

The All-wave DX Log of the World



The Story of Television The Mystery DX Contest Complete Station-Identifying Shortwave List



No. 107

A B D D B

The "Perfect" Phone Adapter

The device which makes it easy to attach headphones to any radio set. Anyone can install it, without tools, in no time at all. It cannot harm the receiver and the operation of the set is not affected in any way.

IDEAL FOR THE HARD-OF-HEARING

Those who are very hard of hearing can enjoy radio reception by using our new HOH Model Phone Adapter. It gives sufficient volume on the headphones without it being necessary to increase the volume of the receiver above normal.

THE VERY BEST HEADPHONES

For use with the Perfect Phone Adapter, we recommend the Trimm Featherweight Headphones. They weigh only 4 ounces and can be worn for hours, without fatigue. Very sensitive, designed for use by commercial operators, they get the weak signals which other, less sensitive 'phones fail to register.

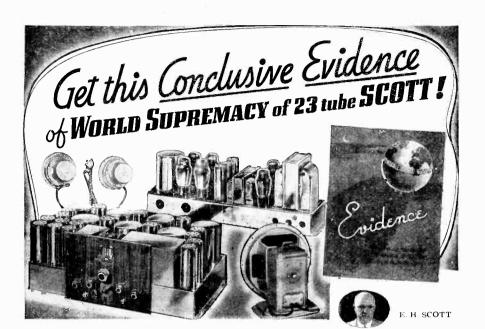
> We pay the postage on all orders. If you live in Ohio add 3% for Sales Tax

The HOH Model Perfect Phone Adapter with Trimm Featherweight Headphones. \$12.00

The HOH Model Perfect Phone Adapter with a good pair of Trimm Headphones.....\$6.70

In ordering be sure to give make and model of receiver and a list of the tubes used.

The Radex Press Conneaut, Ohio



How the SCOTT "CAME THRU" in the moisture-soaked, stiffing heat of the Panaua Canal Zone. What the celebrated Jean Marie Robinault discovered whenexploring with the SCOTT in the blizzard-sweep Swiss Alps.

Read about the experiences of New Englanders tuning in far away Japan -of Californians dancing to European "swing." Here's an amazing book you ought to have-filled with sensational experiences of SCOTT owners theniselves, from Filorida to Washington, from California to Mainel

There's a story of reception of U. S. A. Stations from H. L. Davis written from the battleship U.S.S. Oklahoma, tied up in the Portsmouth, England navy yard! Oboe player James B. Spear put SCOTT high fidelity tone to an "acid" text-read how he did it! Learn what the exclusive SCOTT Volume Range Expander did not only for Radio Programs but to old phonograph records!

This is but a fragmentary sketch of

the fascinating adventures SCOTT owners unfold in this mountain of EVIDENCE—conclusively establishing the world supremacy of the SCOTT.

Every tone—every silvery harmonic of the flute—every thundering thrill of organ bass—you hear them all in their inspiring and exquisite truth of tone on a SCOTT.

Clear, dependable, foreign reception, with ample volume, from practically every country on the face of the earth!

Every radio enthusiast will want this brochure, for it's the first of its kind. Your sending for it obligates you in no way. Your copy will be mailed to you FREE at once upon receipt of the coupon below. Fill it out and mail it nov!

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Cultural interests have in many ways long since burst land and sea boundaries. Thousands have searched for years without *real* success for a radio that would bring in the endless procession of world music and news free from distortion of tone.

In the new 23-Tube Full Range High Fidelity SCOTT you will find, for the first time, a glorious and perfect musical instrument that finally satisfies that deep and lasting pride of ownership that comes of ownership that comes only from the knowledge II, in addition to the book IF end that you want

E. H. SCOTT RA	DIO LABORATORIES, INC.
4424 Ravenswood A	Avenue, Dept. 15C7, Chicago, Illinois
630 Fifth Avenue, New York, N. Y.	115 N. Robertson Blvd., Los Angeles, Cal.

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SCOTT receivers are not sold through dealers but direct from SCOTT Laboratories where each is custom-built to order. Only in this manner can any radio guarantee its owner the world-supreme performance for which SCOTT receivers are famous. In New York and Los Angeles I have direct branch Studios as well as a Studio at the Laboratories in Chicago; all are owned and operated by me. If you live near any of the studios call, and see and hear an antan living room demonstration of the SCOTT. Your order placed at any of the studios will receive the same immediate attention as though you had mailed it to Chicago. Studio addresses are

below 19

complete Information on the Custom Built SCOTT Radio itself, or want a "living room" demonstration in our New York, Los Angeles or Chicago Salon, simply place a check mark in the space provided for this purpose on the coupon.

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MARCH 1, 1937







PAGE TAYLOR Editor

Associate Editors B. FRANCIS DASHIELL, Technical CARLETON LORD, Broadcast

THIRTEENTH YEAR

NUMBER 107

Page

CONTENTS

Cover Girl-Joan Blaine, in A Tale of Today

Let's Get Ready for Television, by B. F. Dashiell	3
The RADEX Mystery Contest	8
Do You Remember? by James Hall	11
The RADEX Puzzle Corner	12
With the Station Hunters, by Carleton Lord	13
Listeners Wanted	19
Unusual Service Problems, by the Technical Editor	20
Hints for Shortwave Fans, Part II	27
Tuning the Amateurs, by Bernard Ahman, Jr.	30
Leaves from a DXer's Scrapbook, by Count de Veries	32
The Shortwave Listeners Report	35
Ten Meters for DX	42
The Month's Changes	48

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THE RADEX PRESS

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Let's Get Ready For TELEVISION

ONTRARY to popular opinion there is little that is entirely new to the art of television. Many of its basic principles have been known for a long time. Some of these things were accidentally discovered far in the past century. However, television, like radio, could not be developed until some means of amplifying very weak electric currents had been found. Then came our modern radio and cathode tubes. Now these ideas have been assembled, and television will become the great achievement of 1937 and the years to come.

So let's be ready for television when it arrives fully grown. We all know that the world's greatest scientists have been working steadily on the problem. Success is at hand, and sight broadcasting is about to be added to sound reception. As this will revolutionize the radio world we should be prepared, but television need cause neither uncertainty nor misunderstanding in the minds of the people for whom it has been designed.

Television has passed through a period of development and, unfortunately, considerable premature exploitation. Many of us seemed to lose patience, while others lost some of their savings in various schemes. We still remember vivid promises that faded as the years passed by but at last real progress has been made, actual receivers of excellent ability have been completed, and here and abroad the public is being given a taste of what is soon to come.

What Is Television?

Before we attempt any discussion of television, let's have an understanding of the meaning of the word

• • By B. FRANCIS DASHIELL

itself. Like "telephone" and "telegraph," it bears the Greek prefix "tele." This means, in effect, "far off" or "distant." To us, the remainder of the words is obvious. "Vision" means to "see"; "phone" signifying "sound"; and "graph" meaning "write." Thus, we the from afar," have "sound at a distance," and "write far away."

Television must not always be associated with radio. The loose conception of the word may cover transmission of "still" pictures by Certainly most of us are wire. familiar with "Wirephotos" that ap-"Still" pear in the daily papers. such as photographs, pictures. drawings and letters, are transmitted in facsimile. Even newspapers are copied over long telegraph lines. On the other hand, actual living scenes or motion pictures may be sent to distant points by the medium of land wires or radio. Radio, however, presents the greater prob-



lem, but offers the most to the public.

Right now the public fancy is television by radio—or "radiovision" if that term pleases. This is a natural result, for surely we look to radio to bring television entertainment into our homes. And; when the new receivers become available, as they are here and in England to a limited extent, we shall be able to watch plays and movies and actual scenes, while at the same time listening to the sounds of music or voice as at present.

Unmasking Television

Television works essentially the same as radio. The greatest difference is the manner in which the signals are picked up and received. Instead of gathering sound in through a microphone, we must take light and broadcast it, in its many shades or degrees of illumination, as a simple radio wave. And the receiver. instead of throwing sound into a room from the loud speaker, must reassemble the jumbled radio signals in an orderly manner so as to recreate the picture, either "still" or "moving," and project it on a screen in the radio cabinet.

Some of us are not familiar with the simple fundamentals of radio how it picks up the sound waves from a speaker's lips as they strike the microphone, and converts them into a flickering electric current that is impressed upon a penetrating "carrier" radio wave which is projected into space. As much of this is almost identical to the telephone, let us briefly consider that essential instrument.

First we speak into a mouthpiece which is the microphone. The air waves we set in motion strike the thin inner surface and cause it to vibrate in harmony with our voice vibrations. In turn, these vibrations work to vary the resistance of an electric circuit, and the current flowing through it begins to flicker or fluctuate in exact pitch or unison. Then, these variations of current, after passing over miles of wire, enter an electromagnet within a telephone receiver, somewhat similar to the loud speaker. The strength of the magnet changes with the current variations; and a thin iron disc, fastened close to the magnet, is set into vibration. By placing one ear close to the disc we hear the original speaker through recreated sound waves.

Turning Vision Into Sound

Similar things happen in radio. The tubes and tuning parts are merely means toward an end. The essential thing in any case is to convert sound into an electric current that carries characteristics similar to the sound waves. Any text book on physics or radio will be illustrated by some wavy lines that depict sound through the air or carried by an electric current or radio wave Then the electric vibrations are converted again into mechanical vibrations so the ear can understand. There is only this and very little more to the fundamental action.

Let us remember, then, that radio can transmit and receive only electrical vibrations. When we have only sound, such as music or speech, the job is relatively simple, as we have observed. But when we attempt to use a picture or an actual living scene, and change *that* into electric vibrations which can be transmitted over a wire or through space by radio, we are faced with quite another problem.

But this is exactly what happens when we place a photograph or actual moving view before the television transmitter. Strange as it seems, a picture can be broken down flickering electric impulses into which are passed along a wire or through the air the same as any sound vibration. Thus we can obtain a one-way movement (length) to the characteristics of something that previously possessed two-way dimensions (length and breadth). At the receiving end these unidirectional electric waves are assembled again into a picture having its two dimensions. Radio is merely the medium of transmission. The mechanical work of breaking down the picture and putting it together again is separate and distinct from the radio operation. Let us, then forget radio for the time being.



A picture of Jean Muir transmitted by televasion and received on a Philco receiver at a distance of seven miles. The 345 line system is employed.

Photo-Electric Cells

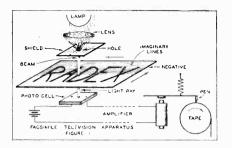
The discovery of the light-sensitive or photo-electric cell, frequently called the "electric-eye," dates back several generations. This, together with the moving picture, gave television investigators something to tie up with radio. The cell provided ways to control electric current by means of light. But this was not sufficient, for some method of splitting the picture into divisions or elements that could be transmitted successively was required. The early motion picture inventors, such as Nipkow, Weiller, Jenkins, and others, created whirling discs for this purpose, and they are still in use today.

In its simplest form the lightsensitive cell consists of selenium arranged so as to provide a resistance in an electric circuit. This re-

sistance varies whenever the cell is illuminated. Merely lighting а match will ring a bell; but in its highly developed state, such as the bolometer, the cell will measure the light from a tiny, distant start. The modern photo-electric cell will cause changes in the strength of an electric current when seemingly imperceptible variations occur in the illumination that falls upon it. On the other hand, in the receiver, tiny pulsations of current control powerful changes in the light that illuminates the television screen.

If a beam of light falls upon the photo-electric cell it causes a change in the current that flows through it. If anything passes through this ray of light so as to intercept it, there is an instant break in the current. Any opaque object will completely cut off the light and cause a mini-

Radiograms will be accepted free of charge by any amateur for transmission via "ham" radio to RADEX. Contact station W8BKM or W8PNF at Conneaut



mum of current to flow. But when a shaded or translucent object is used, less light will be cut off, and a little more current will flow. Now, if a transparent surface having different shadings between black and clear is passed slowly through the ray of light, the current flowing through the circuit will change accordingly.

Black Line Impulses

In this manner a light beam can be broken into impulses that correspond to the black lines of a drawing traced on a transparent surface. These impulses bring about changes in the current flowing through the circuit and may be detected any distance away. With this effect in mind we are ready to study an elementary television sysem that can be used to transmit pictures which are drawn in black and white.

First, we must study the simple circuit shown in Figure 1. There is a source of light, a concentrating lens, a sheet of opaque material with a tiny pin hole in it, and a sensitive photo-electric cell. The latter is connected in an electric circuit. Some distance away a magnetic relay moves a pen each time the "electric eye" permits a current to pass. The pen then touches a narrow strip of paper passing beneath, and makes marks whenever the sensitive cell operates.

Now draw some black lines on a sheet of clear celluloid. Pass the sheet slowly from side to side through the light ray that comes through the tiny hole in the shield. Each time one of the black lines intercepts the tiny beam the current flickers and the pen will tap the paper. If the paper passes beneath the pen at *exactly the same* rate of speed as the celluloid is moved through the light ray, the distances between the marks on the tape and the corresponding portion of the picture will be the same. This brings us to one of the most important problems of television.

Synchronization

As long as the transmitter (sheet of celluloid) and the receiver (paper tape) run together always in step, the received picture will be synchronized with its original. Lack of synchronization produces distortion and the received picture will present only a meaningless jumble of marks. However, the new television receivers will automatically control synchronization, for timing signals keep the sending and receiving ends in exact step.

Instead of black marks on the transparent sheet let us sketch a picture in black lines. Place its upper-left-hand corner in the light ray. Then pass it steadily across until the spot of light rests on the upper-right-hand corner. The spot of light has then traced a horizontal line directly across the picture. The paper beneath the pen, which has moved at the same speed, bears marks that correspond to the black lines on the original. Return the picture to the left-hand-side, but not through the light ray. Then move the picture vertically upward, a fraction of an inch, and repeat its passage through the beam. This time the spot of light traces another horizontal line, but slightly below, and parallel to, the first. Now repeat the operation until the picture has been entirely passed through the light ray, and the little spot of brilliant light has swept across in many horizontal lines.

Each time the black lines of the picture break the light beam they operate the pen and make marks on the paper strip. Now, if this paper tape is cut into sections, and each placed parallel, side by side, so the rows of markings are spaced just as far apart as the original lines on the picture at the transmitter, a rather striking reproduction of the original picture will be produced. Of course, if the paper tape could be replaced with a sheet of paper that moves across horizontally, and vertically, a line at a time, always in step with the movement of the transmitting picture, a complete reproduction will be drawn by the receiving pen. Actually, all this is done, mechanically and electrically, in a more refined manner by commercial photograph transmitters.

Scanning the Pictures

The spot of light that moves across the image being transmitted is said to "scan" the scene. "Scanning" actually is accomplished at an extremely rapid rate. In the early days of television the best types of scanning devices, such as the Nipkow disc, wiped the spot of light across the picture about 25 times. This created 25 "lines." Then, when the last line was traced, that particular picture was completed, and the next "frame" began with another 25 lines. There usually appeared about 17 of these "frames" to the second the same that moving pictures used, and this meant that the disc turned at 17 revolutions per second. As scanning breaks up a picture into very narrow strips that apparently possess only length, it becomes obvious that the finer and closer the lines the clearer the results will be. This is a well-known fact in photo-engraving, such as the photographs reproduced in this magazine.

In the same way a photograph may be broken down into "lines"

or strips having their part of the high lights and dark shadows. The shadows vary the electric current proportionally. The current, instead of coming in sudden surges, as it does when a black line drawing is used, pulsates up and down in strength. For this reason the pen is no longer useful at the receiving end, for it cannot distinguish between faint shadows and solid blacks, and marks all alike.

Replace the pen with a tiny spot of concentrated light. It will now be possible to receive a photograph, for the lights and shadows of the original negative will be faithfully reproduced by the flickering of the illumination. As the spot of light sweeps, from left to right, a sheet of photographic paper, it affects the sensitive surface. Then the sheet must be moved up vertically to begin the next line. After the original negative has been passed completely through the transmitting beam of light, and the sensitive paper on the receiver has been covered by the flickering spot of light and finally developed, we shall find a very good print of the nega-All this, of course, hinges tive. upon whether the two operations were exactly synchronized.

Living Scenes

The ultimate goal of television is the recreation of action—either motion pictures or actual, living scenes from studios or distant points. While we can product "still" pictures with perfection, provided there is a sufficient number of "lines" to create every detail, we must work faster if a true, moving scene or picture is to be shown.

But, before we can grasp how all this happens, we must know something of the motion picture camera and projector. A moving picture machine projects in shadow on a screen a rapid succession of individual "still" pictures. Each of

(Please turn to Page 75)

The Mystery DX Contest

S FINAL plans for the second Mystery DX contest approach the completion stage, it is evident that DXers of North America are in for a grand session of dial twisting over the week-end of February 20-22. If readers were able to gaze over our editorial shoulders. they would see the last-minute preparations for one of the finest DX marathons ever staged.

Since this issue will be on numerous news stands and in the baods of many subscribers before the contest actually gets under way, we cannot comment on the line-up of stations. However, our "CPC work" has been very successful and we can assure contestants of a great array of broadcasters.

Stations in every part of the country have expressed their willingness to participate, and we know that the final line-up will meet with the approval of listeners everywhere.

The actual scheduling of stations was done after full consideration had been given the particular requirements of every locality. We do not believe that any section of the country can complain that it did not receive an opportunity as good as any other territory.

One of the admitted weaknesses of last year's contest was an unintended hardship placed on West Coast listeners. During the 0200 to 0300 EST hour on each of the three mornings, stations in California. Oregon and Washington were still on their regular daily schedules. Obviously, it was a physical impossibility to dial each of these stations in search of a contest broadcaster.

This handicap has been eliminated by a definite policy in scheduling. During the 0200-0300 EST spot each morning, no station in the Pacific Time zone will be transmitting for the contest. Thus, listeners out there

can dial East with the knowledge that they aren't missing a thing.

Furthermore, realizing the congestion on the West Coast channels during this hour, we have made a particular effort to schedule only the more powerful stations which have a good chance of reaching the Pacific Coast at this time. With but one or two possible exceptions, a Western DXer should have no difficulty in tuning Central and Eastern



The Spider-Web antenna erected. This aerial system incorporates a series of doublet antennae and an improved trans-mission line to the receiver. It covers exceptionally wide band of frean auencies.

stations during the first hour each morning.

Scoring Changes

As noted last month, the scoring system has been altered slightly in an attempt to make up for possible handicaps of listeners on both the East and West coasts. We are of the opinion that this will eliminate any advantage of location on the part of contestants in the Central states, and will give every listener an equal opportunity to win one of the valuable awards.

Reports will still be judged on length and completeness. The mere identification of a station, which necessitates the definite reporting of one selection or announcement, won't be worth as much as a complete report, which must have at



The well-known RCA-Spider Web antenna kit which will be given as one of the prizes in the RADEX Mystery Contest.

least three successive selections or ten minutes of program material.

However, points for the two classifications will be awarded on a mileage basis. For an *identification report*—if the station is less than 200 miles from the contestant, $2\frac{1}{2}$ points; between 200 and 2000 miles, 5 points; more than 2000 miles distant, 10 points. For a *complete report*—if the station is less than 200 miles from the contestant, 10 points; between 200 and 2000 miles, 20 points; over 2000 miles distant, 30 points.

We do not believe that contestants will have a great deal of difficulty in determining the mileage of each station heard. Most of the reports will undoubtedly be for stations between 200 and 2000 miles distant, and these will be easy to classify. All distances will be measured between the home town of the listener and the city in which the principal studios of the station are located, as listed in RADEX.

Contest Rules

As noted in the February issue, all contestants will compute their own scores and submit entries on the official contest forms supplied by us. However, all points claimed and so awarded will be subject to confirmation by the judges, and the decisions of the judges in all cases will be considered as final.

All entries must be postmarked

no later than February 24, 1937 at midnight and should be addressed to RADEX, Box 5284, Oak Lane Station, Philadelphia, Pa. Readers will note that this is a change over the address given in the February issue.

Because of the nature of the mail, all entries must be sent first class, and care should be taken that sufficient postage has been used. Entries arriving with postage due will not be accepted.

If one station is heard broadcasting for the contest on more than one day, it should be counted as many times as it was heard and a separate report made for each day. In no case, however, may a station be counted more than once on the same day, regardless of how many hours it may broadcast.

Late Comers

As a concession to DXers who wish to take part in the contest and who did not get their request for entry forms in by February 1st, we will continue to fill orders for these forms as long as the supply lasts. Late requests should be accompanied by the regular entry fee of 25 cents in coin or unused stamps, and should be addressed to RADEX, Box 5284, Oak Lane Station, Philadelphia, Pa.

All such orders will be filled on the date received, but we cannot assume responsibility if they are not received in time to be filled out and mailed before the contest deadline.

Verifying Contest Stations

In the February issue, we specified that no verifications would be issued for reports on contest stations. At the request of a number of stations, we have decided to reverse that rule.

If contestants desire a verification of a participating station, we will issue personal letters of confirmation for any broadcaster correctly reported. All such requests should be kept separate from contest entries and should be accompanied by 10 cents in coin for each verification desired.

All verification requests should be sent to RADEX, Box 5284, Oak Lane Station, Philadelphia, Pa. This is the third time that address has been given, so please use it for all contest correspondence!

Up Among the Prizes

After all reports have been checked, the contestant receiving the highest number of points will receive the latest model 23-tube Scott Full Range High Fidelity Receiver. To many fortunate readers, this outstanding custom-built model needs no introduction. Individually assembled in one of the country's finest radio laboratories, the Scott receiver enjoys an enviable reputation among those who insist upon the best.

Since November 1st, one of these receivers has been on test at our radio den and its performance has consistently amazed hard-boiled DXers. Combining a wonderful quality of reproduction with extreme power, sensitivity and selectivity, it leaves nothing to be desired in the way of a radio, regardless of one's individual requirements.

Another prize which will be a welcome award for some contestant is the Sky Buddy model of the Hallicrafters. A five-tube job covering 18 to 555 meters, this receiver incorporates many features found normally in far more elaborate models. Α built-in audio beat oscillator makes DXing easy and enables the ham to copy his code stations. An illuminated airplane dial is accurately calibrated over the entire range of frequencies and makes for easy tuning. A built-in headphone jack on the front panel will be appreciated by all DXers. Reports from owners indicate that this is an exceptionally fine little receiver.

Radio Reference Library

The bound study and reference texts of the National Radio Institute is going to be a valuable addition to the library of the enthusiastic radio fan. These are the same texts used in the famous NRI correspondence courses and as such may be depended upon for accurate coverage of the fascinating subject of radio.

The DXer who likes to fuss with aerials will undoubtedly be pleased with another contest prize. This is the well-known RCA Spider Web antenna kit, which is particularly valuable for all-wave reception. Combining its experience in transoceanic communications work with its knowledge of home receiver requirements, the RCA engineers have developed a system which incorporates a series of doublet antennas and an improved transmission line to the receiver. The result of this arrangement is more stations, less noise on the short-wave bands, and an extremely wide frequency range-140 to 70,000 kcys.

Most listeners are familiar with National Union radio tubes, and some lucky contestant will win a replacement kit of as many as 12 of these tubes.

The Trimm Featherweight headphones are acknowledged by radio operators and DXers alike as just about the best in the field, so we are sure that this prize will be welcomed by one of the winners.

The replacement kit of six Arcturus tubes is going to come in mighty handy some morning when the receiver loses its punch. All DXers know the importance of having tubes in good condition, so here is a prize that will help increase the log.

As many readers have been enthusiastic about our Perfect Phone Adapter, we know that this prize will be well received by a winner and it will help him "well receive" a faint station some morning.

The regular prize list is concluded with one of our World Globes and five yearly subscriptions to RADEX.

In addition, however, there will be (*Please turn to Page 59*)

Do You Remember?

James L. Hall, 1267 Fennimore St., Fairmont, W. Va., on checking the January issue of RADEX against a list published by the Department of Commerce on June 30, 1924, finds that only five stations, KFI, WGY, WJAG, WLS and WMAQ have retained their 1924 frequencies to the present time. No station has the same power now as in 1924.

Mr. Hall has compiled some of his recollections of early radio in a column he calls "Do You Remember?" which appears on this page. He would be interested in hearing the recollections of others about some of the early entertainers as well as about the stations themselves.

Do you remember when the first broadcasting (not experimental) licenses were issued in September 1921?

When the first neutrodyne receivers appeared?

When in March 1923, KDPM in Cleveland first used shortwaves as a means of repeating programs from KDKA? This process was put into large scale operation by KDKA and KFKX in Hastings, Nebr., about a year and a half later.

When KDKA transmitted the first shortwave program to England? (December 31, 1923). The first American program to be rebroadcast in England was transmitted by the same station on February 5, 1924, and on October 11 of the same year a program was rebroadcast in South Africa.

When the government list showed 22 stations of 1000 watts or over and only KGO and WEAF used the "super" power of 2000 watts? (February 1925).

When KOP was the station of the Detroit Police Department?

When the Florida boom of 1925

F you are interested in television, you ought to understand radio. Mr. B. Francis Dashiell, the author of the Story of Television running currently in RADEX, has written a book called

The Beginners' Story of Radio

in which the fascinating story of radio is written in plain English so everyone can understand it.

This leatherette-bound book, illustrated with 63 diagrams, explains everything that takes place within a radio receiver.

We will send you a copy for only 35 cents.

The RADEX PRESS Conneaut, Ohio

brought us our first consistent reception from that state with WMBF, WGBU, WJAX, WIOD and WGHB as new stations?

When PWX, 6KW, 7SR and 2BY were the Cuban standbys?

When CZE and CYJ in Mexico City were the only Mexican stations we could log and they both refused to answer letters?

Local papers report that a construction permit has been granted for a new station for Ashtabula, Ohio. It will be owned by the publisher of the Ashtabula Star-Beacon and the Conneaut News-Herald.

The RADEX Puzzle Corner

When the Call-O-Gram printed in the February RADEX was correctly solved the two middle lines read RADEX WISHES YOU THE BEST OF DX. The calls are:

- 10. What is the peculiarity of the call letters KYW, KDKA, KQV? (Answers on Page 34)
 - 1 32?1000 5???6???7???8??? ?? rtical

- 10. WHO 11. KGEF 12. XES

1. RTA

2. WDAH

5. W9XBY

3. KGDE

4. XEE

6. EDT

8. KIT 9. WOS

7. WSUI

- 13. DX
- 14. WAYX
- 15. KPO or KGO
- 16. XEU

Guess Again, DXers!

Compiled by Moe Luff, 2039 Hughes Ave., Bronx, N. Y.

- 1. What do the call letters KLUF stand for?
- 2. What call letters when inserted in the center of LACE will give the name of the city in which it is located?
- 3. The call letters KSAC stand for . . .?
- 4. What west coast stations' call letters, when reversed, will give the call letters of an east coast station?
- 5. What three U. S. call letters when reversed will give you one each in Canada, Cuba and Mexico?
- 6. What do the call letters KCKN signify?
- 7. What do the call letters WNNY signify?
- 8. What station is not but should be located in Chicago, Ill., and why?
- 9. The call letters CHWK signify . . . ?

Horizontal	Vertical
3 on 1310	1 880 in Calif.

- 4 in Jackson
- 5 1310 in Pa.
- 3 does not verify. 6 Illinois, not Chi
 - in Ala cago
 - 4 West Lafayette 5 Jacksonville

2 a poem

7 Capital of the State 6 Miami 8 on the MBS 7 Detroit

The final letters of these calls will spell a word.



Nadine Conner, soprano, who was chosen by Nelson Eddy to accompany him on his nationwide concert and radio tour. She is 27 and sings in seven dif-ferent languages.

With the Station Hunters

F ALL the material published in RADEX during the past year, a story in the May issue, "Five Years of DXing" by S. R. Lewis, has been the subject of the most reader comment. Written by a well-known DXer and the winner of last year's Mystery DX Contest, the article was an interesting treatise on long-distance reception.

The comment-provoking part of the story was the statement that, in June of 1934, Mr. Lewis had verified all but two active stations in the United States. At the time the copy went to press, our only reaction to the claim was that it was a laudable achievement, testifying to the skill which later won an important DX contest.

That some readers were not of the same opinion was soon evident. A few listeners protested that it was impossible to hear that many stations. One of these letters was printed last fall. Other DXers joined in the discussion—some questioning the claim, others citing similar records by equally prominent listeners. In the January issue, a reader suggested that Mr. Lewis must have done a lot of traveling to hear so many stations.

While RADEX will not attempt to decide what can or cannot be done in the way of reception, it will make every effort to give both sides to all questions. In another section of this issue, Mr. Lewis answers his critics with a logical analysis of the problem.

Further support comes from a well-known DXer who prefers to remain anonymous. He writes: "I believe many DXers have logged practically every station in this country. At the present time, I have logged every station which has been

• • • By CARLETON LORD

on the air for three years or more, and I'm closing in on those which have opened only recently. Naturally, it would be impossible to do this in a month. It took me over eight years to get as far as I have. However, although my BCB log is getting close to 1300 stations, my list of foreigners is no longer than that of the average DXer with a total of 500 stations."

Counting Verifications

Another mooted point, which has been dormant for some time, concerns how to count verifications. The question is probably one which will never be solved to the satisfaction of everyone, but Stephen G. Spicer, 2030 Lenox St., Harrisburg, Pa., has his ideas on the subject.

"Here is the rule that I go by," he informs. "If the call letters are changed, it is a new station. I support this contention with the reasoning that there is a new call letter listing and a new card or letterhead. If a station changes its frequency, it should be counted again. This is be cause its old wavelength might produce a better signal than its new, or vice versa. In other words, it may be more difficult or it may be easier to hear.

"As for the power, they all have enough watts to run, or we wouldn't hear them. If a station boosts its power, it may come in easier. If they lower the power, it is interesting to see if you can still hear the signal. So I don't call this a new station when heard a second time."

It seems to us that the questions of power and frequency are pretty much the same. A change in either can affect the ease with which the station is heard in a given location. Thus, if a variance caused by a frequency change justifies the counting of a new station, why shouldn't a similar variance resulting from a power change receive the same consideration?

Of course, every DXer is going to continue his own methods of counting stations, shaping his policies according to his particular fancy. No amount of written arguments, editorial opinion or club regulation will alter his decision. A listener DXes primarily for his own pleasure and will govern his hobby to give him maximum enjoyment.

The only catch in the system is the difficulty of comparing logs. The conservative listener will consider only the most radical changes in call and location, discount deleted stations, and otherwise check a growing log. Another DXer will take advantage of every change as a justifieation to add to his total. Although both may have heard the same number of stations over a period of years, the first may show a current log of 600 veries and the second may point with pride to 800.

Perhaps the ultimate solution will be to classify the various systems. When reporting to RADEX, one DXer will claim 450 veries according to the "don't-count-deleted-stations" system, a second will list 500 catches by the "don't-count-a-location-change-unless-moving-to-anotherstate" system, and a third might take cognizance of the times by reporting 600 veries under the "ICAC" system. This, of course, would be translated as "I count all changes."

Station Schedules

One of the most valuable station lists seen in many a moon appeared in the January 13 edition of National Radio Club bulletin. Tabulated by Arthur Brackbill, Lancaster, Pa., the list gave stations which are on the air early in the day and have a good chance of being widely heard.

On the air at 0600 EST are WAIM, WHIO, WSAZ, WTIC, WMBG, WAWZ, WIBW and WPRO. On the air at 0630 EST are WLW, WCSC, WSPD, WBNS, WCHS, WHKC, WLS, WMFR, WJEJ, WMMN, WFMD, WKZO and WTAM. Many of the lower power stations in this list are operating with clear channels at these hours and should be excellent DX targets.

Readers may undoubtedly supplement the list by consulting the time schedules in previous issues of RADEX and noting when needed stations sign on for the day.

Schedules from a number of Virginia stations are supplied by James R. Fitzgerald, Jr., RFD 4, Box 87-H, Richmond, Va. From his report we note that WRVA operated from 0700 to 2400 EST daily except Sunday, when they sign on at 1000. WMBG has a week-day schedule from 0700 to 2400 EST, and on Sundays broadcasts from 1330 to 1930 and 2130 to 2400 EST. WPHR operates from 0700 to local sunset. WBBL has a Sunday schedule from 1100 to 1215 and 1945 to 2115 EST.

California News Notes

"The populace out here is standing on its head," observes Roy E. Covert, 3940 24th Street, San Francisco, Calif., "trying to remember which station is served by which network. There now appear to be five major networks in the state---NBC Red, NBC Blue, Columbia, Mutual and the California Radio System. The San Francisco street cars now bear a poster on the dashboard: 'Your favorite Columbia programs are now being presented over KSFO.'

"After tying up with CBS, KSFO has dropped its after-midnight schedule. KROW has cut an hour off of its broadcasting day and now signs off at 0100 PST, KYA, just to be different, added two hours to its schedule and now continues until 0200 PST. KGGC has installed a new transmitter, which is now being tested in the early mornings. KVCV came on the air recently and shows a nice signal around 1800 PST. KYOS, another new station, is very strong during the day. KHSL and KTRB also show a good daytime signal, but lose out at dusk to KFWB and WSB respectively."

"On December 18th," notes Anthony C. Tarr, 909 W. Lee St., Seattle, Wash., "I heard the inaugural broadcast from KLAH, Carlsbad, N. I was tuned to their frequency M. at 0300 EST when they put their carrier on for the first time, so can claim to be one of the first DXers to hear this new station. So far, the seasons' best reception has been from 4BU, a 100 watt Aussie on 1480 kcys. They were heard on December 21st with a signal ranging from R2 to R5. The most consistent TP has been 4BH, with 600 watts on They have been heard R7 1380.when no other Aussie could break through the QRM."

"I have been hearing CKCV at Quebec on two different frequencies," announces Allan Ford, Portneuf Station, P. Q. "I have tuned them on approximately 1440 kcys with a good R8 signal, and then go down to 1310 and find them with no more than an R7. This has been carefully checked several times. On December 18th, I heard a mystery station on 1449 kcys. At 9:28 PM. they struck a gong and then announced, 'This is the Canadian Radio Broadcasting Corp.' A heavy hetrodyne from WHOM hung over the signal and they finally signed off at about 10:30. Would appreciate any help as to the identity of this one."

Noise Hurts DX Interest

"In the January issue you say that over-activity of CPCers hurts DXing," reminds Harold Wagner, 328 Hess Ave., Erie, Pa. "I agree with you in part, but contend that heavy interference also is a big factor. A few years ago, we only had to contend with local noises such as those caused by street cars, household appliances and the like. This made DXing difficult but not

impossible. This year the interference seems to be from the power lines and can be heard at great distances. Recently I drove out 20 miles from Erie and turned on the car radio. Although I was two miles from the nearest power line and a mile from a telephone line, the steady buzz could still be heard.

"It seems to me that the government should do something about such a situation. Canada and several foreign countries have a very efficient service for the elimination of interference. I should think that most radio owners in this country would be in favor of laws to control and eliminate radio noises."

Although a poll of listeners would probably show an overwhelming majority in favor of such legislation, it would undoubtedly be difficult to start a concerted action along those lines. The average listener is pretty much an easy-going individual, content to let things pass as they come. If radio interefence gets too heavy, he merely shuts off his receiver and turns his attention to something else.

Also, it is possible that much of the noise we hear today is not caused by electrical appliances. A year or so ago, a peculiar wave of interference was reported throughout the East and could hardly have been caused by any one device. It must be remembered that we are in a period of increasing sunspot activity and some of the noise may be coming from these magnetic disturbances. The last similar period was in 1926, when little or no attention was paid to radio noise. Thus, without any real precedence to go by, we cannot say what is the cause of some forms of interference.

"As a result of eight years of DXing," sums up Fred Stone, Kintnersville, Pa., "I now have all but 48 stations in the United States, all in Canada, nearly all in Cuba and Mexico. During this time, the same receiver has averaged 12 hours a day and I am still using only the second set of tubes. Add that up and you get quite a total."

Foreign Reception

"A year ago I asked you why I had never received any foreign stations," recalls Robert R. Shellard, RFD 5, Brantford, Ont., "although other DXers reported them regularly. I received many letters, all of which suggested that I put up a long aerial. This was done this fall, when I strung up 400 feet of wire. It is working very well.

"I started a new log in September and so far have received 335. My log for the past two seasons was 428, so I feel that this is quite an improvement. The best catches have been TGW, KGU and KHBC. There are 24 in California, about half of which are less than 500 watts in power. But I still have no foreigners!

"Of course, I don't expect to get them all at once. In fact, if I had been told last year that I could get a 250 watt station in Hawaii like KHBC, I would have thought the fellow was imagining things. It may be that foreign reception just isn't so good this year. At any rate, I am still trying and seem to get a little farther each time. I will get there yet!"

That most things come to he who waits is evidenced by a report from Frank Wheeler, 406 Eagle Point, Lakeside, Erie, Pa., who writes:

"At 0245 EST on January 3rd, I received my first trans-Atlantic station. It was Radio Normandie! I had been trying four years for a T.A., and at last I landed one. This season seems to be better for DX than last year. Perhaps it is because I am now using a 12 tube set as compared with a 9-tuber last year. Anyhow, I have received so far 22 new stations and two foreigners. while at this time a year ago I only had 19 new stations and no new foreigners."

"In preparation for the present

DX season," advises Harry V. Adams, Bay View, Digby Co., N. S., "I purchased a new Stewart Warner R-182-X receiver. It is a 6-tube job and I am well pleased with its performance on the broadcast band as well as the short waves. In seven weeks of listening, I have heard over 200 BCB stations and reports are out to LR1, LS2, Lille, Rennes, Belfast and Radio Normandie. Other foreigners heard include 1YA, 4YA, Paris, Bordeaux, LR4, PRC6, LT3 and Lyons. Would appreciate letters from other readers who have this type set."

"I have finally logged two broadcast band stations in South America," pridefully proclaims Roy B. Edge, 14 Villa Ave., Buffalo, N. Y. "I have LR1 and LR4, catches which I had begun to think impossible. I had been reading where so many listeners were hearing all this foreign DX and, like many readers, began to think that it was a lot of bunk. However, I finally heard these two and it proves to me that patience is rewarded in the long run.

