KEPY KFRC KLZ KDYL KOH

2:15 PM—Gypsy Music Makers KDYL KLZ KOH 2:30 PM—Eddie Connors KDYL KLZ

KOH

2:45 PM-Tony's Scrap Book KDYL KLZ KOH

KOH

3:00 PM—Gordon Kibbler's Fulton Royal
Orch, KOL KFPY KFRC KHJ
KDYL KLZ KOH KMJ

3:30 PM—The Melody Musketeers, male
trio KOL KFRC KHI KLZ
KOH KMJ

4:00 PM—Current Events, H. V. Kaltenborn KOL KFPY KFRC KOH

4:15 PM—St. Moritz Orchestra KFPY
KFRC KOH

5:30 PM—The Simmons Hour KOL KFPY
KDYL KHI

KDYL KHI 6:00 PM—The Three Bakers KOL KFPY KOIN KFRC KHJ KDYL KFBK

7:00 PM—Robert Burns Panatela Program, Guy Lombardo's Orch.
KOL KFPY KOIN KFRC KHI
KDYL KLZ KFBK
7:30 PM—Don Amaizo KOL KFPY KOIN
KFRC KHJ KDYL KLZ KMJ

8:00 PM—Leon Belasco and His Orch. KFPY KDYL KLZ KFBK 8:30 PM—Ben Bernie and His Orchestra from Chicago KFPY KDYL KLZ KFBK

Tuesday, March 3, 10, 17, 24, 31

5:30 AM—Tony's Scrap Book KDYL 5:45 AM—Morning Minstrels KDYL KLZ 6:00 AM—Something for Everyone KDYL KLZ

6:30 AM—Morning Moods, Nat Brusiloff and his orchestra KDYL,
7:15 AM—Melody Parade KDYL,
8:00 AM—Brer Rabbit Folk KLZ
8:45 AM—Three Men in a Tub KPPY KLZ
9:00 AM—Paul Tremaine and his Yoeng's Restaurant Orchestra KOL KFRC KLZ KOH
11:15 AM—The Four Clubmen, male Quartet KOL KOIN KLZ KOH
11:30 AM—American School of the Air KOL KOIN KDYL KLZ KOH KMJ

KMJ

12:00 Noon—Columbia Salon Orchestra
KOL KFPY KDYL KLZ KOH

12:30 PM—Pancho and His Orch. KOIN
KFPY KDYL KLZ KOH

1:00 PM—Italian Idyll, Vincent Sorey and
his Orchestra KFPY KFRC
KDYL KLZ KOH

1:30 PM—National Student Federation of
American Program KOL KFPY
KFRC KDYL KLZ KOH

2:00 PM—Rhythm Kings KOL KDYL
KLZ KOH

2:15 PM—Adventures in Words KDYL
KLZ KOH

2:30 PM—Bert Lown and his Biltmore
Orchestra KDYL KLZ KOH

3:00 PM—National Security League
Broadcast Series KFPY KFRC
KLZ KOH KMJ

3:15 PM—Harry Tucker and his Barcalor

Broadcast Series KFPY KFRC
KLZ KOH KMJ

3:15 PM—Harry Tucker and his Barclay
Orchestra KOL KFPY KFRC
KDYL KLZ KOH KMJ

4:00 PM—The Political Situation in
Washington tonight KOL
KFPY KFRC KHJ KOH

4:30 PM—St. Moritz Orchestra KFPY
KDYL KOH KFPK

5:15 PM—Old Cold Character Possings

5:15 PM—Old Gold Character Readings
KOL KVI KFPY KOIN KFRC
KHJ KDYL KLZ KFBK

5:45 PM—Premier Salad Dressers KOL
KVI KFPY KOIN KFRC KHJ
KDYL KLZ
7:00 PM - Greeborts Mr. and Mrs. KOV

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

KLZ 7:15 PM—Blue Ribbon Malt Jester KDYL KLZ

KLZ
7:30 PM—Paramount Publix Radio Playhouse KOL KFPY KOIN KHJ
KNX KFRC KDYL KLZ
8:00 PM—Paul Tremaine and his Yoeng's
Restaurant Orchestra KOL
KFPY KDYL KLZ KMJ KFBK
8:15 PM—Blue Ribbon Malt Jester KOL
KFPY KOIN KFRC KHJ KMJ
KFBK
8:30 PM—Lack Dunny and his Orchestra