About Reports

In the opening paragraphs of the December DX article, we commented on an incident which brought no credit to American DXers. We referred to a report published last spring in which a reader listed a number of foreign stations which he claimed to have heard.

The publication of such a report was not in itself unusual. Scores of DXers throughout the country enjoy foreign reception with a fair degree of consistency. Given a clear morning in the right season of the year, the average listener has an excellent chance to span one of the oceans and bring in a station in Europe or Australia.

The trouble with the report in question was the simple fact that, at the time two of the stations were supposed to have been received, both were still in the process of construction. This fact was established by an Australian listener and was checked with an official government report on broadcasting.

Lately the mail has been heavy with comments on the question of honest DXing. Many letters suggest that we expose listeners guilty of questionable practices. In the minds of the writers, nothing would be too severe for a listener who strayed from the straight and nar row.

While such a policy would undoubtedly drive suspected DXers out in the open, who is to say that they are guilty? We cannot help but feel that many innocent DXers would be drawn into an unfavorable position.

This magazine cannot attempt to decide what reception is possible and what is not. We will publish any interesting reports submitted by DXers of standing, in the belief that 99% of the DXers are honest. But here is the catch if the reports are too obviously exaggerated or false such DXers are pretty apt to lose their standing among honest DXers, because they surely will be recognized.

Old Issues Available

RADEX is now out of print for the years up to and including 1928. For the year 1929 a very few copies of Nos. 29, 33 and 34 remain on hand. For 1930 we have a limited supply of Nos. 41, 42, 43 and 44. We can supply complete files of RADEX from No. 41 through No. 106 inclusive.

Past issues may be secured at the regular rates, that is 25c for single copies, \$1.00 for five and \$1.75 for ten.

"Here is a suggestion for some of the radio clubs. I have heard at least one station in every state but Delaware. As there are but two stations in this state, I should imagine that there are hundreds of other DXers who should appreciate a special from one of them."

Another RADEXer who would

probably like a whack at either WILM or WDEL is Billy Snow, 302 Harrington St., St. Joseph, Mo. "I started DXing in February 1935 and have logged 510 stations since then. LR1 is my most distant catch, although I feel that KHBC is the best catch. Although I have no T. A. or T. P., I have Hawaii complete and that is something. All states but Delaware have been heard at least once."

Orchids to Brinkley

DXers may say what they will about Doctor Brinkley and his border stations, but they do owe him a vote of thanks for having XEAW stand by for the PRF3 special on January 4th. Reports in club bulletins and letters from readers indicate that the Brazilian station was able to get into this country, something that would have been impossible but for the courtesy of Doctor Brinkley.

"Reception on the BCB here has been generally poor," bemoans George M. Curl, 16 School St., Tilton, N. H., "except for a few fine nights when static didn't completely drown out weak signals. PRF3 was heard on their recent special test program but they came in faintly and verification was impossible."

"I started my sixth year of DXing in January," announces Robert W. Botzum, 633 Moss St., Reading, Pa., "and am still using my old reliable 8-tube Atwater Kent. At the time of writing, my log reads 892 stations heard and 800 verified, with several reports still out. Included among my veries are 19 T.A.'s, 15 S.A.'s and 9 T.P.'s. All told, I have tuned 31 different countries on the broadcast band."

"In your December issue, you printed a claim that WWJ and not KDKA was first in the broadcasting field," reminds William Sykes, 3885 Laurel St., Vancouver, B. C. "Three years ago I had a letter from KQW which read as follows: 'This will acknowledge receipt of your communication regarding listening to KQW's DX program in celebration of our 26th anniversary as a broadcasting station. For your information. KQW is a 500 watt station operating on a frequency of 1010 kcvs. Our station is "The Pioneer Broadcasting Station of the World" and we have sufficient literature in our files substantiate this statement.' to Their letter was signed by F. J. Hart, president; Ralph R. Bryan, announcer. and Dan Williams. operator."

Builds New Set

"The old 6-tube Erla TRF receiver has been retired," informs T. R. Grosvenor, 247 S. Hillside, Wichita, Kans., "after building a log of 880 stations for me. I have built a new all-wave set using a 56, 57, 2-58's, 55, 2A5, 45's in push-pull and 80 rectifier. Yesterday morning, December 27th, was the first time that I really DXed with the set and I was very well pleased with its performance. As I have not listened to the frequency check broadcasts since last spring, there will be dozens of new stations for me to go after. With the new catches heard this past week-end, my log stands at 898 heard and 442 verified."

"Although I have been listening to the radio since the early days of 1922," observes Ernest W. Law, 10439 69th Ave., Edmonton, Alta., "I did not start DXing until January 1935. So far we have received 523 stations and have verified 200 of these. It wasn't until last winter that we had any success with foreign stations, and then we logged 10 in Australia and, four in New Zealand. No luck with the South Americans, however, although we believe that most anything is possible in radio if you keep trying."

"This season has brought me 19 new stations," avers Clarence Wakefield, Wiarton, Ont., "to make a grand total of 715 on the broadcast band. I don't count changes in frequency or call, although about 55 on my log have been deleted since I heard them. So far, I haven't had a whisper from any of the T.A. stations. However, reception in other directions has been pretty good, with stations from coast to coast in the United States and Canada being heard, as well as a few across the Pacific."

Prize Letters

"I'm casting my vote in favor of the BCB prize letter in the January issue," ballots Edgar W. Jones, 1250



"Do You Want to be an Actor?" asks Haven MacQuarrie every Sunday night on the Chase and Sanborn program from Hollywood. In this program he gives movie-struck youth the benefit of expert coaching before they take parts in the final performance of dramatic sketches.

Fifth Ave. S., Lethbridge, Alta. "It was more interesting to me because the accomplishments of the blind are as great, if not greater, than those of us who have our sight. While the short wave tuning experiences are interesting, the feat could have been accomplished by a large majority of radio fans with much the same result. Mr. Lewis said: 'We can learn something of the very special brand of courage possessed by Frank Collins of Reubens, Idaho.' And we certainly can! The accomplishments of the blind cannot go unrecognized!"

"The National Radio Club was organized in September, 1933," supplies John C. Kalmbach, Jr., 1195 Wehrle Dr., Williamsville, N. Y., "and has grown steadily until we now have members in every state in the Union, in Canada, Mexico and other parts of the world. Our sixpage bulletin is issued weekly from September 1st to May 1st and goes to all members. Membership is \$1.25 year, with no initiation fee. а Further information may be obtained from the president of the club, Robert H. Weaver, 603 W. Market St., York, Pa."

Home-Made Booster

"Here is a hook-up which may be of interest to your readers," contributes M. F. Meade, 819 Wyandotte St., Kansas, Mo. "My sons broke into the r. f. circuit of my old Kolster K20, just ahead of the detector, and ran the signals into the aerial of a four-tube Philco midget. In other words, the Kolster was converted into an r.f. amplifier for the Philco. By using a double pole switch, the sets may be used in this manner or they may be operated independently as before. So far, the only drawback has been the broad tuning of the Kolster. We hope to correct this in time. Although we have no R meter. we would judge that careful tuning of the sets will increase signal strength about 200 per cent.

With Mr. Meade's letter was a sample of his new report card. It is just about the nicest one we have seen in a long time, and readers may have a sample by sending postage to Mr. Meade.

"In all my 10 years of DXing," postcards Charles L. Morgan, 800 E. 179th St., New York City, "I have never heard a better DX program than the one CFLC broadcast from 0200 to 0500 EST on December 27th. I gave them a report covering the full three hours. It was worth it!"

Listeners Wanted

The amateur radio stations listed below will be on the air at the times indicated and the operators request all listeners and amateurs overseas to report on their signals. Accurate reports, (from abroad only), will be verified for return postage, which can be sent in the form of International Reply Coupons.

These stations will be recognized by the phrase "Calling CQ DX on schedule." Address all reports to the stations in care of The Radex Press, Conneaut, Ohio, and we will forward them promptly.

The schedules below are effective from April 1 to May 1. Time is given in GMT.

W8BKM, Conneaut, Ohio, 3985 kcs. Every hour on the hour from 2300 Sat. to 1200 Sun.

W8PNF, Conneaut, Ohio, 14206 kcs. Every half hour from 2000 to 2300 on Sat. and Sun.

All radio amateurs who desire to contact far-off countries to complete their requirements for a WAC certificate are invited to use this column. The service is for those who use 'phone (A3) emission only. The requirements are simple: Requests are to be made in writing or via "ham" radio to RADEX. Operators must agree to QSL all correct reports if return postage is forwarded. Schedules printed in this column must be kept, on the frequencies specified.

Complete information about transmissions should be in our hands at least three months in advance to allow time for distribution of magazines throughout the entire world.

As most DXers are aware, there are many types of special broadcasts and one such as Mr. Morgan heard from CFLC is too seldom heard. The NNRC program from WOR on January 18th belonged in this class, and merely illustrated (*Please turn to Page* 43)

Unusual Service Problems In The HOME

• • • By B. FRANCIS DASHIELL

60 Vs 25 Cycles

I live in a district where the electric lighting current operates on 25 cycles instead of 60 as is usually the case. I am using a 60-cycle a.c.-d.c. receiver and it is not satisfactory. What I should like to know is whether a 60-cycle radio will work on a 25-cycle current. I have been told that it will not, but that a 25cycle radio will work on a 60-cycle current. There are so many conflicting statements that I would be happy if you would advise me correctly.

Of course, any radio will operate on the various lighting current frequencies. But entire satisfaction cannot be expected. In fact, to do so might endanger the set under certain conditions. The power to run the radio is obtained from a transformer, while in a 110-volt a.c.-d.c. set, certain other conditions current rectification prevail, of usually without the aid of a power transformer. It is safer, in your case, to run the set on 25 cycles than it would be if you had a standard transformer operated set. Your question, however, raises an interesting point, which will be of interest to many readers similarly situated.

Transformers are designed to operate on alternating current, and the frequency of that current, together with the size and quantity of wire on the coils, determines the output of the transformer in volts and amperes. The windings or coils are calculated to provide a certain resistance to the flow of current, which, with alternating current is known as impedance. Any change in the frequency of the alternating current flowing through the wires changes the resistance of the coil, and the lower the frequency the lower the resistance. If the resistance is too low the coil becomes a partial short circuit across the line and may heat to the danger point and burn out.

Therefore, a 60-cycle radio should never be connected to a 25-cycle lighting current. The voltage output of the transformer will not be correct and the set will not function properly. Heating will be noticed even if the transformer primary does not burn out. And the filter chokes and coils will not be of the proper size and capacity. Hum will be noticed. So, if you wish to use a 60-cycle standard radio on a 25cycle line it will first be necessary to replace the power transformer and then make certain changes in the filtering system to handle the slower alterations which are more difficult to filter out.

Such alterations usually consist of increasing the capacities of the filter condensers by not less than twice the original, or even more, sometimes as much as three times. Replacing the choke coil or coils by larger ones, have greater inductances in henrys, also will tend to eliminate the bad hum that is created.

Now, on the other hand, a 25-cycle radio will operate better on 60-cycle The resistances of the current. transformer coils are naturally greater and there is little or no danger of the primary burning out. However, some hum will be noticed, for the filtering system still is not matched to the current used. The values of the filter condensers (across the choke coils) should be reduced to about half of the

original, and smaller chokes might be used.

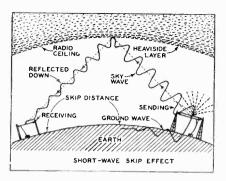
There is only one real solution to the problem that confronts the owner of a 60-cycle set where only 25cycle current is available, and that is to get a set designed for the current in the home. However, if the set is worth the expense, and a competent mechanic or serviceman is available, the changes suggested should be made. and the parts necessarv should be obtained from the manufacturer designing and building the set. The a.c.-d.c. set offers a slightly different problem, but in any case the hum that occurs can be dealt with as above mentioned. We suggest, however, in the case of an inexpensive set of this type, that a new one of 25-cycle design be procured.

Skip Effect

What is meant by the expression "skip distance" which one sees so often in radio magazines. Does it mean that radio waves skip from point to point?

It is known that radio waves can be reflected, just like light and heat waves. A radio wave, when it is shot away from its sending antenna, will travel outward by two routes ---one, the ground wave, and the other, the sky wave. The ground wave soon disappears; this is the reason why we can hear nearby stations with only a ground wire and no antenna. The sky wave is a radiated wave. High above us in the outer air is an electrical region called the Kennelly-Heaviside Laver. or the "radio ceiling." When radio waves reach the outer atmosphere they are reflected back to earth by this ceiling.

When this radio wave is reflected it comes down at an angle, far beyond the limits of the ground wave. Between the vanishing point of the quickly absorbed ground wave and the beginning of the area covered by the sky wave there is a wide area not reached by any radiation from



this particular wave. Signals cannot be heard here for this is within the *skip-distance region*.

The effect of skip distance is shown in the accompanying illustration.

Coaxial Cable

On page 9 of the November issue of RADEX is a reference to carrying images over a wire. I am interested in procuring information about sending images in this manner, and shall appreciate it if you can tell me where I can get more information on the construction and operation of such apparatus.

The coaxial cable that was mentioned in the article on television in the November issue of RADEX is designed to carry high frequency currents or radio waves without them being broadcast into the air. In this way the wide band of frequencies necessary to transmit visual signals can be sent from place to place by wire.

The coaxial cable idea was developed by the experts of the Bell Telephone Laboratories for carrying many telephone calls at the same time. It was found it could be used to "pipe" television images from one broadcasting station to some point of reception. We suggest that you write the Bell Laboratories, care of the Bell Telephone Company, in New York City, and ask for such publications they may have for distribution regarding this remarkable cable.

Adding Power Tube

Is it possible to add another type 45 power tube to my Midwest A.C. 9-tube receiver? If so, will any change in sound or power be noticed, sufficient to make it worthwhile? I wrote the manufacturers but to date have not had any instructions. I also would like to know what the present output in watts would be.

The Midwest receiver you own already has two type 45 power tubes, and it is not at all practicable to add one more. If any addition should be made, it would be best to add two new tubes, each paralleling one of the old ones. Such additions, however, call for changes in potentials furnished the tubes and speaker windings, and the drain on the rectifier system would not be advisable.

The power from this set is about all that you can expect with good tone. You might try replacing the type 45 tubes with type 47s, using the adapters made by Alden, and which are available at most radio supply houses. These pentode tubes give more true tone and slightly more power than the older types of power output tubes. The type 47 draws a bit more amperage than the 45 but the Midwest 9 should be able to supply this slight overload. The power output of the two 45s is slightly in excess of 2 watts while that of the 47s should be close to 3 watts.

Foreign Broadcast Reception

I wish to construct a receiver solely for DX reception on the broadcast band. What do you recommend? I have thought of three r-f stages, detector, and audio stages; or a superheterodyne with a r-f stage ahcad of the first detector. I have been a DX listener since 1923 but never had a set that would bring in foreign broadcast band stations. At present I have a ten-tube set that does not bring in foreign stations on the broadcast band.

First, before you have serious de-

sires to pick up foreign broadcasting stations in the so-called broadcast band, as we here in the United States understand it, stop to consider the distance away such stations are and the power they use. When a broadcast receiver is located on the Atlantic seaboard it is very obvious that consistent reception of the Pacific Coast stations is a rare event. There are so many stations working within the broadcast limits that even if a distant station is within range it might be drowned out or its signal heterodyned in such a way that reception and identification is impossible. To receive stations on the other side of the sea, even from the Atlantic Coast side of this country, requires the spanning of distances far greater than across the United States.

A good broadcast receiver should do this, of course, without much strain on its abilities. Whether a ten-tube set can perform is a question, but it is always exceptional when it does so. The larger sets, such as Scott's 20-odd tube, and others, have the ability to tune to and pick up those weak DX signals. And much DX reception on the broadcast band is being accomplished on smaller sets, when the weather is right, if interference is absent, and the time and patience of the operator perfect.

When you attempt to build a re ceiver that will do all this you are pitting all your untrained and inexperienced skill against the engineers and manufacturers who have been striving for just this same thing for years. Building simply a three-stage radio-frequency receiver will not give this sort of satisfactory reception, nor will a superheterodyne with a single r-f stage ahead of the detector solve the problem. Most superheterodynes now use a r-f stage ahead of the detector, only they call it a pre-selector. There is nothing new to this idea.

Sets of this kind can be built, and

such work would be highly interesting, using modern tubes of great amplification power. But the problems of shielding, tuning and perfect balance are almost insurmountable for the amateur experimenter. RADEX does not attempt to provide circuits for its readers, because it knows from wide experience that a mere circuit drawn on a piece of paper is not a proper guide to follow in building a set with modernday tubes and parts. A wiring diagram is the smallest part of the job. There are radio magazines that provide this service, which obviously is beyond the scope of RADEX, and we suggest that you carefully peruse the pages of some of these. We know that, unless we conducted an experimental laboratory, it would be unfair to all concerned if we described a set of great r-f amplifying powers, and did not give measurements, exact specifications, shielding and location of all parts down to the minutest details.

Tubes Burn Out

I have an Atwater Kent model 559 receiver which will not run over a month without burning out a tube. I had this trouble from the first, and three different repair men have been unable to locate the trouble. I should like to hear from you as I feel that you can help me.

When tubes burn out it is natural that an excess voltage on the heater or filament is the cause. Now, just what brings about these surges of high voltage often seems completely hidden, but it is a fact that the trouble exists. There is no cure except to find the cause. An examination with a test meter of the voltages across the heater terminals of all the tube sockets under all conditions of operation is imperative. Such things as cathode resistors and condensers and internal short circuits that might overload the heaters and filaments must be included in the search. The voltage divider that feeds these parts of the tubes, and the transformer section that provides current to the tubes all must be tested. The possibility of some loose contact causing a short circuit with a filament of a tube must not be overlooked. Try connecting a low-voltage a.c. voltmeter across the terminals of the heater supply from the power transformer and watching for a surge of increased voltage late in the evening when light switches are snapped on and off.

I have a Midwest receiver that uses 18 tubes. It seems to be off balance just now as the short wave stations do not all come in where they are supposed to. London comes in about 15 points off, and then at times it can hardly be heard. I put in a number of new tubes, but it has not helped. Can a good service man work on this set? One tells me that he can. Or will it be best for me to return the set to the factory? I don't wish to do this because of the expense.

All radio sets get something wrong once in a while. Any good service man should be capable of working on any set, for when we come down to it, all sets are fundamentally similar. If you have a good service man available, by all means patronize him. The added expense of sending the set to the factory and the longer loss of time is not justified. However, you might write the Midwest people, and they will advise you whether they wish to make the repairs or not.

We think that all this set needs is a simple lining up of short wave tuning circuits. Any serviceman with certain testing apparatus can do the job. The short wave bands of all-wave sets sometimes get out of alignment and need readjustment. Of course, if there is some error of calibration, the trouble would exist in all sets, and this is not the case you may be sure. It also is possible for the higher frequencies to get off a bit when the oscillator circuits "drifts." Installing so many new tubes would not help this particular trouble unless the oscillator tube happened to be defective.

"Air-Line" Antenna

What kind of an aerial do you advise for use with my 7-tube all-wave "Air-Line" receiver. I have logged a few foreign stations in Europe, England, France and Germany, but can't seem to get them very clear or with much volume. I now use two wires, one 90 feet and the other 25 feet. I would like to get rid of the noise of on-coming cars on U.S. Route 12. This set seems to be rather noisy on the short waves. Down from 11 to 6 meters it has too much noise for good listening, and this seems to be a "slushing" sound. It has all new tubes. The set works fine on the broadcast band.

We suggest that you try an antenna of the doublet type, a number of which are on the market and may be purchased at most radio stores. They, also have been described in the pages of this magazine. Run the antenna at right angles to any power line and street car line that may be near. The motor car noise is very hard to control, and the antenna may help some if far enough away from the highway. In this case most any length of transmission line lead-in can be used. As to the noise that you encounter on the 11 to 6 meter band, this is not unusual, for the higher frequencies often are noisy, and increasing volume adds to the noise level or background. However, if some of the noise comes from power lines and street cars, a good antenna should be of considerable assistance. As a rule, good reception is not obtained on this 11-6 meter wave band from distances. But better distance comes in over the 11 meter end. When you get close to 5 meters, the range is practically visual-that is, you hear from places that you can see. In this case the higher the antenna the better the reception. All in all, we

are of the firm opinion that you are getting very fine reception on a set having only 7 tubes, and any improvement in antenna will not clear up the weak and indistinct signals now coming in. The new antenna should, however, seem to increase the volume for it cuts out some of the noise and thus reduces the noise background that tends to ruin signals.

Had Two G. E. Sets

I had a new G. E. model E-81 set last October, but it was in a repair shop much of the time, and in two months it was replaced with a different model called the E-91 because I had had so much trouble. Now the new one had to have a tube in a short time, and I notice that the colored tuning light stays green constantly instead of turning.red when the set is not properly tuned. Is this second set worth sending to the shop or shall I get rid of it like I did the first one?

This is a well-recognized brand of radio and there is no reason why should experience similar vou trouble with two sets. In fact, no unusual amount of trouble should be given by either of the sets. It is possible, however, that you just happened to get a set that had some defect that slipped by the inspector, or it had been damaged or put out of adjustment by some accident. Even with the very best of things, like fine motor cars, there might be one that fails to get perfect assembly and adjustment.

We suggest that you hold on to the set you have and get a good service man to make an estimate of the cost of repairs and submit the estimate to the G. E. agent from which you purchased the set in a distant city, and see what his reaction is. It is almost certain that some slight work on the local serviceman's part will correct the trouble and the set will give years of fine service. A tube, of course, is apt to burn out or fail at any time. And the failure of the color tuning light indicates that the set is off tuning and fails to resonate in the tuning or i.f. circuits. This accounts for the weakened signals, and here your serviceman can quickly fix the trouble and get the set back in tune for all time.

Set Not Selective

I have a set that is not very selective on the broadcast band, yet rather good on the short waves. If I can increase the volume of this set, will you tell me how. Does it make any difference if the lead-in wire is 40 or 60 feet long? Please tell me how to make the set more selective on the broadcast band.

You have not mentioned the name of the set, so it is impossible for us to give more detailed information. If our readers would be more explicit when writing about their troubles and give us full information about the set so we can identify it in our files of circuits, we can be of much more assistance.

However, in most sets, if they are not properly balanced the selectivity will be seriously impaired. We suggest a good serviceman, for the job of aligning is not difficult or costly, and the net result, too, will be that the volume will be increased. If the set and tubes are in god condition, without failing resistors and condensers or leaking tuning units and poor coils, there is not much else that can be done to increase the volume. To do this, it would be necessary, then to add an additional audio amplification stage. If the set is modern, with shielded chassis, the job is quite impracticable. The extra tube and circuit would draw heavily on the power parts and the voltage readings over some of the circuits would change with a loss of signal intensity.

A forty to sixty foot antenna leadin should not affect reception if it is well insulated and as much in the open or clear as practical. In some cases, the lead-in wire is part of the antenna, and the 20 feet of additional wire might change the tuning ability of the antenna, but we doubt whether this is noticeable in ordinary radio reception.

Antenna Troubles

I have a Wilcox-Gay 7-tube set with 5 bands from 15 to 2200 meters. Also have a G. E. doublet antenna, but I do not think it keeps out noise. I think that a good "Zep" antenna with tuned feeders would be better. Now, when I hook up the antenna as one straight wire it does better on this particular set. Also have a short wave 5-tube set, and the same effect is noticed.

Your suggestion of a tuned Zep antenna is good, but it would mean naturally that you would have to have an additional tuning control. If the Zep were made for just a narrow band that you wished to receive on at all times there would be some advantage. We suggest, instead that you use the doublet antenna which you have but procure a good antenna coupling condenser such as made by Lynch and others. Your set will not properly connect to an antenna of the doublet or two leadin style, unless the coupling transformer is used. Otherwise, use a good flat-top antenna of conventional design with a ground wire.

If one wire of a doublet is disconnected it will often act as a "T" type of antenna and in some cases give louder signals than the doublet especially if the doublet was not working very efficiently in the first place due to directional effect, poor matching transformer or lack of one, or failure to respond to all frequencies when not in proper resonance.

Also, the greatest signal does not mean everything; rather it is the signal to noise ratio which is the greatest importance with a sensitive and efficient radio receiver. If the noise level is missing entirely, a very weak signal is entirely intelligible.

New Antenna

I have just purchased a 9-tube allwave G. E. set, and would like to know what antenna to use. A serviceman told me about a plan he has and says it would work nicely with my set. It is a straight horizontal wire split with an insulator so one section is 18 feet and the other 30 feet. Two leadins run down to the set. one to the short wave terminal and the other to the long wave terminal. Would this give good results? Also, I am told that an antenna must be erected cross-wise of the power lines on the street. Is this 80?

We do not see anything special about the antenna you have described. In fact, it happens to be two separate antennas for each terminal. A doublet antenna, such as the General Electric people make for their own sets, is advisable. Or a conventional antenna will give good results. A wire about 40 to 60 feet long, with the leadin off one end will suffice. If there are any power lines close to the aerial it would be an advantage to run the antenna top at right angles, but as far away as possible.

Short Wave Hopes

I purchased a Philco 9-tube set. model 660B, and while I get some German, Italian and South American stations, I feel that I am not getting all the distance I should. As I am very anxious to get distance on the short waves would you suggest that I buy a short wave receiver having about 5 tubes? The stations I get come in strong but do not understand why I can't get more around the world. Is it necessary to get an 18 to 23 tube set in order to get Japan and other stations half way around the world? I can not understand all these DX records others make. Do they have "super" sets that I don't know anything about?

It would be useless for you to purchase a short-wave receiver of five tubes and expect it to get distance from around the world. Surely, when you cannot do this with ease with a 9-tube widely recognized set, it would be just as great a problem with a small, inexpensive receiver.

Short wave reception is something that cannot be pulled in on a moment's notice. Sometimes nine tubes will do it, and again 25 tubes would fail. So there you are. Really, we think you are doing well with a nine tube set to get Europe and South America as loud as you say they are. This, to our mind speaks well of the set you have. As soon as people understand that short waves are not consistent and that while a set is advertised as "short-wave" it may not get all "foreign" short waves, the better satisfied they will be with what they are able to pick up.

While you may not think your all-wave set is made for distance, it is only necessary that a receiver have good sensitivity to bring in distant stations under good conditions. So do not think that this set is not made for distance, because it is. If it lacks sensitivity then this is a matter for a good serviceman who can balance and align the set for maximum results. Also, the tubes may need an examination and replacing here and there. In most cases, when foreign stations come in, as in your case, the set is very sensitive, and under good conditions the elusive stations will finally be located. Possibly more experience will yield better results or possibly you are too anxious. Many atmospheric conditions, as well as locality, play a great part in distant reception on the short waves. The remarkable distant DX records that have been made, have not been accomplished all in one night, one station immediately after another. Frequently they represent months and months of painstaking effort.

Hints for SHORTWAVE Fans An Explanation of SW Reception—Part II

THERE are hundreds of shortwave stations on the air, and the average receiver will pick up at least a score of overseas broadcasters during a day and evening with very little effort, but, most listeners ask, how does one know who it is if the announcements are made in Serbian or Hindustani? The problem of properly identifying stations is most discouraging to s.w. listeners.

While it is not possible for us to teach the various foreign languages, we do give as much information as possible in our new indices so listeners can identify strange stations by their manner of announcing or by various signals they employ to facilitate their identity. For North American listeners the biggest problem is to conquer the Spanish language. If one masters the alphabet he has made a good start, because call letters are given by the letters of the alphabet.

The Spanish Alphabet

	NT The second
A, Ah	N, En-nay
B, Bay	O, Oh
C, Say or thay	P, Pay
D, Day	Q, Koo
E, Ay	R, Air-ray
F, Ef-fay	S, Ess-say
G, Hay	T, Tay
H, Ah-chay	U, Oo
I, Ee	V, Vay
J, Ho-tah	W, Doo-ble-vay
K, Kah	X, eckis; ay-kis;
	ek-key
L, El·lay	Ү, Үау
M, Em-may	Z, Zed.
-	

These pronunciations are given the way they sound on the radio and may not agree with Spanish textbooks. Slightly different accents are heard in different countries, which accounts for the difference in pronunciation of some of the letters.

The Spanish numerals, also very important, are given below: One, Oo-no Six, sase Two, Dose Seven, Sate Three, Trace Eight, Oh-cho Four, Koo-ah'trow Nine, Noo-ay-ve Five, Theeng-ko Ten, Diez

Telling Time

The conversion of time from one standard to another is very difficult for some listeners. In RADEX we use the 24-hour clock and it is always Eastern Standard Time unless otherwise specified. The idea of the 24-hour clock is not new, nor is it original, although we believe we are the first radio magazine to practice its use consistently. It pleases us, quite naturally, to know that most

Time Conversion Table

The time given through RADEX, unless otherwise specified, is Eastern Standard by the 24-hour clock,

EST 24-hr.	
clock	GMT
0000	0500
0100	0600
0200	0700
0300	0 800
0400	0900
0500	1000
0600	1100
0700	1200
0800	1300
0900	1400
1000	1500
	1600
1200	1700
	1800
	1900
	2000
	2100
	2200
	2300
	2400
	0100
	0200
	0300
2300	0400
	0100 0200 0300 0400 0500 0600 0700 0800 0900

For times throughout the entire world consult the RADEX Time Converter. of our readers use this time system in all their letters. For the benefit of new readers who may not be familiar with this method of writing time, we have decided to print a little chart each month showing various local times compared with the EST 24-hour clock and GMT. This month our chart shows conventional EST alongside the other two systems.



Believe it or not, here's Popeye! That Hercules of comic-strip characters is brought to life by Floyd Buckley, who qualifies as a he-man in his own right. He has been a couboy, gold miner and a stunt man in the movies, in addition to playing the banjo for a traveling medicine man and touring with Buffalo Bill.

Ham Lingo

Some of the amateur radio operators use abbreviated forms of many radio terms. We do not consider them as slang expressions, but feel that occasional use of these words, in addition to adding "color" to a radio fan's language, enables us to express a great many ideas by the use of only a few letters.

Perhaps the most frequently-heard expressions are "73" and "CQ." 73

is the amateur's way of saying "best regards," and vy 73 is "very best regards." CQ is a general call to any radio station that might wish to make a two-way contact.

Radio operators are nearly always "old men," (OM) and a feminine operator is a YL (young lady). An operator's wife is an XYL.

The letter "X" saves using a number of other letters, as in xmitter, xmission, xtal, for transmitter, transmission and crystal. Schedule is more often spelled "sked."

A radio operator is an "op"; his typewriter is a "mill"; he proudly refers to his xmitter as "junk" or a "rig," while his aerial is usually a "sky wire" and the pylons supporting the sky wire are "sticks." Instead of typing on his typewriter he "pounds" the mill, and the hand with which he operates his key is his "fist."

The letter "K" means "go ahead." CUL stands for "see you later." The QRA is a station's address. QRM is interference from some other station, while local QRM is interference caused by faulty electrical appliances nearby. QRN is atmospheric or natural static.

To Request Verifications

A large number of stations welcome reports of reception from their listeners and usually acknowledge the reports with a verification. This practice started in the old days when a listener thought he needed a letter or card from a station to prove to his doubting friends that the broadcaster actually was heard. In these modern times a DXer's friend will usually believe him when he mentions reception of a California or Oregon station, but he still collects the cards and letters for his own amusement, just as some of us collect postage stamps or match boxes.

Among radio fans verifications are known by various names, the most common being "veri," "confirmation," "QSL," and "wallpaper." A collection of attractively colored QSL cards pasted up on a wall makes an attractive-looking radio den but only the very best DXers can ever hope to paper an entire room in this manner. Many of them try it, however, and this practice has led many radio stations to believe that this is the primary object of collecting cards.

It should not be necessary to state that DXers should never request a verification from a station until the station is positively identified. Α few so-called DXers write for verifications from every new station that is reported without bothering to tune for them, and we have known of some who have written to shortwave stations while they did not even possess a shortwave receiver. This sort of chiseling has caused several prominent stations to adopt the practice of ignoring all reports. so all DXers suffer because of the thoughtlessness of two or three persons.

Complete Reports

At least a half hour of the program should be logged, if this is possible, and this log should be as accurate, truthful and complete as possible. The letter should include the date and time of the reception, the frequency on which the station was heard, the call letters, location and accurate data on the signal strength and quality. Time should be given in EST if the station is located in North or South America, and in GMT if it is located elsewhere.

The names of all musical numbers recognized should be given and unfamiliar musical items can be described, as, a "fox trot," "tenor solo," "stringed instruments," etc. Most of the musical numbers heard from South America are unfamiliar and their tempo is undescribable, but if one pays close attention to the announcer he can usually catch the name of the dance tune to follow. A list of the names of the various dances is given here; listen for these words when trying to catch announcements:

nouncements.	
Bambuco	Marcha
Criolla	Paso-doble
Fox	Tango
Jota	Cancion (song)
Pasillo	Fandango
Son	Joropo
Bolero	Merangue
Danzon	Rumba
Hab an era	Valse

Whenever possible, the names of advertisers sponsoring programs should be given; regardless of the language spoken it is oftentimes easy to catch the trade names of various products, such as Victor, Sessions, Philco, Pepsodent, etc.

The Signal Data

That the report may be of some value to the station it is necessary that the writer mention, truthfully, how well the station is heard, describing volume by the R Code, quality of the QSA Code, and hazards such as interference, static or fading, by the S. X and N symbols.

R1 indicates the faintest signal that can be heard on headphones.

R2 is a weak headquarters signal.

R3 is audible but only partially readible.

R4 a fair signal.

R5 a good headphone or a weak speaker signal.

R6 Fair speaker volume.

R7 Strong volume.

R8 Very strong volume.

R9 Maximum volume.

The QSA Code describes quality as follows:

QSA1 Unintelligible.

QSA2 Signals which can be understood only now and then.

QSA3—Poor signals understood with difficulty.

QSA4 Good signals, easy to understand.

QSA5 Perfectly understandable.

Fading is indicated by the letter

"S". S means slight fading; SS means deep fading, and SSS is a complete fadeout. The letter "R" indicates rapid fading.

Static is indicated by X, rather bad static by XX and very heavy static by XXX.

If no fading or static is present, this fact is indicated by "N".

These symbols are usually written one after the other in this fashion: VPD, R7, QSA4/SS/X.

Always Prepay Postage

When writing to overseas stations it is customary to enclose return postage in the form of International Reply Coupons. These can be procured from any Post Office for nine cents each, and can be exchanged in any country in the Universal Postal Union for postage stamps on a first class letter to this country. Contrary to some published reports, all countries are members of the UPU except Laccadive and Maldive Island, the State of Alaouites. Northern Rhodesia, and Tonga. Radio stations in which we are interested do not exist in any of these localities.

Tuning the AMATEURS

• • • By B. L. Ahman, Jr.

MARCH should mark the beginning of extreme DX pleasure for 20-meter (14 megacycle) band listeners, and vice versa for those who listen on 40 me-This winter ters. the Venezuelans, Colombians and Central Americans have been very active on 7 megs. and many new calls were heard, but an overabundance of CW ruined most of the pleasure of listening to them.

On 14 megs. the opposite is true. Contrary to last season, the winter brought in numerous DX stations. One of these, LUSAB, the station of Felix Gunther, Federico Lacroze 2158, Buenos Aires, Argentina, was heard nearly every evening. Early or late, he does a lot of talking. "Don Felix," as he is known by his friends, is president of the South American Radio Association, the *Rueda del Oeste*, of which many Spanish-speaking a mateurs are members.

The members of the Rueda del Oeste are required to send QSL cards to other members when their signals are reported, under penalty of expulsion. A regulation multicolored card showing the flags of all the participating countries in their natural colors is used. The writer was recently made an SWL member of this club.

We would like again to remind shortwave listeners that amateurs are not always prompt in replying, mainly because some of them have extremely heavy mail. SU1CH in Cairo, Egypt had 7000 letters to reply to last spring. Even the ordinary close-by amateurs receive a great many reports, and since they have to answer all their mail personally we sometimes wonder how they ever find time to do it. Needless to say, return postage should always be paid when requesting a confirmation.

Following are four stations that we know anyone can hear with a little persistent tuning, on 14 megs.

HK3JA, Jorge Acevedo F., Apartado 330, Bogota, Colombia. Like PY2CK, Mr. Acevedo has an inferiority complex concerning his English, although he speaks it excellently. Tune for him at the extreme low frequency end of the band. His signal is usually a good R9 in most parts of the USA. Send him some snapshots and he will send you some excellent views of The best time is in the Bogota. evenings after 7:30, although as summer approaches he can be heard earlier.

G2MF, Mr. J. Fife Mortimer,

Hoylake Road, Moerton, Cheshire, England. This is probably the hardest of this little group to hear but is chosen because he personally salutes those who report reception to him. He notifies the reporters of the date and time to listen in for the aerial greeting. Best heard after 5:30 pm, on the low frequency end of the band.

LU5CZ, Jorge Delcasse, Cuba 1919, Buenos Aires, Argentina. Another Rueda del Oeste member, he replies promptly and sends personal greetings on each card. Uses the low frequency side of the 14 meg. band, coming in best at twilight.

CO2KY, Raul Perez Falcon, Box 945, Havana, Cuba. This is the easiest of this group to hear. Sr. Perez sends a special card to SWL listeners, but since he has a very heavy mail he requires a lot of time to reply. Comes in well on several frequencies, and is heard R9 all over the USA.

All shortwave stations are licensed as amateurs in some South and Central American countries. One should not be surprised to hear a broadcasting station calling CQ on the amateur bands as this is Some quite a common occurrence. of the hard-to-get Dominican stations have been picked up by the writer on the amateur bands. On the other hand some broadcasters call CQ on their regularly assigned frequencies, some of these being PRADO, HJU, HJ1ABP, HJ1ABE and many other Cuban, Colombian, Ecuadorian, Venezuelan and Costa Rican stations.

It would interest us to know how many of our readers would like to read thumb-nail sketches of some of the best-heard foreign amateurs and descriptions of their rigs. Incidentally, we also would like to hear from all SWL's and amateurs. Let us know what you are hearing and what kind of news you want in this column. Address Bernard

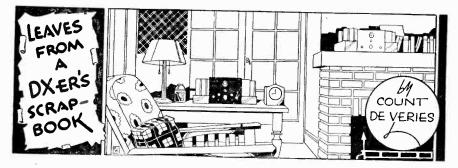


Lysbeth Hughes' deft fingers sweep over her harp as she sings during broadcasts by Horace Heidt's Brigadiers on Monday nights. This 23-year old singing harpist comes from San Francisco and made her debut as a harpist at the age of 14.

Ahman, Jr., 3313 Westerwald Ave., Baltimore, Md.

The writer wishes to express his thanks to E. R. Roberts of Indianapolis and Edward Schmeichel of Chicago for help in getting started on these columns. VY 73's and lots of DX!

No doubt in the future a television receiver will be regarded not only for its entertainment value but also for its domestic utility. A washing demonstration was an item in the London television programs recently. Soapsuds and steam filled the Pain Daisy screen when Mrs. showed how washing should be done. She explained how to locate grease spots when the garments are wet, how to wash white clothes, how to remove stains and how to scald Finally. materials. she colored showed how to wash woolens without shrinking them and, what is equally important, how to revive woolens already shrunk,



Into WMIN, St. Paul, during the Joe Louis-Joe Brescia fight last fall, a telegraph ticker brought this message: "Flash . . . urgent . . . New York . . . Joe Louis knocked out . . ." An excited bystander rushed the message to the announcer, who told listeners that "Joe Louis was knocked out."

A few minutes later the announcer received the rest of the message. ".... Joe Brescia in 2 minutes and 12 seconds of the third round in a fight here tonight. Louis had everything his own way." The bystander was Edward Hoffman, owner of WMIN. Reading the first part of the message and eager to broadcast the news over the station which he had just opened, he clipped it from the ticker and rushed to the announcer in the hope of beating other local stations to the flash.

The story of that fight and the embarrassment of Mr. Hoffman is old stuff now. But how often can we find a counterpart in DXing today, when the dialer jumps at conclusions without making sure of his facts.

To a DXer with a potent imagination, many things are possible during an evening of dialing. A faint burst of Oriental music played by a tired engineer in California is interpreted as being an honest-to-goodness Jap. The announcer down in Texas with an odd accent may be construed as standing before an Australian or New Zealand microphone. Perhaps the only limit to that type of DXing is the extent of the imagination.

Naturally, it is possible for these listeners to compile truly amazing records. Their logs show stations from all over the world. It's grand fun until the arrival of the inevitable showdown—and that is likely to prove embarrassing. The DXer may have acted in perfectly good faith and actually believed that he heard the stations reported, but that won't excuse him in the eyes of those who snicker at his discomfiture.

Moral: it's better to be careful than sorry!

Network Recordings

Some twenty million Americans went to work on the morning of January 20th. At noon of that day, President Roosevelt was inaugurated for his second term. A few thousand saw the formalities in Washington. A few million radio listeners heard the president's address. The twenty million workers went about their jobs, ate their lunches, and went back to work.

At nine o'clock that evening, the Mutual network swiped a page from the books of the British Broadcasting Corp. and presented a recording of the inaugural address. The twenty million workers laid aside their evening papers to hear the transcribed broadcast. Everything was just dandy.

One can't help but recall a previ-

ous transcription of the president's voice which failed to reach the audience for which it was intended. Columbia cut it off before it had really started and NBC refused to touch it with a ten-foot pole. That was the famous Vandenburg "debate."

The networks explained that it was against their policy to broadcast recordings of speech or music. Most everybody agreed that neither NBC or Columbia wanted to risk the displeasure of the FCC. Policies can be established with remarkable rapidity—almost as fast as renewals of licenses can be refused.

It is admitted that Mutual has no connection with NBC or CBS, that its policies are formulated by different executives. It is remembered that several Mutual stations broadcast the Vandenburg "debate" last fall.

However, one salient fact was observed on the inauguration broadcast. Before and after the recording was played, it was announced that "the transcription had been made by *special permission.*" Who gave the permission? Was it Mutual executives, the Federal Communications Commission, some other government agency, or perhaps the president himself?

If permission was granted in this instance, it seems logical to assume that it was denied in the Vandenburg incident. And if such is the case, it follows that the "policy" explanation offered by NBC and CBS was without foundation and that the two networks actually were subjected to some manner of censorship, voluntary or otherwise.

Americans have always been rather proud of their freedom from censorship in the press and on the air, so this apparent confirmation of former charges of gagging leaves a bad taste. Before another election rolls around, the FCC would do well to issue a definite statement of policy so we all would know where we stand.

Factors Affecting Reception

Since the first radio listener dialed the most remote station within the range of his receiver, DXers have been interested in the factors which affect long distance reception. He wants to know why he can log an Aussie on one particular morning and fails to hear even a carrier the other six days a week.

During the past year, the Bureau of Standards has been conducting tests on stations in Europe and South America. Measurements of signals have been made under every conceivable condition. We now learn that attention is being given to trans-Pacific reception.

While DXers cannot hope to have at their disposal the equipment and facilities of the Bureau of Standards, they can make careful studies of general conditions at the time they are listening. If accurate logs and notes are kept for each night's dialing, interesting conclusions can be drawn and theories propounded.

In the February issue were noted a few general observations on the apparent effect of atmospheric pressure on long distance reception. A few cases were recalled when a study of the weather map might explain varying DX conditions. As reception tests on the Scott receiver continue, these observations are extended and it is hoped that some definite conclusions may be reached.

In this connection, readers are invited to make their own notes and send in their theories. Weather maps are generally to be found in the larger post offices as well as in many newspapers. By checking localities of high and low pressure, and noting how signals from stations in and beyond these areas behave, theories may be established. When signal behavior under given conditions can be checked a second and a third time, the theories may be confirmed.

Temperature and Reception

Temperature is another factor which appears to exert considerable influence on radio signals, but I often wonder whether we really appreciate the actual effects.

In the late spring and summer, for example, we all know that DXing is difficult, if not impossible. Static frequently blots out all but the most powerful signals and seldom permits reception over a distance. Because static is heard in warm weather, we assume that higher temperatures act against long distance reception.

If this is true, we would expect that cold weather would bring better reception. To a certain extent this is true. However, there appears to be a very definite lower limit, below which reception again falls off.

It has frequently been noted that DX improves until the temperature gets down to about 20° above zero. When the thermometer falls below that, signals appear to get weaker and fading increases. During the record-breaking cold spells of the past two winters, DX was often practically impossible. When the temperature dropped to around 20° below zero, even stations within a 500-mile radius were erratic.

Thus, it would seem that ideal DXing weather occurs somewhere between 20° and 40° above zero. Below that range, signals fall off; above it, we begin to find static on the increase. Apparently the good DXer must follow a relatively-narrow path between the two temperature barriers.

And yet we can only prove that half of this idea is true. We do know that extremely cold weather is bad for reception. We merely assume that high temperatures have an adverse effect, because the accompanying static blots out signals.

As a matter of fact, no one has ever had a chance to observe how far signals would travel in warm weather. Naturally, you will say, because there is too much static!

Actually, the point isn't as absurd as it may first appear. Not a few engineers are of the opinion that natural as well as man-made static is carried on waves which may eventually be divorced from radio waves, at least insofar as reception is concerned. If that is ever ac complished, static would cease to be a menace to warm-weather reception. In such a case, how would the interference-free signal penetrate the warm air?

Of course we don't know the answer to that question, but it provides food for hungry brain cells!

Answers

(Questions on Page 12)

- 1. The owner, George R. CLOUGH
- 2. LaWRENce, Kansas.
- 2. Kansas State Agricultural College.
- 4. KROW, Oakland, Calif., becomes WORK, York, Pa.
- 5. (a) KCRC, Enid, Okla., becomes CRCK, Quebec, P. Q.
 - (b) KEX, Portland, Ore., be comes XEK, Mexico City.
 - (c) WMC, Memphis, Tenn., be comes CMW, Havana, Cuba
- 6. Kansas City Kansan.
- 7. W-attertow-N, N-ew Y-ork.
- 8. WIND, Gary, Ind. Chicago is called the "Windy City."
- 9. A contraction of Chilliwack, B. C.
- 10. They are the only K calls located in the east coast states. All other K calls, except KFIZ, are located west of the Mississippi River.

A new "West Coast Network" was instituted the first of the year, supplanting the Don Lee System, it was recently announced from CBS headquarters. Programs over this network will be keyed from either Los Angeles or San Francisco.

The SHORTWAVE LISTENERS Report

RANSOCEANIC reception paled into insignificance this month. For real radio thrills shortwave fans covered the police bands, the amateurs, airports, coast guards and other emergency services. While flood waters tore through the Ohio and Mississippi valleys radio operators stood by their posts, working day and night, doing everything they could to help relieve the suffering of thousands of stricken persons. Normal operating procedure was set aside and anything was done to get the messages through. Amateurs contacted police stations; police, airports and others contacted broadcasting stations: amateurs set up networks of their own to get messages into isolated areas. One network consisted of a 5-meter station in Pittsburgh, a station on 160 meters and a third on 75. Stations of the Eastern Airlines situated in Washington, Chicago, Jacksonville, Indianapolis, and Atlanta handled flood traffic. Over 150 field transmitters and receivers were brought into the area and used by government services.

When these lines are read the flood will be over, cities will already be rebuilding and people will be returning to normal lives. The story of the greatest flood this country has ever known will be written into history, but impressed on the memory of radio listeners will be the greatest story of all—one that will not go into history books—the story of faithful devotion to service as exemplified by the radio amateurs.

Verify Daventry

Through the efforts of two good fans, RADEX shortwavers will have

• • The Thrill Bands

an opportunity to verify reception of the Daventry transmissions. It is well known that the stations of the British Broadcasting Corp. do not verify reception of their transmissions, although they do send attractive little "thank you" cards to show their appreciation for reports. We will not enter into a discussion of this matter again, except to say that we feel they are justified in the position they take. Nevertheless, shortwave fans desire good verifications from all the stations they hear, and now is their opportunity to verify Daventry.

Bernard Ahman and Carroll Wevrich of Baltimore, Md., are the two public-spirited citizens of Radextown. To obtain verifications listeners should tune for the Daventry broadcasts on the three Saturday evenings of March 6, 13 and 20, on Transmission No. 5, which is radiated between 1800 and 2000 EST. Reports should consist of the names of at least two musical selections and one verbatim announcement; the call letters of the station heard should be given, and the reports sent, with five cents, to Carroll Weyrich, 4310 Evans Chapel Road. Baltimore. These reports should be in the mail within 24 hours after the close of the broadcast. The remittance may be sent in coin or in stamps of small denomination. If verifications are desired from more than one station, separate reports should be forwarded for each station reported. The verification cards, attractively printed in large letters, will be sent out as soon as possible after the last monitoring date, March 20.



Billy Jones and Ernie Hare, song and comedy entertainers now in their 15th year of broadcasting, who are heard on Sunday nights on the Original Gillette Community Sing with Wendell Hall and Milton Berle. This patr was the first ever to receive compensation for broadcasting on the radio.

The "Awatea" Verified

"Probably the most important verification I have received so far is the one from ZMBJ," avers J. H. Hyde, Elmwood, Conn. "The card gives the following information: The ship is the T. S. S. 'Awatea,' owned by the Union S. S. Co. The call letters, ZMBJ, and the slogan, 'The Ears and Voice of the Tasman." The transmitter is crystal controlled on a frequency of 13.2 megs., and employs 300-400 watts power. I heard this ship shortly after 2 am, EST on 13.2 megs. The ship's radio operator was trying to contact Sydney, Australia or Wellington, N. Z. and at the time they were somewhere out in the Atlantic Ocean."

Time Signals

The time signal broadcast schedule from NAA and NSS at Arlington, Va., was revised the first of the year. The new schedule calls for transmissions every hour, commencing at five minutes before the hour and continuing until the even hour, except at 0855, 1055, 2055 and 2255 EST. The complete schedules and frequencies are given in our s.w. indices. The broadcast band transmissions on 690 kcs. were discontinued last June 1st.

Amateurs

This month Bernard Ahman returns with his amateur column which proved so popular in the November issue. A large number of our readers have been requesting amateur news for some time and we feel that the column prepared by Mr. Ahman just about fills the bill. We are anxious to have comments from our readers on this new service.

A new amateur service presented this month for the first time is a column on 28 megacycle (10 meter) reception. This column, prepared with the help of several enthusiastic listeners and amateurs, at the suggestion of Fred Satterthwaite of 544 Colonial Court, Toledo, Ohio, appears in another section of RADEX. For real DX, 10 meters is highly recommended.

The response to our initial appearance of the "Listeners Wanted" column has not been very gratifying. This stunt is being given a trial in this magazine, and frankly, we think it is a pretty good idea. Amateurs are invited to make use of the space we are devoting to them.

Fred Satterthwaite had an unusual experience on the 14 meg. band. He heard a Toledo station and the signal, he says, traveled 2000 miles air-line to reach his set. The station was W7AO in Toledo, Ore.

Argentina

LSX, 10350 kcs., Transradio Argentina, Buenos Aires, has a new sustaining program originating in their own studios, according to information received from Manuel Barbera of Buenos Aires. The pro-

gram deals with the importance and development of Argentine produce, particularly cattle and agricultural. The broadcast is called "La Voz de la Argentina," and announcements made Spanish. English. are in French and German. These programs can be heard on Mondays and Fridays from 1700 to 1745 EST with Bill Clark, well-known engineer, at the microphone.

LRX on 9660 kcs. is now on daily from 1800 to 2230.

Austria

The Austrian experimental station OER2 is now on 11.800 megs. on weekdays and well received by E. L. Peters of Westport, N. S., Canada.

British Guiana

VP3MR in Georgetown, British Guiana, claims to be on 6010 kcs but actually has been moving all over between 5975 and 6017. It operates most consistently near 5980 kcs.

Chile

The Santiago station CB615, known as "Radio Service" has been operating experimentally on 12295 kcs., we are told by Manuel Barbera of Buenos Aires. While working on 12 megs they have ceased their 6150 kcs. transmissions. As their transmissions are much better now it is presumed they will adopt the new frequency permanently. They work from 1100 to 1300 and 1600 to 2000 EST.

The schedule of CB960 in Santiago is 1130 to 2130, EST.

CEC at Santiago on 10670 and CED at Antofogasta on 10230 kcs. work with each other nearly every night after 2100 EST.

Colombia

Station HJ1ABP, "Radio Cartagena," 9600 kcs. with 1000 watts power, presents programs for American DXers every Saturday night. The programs, dedicated to the Newark News Radio Club and presented by Sr. Eldon J. Lagonterie, start at 2200. Reports are requested and should be addressed to P. O. Box 37-HJ1ABP has been reported on various frequencies; 9600, 9616, 9618 and 9620 are some of the reported frequencies. We show them on 9618 in our index. This station has been reported at 0700 in the mornings quite frequently.

HJ1ABE, Cartagena, is heard every night lately around 2000 MST with an R9 signal by Sgt. A. W. Brummond, Box 84, Fort Douglas. Utah. Sgt. Brummond says they hold quite closely to the assigned frequency.

R. B. Oxrieder reports that HJ4ABC, "Ecos de Combeima," Ibague, is back on the air on 6090 kcs., interfering with CRCX, being just a shade higher in frequency than the Canadian station.

HJ4ABH has been reported on 9550 kcs. instead of 9520. This station, situated in Armenia, Colombia, signs off with the "Indian Love Call."

HJ4ABD, Medellin, Colombia, 5760 kcs. They have the 5760 kcs. frequency assigned to them but they haven't been using it for some time. They went up to 6135, stayed there about a week or ten days, then moved to 5930. After a while they moved again, to 6138 kcs. and surprisingly have stayed very close to that frequency since.

Costa Rica

A new Costa Rican station is TIMS, 5905 kcs., at Puntarenas. There is still some question on the identification of this one, as the signals are quite weak. It signs in Spanish and English at 11 pm. EST and I think the call is TIMS, although the last two letters may be wrong.

Czechoslovakia

The Prague station has been reported on as many as six different frequencies, but the most dependable seems to be 11840 kcs. The identification signal consists of a trumpet playing a few bars from Dvorak's "New World Symphony." The programs can be heard until about 1630 EST.

Dominican Republic

HI1J, San Pedro de Macoris, D. R., is now on 5855 kcs.

HI9B, Santiago de los Caballeros, D. R., moved to 5884 from 6045 and is now quite easy to get.

Ecuador

HC1PM in Quito, Ecuador, is supposed to be on 5725 but is actually on 5735, phoning irregularly and broadcasting on Tuesday nights.

Fiji

Geo. K. Glass of 9284 Boleyn St., Detroit, Mich., says that VPD2 at Suva has been discontinued and a new frequency, VPD3, is now being used. VPD3 works on 8720 kcs. from 0530 to 0700 EST. VPD on 13075 is no longer heard. Anthony Tarr of Seattle, Wash., also reports the new frequency.

Great Britain

The British Broadcasting Corp. has undertaken the publication of a bulletin called "BBC Empire Broadcasting." This is a 12-page weekly journal with full details of coming Empire programs, together with illustrations and notes about the more important items. This publication can be obtained direct from the corporation at 10 shillings per year (about \$2.50).

The Daventry station GSP is to be discontinued on 15310 kcs. and in its place will be used GSB on transmission 5. The reason for the change is that overseas transmissions on 15 megs. have been very poor in England and it is generally found that transmitting conditions are nearly reciprocal, according to information received from Raphael Geller, 1652 Radcliff Ave., Bronx, N. Y.

Guatemala

TGWA is operating on and verifies as 9450 kcs.

Hong Kong

"We have received a verification from ZBW in Hong Kong which gives their power as 2½ kw, and their schedule as, weekdays from 2330 to 0130 and 0400 to 1000, and Sundays from 0000-0130 and 0300-0930," contribute Carl and Anne Eder, Willmar, Minn.

Japan

"The new 50 kw Japanese stations are now in operation" submits Raphael Geller. "JZI and JZK are now operating on regular schedules on Mondays and Thursdays from 1600 to 1700 EST, and Tuesdays and Fridavs from 1400 to 1500. Sometimes JZJ is also used. JZI works on 9535 kcs; JZJ on 11800 and JZK on 15160. Announcements are made in English, although of course the major portion of the program is in Japanese. Reports should be adaddressed to the Broadcasting Corp. of Japan, Atagoyama, Shiba, Tokyo." "Station JZG is heard near 6350 kcs from 0330 to 0440 working in parallel with JVT," postcards A. C. Tarr. "At 0400 they sign their call in Morse and switch to inverted speech. JZJ on 11800 broadcasts a daily program to Western USA from midnight to 0100 EST."

Labrador

"I logged VOWQ, Northwest River, Labrador, shortly after 1900 on a frequency estimated to be 8650 kcs. or thereabouts," submits J. Herbert Hyde, Elmwood, Conn. "This station was working duplex with CZ9U."

Martinique

"Radio Fort de France (if it has call letters I have yet to hear them), in Martinique, French West Indies. is heard on 9445 kcs," contributes R. B. Oxrieder. "Announcements are made in French and English."

Mexico

"The information I sent on the Mexican stations last month is already pretty much out of date," explains Anthony Tarr, 909 W. Lee St., Seattle, Wash. "XEBR in Hermosillo, Son. on 11820 relays XEBH, daytimes only. The address is Apartado 68.

"XEDQ in Guadalajara moved to 9480 and is reported working between 2300 and 0100 EST. XEFT, Veracruz, heard at midnight on 9460. XEPW on 6120 in Mexico City signs off at midnight. This station announces as 'La Voz del Aguila Azteca desde Mexico.' XETU in Guadelajara on 6115 megs. works from 2100 to 2400 EST. XEWI in Mexico City on 11900 kcs also operates sometimes on 6015."

Netherland East Indies

The schedule of the NIROM stations on the island of Java is sent to us by Geo. K. Glass. They broadcast daily from 0530 to 1030 or 1100; 1800-1930 and 2230 to 0200. Saturdays 1030-1130 and 2230-2400. Sundays 0000-0200 and 0530-1030. The stations used are YDA, YDB, PMN, PLP, YDC and PMH, all given in our index.

Nicaragua

YNOP, Managua, Nicaragua, a comparatively new station which varies in frequency somewhat, but announces as 5758 kcs. It is known as "Radio Bayer."

Panama

Carl and Anne Eder report hearing HP5K on 6000 kcs, Colon, Panama, in the mornings at 0700, with a very good signal and announcing in very good English.

"I am hearing a Spanish-speaking station on 11.750 megs. which appears to be in David City, Panama," reports Alfred H. Bacon, 928—13th St., New Westminster, B. C. "Several test programs were heard but they were marred by very bad fading. A new station, YV1RH, in Valencia, Venezuela, is heard nightly at 10:30 pm. PST testing on about 5.810 megs. Announcements are often made in English."

Peru

The strange station on 6164 kcs. has finally been identified as OAX1A, at Ica, Peru. It signs off at 2300 with the Good Night Waltz, according to Capt. R. B. Oxrieder.

Another Ica station is added to our list by Manuel Barbera of Buenos Aires. The new transmitter is OAX5B, "Radio Universal," on 11796 kcs. According to announcements made by the speaker, they broadcast from 1200 to 1600 and 2000 to 2200, EST. The address is Estafeta de Correos.

Another new Peruvian is OAX4A, 9350 kcs, heard on weekdays from 1830 to 2330 and on Sundays from 1930 to 2430 by Ray. W. Sahlbach, 3200a Miami St., St. Louis, Mo. A 3-note chime is heard before the station announcements, and the address is Box 116.

A further report from Mr. Oxrieder, since the above paragraphs were written, tentatively alters some of the information on Peruvian stations. "The stranger on 6164, mentioned in a former letter as OAX1A, moved to 6175 for a couple days, and



Laughing at the world through an NBC microphone is the merry team of Victor Moore and Helen Broderick, two of America's foremost stage comedians, brought together for the first time on the air by the new Twin Stars program on Fridays at 9:30 pm. then returned to 6164. At first I thought they announced as Ica, but that didn't seem right because Ica is supposed to be in the 5th district. The announcements sounded like Radio Philca so I looked over a map very carefully and the only town that looks right is Quilca, but unless they have their districts arranged in a very peculiar manner, Quilca should not be in the 1st district either. This station signs off in English about 2300 every night, gives his address as Box No. 9, and claims his frequency is 6133 kcs.

"OAX5B is in Ica, on 11804 kcs., but the frequency varies."

Poland

That elusive Polish station SPW works on 13635 kcs. on Mondays, Wednesdays and Fridays from 1230 to 1330. This information also is from R. B. Oxrieder, 122 E. Hamilton Ave., State College, Pa.

Sweden

"For the past few days I have heard a station in Stockholm, Sweden, operating on 11705 kcs. The call letters are SM5SX," writes Robert Bjur. "The best reception is obtained on Wednesday from 1700 to 1800 EST." The complete schedule of this station is Saturday 0700-1700; Sunday 0900-1700; other days 0200-0245; 0630-0700; 1100 to 1700.

U. S. S. R.

At this time the only new s.w. station I am picking up is RAN at Moscow, USSR, on 31.51 meters. This station broadcasts every Sunday from 5 to 6:30 pm. MST with Russian music and speech in English." Ernest Law, 10439-69th St., Edmonton, Alta., is the one reporting.

United States

"On page 22 of the January RA-DEX you state that W9XAA will be off the air during rebuilding. This is not accurate," corrects Mr. Maynard Marquardt, Technical Supervisor of WCFL-W9XAA, Chicago Federation of Labor, 666 Lake Shore Drive. "W9XAA is using its present transmitter and constructing an entirely new one separate from the present one. We have amended our application to the FCC and are now asking for permission to use 20,000 watts in the new W9XAA."

Another letter from Mr. Marquardt tells us that W9XAA signs off in a variety of languages, including English, German, French. Norwegian, Polish, Russian and occasionally Spanish. "Our night time schedule," he writes, "is from 1700 until midnight, CST, on 6080 kcs., and we use a directional antenna aimed at Central Europe. We also have under construction, and will complete within ten days, a new directional aerial on which we will transmit from 0630 until noon CST on 11830 kcs., aiming at the west coast of the United States, Australia and New Zealand."

Two South American stations now rebroadcast the Saturday matinee performances of the Metropolitan Opera Co. in New York, heard in this country over the NBC Networks, under the sponsorship of the Radio Corp. of America.

The two stations are Radio Splendide at Buenos Aires and Radiobras The programs at Rio de Janeiro. are transmitted from New York over W3XAL at Bound Brook, N. J. The new directional-beam antenna for South American broadcasts is used for these transmissions. Transmission problems, which limited NBC's broadcasts to Latin America in the past, are overcome in a large measure by use of this new antenna. Because of its directive quality the aerial will have the equivalent of a six-fold increase in power. This is true on both of W3XAL's frequencies. 17780 and 6100 kcs.

A directive antenna for European broadcasts is now under construction at Bound Brook and is expected to be in operation by March 1.

We wrote: "Will you please advise us what languages are used by W9XF when the station is signing off?"

W9XF answered: "If verification is desired please send complete details of program heard."

We think 9XF uses French, German, English and Spanish, but not being language experts we would like to confirm this information.

Some new police broadcasters are reported by Charles Gamwell, Jr., 11 Taconic St., Pittsfield, Mass. They are WEVN, Bel Air, Md., 1678 kcs., WPHK, near Wilmington, Ohio, 1682 kcs., and WAKX, York, Pa., on 2442 kcs.

Venezuela

Rex Davis of Cumarebo, Venezuela: Bernard Ahman of Baltimore



The Morin Sisters, heard on the Fitch Jingle Program, are, reading down, Marge and Evelyn, sopranos, and Pauline, contralto. Marge makes the arrangements they sing, Evelyn is the business head and Pauline, the oldest, is the boss of the group.

and the NNRC Venezuelan Director Jesus Ma. Lander Garcia, Caracas, as well as R. B. Oxrieder of State College, Pa., send information on a complete revision of the call signs of Venezuelan stations. This country is now divided into districts, evidently from 1 to 9, so all the stations in the same district will bear the same numeral. The complete list of changes appears in "The Months Changes in Station Data" on Page 48.

YV1RH, 6360 kcs., Maracaibo, reads letters and reports of reception on Thursdays at 2210 to 2245, EST.

Correspondence Wanted

Kenneth W. Crawford, 5006 Lyndale Ave., S., Minneapolis, Minn., uses a Majestic 5-tube receiver with a Stewart-Warner s.w. converter, and would like to hear from users of similar equipment.

"Will you please put my name in your list for exchanging SWL cards," requests Francis de Chambeau, 2830 Fifth Ave., Hibbing, Minn. "1 have been DXing for 10 months and am interested in 20 meter amateurs as well as s.w. broadcasts."

Manfred C. Johnson, 2318 Third Ave., Hibbing, Minn., also requests exchange of SWL cards. "I am especially interested in hearing from Grunow owners," he states. "I use two inverted L antennas, one 40 feet high and 80 feet long and the other 30 feet high and 100 feet long. I have a total of 50 countries on 20 meter 'phone and have heard all continents several times."

"I would like to ask readers to answer a question for me," invites Herbert Hop, 63 E. 21st St., Holland, Mich. "I have been hearing a station on about 9.490 or 9.5 megs. It comes in very well but I cannot get the call letters or the location. When they announce they make all sorts of sounds, such as a baby crying, a siren blowing, or a person laughing. Many popular recordings are played."

An intinerant aircraft license has been granted Wallace Beery to work on the 3105 kcs. frequency with 10 watts power. The station, for which call letters have not yet been assigned, will be installed in his plane NC-50Y.

Ten For DX

THE 10-meter or 28 megacycle amateur 'phone band is not accessible on most all-wave receivers, but those who have tuned on 28 megs. are enthusiastic about its DX possibilities.

Elmer Rahmes of W8JFC in Sharonville, Ohio, advises us, through W8BKM, of the best time to listen for signals from certain parts of the world. Egypt is heard near 1000, EST. European stations are best between 0330 and 1300. Africans are good all morning. Australia is heard in the evenings from 1800 to 2000 and Japanese amateurs come through between 1800 and 1900. South America is not very active on 10 but a few stations are heard near 1800 EST.

J. F. Satterthwaite, 544 Colonial Court, Toledo, Ohio, submits some sizzling dope on ultra-high frequencies. All this information is his:

ZU6P, W. F. Myer, 58 Sixth Ave., Bezuidenhout Valley, Johannesburg, Union of S. Africa, is on 28189 shortly after noon. This station has had so many reports he is now 500 cards behind.

SUISG, F. H. Pettitt, Catholic Club, Mustapha Barracks, Alexandria, Egypt, usually on CW but occasionally on 'phone.

OEIFH, Fritz Haas, Frankenberggasse 12, Wien IV, Austria, just before noon.

A lady operator at G6DH, owned by D. W. Heightman, 59 Burrs Road, Clacton on Sea, Essex, England, on 28100.

G6VX, T. St. G. Leigh Clark, 42 Lynmouth Rd., Stamford Hill, N16, London, on 28120, verified.

G6GO is on 28840.

PAOVX, Netherlands, on 28190 at noon.

EI2L, Irish Free State on 28124 megs.

OA4AK, Peru, will verify on 10 meters but not on 20 meters.

LU8AB, Felix Gunther, F. Lacroze 2158, Buenos Aires, Argentina, on 28140.

LU9AX, Ernesto Guerrini, Figueroa 578, Buenos Aires, on 28125 between 1600 and 1800 EST.

K6MVV, Hawaii, is the loudest signal on 28 megs. here. It is verified.

K7PQ, R. J. Fox, Box 301, Ketchikan, Alaska, 350 watts, on 28500 at 1800 EST.

Other good stations are K7FDE, FBSVX, ZL1CD on 28520. ZS1C is reported on 28100 but I have not heard it.

Direction Finders

One topic which is in the mind of nearly every American today is the subject of safety in air transportation. Recent disasters seem to indicate the necessity for additional safeguards for those who fly.

Ray W. Brown, official of the contest board of the National Aeronautical Association and sales manager of the General Tire & Rubber Co., has been working for nearly two years to bring about the adoption of the radio direction finder by all air line companies. He feels that the present system of radio beams is out of date and should be discarded in favor of the direction finder.

When bad flying conditions prevail it is sometimes impossible for a pilot to ride on a beam and there have been times when a pilot was on the wrong beam, but the direction finder enables one to set his course by any radio station.

Mr. Brown, flying under adverse conditions in the vicinity of Terre Haute, Ind., was able to determine his exact position in respect to Terre Haute by tuning in stations in that city, in Goshen, Ind., and in Cleveland. Then, tuning in WWO at Cleveland as a homing point, he was able to drop to 2500 feet and start to break through the overcast. Near Bucyrus, Ohio, however, the storm started to move in rapidly so he changed his homing point to broadcast station WADC in Akron and rode home safely.

Station Hunters

(Continued from Page 19)

what can be accomplished by a little planning. If CPCers would spend half of their activity time on arranging details of programs already scheduled, listeners would have a program worthy of attention and the station response would be boosted considerably.

J. Edward Diehm, Jr., 424 Walnut St., Pottstown, Pa. says, "I have been DXing for about seven years and have 539 veries on the BCB to show for the effort. I'm serving on the CPC of the URDXC and am having a fine time. Would be pleased to hear from DXers just starting in the game, as I feel sure I can be of some aid to them."

Foreign Tests

"Recently I visited the Bureau of Standards in Washington, informs J. L. Lippinco⁺t, Box 2, Tufts College, Mass., "and had a long talk with Mr. Kirby, who is making some of the measurements of foreign stations during the current tests. He showed me charts of reception from some of the T.A.s and LR1. He would like to receive word from DXers as to how the T.A.'s and T.P.'s come in. He is anxious to know whether or not Europeans come in better when broadcast in the same latitude as the listener. Their tests have shown that the Europeans are much weaker than the South Americans, and they are looking for some explanation of this. Also, DXers who can receive both T.A. and T.P. stations (especially Japs in the same latitude as some of the T.A.'s) might be able to gather interesting data."

"Being an old timer in the DX

hobby," admits Lemuel Cavileer, 1223 Keswick Ave., Haddon Heights, N. J., "you boys tempt me with your contest and I want to sample some of the fun you are sure to offer. When I say 'old timer,' I refer to the radio age-not my own. My boy friend had a radio-or wireless, as it was then called-when we entered World War and he had to dismantle it. I can remember Station WOO in Philadelphia when they came near wearing out the store organ. And how about the week all the stations in the U.S.A. had to sign off from 10 to 11:30 PM just to see how far we could hear on this thing called radio. I got a framed certificate for receiving 2LO, HRB and OAX on one tube. And how about the thrills when the Ekko stamps arrived from 6KW. CNRR and KGBU? But enough of this and on with the Mystery DX Contest!"

Believing that some time they may have two networks, like the NBC Red and Blue, the CBS has, for a long time, tried to obtain a second outlet in New York City. A rather complicated procedure would be necessary; it was planned that the Paulist Fathers, operators of WLWL, would buy WOV for \$300,. 000, and then junk WOV, transferring its facilities to WPG in Atlantic City. Thus WPG would acquire full time with 1000 watts on 1130 WLWL would then assume kcs. full time on 1100 kcs. in New York. after which the Paulists would sell WLWL to the CBS.

The situation just became a bit more complicated, however. Arde Bulova, the watch maker, bought WOV from John Iraci for \$300,000. This was the key to the whole CBS shift and it is problematical now what the final outcome will be. Mr. Bulova has purchased several radio stations this year and it is believed he plans to start a new network.

The Frequency Checks

T HE engineers of the Federal Communications Commission have arranged a schedule of programs for the purpose of checking the frequency of a great number of low-powered stations. Interfering stations are silenced for these tests which continue for twenty minutes with frequent announcements of call and location.

These special programs take place during the second week of each month. The March tests will commence on Monday the 8th and continue through Saturday the 13th. April tests will commence on Thursday the 8th and continue through Wednesday the 14th, exclusive of Sunday; and the May tests will start on Saturday the 8th and carry through Friday the 14th, exclusive of Sunday.

The following schedule has just been received from the FCC and readers should preserve it for future reference.

The Second Monday

	Ine	Secona	Monday
2:00-2:20	WLNH	1310	Laconia, N. H.
100 1 100	WJBO	1420	Baton Rouge, La.
2:10-2:30	WBRB	1210	Red Bank, N. J.
	WHBB	1500	Selma, Ala.
2:20-2:40	WMAS	1420	Springfield, Mass.
	WIOD	1300	Miami, Fla.
2:30-2:50	WWRL	1500	Woodside, N. Y.
	WJBW	1200	New Orleans, La.
2:40-3:00	WOKO	1430	Albany, N. Y.
	WMBR	1370	Jacksonville, Fla.
2:50-3:10	WCAX	1200	Burlington, Vt.
	WOPI	1500	Bristol, Tenn.
3:00-3:20	KTRH	1290	Houston, Texas
	WMBO	1310	Auburn, N. Y.
	WMSO	1420	Sheffield, Ala.
3:10-3:30	WOC	1370	Davenport. Ia.
	WCAD	1220	Canton, N. Y.
	WMFN	1210	Clarksdale, Miss.
3:2 0-3:4 0	KWLC	1270	Decorah, Ia.
	WMBQ	1500	Brooklyn, N. Y.
	WNBR	1430	Memphis, Tenn.
3:30-3:50	KFPW	1210	Fort Smith, Ark,
	WMFF	1310	Plattsburg, N. Y.
	WDBO	580	Oriando, Fla.
3:40-4:00	KABC	1420	San Antonio, Texas
	WQDM	1390	St. Albans, Vt.
	WSMB	1320	New Orleans, La.
:3:50 -4:10	KADA	1200	Ada, Okia.
	WFAS	1210	White Plains, N. Y.
	WHEF	1500	Kosciusko, Miss.
4:00-4:20	KFDM	560	Beaumont, Texas
	WCAP	1280	Asbury Park, N. J.
	KIS WAGF	1280	Oakland, Calif.
4:10-4:30	KCRJ	$1370 \\ 1310$	Dothan, Ala.
-€:10~£:30	KURJ	1200	Jerome, Ariz. Monroe, La.
	PWPR	1200	Monroe, La.

4:20-4:40	KLUF	1370	Galveston, Texas
	WDEV	550	Waterbury, Vt.
	KGDM	1100	Stockton, Calif.
	WDNC	1500	Durham, N. C.
4:30-4:50	KROC	1310	Rochester, Minn.
	KGAR	1370	Tueson, Ariz.
	KALB	1420	Alexandria, La.
4:40-5:00	KOVC	1500	Valley City, N. D.
	WBNO	1200	New Orleans, La.
4:50-5:10	KRE	1370	Berkeley, Calif.
	WLAK	1310	Lakeland, Fla.
5:00-5:20	KIEM	1450	Eureka, Calif.
	WGCM	1210	Gulfport, Miss.
5:10-5:30	KDON	1210	Del Monte, Calif.
	WMIN	1370	St. Paul, Minn.
	WTAL	1310	Tallahassee, Fla.
5:20-5:40	KUMA	1420	Yuma, Ariz
5:30-5:50	KWG	1200	Stockton, Calif.
5:40-6:00	KGMB	1320	Honolulu, T. H.
	The	Second	Tuesday
2:00-2:20	WBAX	1210	Wilkes Barre, Pa.
2:10-2:30	WDAS	1370	Philadelphia, Pa.
2:20-2:40	WBBL	1210	Richmond, Va.
2:30-2:50	WFBG	1310	Altoona, Pa.
2:40-3:00	WMBG	1210	Richmond, Va.
2:50-3:10	WEBR	1310	Buffalo, N. Y.
3:00-3:20	KDAL	1500	Duluth, Minn.
	KFIZ	1420	Fond du Lac, Wise.
	WLVA	1200	Lynchburg, Va.
0 10 0 00			
3:10-3:30	KPAC	1260	Port Arthur, Texas

1210

1370

1310

550

1430

1010

1420

1370

1210

900

1310

1120

1430

1370

1210

1200

1310

1240

1370

1500

1420

1310

1120

1200

570

1270

1420

1500

1370

900

1310

1200

1260

1420

1390

1500

1450

1210

1340

1370

1420

940

1370

1210

1240

1420

1450

610

Manitowoc, Wise.