8:30 PM-Jack Denny and his Orchestra from Montreal KDYL KLZ

Wednesday, March 4, 11, 18, 25
5:30 AM—Tony's Scrap Book KDYL
5:45 AM—The Old Dutch Girl KDYL KLZ
6:00 AM—Something for Everyone KDYL
6:30 AM—Morning Moods KDYL
7:15 AM—Melody Parade KDYL

7:45 AM-Sewing Circle K.DYL

8:00 AM-Five Minute Meals KLZ

 $8:15\;\mathrm{AM}\text{---}\mathrm{Ben}$  and Helen KDYL KLZ

8:45 AM—Interior Decorating KDYL KOH KEPY

9:00 AM-Paul Tremaine and his Young's Restaurant KLZ KOH Orchestra

11:15 AM—Columbia Artists Recital KOL KFPY KLZ KOH 11:30 AM—American School of the Air KOL KFPY KFRC KHJ KDYL KLZ KOH KMJ

KLZ KOH KMJ

12:00 Noon—Columbia Salon Orchestra
KOL KFPY KLZ KOH

12:30 PM—Syncopated Silhouettes KFPY
KDYL KLZ KOH

1:00 PM—Musical Album KOL KFPY
KFRC KDYL KLZ KOH

2:00 PM—Asbury Park Casino Orchestra
KDYL KLZ KOH

2:30 PM—The International Singers
KDYL KLZ KOH

2:45 PM—Tony's Scrap Book KDYL KLZ
KOH

3:00 PM—"Bill Schudt's Going to Press"

-"Bill Schudt's Going to Press" KFPY KFRC KDYL KLZ KOH 3:00 PM-

KMJ 3:15 PM—President's Emergency Employment Committee Speaker KOL KMJ KFPY KDYL KLZ

KOH

3:20 PM—Winegar's Barn Orchestra KOL
KFPY KDYL KLZ KOH KMJ

4:00 PM—Morton Downey KOL KFPY
KFRC KHJ KOH KFBK

4:15 PM—Musical Aviators Orchestra
KOL KFPY KFRC KHJ KOH

5:30 PM—The Sunkist Musical Cocktail
KFRC KDYL KLZ

6:00 PM—Gold Medal Fast Freight KFRC
KHJ KDYL KLZ

6:30 PM—Saving Tone Pictures KOL
KFPY KHJ KDYL KLZ KOH
KMJ KFBK KFRC

7:00 PM—Columbia Experimental Laboratory KOL KFPY KDYL KLZ

KOH KMJ

7:30 PM—Columbia Concerts Corporation

KOH KMJ
7:30 PM—Columbia Concerts Corporation
Program KOL KFPY KFRC
KDYL KOH KMJ KFBK
8:00 PM—Guy Lombardo and His Royal
Canadians KOL KFPY KFRC
KHJ KDYL KLZ KMJ KFBK
8:30 PM—Jimmie Joy and His Orchestra
from St. Paul KDYL KLZ KMJ

Thursday, March 5, 12, 19, 26

Thursday, March 5, 12, 19, 26
5:30 AM—Tony's Scrap Book KDYL
5:45 AM—Morning Minstrels KDYL KLZ
6:00 AM—Something for Everyone KFRC KDYL KLZ
6:30 AM—Morning Moods KDYL
6:45 AM—Morning Moods KDYL
8:00 AM—Five Arts KDYL KOH
8:30 AM—Uneeda Bakers KDYL KLZ
8:45 AM—Peter Pan Forecasts KOL KVI KFPY KOIN KFRC KHJ KDYL KLZ KMJ
9:00 AM—Paul Tremaine and His Yoeng's Restaurant Orch. KOL KFRC

Restaurant Orch. KOL KFRC
KDYL KLZ KOH

11:00 AM—Columbia Artists Recital KFPY
KLZ KOH

11:45 AM—Uneeda Bakers KOL KVI KFPY KOIN KFRC KHJ KMJ 11:30 AM—American School of the Air KOL KFPY KFRC KDYL KLZ KOH KMJ

12:00 Noon—Rhythm Ramblers KOL KOIN KDYL KLZ KOH 12:30 PM—Columbia Salon Orch. KOL KOIN KDYL KLZ KOH KMJ

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#### Columbia Broadcasting Co.—Cont.