Cincinnati, Ohlo

Rochester, N. Y.

Williamsport, Pa

Johnstown, Pa

Columbus, Ohio Buffalo, N. Y.

Columbus, Ohio

Minot, N. Dak

Marshfield, Ore.

Wilkes Barre, Pa.

Portsmouth, Ohio

Wenatchee, Wash

Shreveport, La. Spokane, Wash.

Janesville, Wisc

Syracuse, N. Y.

Decorah, Iowa

Binghamton, N. Y

Ketchikan, Alaska

Newport News, Va.

Temple, Texas

Canton, Ohio

Missoula, Mont Midland, Texas

Cleveland, Ohio

Pittsburgh, Pa. Wolf Point, Mont

Rochester, N. Y.

Palestine, Texas

Kansas City, Mo

Klamath Falls, Ore.

Toledo, Ohio

Astoria, Ore.

Louisville, Ky

Detroit, Mich. Lamar, Colo.

Cleveland, Ohio

Eugene, Ore. Cleveland, Ohio

Parkersburg, W. Va

Cape Girardeau, Mo.

College Station, Tex.

Norman, Okla. Detroit, Mich.

Quincy, Ill.

Danville, Va. Kansas City, Kans.

WOMT

WBTM

KCKN

WKRC

WHEC

WNAD

WMBC

WRAK

WTAD

WJAC

WTAW

WBNS

WBNY

WCOL

KOOS

WBRE

KLPM

WPAY

WPAR

KRMD

KFIO

WCLO

WSYR

KGCA

KORE

WIAY

WNBF

KTEM

KGBU

WGH

WHBC

KGVO KRLH

WHK

WWSW

KGCX

WSAY

WSPD

KAST

KNET

WAVE

KCMO

WXYZ

KIDW

WGAR

KFJI

KPQ

KFVS

3:20-3:40

3:30-3:50

3:40-4:00

3:50-4:10

4:00-4:20

4 10-4:30

4:20-4:40

4:30-4:50

4:40-5:00

4:50-5:10

5:00-5:20

5:10-5:30

5:20-5:40

5:30-5:50

44

5:40-6:00	KQV WCAT	1380 1200	Pittsburgh, Pa. Rapid City, S. Dak.	4:20-4:40	KGKB KGU	1500 750	Tyler, Texas Honolulu, T. H.
The Second Wednesday			4:30-4:50	WBOW KGKL	1310 1370	Terre Haute, Ind. San Angelo, Tex.	
2:00-2:20	WMFJ	1420	Deutene Deesk Elu		KSUN	1200	Lowell, Ariz.
2:10-2:30	WAIM	1420	Daytona Beach, Fla. Anderson, S. C.	4:40-5:00	WCBS	1420 950	Springfield, Ill.
2:20-2:40	KVOL	1310		4.40-5.00	KHSL KRRV	950 1310	Chico, Calif. Sherman, Texas
2:30-2:50	WHBQ	1370	Lafayette, La. Memphis, Tenn.		WTMV	1500	East St. Louis, Ill.
2:40-3:00	WKAQ	1240	San Juan, P. R.	4:50-5:10	KERN	1370	Bakersfield, Calif.
2:50-3:10	WSJS	1310	Winston-Salem, N. C.	-	WIIBF	1210	Rock Island, Ill.
3:00-3:20	KABR	1420	Aberdeen, S Dak.	5:00-5:20	KHBC	1400	Rilo, T. H.
	WFAM	$1200 \\ 1370$	South Bend, Ind.		WTRC	1310	Elkbart, Ind.
3:10-3:30	WMFD KLCN	1370	Wilmington, N. C. Blytheville, Ark.	5:10-5:30	KTRB	740	Modesto, Calif.
3.10-3.00	WPAX	1210	Thomasville, Ga.	5:20-5:40	WWAE WIBM	1200 1370	Hammond, Ind. Jackson, Mich.
3:20-3:40	KFPL	1310	Dublin, Texas	5:30-5:50	WALR	1210	Zanesville, Ohio
	WKBN	570	Youngstown, Ohio	0.000 0.000		1210	Bancornie, Onio
	WRDW	1500	Augusta, Ga.		The	Secon	d Friday
3:3 0- 3:50	KGBX	1230	Springfield, Mo.	2:00-2:20	WGNY	1210	Newburgh, N. Y.
	WELL WQBC	$1420 \\ 1360$	Battle Creek, Mich.	2:10-2:30	WCNW	1210	Brooklyn, N. Y.
3:40-4:00	KFNJ	1200	Vicksburg, Miss. Grand Junction, Colo.	2:20-2:40	WGBB	1210	Freeport, N. Y.
0.10-1.00	KPLC	1500	Lake Charles, La.	2:30-2:50	WABY	1370	Albany, N. Y.
	WADC	1320	Akron, Ohio	2:40-3:00	WNRI	1200	Newport, R. I.
3:50-4:10	KARK	890	Little Rock, Ark.	2:50-3:10	WSYB	1500	Rutland, Vt.
	WGPC	1420	Albany, Ga.	3:00-3:20	KICA	1370	Ciovis, N. Mex.
	WOSU	570	Columbus, Ohio		WEBQ WABI	1210 1200	Harrisburg, Ill. Bangor, Me.
4:00-4:20	KFJZ WHBU	1370 1210	Fort Worth, Texas	3:10-3:30	WACO	1420	Waco, Texas
	WJNO	1210	Anderson, Ind. West Palm Beach, Fla.	0.10-0.00	WLBC	1310	Muncie, Ind.
4:10-4:30	WBEO	1310	Marquette, Mich.	3:20-3:40	WEW.	760	St. Louis, Mo.
	WCOC	880	Meridian, Miss.		WIBX	1200	Utica, N. Y.
	WLB	1250	Minneapolis. Minn.		WKBB	1500	E. Dubuque, Ill.
4:20-4:40	KSO	1430	Des Moines, Iowa	3:30-3:50	KUOA WAGM	1260 1420	Fayetteville Ark.
	WKEU WMPC	1500	Griffin, Ga. Lapeer, Mich.		WHDF	1420	Presque Isle, Me. Calumet, Mich.
4:30-4:50	WEXL	$1200 \\ 1310$	Royal Oak, Mich.	3:40-4:00	KIUJ	1310	Santa Fe, N. Mex.
1.00 1.00	WHLB	1370	Virginia, Minn.		WJW	1210	Akron, Ohio
4:40-5:00	WJMS	1420	Ironwood, Mich.		WNBZ	1290	Saranac Lake, N. Y.
	WJRD	1200	Tuscaloosa, Ala.	3:50-4:10	WJBK	1500	Detroit, Mich.
4:50-5:10	KFXR	1310	Oklahoma City, Okla.		WMBH WRDO	$1420 \\ 1370$	Joplin, Mo.
	WTAX	1210	Springfield, Ill.	4:00-4:20	KIUL	1210	Augusta, Me. Garden City, Kans.
5:00-5:20	WBIG KFJB	1440 1200	Greensboro, N. C. Marshalltown, lowa	100 1.20	WCMI	1310	Ashland, Ky
	WEOA	1370	Evansville, Ind.		WTHT	1200	Hartford, Conn.
5:10-5:30	KPDN	1310	Pampa, Texas Tuscola, III.	4:10-4:30	WCAZ	1070	Carthage, Ill.
5.00.5.10	WDZ	1020	Tuscola, Ill.	4:20-4:40	WNLC WMFG	$1500 \\ 1210$	New London, Conn. Hibbing, Minn.
5:20-5:40	KELD WAYX	$1370 \\ 1200$	Eldorado, Ark. Waycross, Ga.	1.20-1.10	WTAQ	1330	Green Bay, Wisc.
5:30-5:50	KDLR	1210	Devils Lake, N. Dak.	4:30-4:50	KIUP	1370	Durango, Colo.
5:40-6:00	KRBC	1420	Abitene, Texas		WPAD	1420	Paducah, Ky.
				4:40-5:00	KNOW	1500	Austin, Texas
	The S	Second	Thursday	4:50-5:10	WEMP KGDE	$1310 \\ 1200$	Milwaukee, Wis. Fergus Falls, Minn.
2:00-2:20	WSVS	1370	Buttale N.V.	4.00-0.10	WGRC	1370	New Albany, Ind.
2:10-2:30	WKOK	1210	Buffalo, N. Y. Sunbury, Pa.	5:00-5:20	KIUN	1420	Pecos, Texas
2:20-2:40	WRAW	1310	Reading, Pa.	5:10-5:30	KGEK	1200	Sterling, Colo.
2:30-2:50	WJTN	1210	Jamestown, N. Y.	5:20-5:40	KMAC	1370	San Antonio, Texas
2:40-3:00	WTEL	1310	Philadelphia, Pa.	5:30-5:50	WIL	1200	St. Louis, Mo.
2:50-3:10	WHIS	1410	Bluefield, W. Va.	5:40-6:00 5:50-6:10	KGFG KANS	$1370 \\ 1210$	Oklahoma City, Okla. Wichita, Kans.
3:00-3:20	KGKO WCPO	570 1200	Wichita Falls, Tex. Cincinnati, Ohio	0.00-0.10			
	WQAN	880	Scranton, Pa.		The S	second	Saturday
3:10-3:30	KFYO	1310	Lubbock, Texas	2:00-2:20	WMFR	1200	High Point, N. C.
	WGL	1370	Ft. Wayne, Ind.	2:10-2:30	WMFO	1370	Decatur, Ala.
	WLEU	1420	Erie, Pa.	2:20-2:40	WSOC	1210	Charlotte, N. C.
3:20-3:40	KGFI	1500	Corpus Christi, Texas	2:30-2:50	WTJS	1310	Jackson, Tenn.
3:30-3:50	WIBU KGFL	$1210 \\ 1370$	Poynette, Wisc. Roswell, N. Mex.	2:40-3:00 2:50-3:10	WSIX WROL	1210	Nashville, Tenn.
0.00-0.00	WBCM	1370	Bay City, Mich.	3:00-3:20	KOTN	1310 1500	Knoxville, Tenn. Pine Bluff, Ark.
	WSAJ	1310	Grove City, Pa.	0.00-0.20	WQAM	560	Miami, Fla.
3:40-4:00	KGGM	1230	Albuquerque, N. Mex.	3:10-3:30	KWYO	1370	Sheridan, Wyo.
	WJBC	1200	Bloomington, Ili.		WCLS	1310	Joliet, Ill.
3:50-4:10	KÖHF	1320	Pueblo, Colo.		WPRP	1420	Ponce, P. R.
	WHAT WLAP	1310 1 42 0	Philadelphia, Pa.	3:20-3:40	KGCU	1240	Mandan, N. Dak.
4:00-4:20	KGHI	1300	Lexington, Ky. Little Rock, Ark.		WHBY WNEL	1200 1290	Green Bay, Wisc.
1.00 1.00	KXO	1500	El Centro, Calif.	3:30-3:50	KXYZ	1290	San Juan, P. R. Houston, Texas
	WHDL	1400	Olean, N. Y.	3.00 0.00	WAML	1310	Laurei, Miss.
	WSMK	1380	Dayton, Ohio		WKBV	1500	Richmond, Ind.
4:10-4:30	KIDO	1420	Alamosa, Colo.	3:40-4:00	KRGV	1260	Weslaco, Texas
	KJBS WJIM	$1070 \\ 1210$	San Francisco, Calif. Lansing, Mich.		WFOR WJBL	$1370 \\ 1200$	Hattiesburg, Miss. Decatur, Ill.
		1210			MUDL	1200	Decatur, rd.

8:50-4:10	KNEL	1500	Brady, Texas
0.00 1.10	WEED	1420	Rocky Mount, N. C.
	WGBF	630	Evansville, Ind.
4:00-4:20	KFOD	780	Anchorage, Alaska
1.00 1.20	KVSO	1210	Ardmore, Okla.
	WFDF	1310	Flint, Mich.
4:10-4:30	KONO	1370	San Antonio, Texas
1110 1100	KVOS	1200	Bellingham, Wash.
	WKBZ	1500	Muskegon, Mich.
4:20-4:40	KRLC	1420	Lewiston, Idaho
1.20 1.10	KTSM	1310	El Paso, Texas
4:30-4:50	KUJ	1370	Walla Walla, Wash.
4:40-5:00	KCMC	1420	Texarkana, Ark.
	KRNR	1500	Roseburg, Ore.
4:50-5:10 *	KEEN	1370	Seattle, Wash.
	KWTN	1210	Watertown, S. Dak.
5:00-5:20	KGFF	1420	Shawnee, Okla.
	KIT	1310	Yakima, Wash.
5:10-5:30	KBTM	1200	Paragould, Ark.
	KRKO	1370	Everett, Wash.
5:20-5:40	KFRO	1370	Longview, Texas
	KGEZ	1310	Kalispell, Mont.
5:30-5:50	KBIX	1500	Muskogee, Okla.
	KFXD	1200	Nampa, Idaho
5:40-6:00	KFJM	1410	Grand Forks, N. D.
	KXRO	1310	Aberdeen, Wash.
5:50-6:10	KGY	1210	Olympia, Wash.
6:00-6: 20	KINY	1310	Juneau, Alaska
6:10-6:30	KMED	1410	Medford, Ore.

Notes

The Japanese Association of America has applied to the FCC for permission to erect a shortwave station at San Francisco for the purpose of supplying Japanese farmers in central and northern California with agricultural and market news in their own language.

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One of the southland's most famous radio stations, KTHS, Hot Springs, Ark., has changed hands and applied for permission to move into Little Rock. KTHS, formerly owned by the local Chamber of Commerce, was sold to Radio Enterprises, Inc. At about the same time an application was filed with the FCC by Associated Arkansas Newspapers, Inc., for a new daytime 100-watt station to operate on the 1310 kc. frequency in Hot Springs.

* * *

It is reported that several persons living in a suburb of Bremen, Germany, were recently convicted of listening to a Moscow broadcast and were sentenced to prison for periods varying from one to two years. For two years WLWL in New York has tried to obtain permission to operate full time with 5 kw. Their plans were upset, however, when the FCC disposed of the entire proceeding and granted all stations involved in the controversies renewal of their licenses on the same basis accorded them prior to the time WLWL started the cases.

WLWL works about two hours a day on the clear channel of 1100 kcs, and hoped to obtain full time through switching the assignments of eight stations on five frequencies. These stations, which are now restored to their original status, are WWL, New Orleans, WFAA Dallas, WBAP Fort Worth, WCCO Minneapolis, WOV New York, WPG Atlantic City, KWKH Shreveport, WNYC New York and WJJD Chicago.

Plans are being made for the erection of a new broadcasting center for the Columbia Broadcasting System. The building, which will be completed in about two years, will occupy a tract of land at the southeast corner of Park Ave. and 59th St., in New York, one half mile from Radio City. The European architects who designed the AVRO studios in Hilversum, Netherlands, have been invited to New York to advise in the construction of the new building.

* *

Since the Affiliated Broadcasting Co. was organized last May about a quarter of a million dollars have been spent in organization, of which about \$75,000 was raised by Samuel Insull and his friends. The company is near collapse and only the strictest economy can hold it together until the looked-for fall and winter business relieves the situation. Mr. Insull was practically the founder of the system, but he lost control of the board and resigned; Mr. H. B. Walker of WEOA and WBOW is in charge of the Board at the present time.

A tired announcer speaks terse, brief commands into the microphone of a Dixieland radio station. His words, spoken without emotion or feeling, direct the work of all those engaged in the work of relieving the suffering of homeless refugees from the flood-stricken areas of the Ohio River in the vicinity of Louisville. His appeals for help, spoken to workers in his own city, are heard by persons in every part of the country. He does not dramatize. He is faced with stark reality. Muddy waters of an angry river rush through his city, but hour after hour, day after day, he sits there in the cold and damp, sometimes in the dark, relaying his messages until his voice almost fails him. When his own station has to cease his reassuring voice comes through from a friendly station to the south, so his neighbors know that help is coming and his fellow workers know where they are needed.

It was genuine drama that was packed in the broadcasts of the Volunteer Inter-City Network, the chain of stations that grew up over night from Minnesota to Florida, carrying the story of the flood from WHAS in Louisville.

When the high water first became evident at Louisville, WHAS carried flood bulletins exclusive. When it was announced that the power might fail, WSM in Nashville offered the services of its transmitter and WELL at Battle Creek, as well as WCKY at Covington offered their assistance. Near midnight Louisville had to leave the air, but the broadcasts were picked up by land wire by WSM, and this station continued to broadcast the flood bulletins for Louisville for the entire duration of the flood, twenty-four hours a day. In the morning WHAS returned to the air. and the network was formed.

The broadcasts originated in the

WHAS studios and were fed to the network through WSM. Scanning the dials of his receiver, the writer heard fourteen stations rebroadcasting WHAS: WGRC, WCKY, WELL, WSB, WHAM, WFBM, WGR, WCCO, WWJ, WLAC, WJAX, WJR, WCFL and WFBR. There may have been many more that we did not hear.

In their own localities WLW, WSAI and WSAZ performed most commendably, and the many broadcasts of the NBC, CBS and MBS cannot go without mention.

Programs

This month we have inserted a few of the Canadian Broadcasting Corporation features in the programs listed under "What's On The Air Tonight?" In addition to these shows which originate in Canada, several of the NBC, CBS and MBS broadcasts are heard on the Canadian Network and these are so indicated. A complete list of the CBC stations is given elsewhere in this issue of RADEX.

We receive from Canada regular weekly program folios listing all their network features, but as many of them are not familiar to us we cannot choose the most popular ones for inclusion in our lists. We will try to include a few of the betten programs if our Canadian readers will let us know which they like the best.

We intend to list also the programs of the new coast-to-coast Mutual System, and will do so as soon as Mutual commences to release this information regularly.

DX Convention

With the object of creating greater fellowship a mong DXers throughout the world, an international DX Convention will be held in San Francisco during the month of July, 1939. Although originated and sponsored by the International DXers Alliance, all DX Clubs, radio periodicals and other organizations interested in radio are being asked to participate.

The Convention will be replete with all the customary trimmings, including banquets, talks by prominent DXers and radiomen, contests, prizes, visits to radio stations, recreation, etc.

All clubs and organizations wishing to co-operate should write at once to George C. Sholin, Director, Golden Gate International DX Convention, 55 Lapidge St., San Francisco, Calif.

The MONTH'S CHANGES in STATION DATA

This information is compiled just before we go to press, after the forms for most of the other pages are closed. Some very recent changes, received too late to index in this issue, are here included, and will be incorporated next month in our main indices.

	S	Shortwaves	1000	XEBI XEXS	Aguascallentes, Ags. Portable in Mexico
		NEW	1060	XEMG	Atzeapotzaico, D. F.
2.500	XEXP	Monterrey, N. L.	1080	XEBI	College Park, Md. Guzman, Jal.
5.930	YVIRK	Venezuela	1130	XEJP	Mexico City, D. F.
6.250		Caracas, Venez.	1150	XEC	Tijuana, B. Cfa.
6.720	PMH	Bandoeng, Java		XEDW	Minatitian, Ver.
7.180	YNAM	Managua, Nicaragua	1160	NEBJ	Merida, Yuc.
8.720	VPD3	Suva, Fifi	1190		Visalia, Callf.
11.796	OAX5B	Ica, Peru	1200		Superior, Wis.
		ADD	1210		Bridgeton, N. J.
4.390	NAA	Arlington, Va. Time signals at	1220	XEBL	Mazatlan, Sin.
		0955 and 2155		XEDA	Gra. Anaya, D. F.
6.090	HJ4ABC		1250	XEXH	San Luis Potosi, S.L.P.
26.400	W9XAZ	Milwaukee, Wis.	1370	XELZ	Mexico City, D. F.
		FREQUENCY	15 00	KAWM	Gallup, N. Mex.
5.710	YV2RA	San Cristobal, Venez., from 5.720		KYCA	Richmond, Va.
5.855	HIIJ	San Pedro, D. R., from 5.865			Ashtabula, Ohio
5.880	YV3RB	Barquisimeto. Venez., from 5.900			FREQUENCY
$5.885 \\ 5.950$	HI9B	Santiago, D. R., from 6.045	580	\mathbf{XELO}	Piedras, Negras, Coah., from 1110
9.460	HJN XEFT	Bogota, Colombia, from 6.080	780	XEL	Mexico City, D. F., from 1100
9.480	XEDQ	Veracruz, Ver., from 9.505 Guadaiajara, Jal., from 9.520	870	XEFB	Monterrey, N. L., from 1420
12.295	CB615	Santiago, Chile, from 6.150	1160	NEBZ	Mexico City, D. F., from 820
1	Choro	CALLS			POWER
5.710	YV2RA	San Cristobal, Venez. from	550	XEFX	Merida, Yuc., 100 from 250
0.010		YVIORSC	570	WMCA	New York, N. Y., 1000 from 500
5.800	YV5RC	Caracas, Venez., from YV2RC	610	XEXM	Mexico City, D. F., 500
5.850	YV1RB	Maracaibo, Venez., from YV5RMO	750	NEAM	Matamoros, Tams., 25 from 7.5
5.880	YV3RB	Barquisimeto, Venez., from	990	XEAF	Nogales, Son., 750 from 250
		YV8RB	1060	XEAD	Guadalajara, Jal., 125 from 500
5.910	YV4RH	Valencia, Venez., from YV15RV	1210	XEAT	Parral, Chih., 250 from 300
6.070	YVIRD	Maracaibo, Venez., from YV7RMO	1000	XEE KUOA	Durango, Dgo., 50 from 200
6.156	YV5RD	Caracas, Venez., from YV3RC	1260	KUOA	Siloam Springs, Ark., 2500 from 1000
6.300	YV4RD	Maracay, Venez., from YV12RM	1280	XEMX	Tucson, Ariz., 1000 from 500 Mexico City, D. F., 100 from 12
6.380	YV5RF	Caracas, Venez., from YV4RC	1230	WMFF	Piattsburg, N. Y., 100 from 250
6.400	YV5RH	Caracas, Venez., from YV9RC	1510	11 11 1. 1.	LOCATION
6.520	YV4RB	Valencia, Venez., from YV6RV	1180	NEFA	Tacuba, D. F., from Mexico City
6.545	YV6RB	Bolovar, Venez., from YVIIRB	1210	XEAT	Parral, Chih., from Hidalgo
					CALLS
		Broadcast	810	XEXC	Aguascalientes, Ags., from XFC
			1060	XEAD	Guadalajara, Jal., from XEA
		NEW	1270	XEXB	Jaiapa, Ver., from XFB
640	XEBX	Saltillo, Coah,	1340	XEXD	Jalapa, Ver., from XFD
660	XEAL	Mexico City, D. F.	1370	KEEN	Seattle, Wash , from KVL
820	XEBG	Tijuana, B. Cfa.		XECZ	San Luis Potosi from XEZZ
860	XENC	Mexico City. D. F.	1530	WBRY	Waterbury, Conn., from WIXBS
940	XEYO	Mexico City, D. F.			DELETE
980	XEAC	Tijuana, B. Cfa.	610	XFX	Mexico City, D. F.

640	NEON	Saltillo, Coah.
	NAA	Arlington, Va.
690		
710	XEN	Mexico City, D F.
780	XEYZ	Mexico City, D. F.
820	XEMZ	Coronado Isle, B. Cfa.
1000	XEY	Merida, Yuc.
1150	NEFL	Tijuana, B. Cfa.
-	XEWZ	
1240	NEAI	Mexico City, D. F.
	NEME	Merida, Yuc.
1270	XEG	Ensenada, B. Cfa.
1310		Aguascalientes, Ags,
		O CHANGE FREQUENCY
1210	WMBG	Richmond, Va., to 1350
1420	WJBO	Baton Rouge, La., to 1120
	PERMIT	TO CHANGE LOCATION
880	WPHR	Petersburg, Va., to Richmond
004	PERMIT	T TO CHANGE POWER
1210	WJTN	Jamestown, N. Y., to 100
	WMBG	Richmond, Va., to 500
1420	WJBO	Baton Rouge, La. to 500
1440	W B 1G	Greensboro, N. C., to 1000

The DX Calendar

Special programs arranged by the stations for the benefit of distant listeners. The regular frequency check broadcasts are given in another section of this issue. All times are Eastern Standard.

Sunday mornings February 21			
		Februar	y 21
0100-0300	WHAZ	1300	Troy, N. Y.
0200-0600	RADEX	MYSTE	RY DX CONTEST
		Februar	y 28
0200-0500	CFLC		Prescott, Ont. GCDXC
		March	21
0300-0500	WHAZ	1300	Troy, N. Y.
Febr	uary 21, 2	8 and 1	March 7, 14, 21, 28
0000-0500	TGW	1210	Guatemala City Havana, Cuba
0200 0500	CMCU	1280	Havana, Cuba
0230-0400	CKWX	1010	Vancouver, B. C. Victoria, B. C. Juarez, Chih.
0300-0500	CFCT	1450	Victoria, B. C.
	XEP	1160	Juarez, Chih.
	Mo	nday M	lornings
	1	Februa	ry 22
0200-0600	RADEX		ERY DX CONTEST
		Marcl	
0100-0115	KTSA		San Antonio, Texas
0530-0600	WRAW		Reading, Pa.
		Marci	h 8
0100-0200	WHEF	1500	Kosciusko, Miss.
0200-0600	FCC	Frequ	iency Checks
		March	15, 29
0600-0630	KGFW	1310	Kearney, Neb.
0000 0000	Tue	sday m	nornings
		Februa	
0300-0330	KIUL	1210	Garden City, Kans.
0530-0545	WHEC	1430	Rochester, N. Y.
0530-0600	KBIX	1500	Muskogee, Okla
0000 0000	KMAC	1370	San Antonio, Texas
	11.11.0	10.0	NNRC
		Marc	h 9
0209-0600	FCC		iency Checks
0200-0000	100	March	
0530-0600	KBIX		Muskogee, Okla.
0000-0000		March	
0100-0115	WRR		Dallas, Texas
0100-0110			16, 23
0300-0330	RIUL	1910	Garden City, Kans.
0300-0330		ch 2 9	16, 23, 30
0530-0545	WHEC	1420	Rochester, N. Y.
0000-0040			mornings
		Februa	
0300-0400			Hilo, Hawali NNRC
0300-0400	WPAD	1400	Paducah, Ky.
0500-0530	WPAD	1420	Laundan, ny.

0600-0630	WOOD	1270 Grand Rapids, Mich.	
		March 3	
0300-0330	WHBQ	1370 Memphis, Tenu	
		March 10	
0200-0600	FCC	Frequency Checks	
0200-0000		March 31	
0200 0400		1400 Hilo, llawaii NNRC	
0300-0400			
0500-0530	WPAD	1420 Paducah, Ky.	
		arch 17, 24	
0230-0300	WIBQ		
	IVI.	larch 3, 17	
0630-0700		1420 Hutchinson, Kans.	
		March 3, 31	
0130-0230	WSU1	880 lowa City, la	
		3, 10, 17, 24, 31	
0600+0630	WOOD	1270 Grand Rapids, Mleh.	
	Thur	sday mornings	
		ebruary 25	
0245-0315	KADA	1200 Ada, Okla.	
0240 0010		March 4	
0500-0530	WELA	620 Clearwater, Fla.	
0000 0000		irch 4, April 1	
0200.0500		1160 Cienfuegos, Cuba	
0200.0300	CMRJ	March 11	
0.000 0.000		1200 Ada, Okla	
0200-0550	KADA	1200 Aua, Okia.	
	Marc	h 18, April 15	
0445-0550	CMIIJ	1160 Cienfuegos. Cuba	
Friday mornings			
		March 5	
0145 - 0215		1500 Austin, Texas	
	WACO	1420 Waco, Texas	
		March 12	
0130-0200	WJAG	1060 Norfolk, Neb.	
0200-0600	FCC	Frequency Checks	
0215-0245	KPOF	880 Denver, Colo.	
		rday mornings	
		February 20	
0200-0600	PADEX	MYSTERY DX CONTEST	
0600-0700	WTRC	1310 Elkhart, Ind.	
0000-0700	wine	February 28	
0300-0400	KFRO	1370 Longview, Texas NNRC	
0300-0400	Arno	March 6	
0000 00:0	KASA	1210 Eik City, Okia.	
0330-0350	PUPUP	March 13	
0000 0000	FCC	Frequency Checks	
0200-0630	FUU	March 27	
0000 0400	TEDO	1370 Longview, Texas NNRC	
0300-04 00	KFRO	1510 Longview, Texas Hittee	

The CBC Network

The Canadian Broadcasting Corporation, with offices in the National Research Building at Ottawa Ont., advise us that the following stations use Corporation programs.

CFAC	930	Calgary, Alta.
CFCF	600	Montreal, P. Q.
CFCH	930	North Bay, Ont.
CECO	630	Chatham, Ont.
CFCY	630	Charlottetown, P.E.1.
CFJC	880	Kamlo ps. B. C.
CENB	550	Frederickton, N. B.
CFPL	730	London, Ont.
CFOC	840	Saskatoon, Sask
CFRC		Kingston, Ont.
CFRN		Edmonton, Alta.
CHAB		
CHLP	1120	Montreal, P. Q.
CHML	1010	Hamilton, Ont.
CHNC	960	New Carlisle, P. Q.
CHNS	930	Halifax, N. S.
CIISJ	1120	St. John, N. B.
		Chilliwack, B. C.
CHWK	780	
CJAT	910	Trail, B. C.
CJCA	730	Edmonton, Alta.
CJCB	1240	Sydney, N. S.
CJCJ	690	Calgary, Alta.

CJGX CJKL	1390 1310	Yorkton, Sask. Kirkland Lake, Ont.
CJOC	950	
CJRC	630	Lethbridge, Alta.
CJRM	540	Winnipeg, Man.
CJRO	6150	Moose Jaw, Sask.
CJRX	11720	Winnipeg, Man.
CKBI		Winnipeg, Man.
CKCH	1210	Prince Albert, Sask.
	1210	Hull, P. Q.
CKCK	1010	Regina, Sask.
CKCO	1010	Ottawa, Ont.
CKCV	1310	Quebec, P. Q.
CKCW	1370	Moncton, N. B.
CKGB	1420	Timmins, Ont.
CKMO	1410	Vancouver, B. C.
CROC	1120	Hamilton, Ont.
CKOV	630	Kelowna, B. C.
CKPC	930	Brantford, Ont.
CKPR	730	Fort William, Ont.
CKSO	780	Sudbury, Ont.
CKTB	1200	St. Catherines, Ont.
CKWX	1010	Vancouver, B, C.
CKX	1120	Brandon, Man.
CKY	910	Winnipeg, Man.
CRCK	1050	Quebec, P. Q.
CRCM	910	Montreal, P. Q.
CRCO	880	Ottawa, Ont.
CRCS	950	Chicoutimi, P. Q.
CRCT	840	Toronto, Out.
CRCV	1100	Vancouver, B. C.
CRCW	600	Windsor, Ont.
CRCX	6090	Torouto, Ont.
CRCY	1420	Toronto, Ont.
		, 200

Boake Carter, the Philco commentator who broadcasts five nights a week on the CBS, made his screen debut as the narrator in the new film "The Dead March," which is now showing in theaters throughout the country.

"The Dead March" is a bold screen revelation of the horrors and atrocities of war, dealing in events in Spain, China, Ethiopia and the World War and composed of pictures taken on the scenes of action.

* * *

The Boston local, WMEX, has become a high-powered regional station. Their application for 1470 kcs with 5 kw power was granted by the FCC without a hearing. When construction of the new transmitter is completed their 1500 kilocycle assignment will be relinquished.

* * *

Nathaniel Shilkret once made a gold recording for the Emperor of Japan. He was asked to autograph it, and inscribed it "To His Highness, the Emperor, from Nathaniel Shilkret." The record was returned to him, however, with the request that the dedication be changed; none save the Emperor himself is permitted to write the imperial name.

* * *

On June 1, there were, in the United States, 6111 radio stations exclusive of amateurs and government classes. There were 46,598 ama-These stations are divided teurs. into 34 different classes. The class having the greatest number of stations is the Ship Telegraph, with 1973.This is followed by the Municipal Police, with 1125. There are 630 stations on the broadcast band (550-1500 kes.); 325 point-to-point telegraph stations; 32 "apex"; 79 State Police, and 186 relay broadcasters.

According to World-Radio, the weekly journal of the British Broadcasting Corporation, a number of new stations will be erected throughout India, at Trichinopoli, Dacca, Lahore, Madras and Peshawar, and, in the United Provinces, at Lucknow or some other suitable place. Expenditures on the new stations and for remodeling the existing ones at Bombay and Calcutta, are estimated to be about \$1,350,000.

* * *

There are no shortwave stations in Turkey at present, but it is understood that the Turkish government will soon let contracts for construction of two new radio stations. One of these will be on the high frequencies with 10 kw. It is believed it will be located at Ankara.

* * *

Station WTFI of Athens, Ga., which has a permit to move into Atlanta, has been acquired by the Atlanta Journal, owners of WSB in Atlanta. On removal to Atlanta the call letters no doubt will be changed, perhaps to WAGA. It is expected that WSB, now an NBC outlet, will carry Red Network programs and the new station the programs of the Blue Net.

WHAT'S ON THE AIR TONIGHT

Fill in the calls and frequencies of the stations through which you best receive the network programs. You can then turn quickly to the one that has the feature you want.

Network	Stations
Canadian (CBC)	
Columbia (C)	
Mutual (M)	
National Red (R)	
National Blue (B)	

Time: E Eastern; C Central; M Mountain; P Pacific

RADEX is the only publication listing stations in alphabetical order for your convenience.

While these programs are correct at the time of going to press, changes are made from time to time.