- I:00 PM—The Three Doctors KOL KFPY KFRC KHI KDYL KLZ KOH KM.I
- 1:30 PM—Asbury Park Casino Orch. KOL KFPY KFRC KDYL KLZ KOH
- 2:00 PM-Melody Magic KDYL KLZ KOH
- 2:00 PM—Melody Magic KDYL KLZ KOH
  2:30 PM—Virginia Arnold, pianist KDYL KLZ KOH
  2:45 PM—Tony's Scrap Book KDYL KLZ
  3:00 PM—Gordon Kibbler's Fulton Royal Orch. KOL KFPY KFRC KDYL KLZ KOH KMJ
  3:30 PM—Pancho and His Orch. KFPY KFRC KHJ KLZ KOH KMJ
  4:00 PM—Morton Downey KMJ KOL KFPY KHJ KOH
  4:15 PM—St. Moritz Orchestra KOL KFPY KFRC KHJ KOH KFPK KFPK KFRC KHJ KOH KFBK
  6:00 PM—Lee Morse KFPY KLZ KOH KMJ
  6:15 PM—Old Gold Character Readings,

- Old Gold Character Readings, Lorna Fantin KOL KFPY KOIN KFRC KHJ KDYL KLZ KMJ
- 7:00 PM—The Lutheran Hour KOL KFPY KOIN KFRC KHJ KDYL KLZ KFBK
- 7:30 PM—Toscha Seidel and Concert Orch. KDYL KLZ KOH KMJ 8:00 PM—Ben Bernie and His Orch. from Chicago KDYL KLZ KMJ KFBK
- 8:30 PM-Radio Roundup KFPY KLZ KMI
- 9:00 PM-Folger Coffee Program KOL KVI KFPY KOIN KFRC KHJ KDYL KFBK

#### Friday, March 6, 12, 20, 27

- 5:30 AM—Tony's Scrap Book KDYL
  6:00 AM—Something for Everyone KDYL
  6:30 AM—Morning Moods KDYL
  7:00 AM—Columbia Mixed Quartet KDYL
  9:00 AM—Paul Tremaine and His Yoeng's
  Restaurant Orch. KOL KFRC
  KLZ KOH
  11:45 AM—Columbia Artists Recital KOL
  KFPY KFRC KDYL KLZ KOH
  11:30 AM—American School of the Air
  and Current Events KOL
  KFPY KFRC KHJ KDYL KLZ
  KOH KMJ KFBK
  12:00 Noon—U. S. Marine Band Orch. KOL
  KFPY KDYL KLZ KOH

- 12:45 PM—Columbia Educational Features KFPY KDYL KLZ KOH
- Curtis Institute of Music KOL KOIN KERC KHI KDYL KLZ 1:00 PM -
- Rhythm Ramblers KOL KFPY KFRC KDYL KLZ KOH 1:45 PM-
- 2:00 PM-Light Opera Gems KDYL KLZ KOH
- 2:15 PM-Tony's Scrap Book KDYL KLZ KOH
- 3:00 PM—Winegar's Barn Orchestra KOL KFPY KFRC KDYL KLZ KOH KMJ
- 4:00 PM—Morton Downey KFPY KOL KFRC KHJ KOH
- 5:15 PM—Rhythm Choristers KFPY KFRC KHJ KDYL KLZ KOH 7:00 PM—Gypsy Trail, Emery Deutsch and His Orch. KOL KFPY KFRC KDYL KLZ KMJ
- 7:30 PM-Nit Wit Hour KFPY KDYL
- 8:00 PM—Noble Sissle and His Princesse Restaurant Orch. KOL KFPY KDYL KLZ KFBK
- 8:30 PM—Romanelli and His King Ed-ward Orchestra from Toronto KDYL KLZ

#### Saturday, March 7, 14, 21, 28

- 5:30 AM-Tony's Scrap Book KDYL
- 5:45 AM-Morning Minstrels KDYL KLZ
- 6:00 AM-Something for Everyone KDYL
- 6:30 AM—Morning Moods KDYL 7:00 AM—The International Singers with Virginia Arnold, pianist KDYL
- 8:00 AM—New York Philharmonic Symphony Society Children's Concerts KOL KFPY KFRC KDYL KLZ KOH KMJ
  9:30 AM—Paul Tremaine and His Yoeng's Restaurant Orch KOL KFPY
- кнј кон

- KHJ KOH

  11:00 AM—Columbia Artist Recital KOL
  KFPY KLZ KOH

  11:15 AM—National Democratic Club
  Forum KOL KFPY KFRC KHJ
  KDYL KLZ KOH

  12:00 Noon—The Four Clubinen, Male
  Quartet KOL KFPY KHJ
  KDYL KLZ KOH

- 12:30 PM = Saturday Syncopators KO KFPY KHJ KDYL KLZ KOH
- Ann Leaf at the Organ KOL KEPY KFRC KHJ KDYL KLZ 1:00 PM
- -Spanish Serenade KOL KFPY KFRC KDYL KLZ KOH
- Leon Belasco and His Orch. KOL KEPY KERC KDYL KLZ KOH KMJ
- 2:45 PM—Tony's Strap Book KOL KFRC KILJ KDYL KLZ KOH KMJ KFPY
- 3:00 PM—Ted Husing's Sportslants KOL KFPY KFRC KHJ KDYL KLZ KOH KMJ

- KFPY KFRC KHJ KDYL KLZ
  KOH KMJ

  4:00 PM—Morton Downey with Freddle
  Rich's Orchestra KOL KFPY
  KFRC KIIJ KOH KMJ

  4:15 PM—Armand Vecsey and His Ritz
  Carlton Hotel Orch. KOL KFPY
  KFRC KOH KMJ

  5:15 PM—Ben Alley, tenor with Ann Leaf
  at the organ KFPY KFRC KHJ
  KDYL KOH KMJ KFBK

  5:30 PM—The Early Bookworm. Alexander Woollcott KFPY KFRC
  KHJ KDYL KLZ

  6:00 PM—Around the Samovar KOL
  KFPY KFRC KHJ KLZ KFBK

  6:30 PM—Columbia Educational Features
  KOL KFRC KHJ KDYL KLZ

  7:00 PM—Hank Sinimons' Show Boat KOL
  KFPY KFRC KHJ KDYL KLZ
  KMJ KFBK

  8:00 PM—Jack Denny and His Orch. from
  Montreal KOL KFPY KDYL
  KLZ KMJ KFBK

  8:30 PM—Guy Lombardo and His Royal
  Canadians KFPY KDYL KLZ
  KMJ KFBK

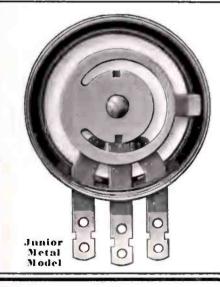


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City and State.....

### United Broadcasting Co.,

Sunday. March 1, 8, 15, 22, 29
7:00 PM—Calendar of the Air KVOS KXA
KXL KORE KGB
7:30 PM—Sunday Serenade KVOS KXL

7:30 PM—Sunday Serenade KVOS KXL KGB
8:00 PM—Brick English Orchestra KVOS KXL KTM KGB
8:30 PM—Album of Familiar Faces KVOS KXL KGB
9:00 PM—On Parade KVOS KXA KXL KMED KORE KFWB KGB
9:30 PM—Traumerei KVOS KXA KMED KORE KFWB KGB KGER
10:00 PM—News KVOS KXA MOD PM—News KVOS KXA MOD PM—Calendar of the Air KVOS KXA KMED KORE KTAB KGB
7:30 PM—Hughespaper of the Air KVOS KXA KMED KORE KTAB KGB
7:45 PM—Old Chestnuts Revue KVOS

KGB
7:45 PM—Old Chestnuts Revue KVOS
KXA KXL KMED KORE KGB
8:00 PM—Boris Kramarenko and His Balalaika Orchestra KVOS KXA alaika Orchestra KVOS KXL KMED KORE

KXL KMI KTM KGB 8:30 PM—"Spring Sluicing" KVOS KXA KXL KMED KORE KTAB

KTAB

9:00 PM—Meys and KORE KIAD KGB

9:00 PM—Musical Gems KVOS KXA KXL KMED KORE KTAB KFWB KGB

10:00 PM—News KVOS KXL KORE

Tuesday, March 3, 10, 17, 24, 31

7:00 PM—Calendar of the Air KVOS KXA KXL KMED KORE KTAB KGB

7:30 PM—Hughespaper of the Air KVOS KXA KNL KMED KORE KTAB KGB KGER

7:45 PM—Three Jacks KVOS KXA KXL KMED KORE KTAB KFWB

U. B. C. program subject to change during March.

8:00 PM—Highway Highlights KTAB KTM KGB

8:30 PM—Dramatic Presentations KVOS KXA KXL KMED KORE KGB KGER

9:00 PM—Phantoms of Broadway KVOS
KXA KXL KMED KORE
KFWB KGB KGER
Wednesday, March 4, 11, 18, 25
7:00 PM—Calendar of the Air KVOS KXA
KMED KORE KTAB KGB
7:30 PM—Hughespaper of the Air KVOS
KXA KXL KMED KORE KTAB
KGB KGER