MONDAY

E-6:15 p.m., C-5:15, M-4:15, P-3:15 - News of Youth c

KMOX WABC WADC WBBM WBNS WCAO WCAU WDRC WEEI WFBL WHK WIBX WKBN WLBZ WMAS WOKO WORC WPRD WWVA

E-6:45 p.m., C-5:45, M-4:45, P-3:45

C — Renfrew of the Mounted KFAB KFH KLRA KMBC KMOX KOMA KRLD KRNT KSCJ KTUL KWKH WABC WADC WBBM WBNS WCCO WDRC WFBM WGR WHEC WICC WISN WJR WIBX WHK WISV WKBN WMAS WMBG WNAC WNBH WOC WREC WSMK WSPD WWVA

B --- Lowell Thomas

CRCT KDKA WBAL WBZ WBZA WFLA WIOD WJAX WJZ WLW WMAL WOOD WRVA WSYR WTAM WXYZ

E-7:00 p.m., C-6:00, M-5:00, P-4:00 C — Poetic Melodies; Jack Fulton WABC WADC WBT WCAO WCAU WDRC WEAN WEEI WFBL WGR WHEC WHK WJAS WJR WJSV WKRC WOKO WSPD WTOC WWVA - Amos 'n' Andy

KYW WBEN WCAE WCSH WEAF WFBR WGY WJAR WLW WEEL WRC WTAG WTIC

E-7:15 p.m., C-6:15, M-5:15, P-4:15 C - Popeye the Sailor

KFAB KLZ KMBC KMOX KRNT KSL WABC WADC WBBM WBNS WCAO WCAU WDRC WEAN WFBL WFBM WGR WHAS WHEC WIBX WICC WJAS WJSV WHK WKRC WNAC WOC WOKO WORC WSMK

– Uncle Ezra's Radio Station R-KPRC KTBS KTHS KVOO KYW WBAP WBEN WCAE WCKY WCSH WDAF WEAF WEEI WFBR WGY WMAQ WOAL WIRE WJAR WKY WOOD WOW WRC WTAG WTAM WTIC

E-7:30 p.m., C-6:30, M-5:30, P-4:30 B — Lum and Abner

WBZ WBZA WENR WJZ WLW WMC WSM WSYR

E-7:45 p.m., C-6:45, M-5:45, P-4:45 C - Boake Carter

KMBC KMOX KOMA KRLD WABC WBBM WBT WCAO WCAU WCCO WDRC WEAN WFBL WGR WHAS WHK WJAS WJR WJSV WKRC WNAC

E-8:00 p.m., C-7:00, M-6:00, P-5:00 - Horace Heidt and Orchestra c

KERN KFAB KFBK KFH KDB KFPY KFRC KGB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KRLD KRNT KSL KTRH KTSA KTUL KVI KWG WABC WBBM WBRC WBT WCAO WCAU WCCO WDRC WFBL WFBM WGR WGST WHAS WHK WJAS WJR WJSV WKRC WLAC WMBR WNAC WNAX WOKO WREC WWL

- Fibber McGee and Molly R-

KSD KYW WBEN WCAE WCKY WCSH WDAF WEAF WEEI WFBR WHO WIRE WJAR WMAQ WGY WOOD WOW WRC WTAG WTAM WTIC WWJ

B — Helen Hayes, Drama

KDKA KOIL KSO KWK WABY WBAL WBZ WBZA WEBR WFBR WFIL WGAR WHAM WJZ WLS WMAL WMT WREN WSAI WSYR WXYZ

E-8:30 p.m., C-7:30, M-6:30, P-5:30 - Pick and Pat c

KEAB KMBC WABC WADC WBBM WBT WCAO WCAU WDRC WEAN WFBL WGR WGST WHEC WHK WHP WICC WJAS WJR WJSV WKRC WLBZ WMAS WNAC WOKO WORC WSPD

R — Voice of Firestone

CFCF CRCT KFYR KPRC KSD KSTP KTBS KVOO KYW WAVE WBEN WCAE WCSC WCSH WDAF WDAY WEAF WEBC WEEI WFAA WFBC WFBR WFLA WGY WHO WIOD WIRE WIS WJAR WIBA WJAX WJDX WKY WMAQ WMC WOA1 WOW WPTF WRC WRVA WSB WSM WSMB WSOC WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

R - Frank Munn: Abe Lyman

KDKA KOIL KSO KWK WBAL WBZ

WBZA WCKY WEAN WEBR WFIL WGAR WHAM WICC WJZ WIS WMAL WMT WREN WSYR WXYZ

E-9:00 p.m., C-8:00, M-7:00, P-6:00 C - Lux Radio Theatre

CFRB CKAC KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KRNT KSL KTRH KTSA KTUL KVI KWG WABC WADC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDRC WEAN WFBL WFBM WGST WHAS WHEC WHK WICC WISN WJAS WJR WJSV WKRW WKRC WLAC WNAC WNAX WOKO WORC WQAM WREC WWL

R -- Warden Lawes, Prison Drama KDYL KFI KGW KHQ KOA KOMO KPO KPRC WCAE WCKY WCSH WDAF WEAF WGY WHO WIRE WJAR WMAQ WNAC WOW WRC WTAM WTIC wwr

E-9:30 p.m., C-8:30, M-7:30, P-6:30

R — Richard Himber and Orchestra KFYR KPRC KSD KSTP KTBS KVOO KYW WBEN WCAE WCSH WDAF WDAY WEAF WEBC WFAA WFBR WGY WHO WIBA WJAR WKY WLW WMAQ WOA1 WOW WRC WTAG WTAM WTIC WTMJ ww.r

Jack Pearl; Morton Bowe

KDKA KECA KFSD KGA KGO KJR KLO KOIL KSO KWK WABY WAVE WBAL WBZ WBZA WCKY WCOL WEAN WEBR WENR WFIL WFLA WGAR WHAM WICC WIOD WIS WJAX WJDX WJZ WMAL WMC WMT WOOD WPTF WREN WRVA WSB WSM WSMB WSOC WSUN WSYR WTAR WWNC WXYZ

E-10:00 p.m., C-9:00, M-8:00, P-7:00 **R** — Contented Program

CFCF CRCT KDYL KFI KGW KHQ KOA KOMO KPO KPRC KSD KYW WBEN WCAE WCSH WDAF WEAF WEEI WFBR WFLA WGY WHO WIOD WIS WJAR WJAX WKY WMAQ WMC WOAI WOW WPTF WRC WRVA WSB WSM

MONDAY (Continued)

WTAG WTAM WTAR WTIC WWJ WWNC

C — Wayne King and Orchestra KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KRNT KSL. KVI KWG WAAB WABC WADC WBBM WBNS WBT WCAO WCAU WCCO WDRC WEAN WFBL WFBM WHAS WHK WIBW WJAS WJR WJSV WKBW WKRC WOKO WSPD WWL

E-10:30 p.m., C-9:30, M-8:30, P-7:30 R — Krueger Musical Toast

WCSC WCSH WEAF WFBC WFLA WGY WIOD WIS WJAR WJAX WNAC WPTF WSB WSOC WSUN WTAG WTAR WTIC WWNC

E-11:00 p.m., C-10:00, M-9:00, P-8:00 Poetic Melodies; Jack Fulton KERN KFAB KFBK KFPY KFRC

KGB KHJ KLRA KLZ KMBC KMOX KOIN KOL KOMA KRLD KRNT KSL. KTRH KTSA KVI WBBM WBRC WCCO WFBM WGST WLAC WREC WWL

R — Amos 'n' Andy

KDYL KF1 KGW KHQ KOA KOMO KPO KPRC KSD WBAP WDAF WHO WKY WLW WMC WOAI WOW WSB WSM WSMB WTAM WWJ

E-11:15 p.m., C-10:15, M-9:15, P-8:15 - Renfrew of the Mounted С KDB KERN KFBK KFPY KFRC KGB KHJ KMJ KOIN KOL KSL

KVI KWG E-11:30 p.m., C-10:30, M-9:30, P-8:30

C — Pick and Pat KDB KERN KFBK KFPY KFRC KFB KGKO KHJ KLRA KLZ KMJ KMOX KOIN KOL KOMA KRLD KRNT KSCJ KSL KTUL KVI KWG KWKH WACO WBRC WCCO WFBM WHAS WLAC WREC

TUESDAY

E-6:45 p.m., C-5:45, M-4:45, P-3:45 B - Lowell Thomas, See Monday c Renfrew, See Monday

E-7:00 p.m., C-6:00, M-5:00, P-4:00 C — Poetic Melodies, See Monday R — Amos 'n' Andy, See Monday

B — Easy Aces

KDKA KDYL KFI KGW KHO KOA KOIL KOMO KPO KSO KWK WBAL WBZ WBZA WCKY WENR WFIL WGAR WHAM WHIO WIRE WJZ WMAL WMT WSYR WXYZ

E-7:15 p.m., C-6:15, M-5:15, P-4:15 C -- "Ma and Pa"; Sketch

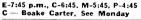
WABC WADC WBIG WENS WBRC WBT WCAO WCAU WDBJ WDRC WEEI WFBL WGR WHEC WHK WIBX WJAS WMAS WMBG WHP WNBF WORC WPRO WSJS WWVA

8 - Tastyeast Jesters

KDKA KOIL KSO KWK WABY WBAL WBZ WBZA WEBR WENR WFIL WGAR WHAM WJZ WMAL WMT WSAI WSYR WXYZ

E-7:30 p.m., C-6:30, M-5:30, P-4:30 8 — Lum and Abner, See Monday

KTRH KTSA KWKH WABC WADC WALA WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBO WDRC WEEI WFBL WFBM WGR WGST WHAS WHEC WHIO WHK WIBM WISN WJAS WJR WJSV WKRC WLAC WLBZ WMAS WMBG WMBR WORO WORC WPRO WQAM WREC WTOC WWL WWVA



E-8:00 p.m., C-7:00, M-6:00, P-5:00 C. Hammerstein Music Hall

KFAB KMOX KRNT WABC WADC WBBM WBNS WCAO WCAU WDRC WEAN WFBL WFBM WGR WHAS WHK WJAS WJR WJSV WKRC WMAS WNAC WOKO WSPD

R — Leo Reisman and Orchestra

KFYR KPRC KSD KSTP KTBS KVOO KYW WBAP WBEN WCAE WCSH WDAF WDAY WEAF WEEI WFBR WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKY WLW WMAQ WOW WPTF WRC WRVA WSOC WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

B --- Log Cabin Dude Ranch

KDKA KOIL KSO KWK WBAL WBZ WBZA WFIL WGAR WHAM WIRE WJZ WLS WMAL WMT WREN WSYR WXYZ

E-8:30 p.m., C-7:30, M-6:30, P-5:30 C - Al Jolson; Sid Silvers

CFRB KFAB KFH KLRA KMBC KMOX KOMA KRLD KRNT KTRH KTSA KTUL WABC WADC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDBJ WDAE WDRC WEEI WFBL WFBM WGR WGST WHAS WHEC WHIO WHK WIBX WJAS WJR WJSV WKRC WLAC WMAS WMBD WMBG WNAX WOKO WORC WPRO WOAM WREC WWL

R — Wayne King and Orchestra

KFYR KPRC KSD KSTP KTBS KVOO KYW WAVE WBAP WBEN WCAE WCKY WCSH WDAF WDAY WEAF WEBC WEEI WFBR WGY WHO WHIO WIBA WIRE WJAR WJDX WKY WMAQ WMC WOAI WOW WRC WSB WSM WSMB WTAG WTAM WTIC WTMJ WWJ

B - Edgar Guest, Welcome Valley KDKA KOIL KSO KWK WBAL WBZ WBZA WFIL WGAR WHAM WJZ WLW WLS WMAL WMT WREN WSYR WXYZ

E-9:00 p.m., C-8:00, M-7:00, P-6:00

C — AI Pearce and Gang CFRE CKAC KFAB KFII KGKO KLRA KMBC KMOX KOMA KRLD KRNT KSCJ KTRH KTSA KTUL KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WDAE WDB. WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WICC WISN WJAS WJR WJSV WKBH WKBN WKBW WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WMMN WNAC WNAX WNBF WNOX WOC WOKO WORC WOWO WPG WQAM WREC WSBT WSFA WSJS WSPD WTOC WWL

C — Alexander Woollcott R — Vox Pop; Sidewalk Interviews KFAB KFH KLRA KMOX KRLD KSD KYW WBEN WCAE WCKY

WCSH WDAF WEAF WEEI WFBR WGY WHO WIRE WJAR WMAQ WOW WRC WTAG WTAM WTIC WWJ

B — Ben Bernie and Orchestra

KDKA KDYL KFI KFSD KFYR KGW KNQ KOA KOIL KOMO KPO KYRO KSO KSTP KTAR KTBS KVOO KWK WAVE WBAL WBAP WBZ WBZA WDAY WEBC WFIL WFLA WGAR WHAM WIBA WIOD WIS WJAX WJDX WJZ WKY WLS WLW WMAL WMC WMT WOAI WPTF WREN WRVA WSB WSM WSMB WSOC WSYR WTAR WTMJ WWNC WXYZ

E-9:30 p.m., C-8:30, M-7:30, P-6:30 Jack Oakie's College

KFAB KFH KFPY KGKO KLRA KLZ KMBC KMOX KNX KOIN KOL KOMA KRLD KRNT KSCJ KSFO KSL KTRH KTSA KTUL KVI KVOR KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WEEI WFBL WFBM WGST WHAS WHEC WHIO WHK WHP WIBW WIBX WISN WJAS WJR WJSV WKBN WKBW WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WNAX WNBF WNOX WOC WOKO WORC WOWO WPG WPRO WQAM WREC WSBT WSFA WSJS WTOC WWL.

R — Fred Astaire; Johnny Green

CRCT KDYL KFI KFYR KGW KHQ KOA KOMO KPO KPRC KSD KSTP KTBS KTHS KVOO KYW WAVE WBAP WBEN WCAE WCKY WCSH WDAF WDAY WEAF WEBC WEEI WFBR WFLA WGY WHO WIBA WIOD WIRE WIS WJAR WJAX WJDY WKY WMAQ WMC WOAI WOW WPTF WRC WRYA WSM WSMB WSOC WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

B --- Husbands and Wives

KECA KEX KESD KGA KGO KJR KLO KOIL KSO KWK WBAL WBZ WBZA WEBR WENR WHAM WJZ WMAL WMT WREN WSAI WSYR WXYZ

E-10:00 p.m., C-9:00, M-8:00, P-7:00 B - Armco Concert Band

KDKA KECA KFSD KGA KGO KJR KLO KOIL KSO KVOD WBAL WBZ WBZA WEBR WENR WFIL WGAR WHAM WJZ WLW WMAL WMT WREN WSYR WXYZ

E-10:30 p.m., C-9:30, M-8:30, P-7:30 Jimmy Fidler Hollywood Gossip KDYL KFI KGW KHQ KOA KOMO KPO KSD KTAR KYW WBEN WCAE WCSH WDAF WEAF WFBR WGY WHO WJAR WLW WMAQ WNAC WOOD WOW WRC WTAG WTAM WTIC WWJ

E-11:00 p.m., C-10:00, M-9:00, P-8:00 C - Poetic Melodies, See Monday R — Amos 'n' Andy, See Monday

E-11:15 p.m., C-10:15, M-9:15, P-8:15 C Renfrew of Mounted, See Monday

E-11:30 p.m., C-10:30, M-9:30, P-8:30 C - Al Jolson; Sid Silvers KFPY KGMB KLZ KNX KOIN KOL KSFO KSL KVI

TUESDAY (Continued)

R — Leo Reisman and Orchestra KDYL KFI KFSD KGHL KGIR KGW KHQ KOA KOMO KPO KTAR

WEDNESDAY

E-6:15 p.m., C-5:15, M-4:15, P-3:15 C - News of Youth, See Mon.

E-6:45 p.m., C-5:45, M-4:45, P-3:45 - Renfrew of Mounted, See Mon. c B — Lowell Thomas, See Monday

E-7:00 p.m., C-6:00, M-5:00, P-4:00 C-Poetic Melodies, See Monday R - Amos 'n' Andy, See Monday B — Easy Aces, See Tuesday

E-7:15 p.m., C-6:15, M-5:15, P-4:15

C — Popeye, see Monday

R - Uncle Ezra, See Monday B - Tastyeast, See Tuesday

E-7:30 p.m., C-6:30, M-5:30, P-4:30 B - Lum and Abner, See Monday

E-7:45 p.m., C-6:45, M-5:45, P-4:45 C - Boake Carter, See Monday

E-8:00 p.m., C-7:00, M-6:00, P-5:00 C - Cavalcade of America

KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KRLD KRNT KVI KWG WABC WBBM KSL WBNS WCAO WCAU WCCO WDRC WEAN WFBL WFBM WGR WHAS WHEC WHK WJAS WJR WJSV WKRC WLAC WMBG WNAC WOKO WTOC WWL

- One Man's Family R -

KDYL KFI KFYR KGW KHQ KOA KOMO KPO KPRC KSD KSTP KTAR KTBS KTHS KVOO KYW WAPI WAVE WBAP WBEN WCAE WCSH WDAF WDAY WEAF WEBC WCSH WDAF WDAF WEAF WEBC WEEI WFAA WFDR WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKY WLW WMAQ WMC WOAI WOW WPTF WRC WRVA WSB WSM WSMB WSOC WSUN WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

B — Broadway Merry-go-Round

KDKA KOIL KSO KWK WBAL WBZ WBZA WCKY WEAN WEBR WFIL WGAR WHAM WICC WJZ WLS WMAL WMT WREN WSYR WXYZ

E-8:30 p.m., C-7:30, M-6:30, P-5:30 C - Burns and Allen

CKAC KFAB KFH KLRA KMBC KMOX KOMA KRLD KRNT KSCJ KTRH KTSA KTUL KWKH WABC WADC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEAN WFBL WFBM WFEA WGR WGST WHAS WHEC WHK WHP WIBW WIBX WICC WJAS WJR WJSV WKRC WLAC WMBG WMBD WLBZ WMAS WMBR WNAC WNAX WNOX WOKO WORC WPG WQAM WREC WSPD WWL

R-- Wayne King, See Tuesday B - Ethel Barrymore, Drama

KDKA KOIL KSO KWK WBAL WBZ WBZA WENR WFIL WGAR WHAM WJZ WMAL WMT WREN WSAI WSYR WXYZ

E-9:00 p.m., C-8:00, M-7:00, P-6:00 C - Chesterfield Program

KDB KERN KFAB KFBK KFH KFPY KFRC KGB KGKO KGMB KIJI KLRA KLZ KMBC KMJ KMOX KOH KOIN KOL KMJ KRLD KRNT KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WCOA WDAE WDBG WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WICC WISN WJAS WJR WJSV WKBH WKBW WKRC WLAC WMBG WMBD WLBZ WMAS WMBR WNAC WNAX WNBF WNOX WOC WOKO WORC WOWO WPG WQAM WREC WSFA WSJS WSPD WTOC WWL

R — Town Hall Tonight

KFYR KPRC KSD KSTP KTBS KTHS KVOO KYW WAVE WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFAA WFBR WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKY WLW WMAQ WMC WOAI WOW WPTF WRC WSB WSM WSMB WSOC WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

E-9:30 p.m., C-8:30, M-7:30, P-6:30 C -- Jessica Dragonette

KDB KERN KFAB KFBK KFH KFPY KFRC KGB KGMB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KRNT KSL KTRH KTSA KTUL KVI KWG KWKH WABC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEAN WFBL WFBM WGST WHAS WHEC WHE WICC WISN WJAS WJR WJSA WKBW WKRC WLAC WLBZ WMBG WMBR WNAC WOKO WORC WOWO WQAM WREC WTOC WWL

E-10:00 p.m., C-9:00, M-8:00, P-7:00 C - Crime Crusade; Phil Lord

KDB KERN KFAB KFBK KFH KFPY KFRC KGB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KRNT KSL KTRH KTSA KTUL KVI KWG KWKH WABC WACO WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEAN WFBL WFBM WGST WHAS WHEC WHK WICC WISN WJAS WJR WJSV WKBW WKRC WLAC WLBZ WMBG WMBR WNAC WOKO WORC WOWO WQAM WREC WTOC WWL

R — Your Hit Parade

KDYL KEX KFI KFYR KGHL KGIR KGU KGW KHQ KOA KOMO KTOK KPRC KSD KSTP KTAR KTDS KTHS KVOO KYW WAVE WCAE WCSC WCSH WDAF WDAF WEAF WEBC WFAA WFBR WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKY WLW WMAQ WMC WNAC WOAI WOW WPTF WRC WRVA WSB WSM WSMB WSOC WSUN WSYR WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

E-11:00 p.m., C-10:00, M-9:00, P-8:00 - Peetic Melodies, See Monday R - Amos 'n' Andy, See Monday

E-11:15 p.m., C-10:15, M-9:15, P-8:15 C-Renfrew of Mounted, See Monday

E-11:30 p.m., C-10:30, M-9:30, P-8:30 C - Burns and Allen

KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMJ KOIN KOL KSL KVI KVOR KWG

THURSDAY

E-6:45 p.m., C-5:45, M-4:45, P-3:45 C - Renfrew of Mounted, See Mon. B - Lowell Thomas, See Monday

E-7:00 p.m., C-6:00, M-5:00, P-4:00 C — Poetic Melodies, See Monday R — Amos 'n' Andy, See Monday B — Easy Aces, See Tuesday

E-7:15 p.m., C-6:15, M-5:15, P-4:15 C -- "Ma and Pa": See Tuesday B - Tastyeast, See Tuesday

E-7:30 p.m., C-6:30, M-5:30, P-4:30 C --- Alexander Woollcott, See Tues, 8 - Lum and Abner, See Monday

E-7:45 p.m., C-6:45, M-5:45, P-4:45 C - Boake Carter, See Monday

E-8:00 p.m., C-7:00, M-6:00, P-5:00 C - A & P Bandwagon

KFAB KMBC KMOX KRLD KRNT KTRH WABC WADC WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDRC WEEL WFBL WFBM WGR WGST WHAS WHEC WHK WHP WIBX WJAS WJR WJSV WKBN WKRC WLBZ WMAS WMBG WMBR WOC WOKO WORC WPBO WQAM WTOC WWL WWVA

R - Rudy Vallee's Variety Hour

R - RUUY VAILED'S VALLEY HOUF CFCF CRCT KDYL KFI KFYR KGW KHQ KOA KOMO KPO KSD KSTP KTAR KYW WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WEBR WGY WHO WJAR WLW WMAQ WOW WRC WTAM WTIC WTMJ WWJ

E-9:00 p.m., C-8:00, M-7:00, P-6:00 C — Major Bowes' Amateurs

C – Major Bowes' Amateurs CFRB CKAC KDB KERN KFAB KFBK KFH KFPY KFRC KGB KGKO KLRA KLZ KMBC WMJ KMOX KOIN KOL KOMA KRLD KMOX KOIN KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG KWKH WABG WACO WACO WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WCOA WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WICC WISN WJAS WJR WJSV WKBN WKBW WKRC WLAC WLBZ WMBD WMBG WMBR WMAS WMMN WNAC WNAX WOC WOKO WORC WOWO WPG WQAM WREC WSFA WSJS WSPD WTOC WWL

R -- Maxwell House Show Boat

KDYL KFI KFSD KFYR KGHL KGIR KWK KHQ KOA KOMO KPO KPRC KSD KSTP KTAR KTBS KYW WAPI WAVE WBAP WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFBR WFLA WGY WHO WIBA WIOD WIRE WIS WJAR WJAX WJDX WKY WMAQ WMC WOAI WOW WPTF WRC WRVA WSAI WSB WSM WSMB WSOC WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

THURSDAY (Continued)

E-10:00 p.m., C-9:00, M-8:00, P-7:00 C - Your True Adventures

KFAB KFH KFPY KLRA KLZ KMBC KMOX KNX KOIN KOL KOMA KRLD KRNT KSFO KSL KTRH KTSA KTUL KVI KWKH WABC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEEI WFBL WFBM WGST WHAS WHEC WHIO WHK WISN WJAS WJR WJSV WKBW WKRC WLAC WLBZ WMBG WOKO WORC WPRO WQAM WREC WTOC WWL

R — Bing Crosby; Bob Burns CFCF CRCT KDYL KFI KFYR KGW KHQ KOA KOMO KPO KPRC KSD KSTP KTAR KTBS KTHS KVOO KYW WAVE WBAP WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFBR WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKY WLW WMAQ WMC WOAI WOW WPTF WRC WRVA WSB WSM WSMB WSOC WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

E-10:30 p.m., C-9:30, M-8:30, P-7:30 C — March of Time KDB KERN KFAB KFBK KFPY

KFRC KGB KHJ KLZ KMJ KMOX KOIN KOL KOMA KRNT KSL KVI KWG WABC WBBM WBNS WCAO WCAU WCCO WDRC WEAN WEEI WFBL WFBM WGST WHAS WHEC WHK WJAS WJR WJSV WKBW WKRC WOKO WWL

E-11:00 p.m., C-10:00, M-9:00, P-8:00 C — Poetic Melodies, See Monday R - Amos 'n' Andy, See Monday

E-11:15 p.m., C-10:15, M-9:15, P-8:15 C-Renfrew of Mounted, See Monday

FRIDAY

E-6:15 p.m., C-5:15, M-4:15, P-3:15 C - News of Youth, See Mon.

E-6:45 p.m., C-5:45, M-4:45, P-3:45 - Renfrew of Mounted, See Tues.

B — Lowell Thomas, See Monday

E-7:00 p.m., C-6:00, M-5:00, P-4:00 C -- Mortimer Gooch, Sketch WABC WADC WBT WCAO WCAU WDRC WEAN WEEI WFBL WGR WHEC WHK WJAS WJR WJSV WKRC WOKO WSPD WTOC WWVA

R — Amos 'n' Andy, See Monday

E-7:15 p.m., C-6:15, M-5:15, P-4:15

- Popeye, See Monday Uncie Ezra, See Monday R -

- Stainless Show; Mario Cozzi

KDKA KECA KEX KFSD KGA KGO KJR KLO KOIL KSO KVOD KWK WBAL WBZ WBZA WEBR WENR WFIL WGAR WHAM WJZ WMAL WMT WSAI WSYR WXYZ

E-7:30 p.m., C-6:30, M-5:30, P-4:30 B -- Lum and Abner, See Monday

E-7:45 p.m., C-6:45, M-5:45, P-4:45 C - Boake Carter, See Monday

E-8:00 p.m., C-7:00, M-6:00, P-5:00

C — Broadway Varieties KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KOMA KRNT KSL KVI KWG WABC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDRC WEAN WFBL WFBM WGR WGST WHAS WHK WJAS WJR WJSV WKRC WMAS WMBG WNAC WOKO WWL

R - Cities Service Concert

CRCT KFYR KOA KPRC KSD KSTP KTBS KTHS KVOO KYW WBAP WBEN WCAE WCSH WDAF WBAP WBEN WCAE WC5H WDAF WDAY WEAF WEBC WEEI WFAA WFBR WGY WHO WIBA WIOD WJAR WKY WMAQ WOAI WOW WRC WRVA WSAI WTAG WTAM WTIC WTMJ WWJ

B - Irene Rich; Drama

KDKA KDYL KFI KGW KHQ KOIL KOMO KPO KSO KTAR KWK WAVE WBAL WBZ WBZA WCKY WFIL WGAR WHAM WIRE WJZ WLS WMAL WMC WMT WREN WSB WSM WSYR WXYZ

E-8:15 p.m., C-7:15, M-6:15, P-5:15 B — Singin' Sam

KDKA KOIL KSO KWK WBAL. WBZ WBZA WFIL WGAR WHAM WJZ WLS WMAL WMT WREN WSYR WXYZ

E-8:30 p.m., C-7:30, M-6:30, P-5:30 KFAB KFH KGKO KLRA KMBC KMOX KOMA KRLD KRNT KSCJ WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WCOA WDAE WDBJ WDBO

WDNC WDOD WDRC WEEI WFBL WFBM WFEA WGR WGST WHAS WHEC WHIO WHK WHP WIBW WIBX WISN WJAS WJR WISV WKBN WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WMMN WNAX WNBF WNOX WOC WOKO WORC WOWO WPG WPRO WQAM WREC WSFA WSJS WSPD WTOC WWT

B --- Death Valley Days

KDKA KDYL KFI KGW KHQ KOIL KOMO KPO KSO KWK WBAL WBZ WBZA WFIL WGAR WHAM WJZ WLS WLW WMAL WMT WMAL WREN WSYR WXYZ

E-9:00 p.m., C-8:00, M-7:00, P-6:00 C - Hollywood Hotel

CFRB CKAC KDB KERN KFAB KFBK KFH KFPY KFRC KGB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG KWKH WABC WADC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WICC WJAS WJR WJSV WKBW WKRC WLAC WLBZ WMBD WMAS WMBG WMBR. WNAC WNAX WNOX WOKO WORC WPG WQAM WREC WSPD WWL

R - Frank Munn; Bernice Claire KSD KYW WBEN WCAE WCSH WDAF WEAF WEEI WFBR WGY WJAR WLW WMAQ WOW WRC WTAG WTAM WWJ

B-Universal Rhythm; Rex Chandler KARK KDKA KFYR KGBX KGNC KOIL KPRC KSO KSTP KTBS KTHS KWK WABY WAPI WAVE WBAL WCSC WDAY WEAN WEBO WEBR WFAA WFBC WFIL WFLA WGAR WGL WHAM WIBA WICO WIOD WIS WJAX WJDX WKY WLS WLW WMAL WMC WMT WOAI WOOD WPTF WREN WRVA WSB WSM WSMB WSOO WSUN WSYR WTAR WTMJ WWNC WXYZ

E-9:30 p.m., C-8:30, M-7:30, P-6:30 R - True Story Court

R — True story court KSD KYW WBEN WCAE WCSH WEAF WEEI WFBR WGY WHO WHIO WJAR WMAQ WOW WRC WTAG WTAM WTIC WWJ

8. - Buddy Rogers; Helen Broderick KDKA KECA KFSD KFYR KGA KGHL KGIR KGO KJR KLO KOIL KURL KUR AGO KAR KIA KUL KURL KSO KSTP KTAR KTBS KTHS KWK WABY WAPI WAVE WBAL WBZ WBZA WCKY WCSC WDAY WEBC WEBR WENR WFAA WFBC WFIL WFLA WGAR WHAM WIBA WIOD WIRE WIS WJAX WJDX WJZ WKY WMAL WMC WJDX WJZ WKY WMAL WMC WMT WOAI WOOD WPTF WREN WRVA WSB WSM WSMB WSOC WSUN WSYR WTAR WTMJ WWNC WXYZ

E-10:00 p.m., C-9:00, M-8:00, P-7:00 R — First Nighter; Drama

KDYL KFI KFYR KGW KHQ KOA KOMO KPO KPRC KSD KSTP KTBS KTHS KYW WAVE WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFAA WFBR WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKY WLW WMAQ WMC WPTF WRC WRVA WSB WSM WSMB WSOC WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

E-10:30 p.m., C-9:36, M-8:30, P-7:30 R — Pontiac Varsity Show

KARK KDYL KFBK KFI KFYR KGBX KGHL KGIR KGAC KGW KHQ KMJ KOA KOMO KPO KPBC KNO KWG KYW WAPI WAVE WBEN WCAE WCOL WCSC WCSH WDAF WEAF WEBC WFAA WFBC WFBR WFLA WGL WGY WHO WIBA WIOD WIRE WIS WJAR WJAX WJDX WKY WLW WMAQ WMC WNAC WOAI WOOD WOW WPTF WRVA WSB WSM WSMB WSOC WSUN WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

E-11:00 p.m., C-10:00, M-9:00, P-8:00 C — Mortimer Gooch, Sketch KERN KFAB KFBK KFPY KFRC KGB KHJ KLRA KLZ KMBC KMOX KOIN KOL KOMA KRLD KRNT KSL KTRH KTSA KVI WBBM WBRC WCCO WFBM WGST WLAC WREC WWL

R - Amos 'n' Andy, See Monday

E-11:15 p.m., C-10:15, M-9:15, P-8:15 C --- Renfrew of Mounted, See Mon.

E-11:30 p.m., C-10:30, M-9:30, P-8:30 C — Hal Kemp; Kay Thompson KFBB KFPY KGMB KGVO KLZ KNX KOH KOIN KOL KSFO KSL KVI KVOR

SATURDAY

E-2:00 p.m., C-1:00. M-Noon: P-11:00 a.m.

B - Metropolitan Opera Co. CFCF CRCT KDKA KDYL KECA KEX KFSD KFYR KGA KGBX KGHL KGIR KGO KGU KJR KLO KOA KOIL KPRC KSO KSTP KTAR KTBS KTHS KVOO KWK WABY WAPI WAVE WBAL WBAP WBZ WBZA WCKY WCOL WCSC WDAY WEBC WEBR WFAA WFBC WFIL WFLA WGAR WHAM WIBA WIOD WIS WJAX WJDX WJZ WKY WLW WMAL WMAQ WMC WMT WOAI WOOD WPTF WREN WRVA WSB WSM WSMB WSOC WSUN WSYR WTAR WTMJ WWNC WXYZ To Canadian Network Also

E-6:45 p.m. C-5:45. M-4:45, P-3:45

C — Saturday Swing Club CFRB CKAC KFBB KFH KGB KLZ KMBC KNOW KOH KRLD KSL KTRH KTSA KVOR KWKH WABC WACO WADC WALA WBNS WCAO WDAE WDBJ WDBO WDNC WDRC WEEI WFBL WFBM WFEA WHAS WHEC WHK WIBX WICC WJAS WLBZ WMBG WMBR WMMN WOC WOKO WORC WQAM WSBT WSJS WSPD

E-7:15 p.m., C-6:15, M-5:15, P-4:15 C — "Ma and Pa." See Tues.

E-7:30 p.m., C-6:30, M-5:30, P-4:30 C — Carborundum Band

KFAB KMBC KNOX WABC WBBM WBT WCAU WCCO WEAN WEEI WFBL WGR WHAS WHK WJAS WIR WKRC

E-8:00 p.m., C-7:00, M-6:00, P-5:00 C --- Columbia Concert Hall CKAC KFH KFPY KGKO KGVO KLRA KLZ KNOW KNX KOH KOIN KOL KOMA KRLD KSFO KTSA KTUL KVI KVOR KWKH WABC WACO WADC WALA WBIG WBNS WBRC WBT WCAO WCAU WCOA WDAE WDBJ WDBO WDNC WDOD WDRC WEEI WFBL WFBM WFEA WGR WHEC WHIO WHK WHP WBX WISN WIAS WJNO WJR WJSV WKRC WLAC WLBZ WMAS WNOX WMBR WNBF WMBG WOKO WORC WPG WPRO WQAM WREC WSBT WSFA WSJS WSPD WTOC WWL

R — Saturday Night Party

KSD KYW WAPI WAVE WBEN WCAE WCSC WCSH WDAF WEAF WFBR WFLA WGY WHO WIOD WIS WJAR WJAX WJDX WMAQ WMC WNAC WOW WPTF WRC WSB WSMB WSOC WSUN WTAG WTAM WTAR WTIC WWJ WWNC

B - Ed Wynn; Don Voorhees KDKA KFYR KOIL KPRC KSO KSTP KTBS KWK WABY WBAL WBAP WBZ WBZA WCKY WDAY WEBC WEBR WFIL WGAR WHAM WIBA WIRE WJZ WKY WLS WMAL WMT WOAI WREN WSYR WTMJ

E-8:30 p.m., C-7:30, M-6:30, P-5:30 C - Coming: "Johnny"; Phil Duey

WXYZ

E-9:00 p.m., C-8:00, M-7:00, P-6:00 C — Floyd Glbbons; Vincent Lopez KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLRA KLZ KMBC

KMJ KMOX KOIN KOL KOMA KRLD KRNT KSL KTRH KTSA KVI KWG WABC WBBM WBNS WET WCAO WCAU WCCO WDAE WDBO WDRC WEAN WFBL WFBM WGST WHAS WHK WISN WJAS WJR WJSV WKBW WKRC WMBR WOKO WQAM WREC WSPD WWL

R - Snow Village Sketches

KSD KYW WBEN WCAE WCSH WDAF WEAF WFBR WGY WJAR WMAQ WNAC WOW WRC WTAG WTAM WTIC WWJ

- National Barn Dance R .

KDKA KOIL KPRC KSO KTBS KTHS KWK WABY WAPI WAVE WBAL WBAP WBZ WBZA WFIL WFLA WGAR WHAM WIOD WIRE WIS WJAX WJDX WJZ WKY WLS WMAL WMC WMT WOAI WOOD WPTF WREN WRVA WSB WSMB WSOC WSUN WSYR WTAR WWNC WXYZ

E-9:30 p.m., C-8:30, M-7:30, P-6:30

C — Mary Eastman; Gus Haenschen C — Mary Eastman; Gus maenschen KDB KERN KFAB KFBK KKFH KFPY KFRC KGB KGKO KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KTRH KTSA KTUL KVI KWG KWKH WALA WBBM WBIG WBNS WBRC WBT WCAO WCOA WDAE WDBO WDOD WEAN WFBL WFBM WGST WHAS WHEC WHE WJAS WJR WISV WKBW WLAC WMBD WMBR WNOX WOC WQAM WREC WSFA WSPD WTOC WWL WWVA

R — Shell Chateau

KDYL KFI KFSD KFYR KGHL KGIR KGW KHQ KOA KOMO KPO KGIR KGW KHQ KOA KOMO KPO KSD KSTP KTAR KYW WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFBR WGY WIBA WJAR WLW WMAQ WOW WRC WTAG WTAM WTIC WTMJ WWJ

E-10:00 p.m., C-9:00, M-8:00, P-7:00 C - Your Hit Parade

C Your Hit Parade KERN KFAB KFBK KFH KFPY KFRC KGB KGKO KGMB KIJJ KLRA KLZ KMBC KMJ KMOX KOH KOIN KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA HTUL KVI KVOR KWG KWKII WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WCOA WDAL WDBJ WDB0 WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WHEC WHK WHP WIBW WIBX WICC WISN WJAS WJR WJSV WKBW WKRC WLAC WLBZ WMAS WMBG WMBR WNAC WMBD WNAX WNOX WOC WOKO WORC WPG WQAM WREC WSBT WSFA WSJS WSPD WTOC WWL WWVA

E-10:30 p.m., C-9:30, M-8:30, P-7:30 C — Fiesta; Lud Gluskin

CFRB CKAC KERN KFBB KFBK KFH KFPY KGB KGVO KLZ KMBC KNOW KOH KOL KRLD KTRH KTSA KVI KVOR KWG KWKH WABC WACO WADC WALA WBNS WCAO WDAE WDBJ WDBO WDNC WDOD WDRC WEEI WFBL WFBM WFEA WGR WHAS WHEC WHK WIBX WJAS WJR WKRC WLBZ WMBG WMBR WMMN WMBD WOKO WORC WPG WQAM WSBT WSJS WSPD

R-Ervin S. Cobb

KDYL KFI KFYR KGHL KGIR KGW KHO KOA KOMO KPO KPRC KSD KSTP KTAR KTBS KTHS KVOO KYW WAVE WBAP WBEN WCAE WCSH WDAF WDAY WEAF WEBC WFBR WFLA WGY WIBA WIOD WIS WJAR WJAX WJDX WKY WMAQ WMC WNAC WOOD WOW WPTF WRC WRVA WSB WSMB WSOC WSUN WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

E-11:00 p.m., C-10:00, M-9:00, P-8:00 **CBC** — The Northern Messenger CFAC CFCH CFCO CFJC CFPL CFQC CHWK CJAT CJCA CJGX GFQC CHWK GJAT CJCA CJGA GJKL CJOC CJRM CJRO CJRX CKBI CKCK CKGB CKOC CKOV CKPR CKSO CKTB CKX CKY CRCK CRCM CRCO CRCS CRCT CRCV CRCW CRCX

B --- National Barn Dance

KDYL KFI KFSD KFYR KGHL KGIR KGU KGW KHQ KOA KOMO KPO KSTP KTAR WDAY WEBC WIBA WLW WTMJ

SUNDAY

E-11:30 a.m., C-10:30, M-9:30, P-8:30 C -- Major Bowes' "Family"

CFRB KERN KFAB KFBB KFBK KFH KFPY KFRC KGB KGVO KMBC KOH KOL KRLD KSL KTRH KTSA KVI KVOR KWG KWKH WABC WACO WADC WALA WBNS WBRC WCAO WCCO WDAE WDBJ WDBO WDNC WESG WFBL WFEA WHAS WHK WIBX WJAS WJR WLBZ WMBD WMBR WKRC WMMN WOC WOKO WORC WPG WOAM WSBT WSJS WSPD WTOC

B - Morton Bowe, Tenor

KOIL KPRC KSO KSTP KWK WAPI WAVE WBAL WBZ WBZA WFIL WIBA WJDX WJZ WLW WMAL WMAQ WMC WMT WREN WSB WSM WSMB WXYZ

E-12:30 p.m., C-11:30 a.m., M-10:30, P-9:30

C — Sait Lake Tabernacle Choir CFRB KFAB KFBB KFBK KFH KFPY KFRC KGB KLZ KOH KOL KRLD KSL KTRH KTSA KVI KVOR KWG WABC WACO WADC WALA WBIG WBNS WBRC WCAO WCCO WDAE WDBJ WDBO WESG WFBL WFEA WGR WHAS WICC WJAS WJR WKRC WLBZ WMBR WMMN WOC WOKO WORC WQAM WSBT WSJS WSPD WTOC

B — Radio City Music Hall

CECE CRCT KDKA KDYL KEI KFYR KGO KGW KHQ KOIL KOMO KPRC KSO KVOO WAPI WBAL WBZ WBZA WCKY WDAY WEBC WGAR WHAM WIS WJDX WJZ WKY WMAL WOAI WREN WSMB WSYR WWNC

E-12:45 p.m., C-11:45 a.m., M-10:45, P-9:45

C --- Trans-Atlantic Broadcast

CFRB CKAC KFH KGKO KLRA KLZ KMBC KRLD KSCJ KTRH KTSA KVOR WABC WACO WADC WALA WBIG WBRC WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEAN WESG WFBL WFBM WFEA WGR WHAS WIBX WJAS WJSV

SUNDAY (Continued)

WKBN WLAC WLBZ WMBD WMBR WNAC WOC WOKO WORC WPG WOAM WREC WSJS WSMK WSPD WTOC WWL

E-1:00 p.m., C-12:00, M-11:00, P-10:00 C — Church of the Air

KFBK KFH KFPY KFRC KGB KHJ KMOX KOH KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KVI KVOR KWG WABC WALA WBNS WBT WCAO WCCO WDAE WDBJ WDBO WDRC WESG WFBL WFBM WGR WHAS WHP WIBX WJAS WJSV WKBN WKRC WLAG WLBZ WMBR WNBF WOC WOKO WORC WPG WQAM WREC WSBT WSJS WSPD WTOC WWVA

E-1:30p.m , C-12:30,M-11:30;P-10:30 R-Muriel Dickson; Morton Bowe KDYL KFI KFYR KGW KHQ KOA KOMO KPO KSD KSTP KYW WBEN WCAE WCKY WCSH WDAF WDAY WEAF WEBC WFBR WGY WIBA WIRE WJAR WMAQ WNAC WOW WRC WTAG WTAM WTIC WTMI WWT

E-2:00 p.m., C-1:00, M-12:00, P-11:00 C — Pittsburgh Symphony

KFAB KLRA KLZ KMBC KMOX KOMA KRLD KRNT KTRH KTSA KTUL KWKH WABC WADC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDBC WEAN WFBL WFBM WGST WHAS WHEC WHK WIBX WISN WJAS WHEC WHK WIBX WISN WIRK WJR WJSV WKBW WKRC WLAC WNOX WOC WOKO WQAM WREC WTOC WWL

B — Magic Key of RCA CFCF CRCT KDKA KDYL KFI KFYR KGU KGW KHQ KOA KOIL KOMO KPO KPRC KSO KSTP KTBS KTHS KVOO KWK WAPI WAVE WBAL WBZ WBZA WCKY WDAY WEBC WENR WFAA WFIL WFLA WGAR WHAM WHIO WIBA WFLA WGAR WHAN WHIO WIDA WIOD WIRE WIS WJAX WJDX WJZ WKY WMAL WMC WMT WOAI WPTF WREN WRVA WSB WSM WSMB WSOC WSYR WTAR WTMJ WWNC WXYZ

E-2:45 p.m., C-1:45, M-12:45, P-11:45 a.m.