KGB KGER

7:45 PM—Murray and Harris KVOS KXA
KXL KMED KORE KGB

8:00 PM—Long Beach Municial Band
KVOS KXA KXL KMED KORE
KTAB KTM KGB

8:30 PM—Vibum of Familiar Faces KVOS
KXA KXL KMED KORE KTAB
KTM KGB KGER

9:00 PM—Dancing Harmonies KVOS KXA
KMED KORE KTAB KFWB
KGB KGER

9:30 PM—Land of Dreams KVOS KXA
KMED KORE KTAB KFWB
KGR

6:30 PM—Land NORE KTAB KFWB
KGR

10:00 PM.—News KVOS KORE

KGB

10:00 PM.—News KVOS KORE
Thursday. March 5, 12, 18, 26

7:00 PM—Calendar of the Air KVOS KXA
KXL KMED KORE KGB

7:30 PM—Hughespaper of the Air KVOS
KXA KXL KMED KORE KTAB
KGB KGER

7:45 PM—Ruth Lee KVOS KXA KXL
KMED KORE KTAB KGR

8:00 PM—Brick English Orchestra KVOS
KXA KXL KMED KORE KTAB
KTM KGB KGER

8:30 PM—Drama KVOS KXA KXL KMED

8:30 PM—Drama KVOS KXA KXL KMED KORE KTAB KFWB KGB

9:00 PM—Musical Contrasts KVOS KXA 9:30 PM—Tone Paintings KVOS KXA KXL KMED KORE KTAB KGB

KFWB KGER 10:00 PM—Hughespaper of the Air KVOS KXL KORE Friday, March 6, 13, 20, 27

7:00 PM—Calendar of the Air KVOS KXA KMED KORE KTAB KGB

7:30 PM-Hughespaper of the Air KVOS KXA KXL KMED KORE KTAB KGB KGER

7:45 PM-Murray and Harris KVOS KXA KXL KMED KORE KGB KXL KGER

8:00 PM-Highway Highlights KTAB

8:00 PM—Highway Highlights KTAB
KTM KGB
8:30 PM—Harrison Hargraves KVOS
KXA KXL KMED KORE KGB
KTAB KFWB
9:00 PM—Venetian Nights KVOS KXA
KXL KMED KTAB KFWB
KGB KGER
9:30 PM—Ad Lib Revue KVOS KXA KXL
KMED KTAB KGER
10:00 PM—News KVOS KXL KGER
Saturday, March 7, 14, 21, 28
7:00 PM—Calendar of the Air KVOS KXA
KXL KMED KORE KTAB KGB
7:30 PM—News KVOS KXA KXL KMED
KORE KTAB KGB
7:45 PM—Brick English Orchestra KVOS

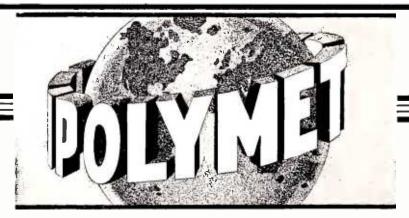
KORE KTAB KGB
7:45 PM—Brick English Orchestra KVOS
KXA KXL KMED KORE KGB
KTAB KTM KGER
8:30 PM—"Melody Madness" KVOS KXA
KXL KMED KORE KTAB KTM
KGB KGER
9:00 PM—Dick Dixon KVOS KXA KXL
KMED KORE KTAB KFWB
KGB KGER
9:30 PM—Tango Orchestra KVOS KXA
KXL KMED KORE KTAB KGB

9:30 PM—Tango Orchestra KVOS KXA KXL KMED KORE KTAB KGB 10:00 PM—News KVOS KXL KORE KGER

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**BOX B, RADIO DOINGS** 



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## POLYMET MANUFACTURING CORPORATION

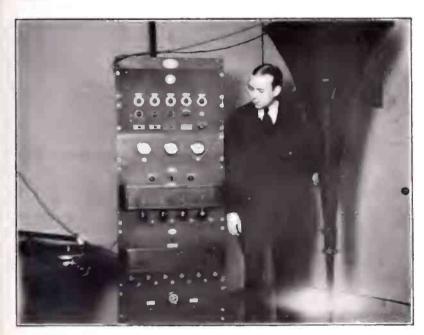
District Representative: THE SPECTOR COMPANY, Rialto Bldg., San Francisco

# **New Products**

#### Webster Power Amplifiers

The Webster Electric Company of Racine, Wisconsin, is offering a complete line of high quality amplifiers for all purposes and of a wide range of power. Phonograph, radio or microphone amplification to any desired volume with uniform excellence of tonal fidelity is provided in a wide assortment of units to meet every possible requirement.

The illustration is of one of the larger rack mounted public address or theatre units. Mr. Perry Demerest is standing beside the rack and a speaker unit to illustrate the relative size of the equipment. This particular unit is installed in the new sound studio on one of the upper floors of the Radio Supply Company's building at 912-914 South Broadway, Los Angeles. This specially constructed studio has been arranged for the demonstration of sound equipment of this nature, and the line of Webster amplifiers are in operation there.



Webster Electric Company Power Amplifier for microphone, phonograph or radio amplification

A feature of the rack type of equipment is that it provides flexibility permitting changes or additions at any time. The power output may be increased by simply adding another unit to the rack, and thus the danger of the installation becoming obsolete is avoided.

Anyone interested in sound amplification for any purpose would do well to visit this studio and inspect the Webster equipment.

## Tiffany-Tone Super

Herbert H. Horn Radio Manufacturing Company, Los Angeles, is now in production on the new Tiffany-Tone Midget Super-Heterodyne. An eight-tube receiver, having a sensitivity of but a small fraction of one micro-volt per meter for normal test output. Push-pull audio amplification and Magnavox dynamic speaker provide a great undistorted volume. In a recent test, 117 stations were logged in one night, including three in Australia, one in New Zealand and six in Japan. Adjacent channels to the powerful locals can be played with ease, according to those who have witnessed the tests.

#### Supreme Test Equipment



Supreme Set Analyzer



Tube Tester. Reads Mutual Conductance Directly



Combined Ohmeter and Capacity-Meter

The Supreme Instrument Company is offering a new tube tester wherein the mutual conductance reads directly on the scale of a meter. It will test every type of tube quickly and thoroughly without necessitating any figuring. All readings are direct.

Another item of the Supreme line is the compact Ohmeter and Capacity meter. This combination is invaluable to the service man and experimenter. It reads directly in ohms and micro-farads and thus affords a very quick check of the values of resistors and condensers. Their standard test kit, also illustrated, is another instrument which is outstanding for the reason that the five meters afford instantaneous readings of all of the vital values without pressing buttons or turning switches to make one or two meters read in all of the circuits. For example, when a 224 type of tube is transferred from the set to the tester, the meters indicate the heater voltage, plate voltage, screen grid voltage, control grid voltage and plate current, all simultaneously.

Listenwalter and Gough of Los Angeles distribute the Supreme line of test equipment.

The new 48-story building of the Radio Corporation of America in New York, with a sign on it which can be read a mile away, and located at the southwest corner of 51st street and Lexington avenue, emphasizes the fact that that portion of the city will soon be the radio center of the country.

This building, which will be ready for occupancy in April, is only a couple of blocks from the Columbia Broadcasting System building at 52nd street and Madison avenue, and not a great distance from the headquarters of the National Broadcasting Company at 55th street and Fifth avenue.

Handicapped by a voice which is a little too husky for the radio, Mary Pickford made another creditable appearance the other night. Speaking in behalf of a California concern, she presented five carloads of oranges to the drought sufferers in Arkansas and Oklahoma. However, as seemingly does most every other picture star who gets on the air, Miss Pickford detracted considerably from the presentation by injecting what seemed to be an excessive amount of advertising into the program.

# The Gateway to "Public Interest, Convenience and Necessity"



Who Will?

Who Won't?

What Changes?

Get it all in the New

# RADIO DOINGS CALL BOOK

NOW ON SALE

This is the only radio log magazine published for Western set owners. Get it today and have a reliable and remarkably complete guide to the air lanes everywhere. Obtainable at your radio or news dealer

For only 25c

## RADIO DOINGS CALL BOOK

314 EAST 12th STREET LOS ANGELES 929-930 HEARST BLDG. SAN FRANCISCO

To Radio Dealers: A small supply of Call Books is still available to you; Reorder Now!



ILLUSTRATION APPROXIMATELY FOUR-FIFTHS ACTUAL SIZE.

BOVE are shown two popular Crowe Tuning Units from the new series, descriptions of which appear in our new Bulletin 41.

The Number 35 unit in the upper right corner is operated by a metal belt friction drive and is very smooth in action. The scale is pyralin and graduated from 0 at the left to 100 at the right through 180 degrees unless otherwise specified. The Number 27 unit at the lower left is a direct drive dial with pyralin scale graduated as shown. Both units are well adapted for use in midget and popular-priced sets.

Send for your copy of Bulletin 41 if you have not already done so

# NAME PLATE & MANUFACTURING COMPANY Chicago, U. S. A. 1744 Grace Street

W. BERT KNIGHT, Western Representative 1646 West Adams St.

Phone EMpire 4440—4443

Los Angeles, Calif.