C - Cook's Travelogue

CKAC WABC WBBM WBRC WBT WCAO WCAU WEEI WGST WJAS WJSV WLAC WREC WWL

E-3:00 p.m., C-2:00, M-1:00, P-12:00 C - New York Philharmonic

CFRB CKAC KERN KFAB KFBB KFBK KFH KFPY KFRC KGB KGVO KLRA KLZ KMBC KNOW KOH KOL KRLD KSL KTRH KTSA WIND KUR KWKH WABC WACO WADC WALA WBIG WBNS WBRC WCAO WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WEEI WESG WFBL WFBM WFEA WHAS WHEC WHIO WHK WIBX WICC WJAS WJR WKBW WKRC WLBZ WMBD WMBG WMBR WMMN WOC WOKO WORC WQAM WSBT WSJS WSPD WTOC

Also On Canadian Network

- Metropolitan Auditions R -CFCF KDYL KF1 KFYR KGW KHQ KOA KOMO KPO KSD KSTP KTAR KYW WAPI WAVE WBEN WCAE E-6:00 p.m., C-5:00, M-4:00, P-3:00 WCKY WCSH WDAF WDAY WEAF WEBC WFBR WGY WHO WIBA WIRE WJAR WJDX WMAQ WMC WNAC WOW WRC WSB WSM WSMB WTAG WTAM WTIC WTMJ WWJ

E-3:30 p.m., C-2:30, M-1:30, P-12:30 R - Grand Hotel; Drama

KDYL KEI KEYR KGW KIIQ KOA KOMO KPO KSD KSTP KYW WBEN WCAE WCSH WDAF WDAY WEAF WEBC WFBR WGY WHO WIBA WJAR WMAQ WNAC WOW WRC WSAI WTAG WTAM WTIC WWI

E-4:30 p.m., C-3:30, M-2:30, P-1:30

R-Musical Camera; Willie Morris KDYL KFI KGW KHQ KOA KOMO KPO KYW WBEN WCAE WCSH WEAF WGY WJAR WLW WMAQ WOW WRC WSB WSMB WTAM WTIC WWJ

E-5:00 p.m., C-4:00, M-3:00, P-2:00 C - Your Unseen Friend: Drama

KFAB KLZ KMOX KSL KWKH WABC WADC WBBM WBNS WCAO WCAU WCOA WDAE WDBJ WDOD WDRC WEAN WEEI WESG WFBL WHAS WHEC WHK WHP WIBX WJAS WJR WKBW WKRC WLAC WLBZ WMAS WMBG WMMN WNOX WORO WORC WOWO WQAM WREC WSMK WSPD WWL WWVA

R — Marion Talley, Soprano

KDYL KFI KFYR KGW KHQ KOA WCAE WCKY WCSH WDAF WDAY WEAF WEBC WFBR WGY WIBA WIRE WJAR WMAQ WNAC WOW WRC WTAG WTAM WTIC WTMJ WWI

B — We, The People; Phil Lord

KDKA KECA KEX KFSD KGA KGHL KGIR KGO KJR KLO KOIL KPRC KSO KTBS KTHS KVOO KWK WABY WAPI WAVE WBAL WBAP WBZ WBZA WEBR WENR WFIL WFLA WGAR WHAM WIOD WIS WJAX WJDX WJZ WKY WLW WMAL WMC WMT WOAI WPTF WREN WRVA WSB WSM WSMB WSOC WSUN WSYR WTAR WWNC WXYZ

M — Ray Knight and his Cuckoos Station list unobtainable

E-5:30 p.m., C-4:30, M-3:30, P-2:30

C — Guy Lombardo and Orchestra KFH KMBC KMOX KOMA KTUL WAAB WABC WBNS WCAO WCAU WDRC WEAN WFBL WFBM WGR WHAS WHEC WHK WIBX WICC WJR WJSV WMAS WOKO WORC WSPD WWVA

R --- Smiling Ed McConnell

KDYL KFI KFYR KGIR KGW KHQ KOMO KPO KSTP KYW WBEN KOMO KPO KSTP KYW WBEN WCAE WCSH WDAF WDAY WEAF WEBC WFBR WGY WHO WIBA WJAR WLW WMAQ WNAC WOW WRC WTAG WTAM WTIC WTMJ wwr

B — Stoopnagle and Budd

KDKA KECA KEX KFSD KGA KGO KJR KLO KOIL KSO KWK WBAL WBZ WBZA WCKY WENR WFIL WGAR WHAM WHIO WIRE WJZ WMAL WMT WREN WSYR WXYZ

C - Joe Penner; Jimmy Grier

KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KSL KTRH KTSA KVI KWG WABC WBBM WBNS WBT WCAO WCAU WCCO WDAE WDRC WEAN WEBL WEBM WGST WHAS WHEC WHK WJAS WJR WJSV WKBW WKRC WMBG WMBR WOKO WQAM WWL

E-6:30 p.m., C-5:30, M-4:30, P-3:30 C - Rubinoff and His Violin

KDB KERN KFAB KFBB KFBK KFH KFPY KFRC KGB KGKO KHJ KLRA KLZ KMJ KMOX KOII KOIN KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WCOA WDAE WDBJ WDBO WDNC WDOD WDRC WEEI WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WISN WJAS WJR WJSV WKBN WKBW WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WNAX WNOX WOC WOKO WORC WPG WQAM WREC WSBT WSFA WSJS WSMK WSPD WTOC WWL WWVA

R — A Tale of Today WBEN WEAF WGY WJAR WMAQ WOW WRC WTAM

E-7:00 p.m., C-6:00, M-5:00, P-4:00 C - Professor Quiz

KFAB KFBB KFH KFPY KGKO KGVOKNOW KOH KOIN KOL KOMA KRLD KRNT KSCJ KSFO KTRH KTSA KTUL KVOR KWKH WABC WACO WADC WALA WBBM WBNS WBRC WBT WCAO WCOA WDAE WDBO WDNC WFBL WFBM WGR WGST WHEC WHIO WHK WHP WIBX WJAS WJNO WLBZ WMAS WMBD WMBG WMMN WNOX WOKO WORC WPG WREC WSBT WSFA WSJS WSPD WTOC

Also On Canadian Network

R — Jack Benny; Mary Livingstone KSD KYA KYW WBEN WCAE WCSH WDAF WEAF WFBR WGY WOSH WDAT WEAT WHAN WNAC WHO WJAR WLW WMAQ WNAC WOW WRC WTAG WTAM WTIC wwr

E-7:30 p.m., C-6:30, M-5:20, P-4:30 C-Phil Baker; Oscar Bradley

KLRA KLZ KRLD KTRH KTSA KTUL KWKH WABC WACO WADC WALA WBIG WBNS WBRC WBT WCAO WCAU WCOA WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGR WGST WHAS WHEC WHK WHP WIBX WICC WJAS WJR WJSV WKBN WKRC WLAC WLBZ WMAS WMBR WNAC WNOX WOKO WORC WQAM WREC WSBT WSFA WSJS WSMK WSPD WTOC WWL WWVA

R - Fireside Recitals

R — FIFESIDE RELITATS KSD KYW WBEN WCAE WCSH WDAF WEAF WFBR WGY WIRE WJAR WMAQ WOW WRC WSAI WTAG WTAM WTIC WWJ

B -- Ozzie Nelson; Bob Ripley

KDKA KOIL KPRC KSO KTBS KTHS KVOO KWK WAPI WAVE WBAL WBAP WBZ WBZA WCKY WFIL WGAR WHAM WHIO WIRE

SUNDAY (Continued)

WJDA WJZ WKY WIS WMAL WMC WMT WOAI WREN WSB WSM WSMB WSYR WXYZ

E-7:45 p.m., C-6:45, M-5:45, P-4:45 R - Sunset Dreams; Morin Sisters CFCF CRCT KSD KYW WBEN WCAE WCSH WDAF WEAF WFBR WGY WHO WIRE WJAR WLW WMAQ WOAI WOOD WOW WRC WTAG WTAM WTIC WWJ

E-8:00 p.m., C-7:00, M-6:00, P-5:00 C - Nelson Eddy; Nadine Conner

KDB KERN KFAB KFBK KFH KFPY KFRC KGB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KTUL KWKH WABC WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDOD WDRC WEAN WFBL WFBM WFEA WGR WGST WHAS WHEC WIKK WHP WIBW WIBX WICC WISN WJAS WJR WJSV WKBN WKRC WLAC WLBZ WMAS WMBD WMBR WNAX WNOX WOC WOKO WORC WQAM WREC WSBT WSFA WSMK WTOC WWL WWVA

R -– Want to be an Actor? CFCF CRCT KDYL KFI KFYR KGW KHQ KOA KOMO KPO KPRC KOW KICH HOA HOA KTAR KTBS KVOO KYW WAVE WBEN WCAE WCSH WDAF WDAY WEAF WEBC WFAA WFBR WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKY WLW WMAQ WMC WNAC WOAI WOW WPTF WRC WRVA WSB WSM WSMB WSOC WSUN WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

E-8:30 p.m., C-7:30, M-6:30, P-5:30 - Eddie Cantor; Bobby Breen

KFAB KFH KGKO KLRA KMBC KMOX KOMA KRLD KRNT KSCJ KTRH KTSA KTUL KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WCOA WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGR WGST WHAS WHEC WHK WHP WIBW WIBX WICC WISN WIAS WJR WIBX WICC WJSV WKBN WKRC WLAC WLBZ WMBD WMBR WMMN WMAS WNAX WNOX WOC WOKO WORC WQAM WREC WSBT WSFA WSJS WSMK WSPD WTOC WWL WWVA

E-9:00 p.m., C-8:00, M-7:00, P-6:00 R — Manhattan Merry-Go-Round CFCF KDYL KF1 KFYR KGW KHQ KOA KOMO KPO KPRC KSD

KSTP KTBS KTHS KYW WAVE E-10:00 p.m., C-9:00, M-8:00, P-7:00 WBEN WCAE WCKY WCSH WDAF C -- Gillette Community Sing WDAY WEAF WEBC WEEI WFAA CFRB CKAC KDB KERN KFAE WFBR WFLA WGY WHO WIBA WIOD WIRE WIS WJAR WJAX WJDX WKY WMAQ WMC WOAI WOW WPTF WRC WRVA WSB WSM WSMB WSOC WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

C --- Ford Sunday Evening Hour

CFRB CKAC KDB KERN KFAB KFBK KFH KFPY KFRC KGB KGKO KHJ KLRA KLZ KMBC KMJ KMOX KOH KOIN KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WCOA WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGR WGST WHAS WHEC WHK WHP WIBW WIBX WICC WISN WJAS WJR WJSV WKBN WKRC WLAC WLBZ WMAS WMBD WMBR WNAC WNAX WOC WOKO WORC WQAM WREC WSBT WSFA WSJS WSPD WTOC WWL WWVA

R. - Walter Winchell

KDKA KECA KEX KFSD KGA KGHL KGIR KGO KJR KLO KOIL KSO KTAR KWK WBAL WBZ WBZA WENR WFIL WGAR WHAM WJZ WLW WMAL WMT WREN WSYR WXYZ

E-9:15 p.m., C-8:15, M-7:15, P-6:15

B - Frank Parker: Shep Fields KDKA KECA KFSD KGA KGUL KGIR KGO KJR KLO KOIL KSO KTAR KWK WBAL WBZ WBZA WERC WEBR WENR WFIL WGAR WHAM WICC WJZ WLW WMAL WMT WREN WSYR WXYZ

E-9:30 p.m., C-8:30, M-7:30, P-6:30 **R** — Album of Familiar Music

CFCF CRCT KDYL KFI KFYR KGW KHQ KOA KOMO KPO KPRC KSD KSTP KTBS KYW WAPI WAVE WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFAA WFBR WFLA WGY WHO WIBA WIDD WIS WJAR WJAX WJDX WKY WMAQ WMC WOAI WOW WPTF WRC WRVA WSAI WSB WSM WSMB WSOC WTAG WTAM WTAR WTMJ WWJ WWNC

E-9:45 p.m., C-8:45, M-7:45, P-6:45 B - Edwin C. Hill

KDKA KECA KFSD KGA KGO KJR KLO KVOD WBAL WBZ WBZA WENR WFIL WGAR WHAM WJZ WLW WMAL WREN WSYR WXYZ

C -- Gillette Community Sing CFRB CKAC KDB KERN KFAB KFBB KFBK KFH KFPY KFRC KGB KGKO KGMB KGVO KHJ KLRA KLZ KMBC KMJ KMOX KOH KOIN KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG KWKH WABC WACO WADC WALA WBBM WHEC WHK WHP WIBW WIBX WICC WISN WJAS WJR WJSV WKBN WKBW WKRC WLAC WLBZ WMBG WMBR WMAS WMBD WMMN WNAC WNAX WNOX WOC WOKO WORC WOWO WPG WQAM WREC WSBT WSFA WSJS WSMK WSPD WTOC WWL

- General Motors Concert р.

R — General motors conceft CFCF CRCT KDYL KFI KFYR KGHL KGIR KGW KHQ KOA KOMO KPO KPRC KSTP KTAR KTBS KTHS KYW WAPI WAVE WBEN WCAE WCEY WCSH WDAYE WDAY WEAF WEBC WFAA WFBR WFLA WGY WHO WIBA WIOD WIRE WIS WJAR WJAX WJDX WKY WMAQ WMC WNAC WOAI WOOD WOW WPTF WRO WRVA WSB WSM WSMB WSOC WSUN WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

8 — Edwin C. Hill

KDKA KECA KFSD KGA KGO KJR KLO KOIL KSO KWK WBAL WBZ WBZA WENR WFIL WGAR WHAM WJZ WLW_WMAL WMT WREN WSYR WXYZ

E-11:00 p.m., C-10:00, M-9:00, P-8:00 C - Eddie Cantor; Bobby Breen

KERN KFBB KFBK KFPY KFRC KGB KGVO KHJ KLZ KMJ KOH KOIN KOL KSL KVI KVOR

R — Sunset Dreams; Morin Sisters KDYL KFI KFSD KGW KHQ KOA KOMO KPO KPRC KTAR KTBS KTHS WBAP WDAF WKY

E-11:15 p.m., C-10:15, M-9:15, P-8:15 B --- Walter Winchell KDYL KFI KFSD KGHL KGIR

KGW KHQ KOA KOMO KPO KPRC KTAR KTBS KTHS WAPI WAVE WBAP WJDX WKY WMC WOAI WSB WSM WSMB

E-11:30 p.m., C-10:30, M-9:30, P-8:30 B --- Frank Parker; Shep Fields KPRC KTBS KTHS KVOD WAPI WAVE WBAP WJDX WKY WMC WOAI WSB WSM WSMB

CLASSIFIED INDEX TO CHAIN PROGRAMS

Time in Eastern Standard

C-Columbia; R-National (Red); B-National (Blue); M-Mutual

CONCERTS

Frank Black, 2 p.m. Sun., B Rosario Bourdon, 8 p.m. Fri., R Ford Concert, 9 p.m. Sun., C Metropolitan Auditions, 3 p.m. Sun., R Metropolitan Opera, 2 p.m. Sat., B General Motors Concert, 10 p.m. Sun., R New York Philharmonic, 3 p.m. Sun., C Pittsburgh Symphony, 2 p.m. Sun.; C Radio City Music Hall, 12:30 p.m. Sun., B Don Voorhees, 8 p.m. Wed.; C

DANCE BANDS

Victor Arden, 8 p.m. Fri., C; 1:30 p.m. Sun., R

Ben Bernie, 9:00 p.m. Tues., B Bunny Berigan, 6:45 p.m. Sat., C Ray Block, 10:30 p.m. Mon., R Oscar Bradley, 7:30 p.m. Sun., C Jimmie Dorsey, 10 p.m. Thurs., R Tommy Dorsey, 9:30 Mon., B Shep Fields, 9:15 and 11:30 p.m. Sun., B Lud Gluskin, 10:30 Sat., C Al Goodman, 9 and 11:15 p.m. Thurs., R Benny Goodman, 9:30 and 11:30 p.m. Tues., C Johnny Grounal, 930 and 1130 pl. Johnny Grier, 6 p.m. Sun., C Gus Haenschen, 9330 p.m. Sut., C Horace Heidt, 8 p.m. Mon., C Richard Himber, 930 p.m. Mon., M Arnold Johnson, 5 Jon, Sun, M Hal Kerop, 8:30 and 11:30 p.m. Fri, C Henry King, 8:30 and 11:30 p.m. Wed., C Wayne King, 8:30 p.m. Tues, and Wed., R. 10 p.m. Mon., C Andre Kostelanetz, 9 p.m. Wed., C Benny Krueger, 8:30 and 11:30 p.m., Mon., C Guy Lombardo, 5:30 Sun., C Vincent Lopez, 9 p.m. Sat., C Abe Lyman, 8:30 p.m. Mon., B. 9 p.m. Fri., R Ozzie Nelson, 7:30 Sun., B Raymond Paige, 9 p.m. Fri., C Leo Reisman, 8 and 11:30 p.m. Tues., R Jacques Renard, 8:30 and 11 p.m. Sun., C Joe Rines, 11:30 a.m. Sun., B Buddy Rogers, 9:30 p.m. Fri. B Harry Salter, 10 p.m. Sat., C Andy Sanella, 9 p.m. Sun., R Harry Sosnik, 10 p.m. Wed., R; 10 p.m. Sun., B Rudy Valle, 8 p.m. Thurs., R Peter Van Steeden, 9 p.m. Wed., R Don Voorhees, 5:30 p.m. Sun., and 8 p.m. Sat., B

Victor Young, 8:30 and 11:30 p.m. Tues., C

DIALOG

Fred Allen, 9:00 Wed., R Amos 'n' Andy, 7 and 11 p.m. daily except Sat. and

Sun., R Phil Baker, 7:30 p.m. Sun., C

- Jack Benny, 7 and 11:30 p.m. Sun., R
- Milton Berle, 10 p.m. Sun., C
- Bob Burns, 10:00 Thurs., R Burns and Allen, 8:30 and 11:30 p.m. Wed., C
- Charles Butterworth, 9:30 Tues., R
- Eddie Cantor, 8:30 and 11 p.m. Sun., C
- Fivin S. Cobb, 10:30 and n p.m. Suit, C Easy Aces, 7 p.m. Tues., Wed., Thurs., B Ray Knight, 5 p.m. Sun., M Beatrice Lillie, 8 p.m. Wed., B

- Fibber McGee and Molly, 8 p.m. Mon., R
- Lum and Abner, 7:30 p.m. daily except Sat. and Sun., B
- Jack Oakie, 9:30 p.m. Tues., C Jack Pearl, 9:30 p.m. Mon., B

- Jack Fearl, 9:30 p.m. Mon., B Joe Penner, 6 p.m. Sun., C Pick and Pat, 8:30 and 11:30 p.m. Mon., C Popeye the Sailor, 7:15 Mon., Wed., Fri, C Sid Silvers, 8:30 and 11:30 p.m. Tues., C Stoopnagle and Budd, 5:30 p.m. Sun., B

- Uncle Ezra's Radio Station, 7:15 Mon., Wed., Fri., R Ed Wynne, 8 p.m. Sat., B

DRAMA

Ethel Barrymore, 8:30 p.m., Wed., B Death Valley Days, 8:30 p.m. Fri., B First Nighter, 10 p.m. Fri., R Gang Busters, 10 p.m. Ved., C Grand Hotel, 3:30 p.m. Sun., R Helen Hayes, 8:00 Mon., B Hollywood Hotel, 9 p.m. Fri., C Warden Lawes, 9 p.m. Mon., R Log Cabin Ranch, 8 p.m. Tues., B Phillips Lord, 10 p.m. Wed., C Lux Radio Theater, 9 p.m. Mon., C Ma and Pa, 7:15 p.m. Tues., Thurs., Sat., C News of Youth, 6:15 p.m. Mon., Wed., Fri., C One Man's Family, 8 p.m. Wed., R. Renfrew of the Mounted, 6:45 and 11:15 p.m. Mon. thru Fri, C

Irene Rich, 8 p.m. Fri., B Snow Village Sketches, 9 p.m. Sat., R Tale of Today, 6:30 p.m., Sun., R. True Story Court, 9:30 p.m. Fri., R Welcome Valley, 8:30 p.m. Tues., B Your Unseen Friend, 5 p.m. Sun., C

POPULAR PROGRAMS

A & P Bandwagon, 8 p.m. Thurs., C Album of Familiar Music, 9:30 p.m. Sun., R Armco Band, 10 p.m. Tues., B Armeo Band, 10 p.m. Tues., B Major Bowes, 11:30 a.m. Sun. and 9 p.m. Thurs., C Broadway Merry-go-Round, 8 p.m. Wed., B Broadway Varieties, 8:00 p.m. Fri., C Carborundum Band, 7:30 p.m. Sat., C Cavaitade of America, 8 p.m. Wed., C Chesterfield Program, 9 p.m. Wed., C Cities Service Concert, 8 p.m. Fri., R Contented Program, 10 p.m. Mon., B Contented Program, 10 p.m. Mon., R Cook's Travelogues, 2:45 p.m. Sun., C Do You Want to be an Actor? 8 p.m. Sun., R Do You want to be an Actor? S p.m. Sun., K Community Sing, 10 p.m. Sun., C Fireside Recitals, 7:30 p.m. Sun., R Fleischmann Variety Hour, S p.m. Thurs., R Hammerstein's Music Hall, S p.m. Tues., C Hit Parade, 10 p.m. Red Wednesday; 10 p.m. Sat., C Hit Farade, 10 p.m. red weansoury, 10 Hollywood Hotel, 9 p.m. Fri., C Husbands and Wives, 9:30 p.m. Tues., B Krueger Musical Toast, 10:30 p.m. Mon., R Magic Key of RCA, 2 p.m. Sun., B Manhattan Merry-Go-Round, 9 p.m. Sun., R March of Time, 10:30 p.m. Thurs., C Maxwell House Show Boat, 9 p.m. Thurs., R Melody Matinec, 1:30 p.m. Sun., R National Barn Dance, 9:00 and 11:30 p.m. Sat., B Packard Hour, 9:30 p.m. Tues., R Sears, Then and Now, 10 p.m. Thurs., C True Adventures, 10 p.m. Thurs., C. Vick's Open House, 8 p.m. Sun., C Voice of Firestone, 8:30 p.m. Mon., R Vox Pop, 9 p.m. Tues., R Waltz Time, 9 p.m. Fri., R

We, The People, 5 p.m. Sun., B

SINGERS

Fred Astaire, 9:30 p.m. Tues., R Gene Austaire, 5 p.m. Sun., C Kenny Baker, 7 and 11:30 p.m., Sun., R Natalie Bodanya, 8:30 p.m. Mon., B Morton Bowe, 1:30 p.m. Sun., R; 11:30 a.m. Sun., B ; 9:30 p.m. Mon., B Bobby Breen, 8:30 and 11 p.m. Sun., C Rachel Carlay, 9 p.m. Sun., R Bernice Claire, 9 p.m. Fri., R Nadine Conner, 8 p.m. Sun., C Mario Cooper, 10:30 p.m. Sun., C Mario Cozzi, 7:15 p.m. Fri., B Vivian Della Chiesa, 10 p.m. Mon., R Edith Dick, 10 p.m. Sat., C Muriel Dickson, 1:30 p.m. Suff., R Jessica Dragonette, 8 p.m. Fri., R; 9:30 p.m. Wed., C Phil Duey, 8 and 11:30 p.m. Tues., R; 8:30 Sat., C Deanna Durbin, 8:30 and 11 p.m. Sun., C Nelson Eddy, 8 p.m. Sun, C Jack Fulton, 7 and 11 p.m. Mon. through Thurs., C Wendell Hall, 10 p.m. Sun., C Harriet Hilliard, 7:30 Sun., B Helen Jepson, 9 and 11:15 p.m. Thurs., R Al Jolson, 8:30 and 11:30 p.m. Tues., C Al Joison, 5.50 and 11.50 p.m. rues, C Elizabeth Lennox, 8:00 p.m. Fri., C Helen Marshall, 7:30 p.m. Sun., R Tony Martin, 8:30 and 11:30 p.m., Wed., C Ed McConnell, 5:30 p.m. Sun., R Lucy Monroe, 9:30 p.m. Sun., R Morin Sisters, 7:45 and 11 p.m. Sun., R Willie Morris, 4:30 p.m. Sun., R Frank Munn, 9:30 p.m. Sun, and 9 p.m. Fri., R; 8:30 Mon., B Frank Parker, 9:15 and 11:30 p.m. Sun., B Jan Peerce, 6:30 p.m. Sun., C

Carmella Ponselle, 8:00 p.m. Fri., C

Virginia Rea, 6:30 p.m. Sun., C Martha Raye, 8:30 and 11:30 p.m. Tues., C Lanny Ross, 9 p.m. Thurs., R Singin' Sam, 8:15 Fri., B Sally Singer, 10:30 p.m. Mon., R Kate Smith, 8 p.m. Thurs., C Margaret Speaks, 8:30 and 11:30 p.m. Mon., R Marion Tailey, 10 p.m. Fri., R Tastyeast Jesters, 7:15 Tues., Wed., Thurs., B Conrad Thibauit, 9:30 p.m. Tues., R Kay Thompson, 8:30 and 11:30 Fri., C Trudy Woods, 9:30 p.m. Tues., R

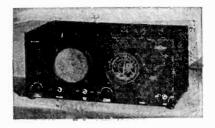
TALKS

Boake Carter, 7:45 p.m. Mon. thru Fri., C Jimmy Fidler, 10:30 p.m. Tues., R Floyd Gibbons, 9 p.m. Sat., C; 10 p.m. Thurs., C Eddie Guest, 8:30 p.m. Tues., B Edwin C. Hill, 10 p.m. Sun., B Bob Ripley, 7:30 Sun., B Sidewalk Interviews, 9 p.m. Tues.; R Loweil Thomas, 6:45 p.m. Mon., thru Fri., B Trans-Atlantic Broadcast, 12:45 p.m. Sun., C Walter Winchell, 9 and 11:15 p.m. Sun., B Alexander Woollcott, 7:30 p.m. Tues. and Thurs., C

Mystery Contest

(Continued from Page 10)

place prizes of more RADEX subscriptions to the contestants who finish 50, 100, 150, etc., in the final standings. It may just happen that the DXer who winds up in last place will get one of these prizes, so we can really say that everyone has a chance to win an award.



The Sky Buddy model of the Hallicrafters receiver, a 5-lube set tuning from 540 to 16,000 kcs. This very efficient all-wave set will go to some lucky contestant in our Mystery competition.

We appreciate the comments and suggestions from readers which enabled us to smooth out the rough spots of the previous contest. We can't say enough in appreciation for the co-operation of the stations and the manufacturers who have made the contest possible.

We've had a lot of fun planning this year's contest and making the necessary preparations. We have seen our work bring in definite results and we are sure that the outcome is going to appeal to those who take part in the big event.

SHORT WAVE STATIONS BY FREQUENCIES

Part II (6.000 megs. to 400.000 megs.)

Frequencies are given in megacycles per second. Power is given in parentheses in kilowatts and decimals thereof. In our indices we show assigned frequencies. Actual frequencies on which stations are heard, when differing from those assigned, are shown in parentheses in kilocycles.

Abbreviations:

Ann: Announces Add: Address Int: Interval signal s/o: Sign on and sign off (*): Will not verify Tr: Transmitter

- 6.000 XEBT, Mexico City, D. F. (1.) Add: Aptdo 79-44.
- 6.005 CFCX, Montreal, P. Q. (.075), Relays CFCF. Add: Canadian Marconi Co., Ltd., Box 1690.
 - HP5K, Colon, Panama. "La Voz de la Victor." Add: Aptdo 33. VE9DN, Montreal, P. Q. Relays CFCF irreg.
 - See CFCX 6005 kcs.
- 6.010 CJCX, Sydney, N. S. (1.) Relays CJCB. Add: N. Nathanson
 - COCO, Havana, Cuba. (.3) Add: Box 98. VP3MR, Georgetown, British Gulana. (5980; 5975; 6017)

NA: North America SA: South America CA: Central America NYC: New York City Aptdo: Apartado (Box No.)

- 5.012 HJ3ABH, Bogota, Colombia. (1.2) "La Voz de la Victor." Same cali on BCB. s/o: "Russian Lullaby." Add: Aptdo 555
- 6.015 H13U, Santiago de los Caballeros, D. R. (.025) (6017) "La Voz del Comercio." Add: Sr. F. Bertran. XEWI, Mexico City, D. F. (.4).
- 6.018 ZHI, Singapore, Stralts Settlements. (.09). Add: 2 and 4 Orchard Road.
- 6.020 DJC, Berlin, Germany. (8.) Tr: Zeesen. Int: Music box tune. s/o: Two national anthems. Add: Reichs-Rundlunk-Geselischaft, Haus des Rundfunk,

Masurenallee, Berlin-Charlottenburg 9.

- XEUW, Veracruz, Ver. (.02). "El Eco de Sotavento desde Veracruz." Int: "Las Golondrinas." Three cents USA postage for veri, Add: Independencia 98.
- 6.625 HJ1ABJ, Santa Marta, Colombia. (.05) "La Voz de Santa Marta."
- 6.030 HJ4ABP. Medellin, Colombia. (1.) (6033) "Radio Philco".
 - HP5B, Panama City, Panama. (.1) Add: Aptdo 910.
- 5.040 PRA8, Pernambuco, Brazil. (3.) "A Vox do Norte." Add: Av. Cruz Cabuga 394.
 - W1XAL, Boston, Mass. (10.) "Dedicated to Enlightenment." Add: University Club.
 - W4XB, Miami, Fla. (5.). Relays WIOD. Add: Isle of Dreams Brdcstg. Corp.
 - YDA, Tandjong Priok, Java, N.E.I. (10.) s/o: "End of a Perfect Day." This is the Key Station for the NIROM Network.
- 6.042 HJ1ABG, Barranquilla, Colombia. (.15) "Emisora Atlantico". Same call on BCB. Add: Aptdo 445.
- 5.045 XETW, Mexico City, D. F. "La Voz del Aguila Azteca desde Mexico." Add: Aptdo 8403.
- 5.050 GSA, London, Gt. Britain. (20.). "A for Aerial." Tr: Daventry. Int: Bow Bells; time signal on even hours; Big Ben strikes hours irreg. preceded by Westminster Chimes. s/o: God Save the King. Add: British Broadcasting Corp., London W1.
 - XEXF, Mexico City, D. F. (.6). Secretaria de Economia."
- 6.055 HJ3ABD, Bogota, Colombia (.05). "Colombia Broadcasting." Add: Aptdo 509.
- 6.060 VQ7LO, Nairobi, Kenya. Cable and Wireless, Ltd., Box 777.
 - W3XAU, Philadelphia, Pa. (10.) Relays CBS-WCAU. Add: 1622 Chestnut St.
 - W8XAL, Cincinnati, Ohio. (10.) Tr. Mason. Relays WLW-NBC. Add: Crosley Radio Corp., 1329 Arlington St.
- 5.070 CFRX, Toronto, Ont. (1.). Relays CFRB. Add: Rogers-Majestic Corp.
 - HJ3ABF, Bogota, Colombia. (.05) (6068; 6073). "La Voz de Bogota". Ann: Estacion HKF. s/o: "Song of the Islands."
 - VE9CS, Vancouver, B. C. (.01) Relays CKFC. Add: 1001 Stock Exchange Bidg.
 - YV1RD, Maracaibo, Venez. (6075). "Radiodifusora Maracaibo." Relays YV1RE,
- 6.075 XEBW, Guadalajara, Jal. (.045). Ramon Loreto.
- 6.080 DJM, Berlin, Germany. See DJC 6.020 megs HP5F, Colon, Panama. (6074; 6078)
 - W9XAA, Chicago, III. (20.) "The Voice of Labor." Tr: York Township. Relays NBC-WCFL. s.o: English, French, German, Norwegian, Polish, Russian, Spanish. This transmitter uses aerial directed to Central Europe. Add: Chicago Federation of Labor, 666 Lake Shore Drive.

ZHJ, Penang, Straits Settlements. (.049). "J for Jubilee".

- 6.085 HJ5ABD, Cali, Colombia. "La Voz del Valle." Aptdo 270.
- 6.090 CRCX, Toronto, Ont. (1.) Relays CRC-CRCT HJ4ABC, Ibague, Colombia, "Ecos de Combeima."

VE9BJ, St. John, N. B. (.05) Admiral Beatty Hotel.

ZBW2, Hong Kong. (2.4). Add: Box 200.

- 6.095 JZH, Nazaki, Japan.
- 6.097 HJ4ABE, Medellin, Colombia. (1.) "La Voz de Antioquia." Relays HJ4ABK, Int: 3 chimes precede ann. Add: Emisora 4ABE,
- 6.100 W3XAL, New York, N. Y. (20.) Tr.: Bound Brook, N. J. Relays NBC-WJZ. Ann: Eng., French, German, Italian and Spanish. s/o: "The Star Spangled Banner," Add: NBC, Rockerfeller Plaza, NYC.
 - W9XF, Chicago, III. (5.) Tr: Downers Grove. Relays NBC-WENR. Add: NBC, Inc., Merchandise Mart.
 - Belgrade, Yugo-Slavia. (1.) "Radio Beograd".
- 6.108 HJ4ABB, Manizales, Colombia. "Radio Manizales."
- 6.110 GSL, London, Gt. Britain. "L for Liberty." See GSA 6.050 megs.
- 6.115 HJ1ABB, Barranquilla, Colombia. (.3) (6447). "La Voz de Barranquilla." Relays HJ1ABA. Int: 3 chimes. Add: Aptdo 715
 - XECU. Guadalajara, Jal. Prague, Czechoslovakia. (35.) See 15.230 megs.
- 6.120 W2XE, New York, N. Y. (10.). Tr: Wayne, N. J. Relays CBS-WABC s/o: "The Star Spangled Banner,"
 - XEFT, Veracruz, Ver. (.012). Jose Rodriguez Lopez.
 - XETW, Mexico City, D. F.
 - YDA5, Bandoeng, Java, N.E.I. (1.5). Add: NIROM (N. V. Nederlandsche Indische Radio Omroep Moatschappij), Tegallegah 0.23, Bandoeng.
- 6.122 HJ3ABX, Bogota, Colombia. '''La Voz de Colombia.'' Same call on BCB.
- 6.125 CXA4, Montevideo, Uruguay. (1.). Add: Martin Fierro 2603,
- 6.130 COCD. Havana, Cuba. (.35). "La Voz del Aire." Int: 4 chimes. Relays CMCD. 5/0: "Good Night Waltz." Add: Calle 25 y "G", Vedado.

VE9HX, Halifax, N. S. Add: Box 998.