## RADIO GOINGS ON AROUND TOWN

M. R. RUSS HINES, who has been associated with Mr. Bert Knight, now heads his own company. He is located at 924 Beaux Arts building in Los Angeles and is the



Pacific Coast representative for Cornell Resistors, Premier Coils and Reliance Variable Condensers.

Mr. Hines has been in the manufacturers' agents business for a number of years and is well known throughout the industry. We wish him all the luck in the world in his new venture. Possibly other lines might be added later if the necessity arises.

Mr. Al Hirsch, of the Micamold Company of Chicago, condenser and resistor manufacturers, spent a few days in Los Angeles. In company with Frank Emmett, manufacturer's agent, Al called on all of the local manufacturers and took some orders. Al says it was a new experience to run into the members of our local Radio Sculptors Guild as chisseling is not yet a fine art east of the Rockies.

Mr. William W. Garstang, of the engineering department of the Elkon Division of P. R. Mallory & Co., Indianapolis, Indiana, was a visitor in Los Angeles during the last week in February, and interviewed the engineers of the local manufacturers, together with Carl Stone, factory representative. The Elkon dry electrolytic filter condensers, manufactured by the Mallory Company, were the chief topic of conversation during these interviews.



Mr. John Booth, one of the best-known retail radio and music merchants in Southern California, is again in charge of the Radio and Music department of Barker Brothers.

Mr. Booth has made a marked success in each position that he has held and we expect him to very materially increase the music and radio sales for Barker Brothers.

The Manufacturers and Agents Association held their bi-monthly luncheon meeting at the Metropole Cafe, Friday the twenty-seventh.

There was a large attendance and the discussion was spirited. Mr. Dick Leitner, chairman of the Standardization committee, read a very interesting report pertaining to the performances of certain super-heterodyne sets.

Mr. Farquharson told of his trip to San Francisco and of the work that the California Manufacturers' Association and the Music and Radio Trades' Association are doing to keep foolish, trick and vicious bills from being passed by the Legislature and thereby becoming laws. Mr. L. E. Taufenbach, president of Western Radio, Inc., announced this last week that they would no longer be the Southern California and Arizona distributors for Brunswick radio sets and records.

This new arrangement was apparently agreeable to both parties.

Mr. Taufenbach stated that he would at present confine his efforts to distributing Silver-Marshall super-heterodyne receivers, electric clocks, tubes, batteries and accessories.



The Electronic Clan, a society of engineers of the local manufacturers, held their regular bi-monthly meeting at the Cafe Metropole Tuesday evening, February 24th. Messrs. Miller and Patterson engaged in a debate over the relative merits of the padded oscillator condenser and the special cut plate condenser in super-heterodynes. The judges, Messrs. Howard and Garstang, called it a draw. Mr. Garstang then spoke on behalf of the truly dry electrolytic filter condenser, as compared with the wet variety.

"King Leer" from Chicago has been in our midst! He held forth in Gilfillan's laboratory and showed some of our local boys how to build super-hets with some real sensitivity and wallop. Representing the Chicago Coil and Wire Company, Bill Leer introduced intermediate couplers and RF coils wound with 10-strand Litz. These put so much performance into a midget super that it's just too bad! Anyhow, we're glad Bill came West, and hope to see him again soon.

More than two hundred Southern California radio dealers gathered at the Los Angeles Chamber of Commerce Wednesday afternoon, February eighteenth to discuss advertising and merchandising plans for the new Holbrook Electric Refrigerator which is to be distributed by Walter M. Fagan, president of Pacific Wholesale, Ltd. Fagan has long been prominent in local radio circles as distributor of the Sparton



receivers, which he will continue to handle. The meeting was called by Fagan, who presided as chairman. Speakers included C. H. Merrill, president of Holbrook, Merrill and Stetson, refrigerator manufacturers; Gordon Muir, factory advertising manager; C. H. Nagel, manager of Silverwood's, and Russel Lockwood. Enthusiasm and optimism were strikingly manifested at the meeting.

# Radio Goings On Around Town

Davison-Haynes Manufacturing Company announce the appointment of the following promotional sales managers:

Edward J. Rapp, formerly merchandise manager for Lipman Wolfe Department Store, Portland, Oregon. Appointed promotional sales manager for the states of Oregon and Washington.

James T. Barrett of the firm of Kaemper-Barrett Corp., Ltd., of San Francisco, promotional sales manager for north-

ern California

Charles G. Walters, promotional sales manager for Southern California.

Davison-Haynes are outlining an entirely new sales program which is unique, and which will, no doubt, result in a larger volume of business than ever before attained.

Mr. P. W. Bialowsky, the Pacific Coast sales manager for the Crosley Radio Corporation of Cincinnati, Ohio, spent ten days in Los Angeles last month visiting their Southern California jobber, Kierulff and Ravencroft and calling on the Crosley dealers.

Mr. Bialowsky, whose main office is in Seattle, says that there has been a very noticeable increase in demand for radio sets since the first of the year and that, while it would take some time to get back to normal, he believes that the radio dealers as a whole will enjoy a good business during the balance of the year.



Mr. David Marshank of the Marshank Sales Company, 224 East 16th street, Los Angeles, took a trip to New York the latter part of last month. He stated he would have some interesting information to give out when he returned. Now that Los Angeles is definitely the leading midget set manufacturing city in the country the makers of parts are playing to the manufacturers in this part of the country. Mr. Marshank has several popular parts lines and may have more on his return.

A very enjoyable dinner dance was given by the Radio Pioneers Thursday, February the 19th. There were over one hundred and fifty guests in attendance. Everyone seemed to enjoy the music and entertainment.

The ballroom of the Commercial Club was beautifully decorated. It made a perfect setting for a gay party.

Our old friend Bill Lane of San Francisco paid us a visit the latter part of last month. Mr. Lane is well known in Southern California, having spent several years with Kierulff and Ravenscroft and John G. Rapp Corporation. He is now with the Waterhouse, Weinstock-Scovel Company, Northern California Distributors for Bosch Receivers.

The Radio and Music Trades' Association of Southern California held a dinner dance at the Los Angeles Realty building Thursday evening, February 5th. The monthly meeting of the association is usually held the first Thursday of each month at 8 a. m., at the Breakfast Club. For a little change the directors of the association decided on the evening meeting. The change was very successful as everyone enjoyed themselves.

## Radio Row

THE OFFICE BOY SEZ:

Introducing two of our most interesting radio men



The Office Boy walked into the office of one of the well-known midget manufacturers the other day and was greeted with "Hello, Charlie, glad you came in. I wanted to see you about some coils." This from the midget magnate who hadn't looked up. "Beg your pardon," said the Office Boy. Whereupon the M. M. looked up with a startled expression and said, "I would have sworn that you were Charlie Wineberg."
"How come?" retaliates the O. B. "Why, by the smell of that pipe! How else? It smells almost exactly like

that smoke stack of Charlie's." It all came about like this. Charlie had given the Office Boy some of his odoriferous to-bacco a few minutes before.

Some people are known for their elegance, some for their tact, some for their humor, etc., but Charlie is identified best by his smell (pipe.) Some pipes in his collection are so old and so smelly that he has to give them an airing every day by carrying them around in his car, and the above candid camera caught him in the act of performing this rite for his pets. Here, folks, is the "Sage of Wall Street" in all his odoriferous glory!

Leigh Borden, the snappiest radio man in town! The big "Yes and No" man for Sparton on the Pacific Coast. When Leigh toots his horn folks sit up and look and listen. And why? Easy boys, because it's so musical. (That wasn't too good, was it?)

Nearly always on the move, Leigh travels thousands of miles every month, either in his snappy roadster or by train. How he keeps so scrupuously well-dressed under these hectic circumstances is something to marvel at (there's that darn little preposition with which you're not supposed

The state of the s

to end sentences.) But anyway, Leigh looks just as though he had stepped out of the proverbial band-box. A pretty posy always adorns his lapel, his fedora sports a swanky band and a shiney cane achieves just that correct touch of elegance which we all envy.

Leigh Borden is one of the boys you want to meet if you haven't had the pleasure, for besides being a well-dressed man about town, he is an excellent salesman and knows the radio business thoroughly.





# U. S. Apex Radio

# Even Today

# "Quality Far Beyond Price"



Model 32A Table Model De Luxe. A full sized set giving outstanding performance and tone quality. In a beautiful cabinet of matched selected hard wood veneers.

> Not a Midget! 32A TABLE MODEL

\$6950 Complete With Tubes

You will like these handsome new 32 Series Apex Receivers.

Every new radio feature. Beautiful in appearance. Full sized performance. Seven tubes in all. Two 245 tubes in push pull amplification. A new circuit developed by Apex engineers makes these sets outstanding in performance.

**MODEL 32B CONSOLE** 

 $\$87\frac{50}{}$ Complete With Tubes



Model 32A

Apex Gloritone Midget Set, \$49.95 Complete with Tubes

Exclusive Wholesale Distributor

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