- VP3BG, Georgetown, British Guiana.
- 6.138 HJ4ABD, Medellin, Colombia. "La Voz de Catia." Also works on 5.760 and 5.930 megs.
- 6.140 W8XK, Pittsburgh, Pa. (40.). Tr: Saxonburg. "The World's Pioneer Radio Station." Relays NBC-KDKA. Add: Grant Bldg.
- 6.145 HJ4ABU, Pereira, Colombia. "La Voz de Pereira."
- 6.150 CB615. Santiago de Chile. "Radiodifusora Pilot." s/o: "Rhapsody in Blue." Add: CiaInternacional de Radio, Casilla 16-D.

CJRO, Winnipeg, Man. (2.). James Richardson & Sons, 157 Royal Alexandra Hotel.

- H15N, Santiago, D. R. (.1). Sr. M. Smester. 6 153
- "Radiodifusora YV5RD, Caracas, Venez. "Ra Venez." Relays YV5RB. 6 156
- VPB, Colombo, Ceylon, (.3). Add: Central 6.160 Telegraph Office.
- XEXA, Mexico City, D. F. (6174). Relays 6.182 XEXM. S/o: "March of the Toys." Add: Secretaria de Educacion Publica
- HI1A, Santiago de los Caballeros, D. R. 6.190 (.05). "La Voz del Yaque."
- COKG, Santiago de Cuba, (.05). "A Bacardi." Relays CMKG. "Ask for \$ 200 Add: Sres. Grau y Caminero, Aptdo 137. XEXS, Portable and Mobile in Mexico. (.1). Departamento de SalubridadPublica.
- HRD, La Ceiba, Honduras. (.25). "La Voz 6.235 de Atlantida."
- HIN, Trujillo, D. R. (.75). s/o: National 6.243 anthem. Add: Aptdo 604.
- YV5RJ, Caracas, Venezuela. "La Voz de la Esfera." Relays YV5RI. 6 250
- OAX4G, Lima, Peru. Relays OAX4B. Add: 6 260 R. Grellaud y Cia.
- YV5RP, Caracas, Venez. "La Voz de Philco." Relays YV5RQ. 6.270
- COHB, Sancti-Spiritus, Cuba. (.15) (6281). 6.280 Relays CMHB. Add: Aptdo. 85.
 - HIG, Trujillo, D. R. (.05). Int: a bawling calf, Add; A. Cordero P.
- YV4RD, Maracay, Venezuela. "La Voz de Aragua." Relays YV4RG. 6 300
- H1Z, Trujillo, D. R. (.1). "La Voz de los Muchachos." Add: Calle Duarte 6.315 Add: Calle Duarte No. 58.
- 6.340 HIX, Trujillo, D. R. (.5).
- YV1RG, Valera, Venezuela. "Radio Valera." 6.345
- HKP1, San Pedro Sula, Honduras. 6 358
- YV1RH, Maracaibo, Venezuela. "Ondas del 6.360 Lago, Emisora Philco." Relays YVIRF.
- YV5RF, Caracas, Venezuela. Caribe." Relays YV5RE. "Ecos del 0.85.3
- W09, Mitchell Field, L. E., N. Y. Army 6.385 airport.
- YV5RH, Caracas, Venezuela. "Ondas Popu-6.400 lares," Relays YV5RG. Add: Aptdo 1931.
- 6.410 TIPG, San Jose, Costa Rica. (1.). "La Voz de la Victor." Add: Aptdo 224.
- 6.420 HI1S, Santiago de los Caballeros, D. R. (.02).
- W2XGB, Hicksville, N. Y. (5.). Press Wire-6 4 2 5 less, Inc.
 - W3XL, New York, N. Y. (100.). Tr: Bound Brook, N. J. NBC control station and cue station for nearly all special broadcasts. Add: NBC, 30 Rocker-feller Plaza, NYC.
 - W9XBS, Chicago, III.
 - W9XF, Chicago, Ill. (2.5). Tr: Downers Grove. Cue station. Add: NBC, Merchandise Mart.
- 5 440 KUP, San Francisco, Calif. Press at 0300 GMT
- HI4V, San Fransisco de Macoris, D. R. (.025). 6.477 "La Voz de la Marina".
- 6.479 H18A, Trujillo, D. R.
- 6.490 Aeronautical point-to-point stations, Purple Chain: See 2.644 megs.

- HIL, Trujillo, D. R. (.05). 6.500 YV1RM, Maracaibo, Venezuela. "Radiodifusora Maracaibo." Relays YVIRN.
- Aeronautical point-to-point, Blue Chain: 6.510 See 2.720 megs.
- YV4RB, Valencia, Venez. "La Voz de Cara-6.520 bobo." Relays YV4RA. Add: Sres. Hermann y Williams Degwitz. Aeronautical point-to-point, Blue Chain: See 2.720 megs.
- Aero, point-to-point, Blue Chain: See 2.720 6.530 meas
- EDR4, Palma, Majorca, Balearic Islands. 6.534 (6565: 6583).
- YN1GG, Managua, Nicaragua. 6.540 Aero, point-to-point, Brown Chain: See 2.612 megs.
- YV6RB, Bolivar, Venezuela. "La Voz de Ciudad." Relays YV6RA. 6.545
- Aeronautical point-to-point, Brown Chain: 6.550 See 2.612 meas.
- HI4D. Trujillo, D. R. (.025). "La Voz de 6.555 Quisqueya."
- Aero, point-to-point, Brown Chain. See 6 560 2.612 megs.
- Aircraft, Orange Chain. See 2.648 and 2.870 6.570 meas.
- Aero. point-to-point, Orange Chain. See 6.580 2.648 megs.
- Aeronautical Green Chain. See 2.608 and 6.590 2.854 megs.
- point-to-point, Green Chain. See 6.600 Aero. 2.608 megs.
- Aeronautical: See 2.930 megs. 6.615
- PRADO, Rio Bamba, Ecuador. (6618; 6625). "Estacion El Prado." Ann: Some-6.620 times by a lady, Srta. Judy. Add: Aptdo 98.
- HIT, Trujillo, D. R. (.2). "La Voz de la RCA-Victor." Add: Aptdo 1105. 6.630
- HC2RL, Guayaquil, Ecuador. (6650; 6667). "Quinta Piedad." Add: Aptdo 759. 6.635
- WXH, Ketchikan, Alaska. Phones Seattle. 6.662 YVQ, Maracay, Venez. 6.672
- 6.688
- TIEP, San Jose, Costa Rica. "La Voz de los Isthmo". Add: Aptdo 257. CFU, Rossland, B. C. Consolidated Mining & 6.720
 - Smelting Co. of Canada, Ltd. PMH, Bandoeng, Java, N.E.I. (1.5), See YDA5 6.120 megs.
- HI3C, La Romana. D. R. "La Voz de la 6.730 Feria."
- JVT, Nazaki, Japan. (20.) Works U.S.A. 6.750
- WOA, Lawrenceville, N. J. (*) Works London 6 755 nights.
- TDA, Shinkio, Manchukuo. (20.), Works 6.762 San Francisco. Add: Manchukuo Telegraph and Telephone Co., Ltd.
- H1H, San Pedro de Macoris, D. R. "La Voz de Higuamo." (.15). 6.775
- WFD, New Orleans, La. Press in winter. 6.785
- HI7P, Trujilio, D. R. (frequency drifts). 6 800
- 6.820
- XGOX, Nanking, China. (.5), KEL, Bolinas, Calif. (*). Works Manila. 6.860
- GDS, Rugby, Gt. Britain. (15.) Works NYC 6.905 nights. See GBW 14.440 megs.
- GBY, Rugby, Gt. Britain. Works NYC irreg. 6.950 See GBW 14.440 megs.
- 7.000 PZH, Paramaribo, Surinam.
- 7.000 to
- Amateurs, United States and Canada 7.300 megs. use code only in this band. Most other countries use voice.
- 7.080 VP3MR, Georgetown, British Guiana. "The Voice of Guiana."
- FO8AA, Papeete, Tahiti (.2). Radio Club 7.100 Oceanien.

- 7.180 YNAM, Managua, Nicaragua. "La Voz del Pacifico.'
- 7.380 XECR, Mexico City, D. F. (20.). Ann: English and Spanish. Add: Departamento de Publicidad de la Secretaria de Re-Jaciones Exteriores
- 7 520 HCK, Quito, Ecuador,
- KKH, Kahuku, Hawaii. (*). Phones Bolinas. 7.555 Lawrenceville, N. J. (20.) (*). Works London.
- 7.565 KWY, Dixon, Calif. (*). Lawrenceville, N. J. (20.) (*), Works
- London and Paris. 7.570 TDG, Shinkio, Manchukuo, Works Berlin,
- Manchukuo Telegraph & Telephone Co., Ltd.
- KWX, Dixon, Calif. (40.) (*) IUB, Addis Ababa, Ethiopia. 7.610 (48) (*)
- 7.620
- 7.700 Aeronautical point-to-point, daytime operation only, Brown Chain. See 2,612 meas.
- 7.715 KEE, Bolinas, Calif, (40,) (*),
- HBP, Geneva, Switzerland. (20.) 7.797 "Radio Nations." Tr: Prangins. Add: M. G. Gallarati, Information Section, League of Nations. 7.850
- HC2JSB, Guayaquil, Ecuador. "Ecuador Radio." Int: one gong. Add: Juan S. Behr.
- 7.920 GDP, Rugby, Gt. Britain. Works Australia. See GBW 14,440 megs.
- 7.968 HSJ, Bangkok, Siam, Post & Telegraph Dept,
- 7.970 XGL, Shanghai, China,
- 8.015 Aeronautical point-to-point, daytime operation only, Blue Chain: See 2.730 meas.
- 8.050 WXA, Juneau, Alaska. Works WVD at 2400 EST
- 8.070 Aero. point-to-point, Yellow Chain, See 2.640 megs.
- 8.075 WEZ, Rocky Point, N. Y. (W2XBJ) (*.) Works Paris.
- 8.095 VLK, Sydney, Australia.
- 8.130 Aero, point-to-point, daytime operation only: Green Chain, see 2.608 megs. Purple Chain, see 2,644 megs.
- 8 220 Aircraft, Orange Chain. See 2.648 and 2.870 meas
 - Clipper Service, see 2.986 megs
- 8.360 WHD, New York, N. Y. Press at 0600 GMT. 8.370
- KFS, Palo Alto, Calif. Press at 0600 GMT. 8-430
- WSC, Tuckerton, N. J. Press at 0415 GMT. 8.500 YNLG, Manaqua, Nicaragua. (.5). "Nicara-gua Patria de Dario."
- WOO, Ocean Gate, N. J. (20.) (*). Phones Ships. "Cast" frequency. 8 560
- HPF4, Panama City, Panama. Works Hialeah 8.600 nights.
- 8 620 WVD. Seattle. Wash. Works Alaska at 2400 EST. Alaskan Telephone Co., 517 Federal Office Bldg.
- 8.630 VOWQ, Northwest River, Labrador,
- CO9JQ, Camaquey, Cuba. (2.4). Add: Calle 8.665 Gnrl. Gomez 4.
- 8.680 GBC, Rugby, Gt. Britain. Works Ships Days, See GBW 14.440 megs.
- 000 8 VWZ. Kirkee, Poona, India. (10.). Assigned 8691, 8693, 8700 and 8708 kcs. also. Phones London, Add: Indian Radio & Cable Communication Co., Poona 6.
- 8.710 KBB, Manila, Philippine Isl. (*)
- VPD3, Suva, Fili, "Radio Suva," s/o; "God 8.720 Save the King." Add: Amalgamated Wireless (A/sia) Ltd. 8.740
- WXV, Fairbanks, Alaska. ICEJ, S. S. Rex. Works IAC and WOO. Add: 8.770 Italian Lines, 1 State St., NYC.
- 8.798 HKV, Bogota, Colombia. Add: Ministerlo de Guerra.

- 8.810 FNSK, S. S. Normandie. Works Paris nights. Add: French Lines, Pler 88, North River, Foot of W. 48th St., NYC, IBLI, S. S. Conte di Savoia. Works IAC and WOO, See ICEJ 8.770 mens.
- 8 830 British Ships, Work GBC and WOO, Add: International Marine Radio, Conneaut House, 63 Aldwych, London WC2. GBTT, R. M. S. Queen Mary. GBZW, S. S. Berengaria. GDLJ, S. S. Homeric. GFWV, S. S. Malestic. GLRZ, S. S. Aquitania. French Ships. For address see FNSK 8.810 megs. FNSK, S. S. Normandie. Works WOO nights, FNSM, S. S. Paris. FNTQ, S. S. Ile de France. Furness-Bermuda Lines, Work ZFA-B and WOO. (*). VQJM, S. S. Monarch of Bermuda. VQJP, S. S. Queen of Bermuda. German Ships. See 4.413 megs. DDBR, S. S. Berlin. DDCP, S. S. Cap Polonio. DDFF, S. S. Reliance. DDFT, S. S. Oceana. DHAO, S. S. Hansa. DHDL, S. S. Cap Arcona. DHEY, S. S. Deutschland. DHJZ, S. S. Hamburg. DHRL, S. S. New York, DOAH, S. S. Bremen. DOAI, S. S. Europa. 8 840 ZMBJ, M. V. Amatea. Phones Australia and
- New Zealand. Add: United S.S. Co., Auckland, N. Z.
- HCJB, Quito, Ecuador. (.15) "La Voz de los Andes." Int: 4 strokes on gong. 8.948 Add: Casilla 691.
- 9.010 KEJ, Bolinas, Calif. (*).
- 9 020 GCS, Rugby, Gt. Britain. (15.), Phones NYC nights. See GBW 14,440 megs,
- 9.040 TYA2, Pontoise, France. (10.). Works Algeria and ships. Add: Service de la T.S.F., 5 Rue Froideveaux, Paris XIV,
- 9.045 VWY, Kirkee, Poona, India. Add: See VWZ 8.690 megs.
- 9.050 NPO, Cavite, Philippine Isl. Time signals at 1255 GMT.
- 9.125 HAT4, Budapest, Hungary. (20.). "Justice for Hungary." Tr: Szekesfehervar, for Hungary." Tr: Szekesfehervar. Ann: English, French, Hungarian, usually by lady. s/o: National anthem. Add: Radiolabor, Kiserleti Allomasa, Budapest IX, Gyali-ut 22,
- 9.168 YVR, Maracay, Venezuela.
- NAA/NSS, Arlington, Va. Time signals at 0955 and 2155 EST, 9.250 9.280
- GCB, Rugby, Gt. Britain, (15.). Works Canada nights. See GBW 14.440. 9.310
- Aircraft, Orange Chain: See 2.648 megs. CGA4, 9.332 Drummondville, P. Q. Phones
- London. See CFCX. 6.005 megs. 9.350 HS8PJ, Bangkok, Siam. Ann: "Happiness
- Siam Eight Progress Jubilee." Int: 3 chimes. Add: Post and Telegraph Dept.
- 9.415 PLV, Bandoeng, Java, N.E.I. (80.). Governe-ments Radio-Dienst.
- NAA/NSS, Arlington, Va. Time signals at 0055, 0155, 0255, 0355, 0755, 1155, 1355, 1555, 1755, 1855, 2355 EST. 9.425
- 9.428 COCH, Havana, Cuba. (.15). General Electric Co, of Cuba, No. 2 "B" St., Vedado. 9.448
- WES, Rocky Point, N. Y. (*). 9.450
- TGWA, Guatemala City, Guat. (.2). "Radie Nacional". Relays TGW, Add: Ministerio de Fomento.

- 9,460 ICK, Tripoll. (2.). WKJ, New Brunswick, N. J. (*). XEFT, Veracruz, Ver. (.02), "La Voz de Veracruz." Add: Av. Independencia 28. XGOX, Nanking, Kian-su, China. (.5),
- WET, Rocky Point, N. Y. (*). Works SA 9.470 irreg.
- EAH, Madrid, Spain. Ann: UGT1. (UGT 9.475 for Union General de Tranajadores Network).
- KES, Bolinas, Calif. (*) 9.480
- XEDQ, GuadalaJara, Jal. Int: 4 chimes in Relays XED. descending scale. Add: Aptdo 197.
- OXY, Copenhagen, Denmark. XTV, Canton, China. 9.490
- VK3ME, Melbourne, Australia (5.). Tre 9 500 Add: Amalgamated Braybank. Wireless (A/sia) Ltd., Box 1272L, Elizabeth St. P. O.
 - HJ1ABE, Cartagena, Colombia. (.18). "La Voz de los Laboratorios Fuentes." Add: Aptdo 31.
 - PRF5, Rio de Janeiro, Brazil. (60.). "A Vox do Brasil." Add: Cia. Internacional do Brasil, Box 709.
- GSB, London, Gt. Britain. (20.). "B for 9.510 Broadcasting." See GSA 6.050 megs. HJU, Buenaventura, Colombia. National Railroads of Colombia.
- HJ4ABH, Armenia, Colombia. "La de Armenia." Relays HJ4ABN. "La Voz 9 520 XEME, Merida, Yuc. (.015). Fernando Ponce Camera.
- 9.525
- ZBW3, Hong Kong. (2.4). Add: Box 200. W2XAF, Schenectady, N. Y. (40.). Relays NBC-WGY. Programs commence 9.530 with electrical discharge of 10,000,000 volts. Add: The General Electric Co. 9.535 JZI, Tokyo, Japan.
- DJN, Berlin, Germany. See DJB, 15.200 megs. 9.540 LKJI, Jeloy, Norway. (1.). VPD2, Suva, Fiji. "Radie Suva." s/o: "God
 - Save the King".
- 9.560 DJA, Berlin, Germany. (8.). See DJB 15.200 meas.
 - HJ1ABB, Barsanquilla, Colombia. (.3) (Daytime only). "La Voz de Barran-Relays HJ1ABA. Add: quilla." Aptdo 715.
- VUB, Bombay, India. (4.5). Add: All India Radio, Irwin House, Sprott Road, 9.565 Ballard Estate.
 - "La Voz de YV3RB. Venezuela. Lara."
- W1XK, Boston, Mass. (10.) (*) Relays NBC-WBZ-WBA. (10.) (*) Tr: Millis. 9.570 "La
- HJ2ABC, Cucuta, Colombia. (.25). 9.575 Voz de Cucuta." "C for
- GSC, London, Gt. Britain. (20.). 9 580 Corporation." See GSA 6.050 megs. 3LR, Melbourne, Australia. Tr: Lyndhurst.
- VK2ME, Sydney, Australia. (20.). "The Voice of Aust." Tr: Pennant Hills. 9 585 Int: Laughing notes of kookaburra. Add: Amalgamated Wireless, (A/sia) Ltd., 47 York St. 9.590 PCJ, Hilversum, Netherlands. "The Happy
- Station." Ann: Dutch, English, Station." Ann: Dutch, English, French, German, Malay, Portuguese, Spanish. s/o: National anthem. Add: N. V. Philips Radio, Emmasingel 29, Eindhoven. VK6ME, Perth, W. A., Australia. (.3). Amal-

 - gamated Wireless, (A/sia)., Ltd. , Philadelphia, Pa. (10.). Relays CBS-WCAU. Add: 1622 Chestnut W3XAU, St.

..... Cincinnati, Ohio (under construction.)

- HBL, Geneva, Switzerland. (18.). "Radio 9 5 9 5 Nations." Tr: Prangins. Add: M. G. Gallarati, Information Section, League of Nations. RAN, Moscow, USSR.
- CB960, Santiago de Chile. "Radiodifusora 9.600 s/o: "Rhapsody in Blue." Pilot." Add: Cia, Internacional de Radio, Casilla 16-D.
- HP5J, Panama City, Panama. (1.). "La Voz de Panama." Add: Aptdo 867. 9.605
- YDB, Sourabaya, Java, N.E.I. (1.). 9.610
- HJ1ABP, Cartagena, Colombia. (.75). "Radio Cartagena." Add: Aptdo 37. 9.618
- 12RO, Rome, Italy. Ann: "Radio Roma-9.635 Napoli," usually by a lady. Add: EIAR, Via Montello 5, Rome.
- CQN, Macau, Portuguese China. 9.640
- HH3W, Port-au-Prince, Haiti. (.03). Add: 9 645 Box A-117.
- LRX, Buenos Aires, Argentina. (5.). "Radio El Mundo." Relays LR1. Aúd: 9.660 Relays LR1. Aud: Calle Maipu 555.
- CT1AA, Lisbon, Portugal. (2.) (9650; 9693; 9770). "Radio Coloniale." Int: 3 9.665 cuckoos. Add: Senhor Abilio Nunes dos Santos Jr., Av. Antonio Augusto d'Aquiar 144.
- (9695). TI4NRH, Heredia, Costa Rica. 9 670 Amando Cespedes Marin, Aptdo 40.
- DZA, Berlin, Germany. See DJB 15.200 9.675 meas.
- COCQ, Havana, Cuba. "de la RCA-Victor." 9.750 Relays CMQ. s/o: "Siboney." Add: Calle 25 No. 445, Vedado.
 - WOF, Lawrenceville, N. J. (*). Phones Paris.
- 9.860 EAQ, Madrid, Spain. (20.) (varies to 10060). "La Voz de Espana." Tr: Aranjuez. Ann: English and Spanish. Broadcasts IBC programs from London. s/o: National anthem "Himno del Reigo." IBC programs s/o "Good Night Waltz." Add: Transradio Espanola, Aptdo 951.
- WON, Lawrenceville, N. J. (20.) (*), 9.870
- 9.890 LSN2, Buenos Aires, Argentina.
- LSN, Buenos Aires, Argentina. Works NYC. 9 895
- CSW, Lisbon, Portugal. 0 940 San Juan, Puerto Rico. (.4). Works
- Hialeah. Radio Corp. of Puerto Rico. GCU, Rugby, Gt. Britain. (15.). Works NYC nights. See GBW 14.440 megs. 9.950
- KAZ, Manila, Philippine Isl. (40.) (*). 9 9 9 0
- WWV, Beltsville, Md. (1.). Standard fre-10.000 quency transmissions Wednesdays 1315-1415 EST.
- 10.042 DZB, Berlin, Germany. See DJB 15.200 megs.
- SUV, Cairo, Egypt. (10.), Tr: Abu Zabal. 10.055 ZFB, Hamilton, Bermuda. (1.5). (*) Tre St. George. Works NYC days.
- TDE, Shinkio, Manchukuo. Works Tokyo. 10.065 Manchukuo Telegraph and Telephone Co., Ltd.
- RIR, Tiflis, USSR. 10.080
- (20.). Works TDB, Shinkio, Manchukuo. 10.105 San Fransisco. See TDE 10.065 megs.
- Aeronautical point-to-point, Blue Chain. 10.125 Daytime operation only. See 2.720 megs.
- 10.135 OPM, Leopoldville, Belgian Congo. Works ORK.

- 10.190 Aeronautical point-to-point, daytime only. Brown Chain. See 2.612 megs.
- 10.220 PSH, Rio de Janeiro, Brazil. (12.). Works LSX. Cia Radiotelegrafica Brasileira, Caixa Postal 500.
- 10.230 CED, Antofogasta, Chile,
- 10.250 LSK3, Buenos Aires, Argentina (5.). Tr: Hurlingham.
- 10.260 PMN, Bandoeng, Java, N.E.I. (1.5). Works VLJ. Gouvernements Radio-Dienst.
- 10.290 DZC, Berlin, Germany. See DJB 15.200 megs.
- 10.330 DRK, Brussels, Belgium. (11.). Works Leopoldville and broadcasts. Tr: Ruysselede.
- 16.335 ZFD, Hamilton, Bermuda. (1.5) (*). Tr: St. George.
- 10.350 LSX. Buenos Aires, Argentina. (20.). Tr: Monte Grande. Add: Cia. Radiotelegrafica Arg. S. A., San Martin 329.
- 10.400 KEZ, Bolinas, Calif. (*).
- 10.420 XGW, Shanghai, China.
- 10.460 WFD, New Orleans, La. Press in summer time.
- 10.535 JIB, Talhoku, Taiwan. (6.). Tr: Chureki. Works Tokyo. Add: Kokusai Denwa Kaisha, Chureki Station, Chureki Gai, Shinchiku, Taiwan.
- 10.578 FYB. Pontoise, France. Time signals 1955 to 2000 GMT.
- 10.610 WEA, Rocky Point, N. Y. (40.) (*).
- 10.660 JVN. Tokyo, Japan. Tr: Nazaki.
- 10.670 CEC, Santiago de Chile. (4.). Tr: La Granja. Add: Cia. Internacional de Radio, Casilla 16-D.
- 10.740 JVM, Tokyo, Japan. (20.). Tr: Nazaki.
- 10.770 GCP. Rugby, Gt. Britain. (15.). Works Sydney. See GBW 14.440 megs.
- 10.840 KWV, Dixon, Calif. (20.) (*). Works Asia,
- 10.955 HS8PJ, Bangkok, Siam. (5.). Tr: Sala Daeng. Add: Radio Service, Post & Telegraph Dept.
- 10.990 ZLT, Wellington, New Zealand. Works Australia. Add: Post & Telegraph Dept.
- 11.000 PLP, Bandoeng, Java, N.E.I. (1.5). Gouvernements Radio-Dienst.
 - ZLT4. Wellington, New Zealand, See ZLT 10.990 megs.
- 11.018 GBTT, S. S. Queen Mary. See 8.830 megs.
- 11.280 HIN. Trujillo, D. R. (.75). s/o: National anthem. Add: Aptdo 604.
- 11.435 COCX, Havana, Cuba. "La Casa Lavin." (frequency varies widely), Relays the 9 o'clock curfew cannon shot, Add: Box 32.
- 11.500 PMK, Bandoeng, Java, N.E.I.
- 11.540 XGR, Shanghai, China. Works England.
- 11.595 VRR4, Stoney Hill, Jamaica. Works Hialeah,
- 11.660 JVL, Tokyo, Japan. Tr: Nazaki.
- FPQ, Rio de Janeiro, Brazil. Tr: Santa Cruz. Works Europe, SA, Rocky Point irreg. Add: Cia. Radiotelegraphica Brasileira, Caixa Postal 500.
 KIO, Kabuku, Hawaii. (*)
- 11.680 K10, Kahuku, Hawaii. (*). 11.715 TPA4, Paris, France. Tr. P
- 11.715 TPA4, Paris, France, Tr: Pontoise. "Radio Coloniale." Add: Ministere des Postes, Telegraphes et Telephones, 98 bis, Blv4. Haussmann.
- 11,720 CJRX, Winnipeg, Man, (2.). Add: James Richardson & Sons, 157 Royat Alexandra Hotel.

- 11.730 PHI, Hilversum, Netherlands. (23.6) (Winter frequency). PHDHI. See: PCJ 9.590 megs.
- 11.740 HP5L, David, Chiriqui, Panama, (.35). "Las Dndas del Baru." Add: Aptdo 129.
- 11.750 GSD, London, Gt. Britain. (20.). "D for Daventry." Tr: Daventry. Int: Bow Bells; time signal on even hours; Big Ben strikes hours irreg. preceded by Westminster chimes. s/o: God Save the King. Add: British Broadcasting Corp., London W1.
- 11.770 DJD, Berlin, Germany. (8.). See DJB 15.200 megs.
- 11.790 W1XAL, Boston, Mass. (10.). "Dedicated to Enlightenment." Add: Educational Director, University Club.
- 11.795 DJO, Berlin, Germany. See DJB 15.200 megs,
- 11.800 JZJ, Tokyo, Japan. Tr: Nazaki,
- 11.810 I2RO4, Rome, Italy. (25.). "Radio Roma-Napoli," Add: usually by a lady. Int: chirping of a bird. s o: two national anthems, "Giovinezza" and "Marcia Reale." Add: Ente Italiano per le Audizioni Radiofoniche, Via Montello 5.
- 11.820 GSN, London, Gt. Britain. See GSD. 11.750 megs.
- 11.830 W2XE, New York, N. Y. (10.). Tr: Wayne, N. J. Relays CBS-WABC, s o: "Star Spangled Banner." Add: Columbia Broadcasting System, 485 Madison Ave., NYC.
 - W9XAA, Chicago, Ill. (20.). This transmitter uses aerial directed to the Antipodes. For details see 6.080 megs.
- 11.840 Prague, Czechoslovakia. (35.) (11750; 11875). See 15.230 megs,
- 11.855 DJP, Berlin, Germany. See DJB, 15.200 megs.
- 11.860 GSE, London, Gt. Britain. (20.), "E for Empire." See GSD 11.750 megs. YDB, Sourabaya, Java, N.E.I. (1.),
- 11.870 W8XK, Pittsburgh, Pa. See W8XK 15.210 megs.
- 11.880 TPA3, Paris, France. See TPA4 11.715 megs.
- 11.880 XEXA, Mexico City, D. F. (.1). Add: Secretaria de Educacion Publica.
- 11.900 XEWI, Mexico City, D. F. "My Voice to the World from Mexico." Add: Aptdo 2874.
- 11.950 KKQ. Bolinas, Calif. (*) Relays programs to Hawaii.
- 11.955 IUC, Addis Ababa, Ethiopia.
- 12.000 RNE, Moscow, USSR. (20.). Programs in English, Czech, Dutch, French, German, Hungarian, Russian, Spanish and Swedish. Int: Kremlin chimes on the hour. s/o: "Internationale." Add: Mme. Inna Marr, Solianka 12.
- 12.150 GBS, Rugby, Gt. Britain. (15.). Works NYC afternoons. See GBW 14.440 megs.
- 12.235 TFJ, Reykjavik, Iceland. (7.5), Icelandic State Brdcstg. Service, Box 547.
- 12.290 GBU, Rugby, Gt. Britain. Works NYC nights. See GBW 14.440 megs.
- 12.330 Alrcraft and aero., Orange Chain. See 2.870 megs. Clipper Service, see 2.986 megs.
- 12.630 NAA/NSS, Arlington, Va. Time signals at 0955 EST,

- 12.830 CNR, Rabat, Morocco. (12.). Direction de l'Office des Postes, des Telegraphes et des Telephones.
- 12.840 WOO, Ocean Gate, N. J. (20.) (*). Works ships, "Boy" frequency.
- 12.885 NPG, San Francisco, Calif. Time signals at 1655 GMT.
- 13.040 German ships. See 4.413 megs. DDBR, S. S. Berlin.
 DDCP, S. S. Cap Polonio.
 DDFF, S. S. Reliance.
 DDFT, S. S. Occana.
 DHAO, S. S. Hansa.
 DHDL, S. S. Cap Arcona.
 DHZ, S. S. Deutschland.
 DHJZ, S. S. Hamburg.
 DHRL, S. S. New York.
 DOAH, S. S. Bremen.
- 13.050 Italian ships: see 4.280 megs. IBEJ, S. S. Conte Rosso. IBGI, S. S. Conte Verde. IBLI, S. S. Conte di Savoia. ICEJ. S. S. Rex.
- 13.075 VPD, Suva, Fiji. s/o: "God Save the King." Add: Amalgamated Wireless, (A/sia) Ltd., Suva.
- 13.190 FNSK, S. S. Normandie. Works Paris afternoons. See FNSK 13.210 megs.
- 13.210 DOAI, S. S. Europa. (.07). See 4.413 megs. FNSK, S. S. Normandle. Works WOO afternoons. Add. French Lines, Pier 88, North River, Foot of W. 48th St., NYC.
- 13.320 British Ships, see 8.830 megs. GBZW, S. S. Berengaria. GDLJ, S. S. Homeric. GFWV, S. S. Majestic. GLRZ, S. S. Aquitania.
- 13.337 YVQ, Maracay, Venezwela. Works WNC days.
- 13,380 IDU, Asmara, Eritrea. Works Rome.
- 13.410 WCT, San Juan, Puerto Rico. (.4). Works
- WNC. Add: Radio Corp. of Puerto Rico. 13.530 TDH, Shinkio, Manchukuo. Works Berlin.
- 13.585 GBB, Rugby, Gt. Britain. Works Canada and Egypt. See GBW 14.440 megs.
- 13.635 SPW, Warsaw, Poland. Tr:Babice.
- 13.690 KKZ, Bolinas, Calif. (*). Works Asia.
- 13.745 CGA2, Drummondville, P. Q. Works Ships.
- 13.780 KKW, Bolinas, Calif. (*).
- 13.820 SUZ, Cairo, Egypt. Tr: Abu Zabal. Phones Germany, England.
- 13.880 VJZ, Raboul, New Guinea.
- 13,900 WQP, Rocky Point, N. Y. (*). Works Europe,
- 13.980 TDC, Shinkio, Manchukuo. Works San Francisco.
- 13.990 GBA2, Rugby, Gt. Britain. Works SA. See GBW 14.440 megs.
- 14.000 to
- 14,400 Amateurs. Amateur 'phones are heard between 14,150 and 14,250 megs. Foreign amateurs usually work on the upper and lower edges of the band.
- 14.440 GBW, Rugby, Gt. Britain. (15.). Works WMA, WMF. Uses Inverted Speech and sometimes a "wobbulated carrier" as well. Add: G. P. O., Armour House, St. Martin's le Grande, London EC1.

- 14.460 DZH, Berlin, Germany. See DJB, 15.200 megs.
- 14.470 WMF, Lawrenceville, N. J. (*). Works Rugby.
- 14.480 LSN, Buenos Aires, Argentina. YNA, Managua, Nicaragua. Works WNC daily.
- 14.485 YSJ, San Salvador, El Salvador. Works WNC daily. Add: Telegrafos, Telefonos y Radio Nacionales.
 - HRL5, La Lima, Honduras. Works WNC
 - HRM, Tegucigalpa, Honduras. Works WNC daily.
- 14.545 HPF, Panama City, Panama. Works WNC daily.
 - TGF, Guatemala City, Guat. Works WNC daily.
 - TIU, Cartago, Costa Rica. Works WNC daily. Add: Cia. Radiografica Int. de C. R.
- 14.590 WMN, Lawrenceville, N. J. (20.) (*). Works Rugby.
- 14.635 GBL, Rugby, Gt. Britain. Works Japan. See GBW 14.440 megs.
- 14.640 JVH, Tokyo, Japan. (20.) Tr: Nazaki.
- 14.800 WQV, Rocky Point, N. Y. (*).
- 14.845 OCJ2, Lima, Peru. Phones SA.
- 14.910 JVG, Tokyo, Japan.
- 14.915 LZA, Sofia, Bulgaria. s/o: national anthem.
- 14.930 HJB, Bogota, Colombia. Works WNC and SA daily.
- 14.940 HIR, Trujillo, D. R. Works WNC daily. HJA3, Barranguilla, Colombia. Works WNC.
- 14.960 ROU,, USSR.
 - YSL, San Salvador, El Salvador. Add: Telegrafos, Telefonos y Radio Nacionales.
- 14.970 LZA, Sofia, Bulgaria. "Radio Sofia."
- 14.98 KAY, Manila, Philippine Isl. (*). Works Germany, England mornings; KWU nights.
- 15.000 WWV, Beltsville, Md. Standard frequency transmissions.
- 15.040 RKI, Moscow, USSR.
- 15.055 WNC, Miami, Fla. (.4) (*). Tr: Hialeah. Works CA, SA and West Indies daily.
- 15.080 RKI, Moscow, USSR. RV96, Moscow, USSR.
- 15.110 DJL, Berlin, Germany. See DJB 15.200 mcgs.
- 15.120 HJV, Vatican City. (10.). Int: ticking of clock. Ann: "Laudatur Jesus Christus." Add: Pontificia Accademia Della Scienze, Roma-Castina Pio IV.
- 15.140 GSF, London, Gt. Britaln. (15.). "F for Fortune." See GSD 11.750 megs.
- 15.150 YDC, Bandoeng, Java, N.E.I. (3.).
- 15.160 JZK, Tokyo, Japan.
- 15.175 RV96, Moscow, USSR.
- 15.180 GSO, London, Gt. Britain. See GSD 11.750 megs.
- 15.190 ZBW4, Hong Kong. (2.4). Add: Box 200.
- 15,200 DJB, Berlin, Germany. (8.). Tr: Zeesen. Int: Music box tune. s/o: Twe national anthems. Add: Reichs-Rundfunk-Gesellschaft, Haus des Rundfunk, Masurenallee, Berlin-Charlottenburg 9.
- 15.210 W8XK, Pittsburgh, Pa. (*). Tr: Saxonburg. Relays NBC-KDKA.
- 15.220 PCJ, Hilversum, Netherlands. See PCJ 9.590 megs.

- 15.230 Prague, Czechoslovakia. (35.) "Radio Podebrady." Tr: Podebrady. Int. trumpet tune from New World Symphony. Add: Praha XII, Fochova Tr. 16.
- 15.245 TPA2, Paris, France, See TPA4 11.715 meos.
- 15.250 W1XAL, Boston, Mass. (10.). "Dedicated to Enlightenment." Add: University Club.
- 15.260 GSI, London, Gt. Britain. "I for Island." See GSD 11.750 megs.
- 15.270 W2XE, New York, N. Y. See 11.830 megs.
- 15.280 DJQ, Berlin, Germany. See DJB 15.200 megs.
 - LRU, Buenos Aires, Argentina. "Radio El Mundo." Relays LR1. Add: Calle Maipu 555.
- 15.300 XEBM, Mazatlan, Sin. (.05). Ignacio L. Saiz.
- GSP, London, Gt. Britain. "P for Progress." 15 310 See GSD 11.750 megs.
- 15.330 W2XAD, Schenectady, N. Y. (20.). Relays NBC-WGY, Sce W2XAF 9.530 megs,
- 15.340 DJR, Berlin, Germany. See DJE 17.760 megs.
- KWU, Dixon, Calif. (15.). Works Hawaii, Philippines, Japan, Add: Trans-15.355 pacific Communication Co., 140 New Montgomery St., San Francisco.
- DZG, Berlin, Germany. See DJE, 17.760 megs 15.360
- 15.370 HAS3, Budapest, Hungary (20.). See HAT4 9.125 megs.
- 15.415 KWO, Dixon, Calif. (20.). Works N.E.I. and Japan nights. See KWU 15.355 meas.
- 15.905 TDI. Shinkio, Manchukuo. Works Berlin,
- 16.140 GBX, Rugby, Gt. Britain. Works SA. Uses Add: G.P.O., inverted speech. Add: G.P.O., Armour House, St. Martins le Grand. London, EC1.
- 16.440 Aircraft and aeronautical, Orange Chain: See 2.870 megs. Clipper Service, see 2.986 megs.
- 16 460 DHEY, S. S. Deutschland, Works DAF, WOO, Add: North German Lloyd, Pier 4, Foot of 58th St., Brooklyn.
- DOAI, S. S. Europa. See DHEY 16.460 megs. 16.600
- 16 765 DHTY, S. S. Resolute.
- 16.820 NAA, Arlington, Va. Time signals at 0955 EST.
- 17.080 GBC, Rugby, Gt. Britain. (5.). Works ships. See GBX 16.140 megs.
- 17.120 WOO, Ocean Gate, N. J. (20.) (*). Works ships. ICEJ, S. S. Rex.
- 17.225
- 17.310 W3XL, New York, N. Y. (20.). See W3XAL 6.100 megs.
- 17.480 VWY2, Kirkee, Poona, India. Works GAU mornings. Indian Radio and Cable Communications Co., Ltd., Poona 6. 17.755
- ZBW5, Hong Kong. (2.4). Add: Box 200.
- DJE, Berlin, Germany. Tr: Zeesen. Int: music box tune. s/o: two national 17.750 anthems. Add: Reichs-Rundfunk-Gesellschaft, Haus des Rundfunks, Masurenallee, Berlin-Charlottenburg 9.
- W2XE, New York, N. Y. See 11.830 megs. 17.775 Hilversum, Netherlands. PHI. (23.6). Summer frequency. See PCJ 9.590
- megs. 17.780 W3XAL, New York, N. Y. (15.), See 6.100 megs.
- 17.785 JZL, Tokyo, Japan.
- GSG, London, Gt. Britain. (15.). "G for 17.790

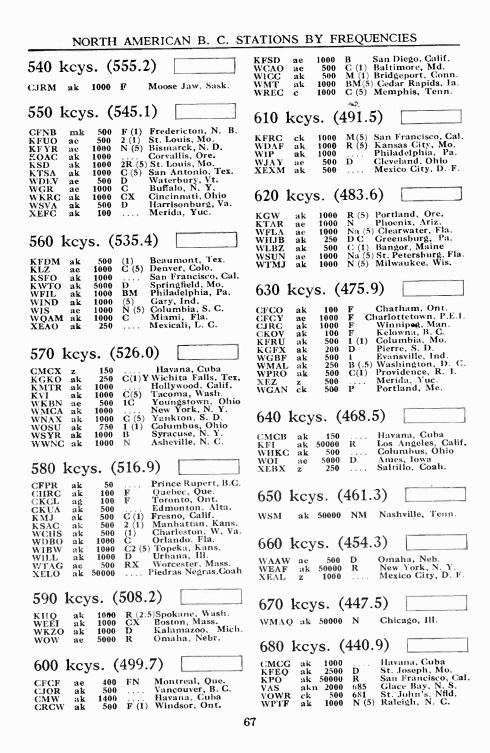
Greeting." Tr: Daventry. Int: Bow Bells; time signal on even hours; Big Ben strikes hours irreg, preceded by Westminster Chimes. s/o: "God Save the King." Add: British Brdestg. Corp., London W1.

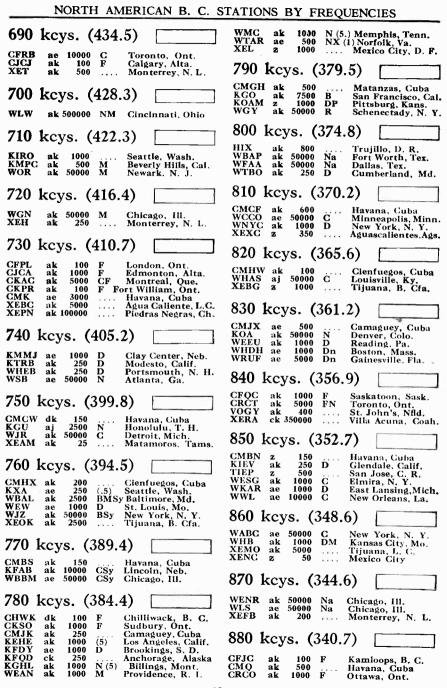
- 18.270 IUD, Addis Ababa, Ethiopia.
- 18.310 GAS, Rugby, Gt. Britain. Works NYC mornings. See GBX 16.140 megs.
- 18.350 WLA, Lawrenceville, N, J. (*), Works London mornings
- GAU, Rugby, Gt. Britain. (15.). Works India. NYC and Capetown. See 18.620 GBX 16.140 megs.
- 18 830 PLE, Bandoeng, Java, N.E.I. (40.). Works Dixon nights and Tokyo mornings. Governments Radio-Dienst.
- Works Kenya 19.480 GAD, Rugby, Gt. Britain. Colony. See GBX 16.140 megs.
- 19.630 VQG, Nairobi, Kenya Colony. Works Cable & Wireless, Ltd. London. Box 777
- 20.380 GAA, Rugby, Gt. Britain. (15.). See GBX 16.140 megs.
- GSH, London, Gt. Britain. "H for Home." 21.470 See G5G 17.790 megs.
- 21.520 JZM, Tokyo, Japan.
- W2XE, New York, N. Y. See 11.830 megs.
- GSJ, London, Gt. Britain. "J for Justice." 21.530 See GSG 17,790 megs.
- 21.540 W8XK, Pittsburgh, Pa. (*). Tr: Saxonburg. Relays NBC-KDKA. Westinghouse Electric & Mfg. Co.
- GSK, London, Gt. Britain. "K for King," 26.100 See GSG 17.790 megs.
- 28.000 to
- 30.000 Amateurs. Amateur 'phones are used between 28 and 29 megs.
- 30.604 IAG, Golfo Aranci, Sardinia. (5.).
- 31.600 W1XER, Boston, Mass. (.5). Add: Shepard Brdcstg. Service.
 - W2XJI, Newark, N. J. (1.) Brdcstg. Service, Inc. (1.). Bamberger
 - W3XEY, Baltimore, Md. (.1). Add: WFBR, 7 St. Paul St.
 - W6XAS, San Francisco, Calif. (.01).
 - W6XKG, Los Angeles, Calif. (1.). Ben S, McGlashan.
 - W8XAI, Rochester, N. Y. (.1). Stromberg-Carlson.
 - W8XKA, Pittsburgh, Pa. (.15). Add: KDKA, Grant Bldg.
 - W8XWJ, Detroit, Mich. (.1). Add: WWJ, the Detroit News.
 - W9XAZ, Milwaukee, Wis. (.5). The Journal Co.
 - W9XER, Kansas City, Mo. (.05).
 - W9XPD, St. Louis, Mo. (.1).
- W8XKA, Pittsburgh, Pa. (.15). 55.500 KDKA Grant Bldg.

56 000 to

- Amateurs. Amateur 'phones are heard in 60.000 the entire band.
- 60.500 W8XKA, Pittsburgh, Pa. (.15). KDKA. Grant Bldg.
- 110.000 megs to infinity. Amateurs. 401.000 W1XEG, Storrs, Conn. (.5). Connecticut State College.
 - W9XHW, Minneapolis, Minn. (.05).

All the shortwave stations will be listed in the April RADEX by locations and by call letters.

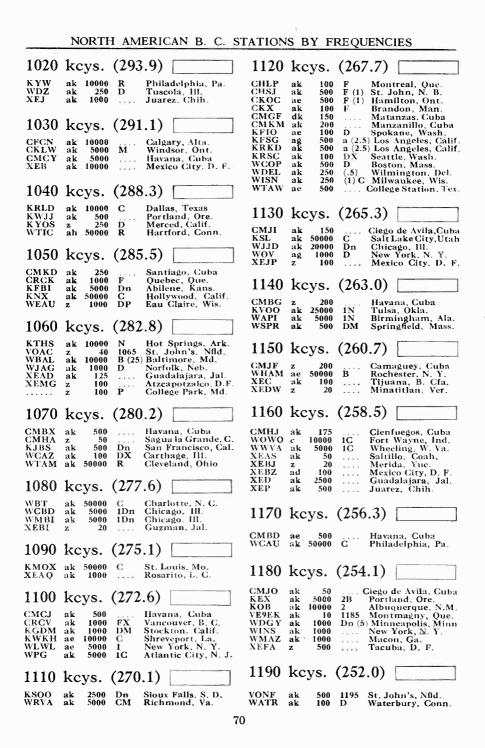




NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

	THE CONTRACTOR
KFKA ak 500 2 (1) Greeley, Colo. KLX ae 1000 Oakland, Calif.	940 kcys. (319.0)
KPOF ae 500 2 Denver, Colo.	KOIN ak 1000 C (5) Portland, Ore.
WCOC ae 500 (1) Meridian, Miss. WGBI ae 500 1 Scranton, Pa,	VOAS ak 100 St. John's. Nfld.
WPHR ak 500 DY Petersburg, Va. WQAN ac 250 1 Scranton, Pa.	WAVE -1. 1000 N. T. J. T. W.
WQAN ac 250 1 Scranton, Pa. WSUI ac 500 (1) Iowa City, Iowa	WUSH ak 1000 K (2.5) Portland, Maine WDAY ac 1000 N (5) Fargo N D
	WHA ak 5000 D Madison, Wis. XEFO ak 5000 (XFO) Mexico City, D. F.
890 kcys. (336.9)	WHA ak 5000 D Madison, Wis, XEFO ak 5000 (XFO) Mexico City, D. F. XEYO z 500 Mexico City, D. F.
KARK ak 500 (1) N Little Rock, Ark. KFNF ak 500 2 (1) Shenandoah, Iowa	950 kcys. (315.6)
KFPY ak 1000 C (5) Spokane, Wash.	CJOC ak 100 F Lethbridge, Alta.
KUSD ae 500 2 Vermillion, S. D. WBAA ak 500 (1) W. Lafayette, Ind.	CMCD ak 250 Havana, Cuba CRCS ak 100 F Chicoutimi, Que.
WCST ak 1000 C Atlanta Ca	KFWB ak 1000 (5) Hollywood, Calif. KHSL ak 250 D Chico, Calif.
WMMN ak 500 C(1) Fairmont, W. Va.	KMBC ae 1000 C (5) Kansas City, Mo.
XEW ak 50000 Mexico City, D. F.	WRC ak 500 R (1) Washington, D. C.
900 kcys. (333.1)	960 kcys. (312.3)
KGBU ak 500 X Ketchikan, Alaska	CFRN ak 100 F Edmonton, Alta. CHNC ak 1000 F New Carlisle, Que.
KHJ ak 1000 M (5) Los Angeles, Calif.	XEAW ck 50000 Reynosa, Tams.
KSEI ae 250 (.5) Pocatello, Idaho WBEN ak 1000 R (5) Buffalo, N. Y. WELI ak 500 D New Haven, Conn.	970 kcys. (309.1)
WELI ak 500 D New Haven, Conn. WFMD ak 500 D Frederick, Md. WJAX ak 1000 N (5) Jacksonville, Fla.	
WKY ae 1000 N (5) Oklahoma City,Okla.	CMBY z 150 Havana, Cuba KJR ak 5000 B Seattle, Wash. WCFL ae 5000 B Chicago, Ill.
WLBL ak 2500 DX Stevens Point, Wis. WTAD ak 1000 D Quincy, Ill.	WIBG ak 100 D Glenside, Pa.
910 kcys. (329.6)	980 kcys. (306.0)
910 Reys. (329.0)	KDKA c 50000 B Pittsburgh, Pa. XEAC ak 250 Tijuana, B. Cfa.
CJAT ak 1000 F Trail, B. C. CKY ak 15000 F Winnipeg, Man.	AEAC as 250 Injuana, D. Cia.
CRCM ak 5000 F Montreal, Que. XENT ak 150000 F. Nuevo Laredo, Tams.	990 kcys. (302.8)
	WBZ c 50000 BSy Boston, Mass.
920 kcys. (325.9)	WBZA c 1000 BSy Springfield, Mass. XEAF ak 750 Nogales, Sonora
-	XEAF ak 750 Nogales, Sonora XEK ak 100 Mexico City, D. F. XES dk 250 Tampico, Tams.
CMX ae 1000 Havana, Cuba HHK ae 1000 Port-au-Prince, Haiti	AES UN 250 rampico, rams.
KFEL ak 500 aM Denver, Colo. KOMO ak 1000 R (5) Seattle, Wash.	1000 kcys. (299.8)
KPRC ak 1000 N (5) Houston, Texas KVOD ak 500 aB Denver, Colo.	CMBZ ak 500 (1) Havana, Cuba
WAAF ak 1000 D Unicago, III. WORL ac 500 D Boston, Mass.	KFVD ae 250 DnX Los Angeles, Calif. WHO ak 50000 R Des Moines, Iowa
WPEN ak 250 (.5)1 Philadelphia, Pa.	YERI ak 25 Advascalientes Adv.
WSPA are 1000 D Spartanburg, S. C.	XEBK ak 100 Nuevo Laredo, Tams. XEXS z 100 Portable in Mexico
WWJ ak 1000 R (5) Detroit, Mich. XEAA ak 200 Mexicali, L. C.	1010 1
	1010 kcys. (296.9)
930 kcys. (322.4)	CHML ak 100 F Hamilton, Ont. CKCD ak 100 1 Vancouver, B. C.
	CKCK ak 500 F Regina, Sask. CKCO ak 100 F Ottawa, Ont.
CFCH ak 100 F North Bay, Ont.	CKIC ak 50 Wolfville, N. S.
CFLC ae 100 Prescott, Ont. CHNS ae 1000 F Halifax, N. S.	CKWX ak 100 F 1 Vancouver, B. C. CMJA ak 300 Camaguey, Cuba
CKPC ae 100 F Brantford, Ont.	KGGF ak 1000 2 Coffeyville, Kans.
KMA ak 1000 (5) Shenandoah, Iowa KROW ak 1000 Oakland, Calif.	KOW ae 1000 San Jose, Calif. WIIN ae 1000 (5) New York, N. Y.
KROW ak 1000 Gakland, Calif. WBRC ak 1000 C Birmingham, Ala. WDBJ ac 1000 C (5) Roanoke, Va.	WNAD ae 1000 2 Norman, Okla.
XEBH ak 500 Hermosillo, Sonora	WNOX ak 1000 C (2) Knoxville, Tenn. XEU ak 250 Veracruz, Ver.

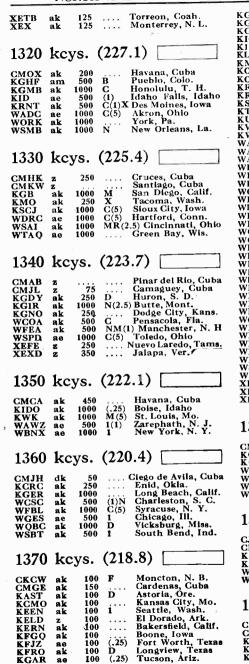
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WOAI		50000	С	San Antonio, Tex. Huntington, W. Va.	KLAH	ak	100		Carlsbad, N. Mex.
WSAZ	ak	1000	DP	Huntington, W. Va.	KOCA	Z	100	P	Kilgore, Texas
••••	z	250	DP	Visalia, Calif.	KPPC KVSO	ak ak	100 100	9	Pasadena, Calif. Ardmore, Okla.
1200	1		(240		KWTN	ak	100	1111	Watertown, S. D.
1200	kcy	ys.	(249	.9)	TGW	ak	10000		Guatemala City
CHAD	ak	100	F	Maana Jaw Saak	WALR	ak	100		Zanesville, Ohio
CHAB CKNX	ak	50	r	Moose Jaw, Sask. Wingham, Ont.	WBAX	ae	100		Wilkes Barre, Pa.
KTB	ag	100	F	St. Catherines,Ont.	WBBL	ak	100	S	Richmond, Va.
CMCO	ad	250		Havana, Cuba	WBL Y WBRB	ak ak	100 100	D 3	Lima, Ohio Red Bank, N. J.
KADA	ak	100	D	Ada, Okla.	WCOL	ak	100	Ň	Columbus, Ohio
KBTM	ak	100	D	Jonesboro, Ark.	WCRW	ae	100	4	Chicago, Ill.
KDNC KELO	z z	100 100	P(.25) P) Lewistown, Mont. Sioux Falls, S. Dak.	WEBQ	ae	100		Harrisburg, Ill.
KFJB	ak	100		Marshalltown, Iowa	WEDC	ae	100	4	Chicago, Ill.
KFXD	ae	100	(.25)	Nampa Idaho	WFAS WFOY	ak z	100 100	3 P	White Plains, N. Y St. Augustine, Fla
KFXJ	ak	100	(.25)	Grand Junc., Colo. Fergus Falls, Minn.	WGBB	ae	100	3	Freeport, N. Y.
KGDE	ak	100	(.25)	Fergus Falls, Minn.	WGCM	ae	100	(.25)	Gulfnort Miss
KGEK	ak	100		Sterling, Colo. Los Angeles, Calif.	WGNY	ak	100	3	Newburgh, N. Y.
KGFJ KGHI	ae ak	100 100	(.25)	Little Rock, Ark.	WHBF	ak	100	(.25)	Rock Island, Ill.
KMLB	ak	100	(.25)	Monroe, La.	WHBU WIBU	ak ak	100	(.25)	Anderson, Ind. Poynette, Wis.
KOOS	ae	250	Ď	Marshfield, Ore.	WIBU	ak	100	(.25)	Gadsden, Ala.
KSUN	с	100	(.25)	Lowell, Ariz.	WJEJ	ae	100	D	Hagerstown, Md.
KVCV	z	100	DDE	Redding, Calif.	WJIM	z	100	(.25) X	Lansing, Mich.
KVEC KVOS	z dk	250 100	DP S	an Luis Öbispo, Cal. Bellingham, Wash.	WJTN	ak	50	x	Jamestown, N. Y.
KWG	ak	100	Ň	Stockton, Calif.	WJW	ae	100	(.25)	Akron, Ohio
WABI	ak	100	(.25)	Bangor, Maine	WKOK WLMU	ak z	100 100	P	Sunbury, Pa. Middlesboro, Ky.
WAIM	ak	100	XZ	Anderson, S. C.	WMBG	ak	100	cxz	Richmond, Va.
WAYX	ak	100		Waycross, Ga.	WMFG	ak	100	X Y	Hibbing, Minn.
WBBZ WBHP	ak z	$100 \\ 100$	P	Ponca City, Okla. Huntsville, Ala.	WMFN	ak	100	Y	Clarksdale, Miss.
WBNO	ak	100	1	New Orleans, La.	WOMT	ak	100	<u> </u>	Manitowoc, Wis.
WCAT	ak	100	Ď	New Orleans, La. Rapid City, S. D.	WPAX WSA Y	ak z	100 100	D D	Thomasville, Ga. Rochester, N. Y.
WCAT WCAX	ak	100	2.2.23	Burlington, Vt.	WSBC	ae	100	4	Chicago, Ill.
WCLO	ak	100	(.25)	Janesville, Wis.	WSIX	ak	100	Y	Springfield, Tenn.
WCPO WEST	ak ae	100 100	(.25)	Cincinnati, Ohio) Easton, Pa.	WSOC	ak	100	N(.25	Junariotte, N. G.
NFAM	ak	100	8	South Bend, Ind.	WTAX ХЕАТ	ak	100 250		Springfield, Ill. Parral, Chih.
NFTC	z	100		Kinston, N. C.	XEAT	ak ak	250		Durango, Dgo.
WHBC	ak	100	(.25)	Canton, Ohio	XEFV	ak	100		Juarez, Chih.
WHBY WIBX	ak ak	100 100	(.25)	Green Bay, Wis. Utica, N. Y.	XETH	ak	100		Juarez, Chih. Puebla, Pue.
VIL	ak	100	(.25)	St. Louis, Mo.	100110	z	100	DP	Bridgeton, N. J.
WJBC –	ak	100	6(.25)	Bloomington, Ill.					
NJBL	ak	100	6	Decatur, III.	1220	1		(215	(9)
VJBW	ak	100		New Orleans, La. W. Palm Beach, Fla.	1220	ĸ	ys.	(243	.0)
WJNO WJRD	ak c	100 100	Ď	Tuscaloosa, Ala.	01 (I)				a contra a Contra
WKBO	ak	100) Harrisburg, Pa.	CMJE	z ak	50 1000	· · · · · · · · · · · · · · · · · · ·	Camaguey, Cuba Lawrence, Kans,
VLVA	ak	100	(.25)	Lynchburg, Va. High Point, N. C.	KFKU KTW	ak	1000	a (5) S2	Seattle, Wash.
VMFR	ae	100	D	High Point, N. C.	KWSC	ae	1000	2 (5)	Pullman, Wash.
WMPC WNRI	ak	100 100	(.25) (.25)	Lapeer, Mich. Newport, R. I.	WCAD	ak	500	D .	Pullman, Wash. Canton, N. Y.
WRBL	ak ak	100	(.23)	Columbus, Ga.	WCAE	ak	1000	MR(5) Pittsburgh, Pa.
VTHT	ak	iõõ	DM	Hartford, Conn.	WDAE WREN	ae ak	1000 1000	C(5)	Tampa, Fla. Lawrence, Kas.
WWAE	ae	100	8	Hammond, Ind.	XEBL	Z	1000		Mazatlan, Sin.
	z	100	Р	Superior, Wis.	XEDA	z	200		Gra. Anaya, D. F.
010			10.45		XETF	ak	30		Veracruz, Ver.
1210	kcy	/s.	(247	.8)					
JCS	ak	50		Stratford, Ont.	1220	1-0		1212	8)
JCU	z.	50		Aklavik, N. W. T.	1230	ĸ	ys.	(24)	.0)
CKBI	ak ak	100 100	F F	Prince Albert, Sask. Hull, Que.	KODY		500		Contraction 14
CKCH CKMC	ak	50	r	Cobalt, Ont.	KGBX	ak ak	500 250	(S) Y	Springfield, Mo. Albuquerque, NIM
MHI	ak	150		Santa Clara, Cuba	KGGM KYA	ak	1000	N S	an Francisco, Cali
KANS	ak	100		Wichita, Kans.	WFBM	ae	1000	C(5)	Indianapolis, Ind.
KASA	ck	100		Elk City, Okla. Devils Lake, N. D.	WNAC	ak	1000		Boston, Mass.
KDLR KDON	ak 7	100 100	M	Devils Lake, N. D. Del Monte, Calif.	XEFJ	ak	100		Monterrey, N. L.
KFJI	z ak	100	148	Klamath Falls, Ore.					
KFOR	ak	100	CM(.	25) Lincoln, Neb.	1240	1-		1211	9)
KFPW	ak	100	1.011.01	Fort Smith, Ark.	1240	ĸ	ys.	(241	.0)
GEVS	ak	100	6(.25)	Cape Girardeau, Mo.					
KFXM KGLO	ak z	100 100	M9 S: P	an Bernardino, Calif. Mason City, Iowa	CJCB	ak	1000	F	Sydney, N. S.
KGY	ak	100		Olympia, Wash.	CMHB	z	50	. S	ancti Spiritus, Cub
KĬUL	ak	100		Garden City, Kans.	KGCU	ak	250	1	Mandan, N. D.

	NO	RIH	AM	ERIC	AN	B. C.	S'
KLPM KTAT KTFI WKAQ WXYZ XEKL XELA	ak ae	250 1000 1000 1000 1000 500 50	1 B	Mino Fort Twin San J Detro Leon, Saltil	t, N. Worth Falls uan, it, Mi Gua	D. n, Texa , Idaho P. R. ich. n. oah.	s
1250	-]
CMKC KFOX WAIR WDSU WHBI WLB WNEW WNEW WTCN XEXH	z ah ak ak ak ak	1000	DP 2(2.5) 1(2.5) 2 1(2.5) B (5) S	North	Beac on-Sa ifield,	Cuba h, Cali alem Minn. ns, La. . J. is, Min: N. Y. is, Min: osi,S.L	
1260	kcy	s. (238	.0)	[]
KGVO KOIL KPAC KRGV KUOA KVOA WHIO WNBX WTOC	ak ak ae ak ak ak ak ak	500 500 2500 1000 1000	C (5)	Misso 5) Orr Port J Wesla Siloar Tucso Dayto Spring Savan	Arthu .co, T n Spa n, Ai on, Ol	ir, Texa 'exas gs., Ari riz. vio	as k.
1270	kcy	s. (236	.1)			
CMHD KGCA KOL KVOR KWLC WASH WFBR WJDX WOOD XEXB	ae 1 ak ak ae	250 100 000 100 500 500 500 500	2D C(5) C Co 2D aN G R (1) N(2.5) aN G	Caiba Decor Seattl lorado Decor rand l Baltir Jacks rand l Jalapa	rien, (ah, lo e, Wa Sp'g ah, lo Rapid nore, on, M Rapid a, Ve	Cuba owa sh. ss, Cole owa s, Mich Md. iss. is, Mich r.	o. 1. 1.
1280	kcy]
CMCU KFBB KLS WCAM WCAP WDOD WIBA WORC WRR WTNJ XEMX	ak ae ak 1 ae 1 ak ak ak	500	1	Dallas	Tex	uba s, Mony calif. . J. k, N. J a, Tenr Vis. Mass. as . J. y, D. F.	
1290	kcy	s. (232.	4)]
 KDYL KLCN KTRH WEBC WJAS WNBZ WNEL	ak ak 1 ak 1 ak 1 ak	100 I 000 C 000 P 000 C 100 I) C(5) N (5)	Joust Joust Julut	on, T	ty, Utal Ark. exas nn. Pa. ce, N. Y P. R.	

		1000	-		
1000			1		
1300	kc	VS	(230).6)	
KALE	ak	500	3C	Portl	and, Ore. ngeles, Calif.
KFAC	ak	1000		Los A	ngeles, Calif.
KFH	ak	1000	C		
KFJR	ag ak	500	3	Portla	ita, Kans. and, Ore. dyn, N. Y. York, N. Y. York, N. Y. ville, S. C. N. Y. Dygan, Wis. di, Fla.
WBBR	ak	1000	1	Brook	lyn, N. Y.
WBBR WEVD WFAB	ak	1000	1	New	York, N. Y.
WFAB	ae	1000	1	New	York, N. Y.
WFBC	ak	1000	(5)N	Greet	wille, S. C.
WHAZ	ae	500 250	(5)N 1X	Troy.	N. Y.
WHBL	ae	250		Shebe	ovean. Wis.
WHBL WIOD	ak	1000	N	Mian	i. Fla.
1310	1-0		(228	20°	
1010	KC	ys.	(220).7/	the second se
ollow			~		
CHCK CJKL	ak	50	C	narlot	tetown, P.E.I.
GJKL	ak	100	F.	Kirkla	nd Lake, Ont.
CJLS	ak	100	F	Yarm	outh, N. S. 👘
CKCV KAND	ak	100	F	Queb	ec, Que. cana, Texas
KAND	z	100	DP	Corsi	cana, Texas
KCKN KCRJ	ak	100	11.1.1	Kausa	is City, Kans.
KCRJ	ak	100	D.	Jeron	ne, Ariz.
KFPL KFXR	dk	100	(.25)	Dubli	ne, Ariz. n, Texas ma City,Okla.
KFXR	ak	150	(.2) (Jklaho	ma City,Okla.
KFYO KGEZ KGFW	ak	100	(.25)	Lubb	ock, Texas pell, Mont. ney, Neb. prville, Calif.
KGEZ	ae	100		Kalis	pell, Mont.
KGFW	ak	100	(x + x)	Kearr	iey, Neb.
книв	z	250	DP	Watso	nville, Calif.
KINY	ak	100		Junea	u, Alaska
KIT KMED KPDN KRMC	ak	100	(.25)	Yakir	nu, Alaska na, Wash. Iford, Ore. 24. Texas 25. Stown, N. D.
KMED	ck	100	XZ(.:	25) Mee	lford, Ore.
KPDN	ak	100	D	Pamp	a. Texas
KRMC	z	100	1P	Jame	stown, N. D.
KRMD	ak	100		Shrev	eport, La.
KROC	ak	100		Roche	stown, N. D. eport, La. ester, Minn.
KROY KRQA	z	100	DP	Sacra	mento, Calif. Fe, N. Mex. nan, Texas
KRQA	ak	100		Santa	Fe. N. Mex.
KRRV	z	100	DX	Sherr	nan, Texas
KSRO	z	250	DP	Santa	Rosa, Calif.
KSUB KTSM KVOL KVOX	z	100	Р	Cedar	Rosa, Calif. City, Utah so, Texas
KTSM	ak	100		El Pa:	so. Texas
KVOL	ak	100		Lafav	ette La
KVŎX	z	100	1 P	Moorl	head. Minn.
KWOS	z	100	DP	Jeffer	ette, La. head, Minn. son City, Mo. een, Wash. l, Miss. uette, Mich. Hauto, Ind
KXRO	ak	100		Aberd	een Wash
KXRO WAML	ak	100		Laure	1 Miss
WBEO	ae	100		Margi	uette Mich.
WBOW	ak	100	(.25)	Terre	Haute Ind.
WBRE	ak	100	(Wilke	Barro Po
WCLS WCMI	ak	100		Inliet	III
WCMI	ak ak	ÎŎŎ	(25)	Ashla	nd Kv
WDAH WEBR	ak	100	ŝ	El Par	о Техяя
WEBR	ak	100	B(25	Buffa	
WEMP	ak	100	D	Milwa	ukee Wie
WEXI.	ak	50		Roval	Oak Mich
WEXL WFBG WFDF	ae	100	3	Alton	uette, Mich. Haute, Ind. s Barre, Pa. , Ill. nd, Ky. 30, Texas lo, N. Y. ukee, Wis. Oak, Mich. na, Pa. Mich. Ott News. Va.
WFDF	ak	ÎŎŎ		Flint	Mich.
WGH	ak	100	(.25)	Newn	ort News, Va.
WHAT	ak	100	4	Philad	lelphia, Pa.
WJAC	ae	100	ŝ	Johns	town Pa
WJAC WLAK	z	ĨŎŎ		Lakel	il News, va. ielphia, Pa. town, Pa. and, Fla. le, Ind. ia, N. H. rn, N. Y. burg, N. Y. edford Mass
WLBG	ak	100	6(.25)	Munc	le. Ind.
WLNH WMBO	ak	100	• (•=•)	Lacon	ia. N. H.
WMBO	ak	100		Aubu	n N Y
WMFF	ak	100	(.25) M(.25) XZ	Platts	burg, N. Y.
WNBH	ak	100	M(25)	Now B	edford Mass
WOL	ae	100	XZ	Washi	edford, Mass. ngton, D. C.
WRAW	ak	100		Readi	no. Pa.
WROL WSAJ WSGN	ak	100	(.25)	Knovy	ng, Pa. Ille, Tenn.
WSAJ	ae	100	(-20)	Grove	City. Po
WSGN	ak	100	(.25)	Birmi	noham Ala
	ak	100	čĩ́w	linston	City, Pa. ngham, Ala. -Salem, N.C. assee, Fla.
WTAL	ak	100	- n	Tallah	Besee Fla
WTEI	ce	100	4	Philed	leinhia Pa
WTJS	ak	100	(.25)	Jacker	n Tenn
WTAL WTEL WTJS WTRC	ak	100	6(25)	Elkha	rt Ind
XEAG	2 A B	10	5(.23)	Corde	ha Var
XEAG XECW	âk	10		Mavia	o City, D. F.
XEFW	ak	250	••••	Tame	assee, Fla. lelphia, Pa. on, Tenn. rt, Ind. ba, Ver. o City, D. F. lco, Tams.
		200		* emp	, iailis.



ION	<u>5 BI</u>	FR	<u>EQU</u>	ENCIES
0.00		100		klahoma City Okla
GFG GFL	bk àk	100 100	4	Oklahoma City, Okla Roswell, N. M. San Angelo, Texas Clovis, N. M. Durango, Colo. Galveston, Texas
GKL	ak	100	(.25)	San Angelo, Texas
ICA –	ak	100	4	Clovis, N. M.
IUP	ak	100	1 22	Durango, Colo.
LUF	ak	100	(.25)	Galveston, lexas
MAC OBH	ak ak	100 100	.5	Gaiveston, Texas San Antonio, Tex. Rapid City, S. Dak. San Antonio, Tex. Berkeley, Calif. Everett, Wash.
ONO	ak	100	5	San Antonio, Tex.
RE	ak	100	(.25)	Berkeley, Calif.
RE RKO	ak	50	i	Berkeley, Calif, Everett, Wash. Salem, Ore. Temple, Texas Walla Wash. Great Bend, Kans. Sheridan, Wyo. Albany, N. Y. Dothan, Ala. Atlanta, Ga. Clarksburg, W. Va. Buffalo, N. Y. Danville, Va.
SL.M	ak	100		Salem, Ore.
TEM	z,	100	D	Volla Walla Wash
UJ VGB	ak	$\begin{array}{c} 100 \\ 100 \end{array}$	P	Great Bend, Kans.
W Y I I	z ak	100	(.25)	Sheridan, Wyo.
ARY	ak	100	- B	Albany, N. Y.
AGF	ak	250	D (.25) DP	Dothan, Ala.
ATL	ak	100	(.25)	Atlanta, Ga.
BLK BNY	z.	100	DP 2(25)	Duffalo N V
DTA	a <u>k</u> ak	$\begin{array}{c} 100 \\ 100 \end{array}$	2(.25) (.25) (.25) (.25)	Buffalo, N. Y. Danville, Va. Baltimore, Md. Philadelphia, Pa. Champaign, Ill.
CBM DAS DWS	ae	100	(.25)	Baltimore, Md.
DAS	ag	iðð	(.25)	Philadelphia, Pa.
DWS	ag ak	100	DP	Champaign, Ill.
EOA	z,	100		
FOR	ak	100	\mathbf{c}	Fort Wayne Ind
GL	ck ak	100 250	Ď	New Albany Ind
GRC HBQ	ak	100	1.0.0.0	Memphis, Tenn.
HDF	ak	100	(.25)	Calumet, Mich.
ньк	ak	100		Hattlesburg, Miss. Fort Wayne, Ind. New Albany, Ind. Memphis, Tenn. Calumet, Mich. Virginia, Minn. Jackson, Mich.
TBM TLLH MBR MFD	ak	$\begin{array}{c} 100 \\ 100 \end{array}$	(.25)	Jackson, Mich.
LLH	ak ak	100	M(, 25) Lowell, Mass.
MED	ak	100	D	Wilmington, N. C.
MFO	ak	100	Ď	Decatur, Ala.
MFO MIN	ak	100 100	(.25)	Jackson, Mich. 5) Lowell, Mass.) Jacksonville, Fla. Wilmington, N. C. Decatur, Ala. St. Paul, Minn.
OC PAY	ak	100	Č(.25) Davenport, Iowa
PAY	ak	100	/ bein	Portsmouth, Onlo
PKA	z ak	100	(.25)P	Williamsport Pa
RAK	aĸ ae	$\begin{array}{c} 100 \\ 100 \end{array}$	(-23)	Augusta, Maine
IN IN	ak	100	(.25)	Racine, Wis.
	z	100	DP ´	Wausau, Wis.
SVS	ak	50	D2	Buffalo, N. Y.
ECZ	z	100 125	· · · · 2	San Luis Potosi, S.L.F
SVS ECZ EI ELZ	ak z A	100		Merico City, D. F.
ELK.	4 0	100		Medice entry,
				Wilmington, N. C. Decatur, Ala. St. Paul, Minn.) Davenport, Iowa Portsmouth, Ohlo Mayaguez, P. R. Williamsport, Pa. Augusta, Maine Racine, Wis. Buffalo, N. Y. San Luis Potosi, S.L.P Morelia, Mich. Mexico City, D. F.
380	kcy	vs.	(217)	7.3)
	J		\	
MCR	z	150		Havana, Cuba Reno, Nev. Pittsburgh, Pa.
MCR OH QV	ak	500	C	Reno, Nev.
QV	ae	500	IG	Pittsburgh, Pa.
ALA	af	500	C(1)	LaCrosse Win
VKBH VNBC	ae ak	1000 250	D	Mobile, Ala. LaCrosse, Wis. New Britain, Conn.
SMK	ak	200	ĩC	Dayton, Ohlo
200	1		1210	5 7)
.390	kcy	/s.	(213	5.7)
		100		Verlagen Soula
JGX MJC	ak	100	••••	Yorkton, Sask.
	z ae	150 1000	CO'	5) Little Rock. Ark.
OY	ae ae	500	(1)	Phoenix, Ariz.
LRA OY VHK	ae	1000	C(2.	5) Cleveland, Ohio
ŶQDM	เสี	1000	D	Camaguey, Cuba 5) Little Rock, Ark. Phoenix, Ariz. 5) Cleveland, Ohio St. Albans, Vt.
400	kcy	vs-	(214	4.2)
100		,	(
				Matanaua Cuba
MGC	ad	150		matanzas, Guba
CMGC CMKR	ad z	100		Matanzas, Cuba Santiago, Cuba
CMGC CMKR CHBC	z	100		Santiago, Cuba Hilo, T. H.
CMGC CMKR CHBC CLO CLO			B	Hilo, T. H. Ogden, Utah

WARE WBBC WEGL WHDI WIRE WLTH WVFW	ae z ak ak ak	500 500 500 250 1000 500 500	2(1) P D MR(Brooklyn, N. Y. Brooklyn, N. Y. Brooklyn, N. Y. Olean, N. Y. 5) Indianapolis, Ind. Brooklyn, N. Y. Brooklyn, N. Y.	1430 kcys. (209.7) CMJP ak 75 Moron, Cuba KECA ak 1000 (5) B Los Angeles, Califi KGNF ak 1000 D North Platte, Neb KSO ak 500 BM(1) Des Moines, Iowa WBNS ak 500 C (1) Columbus, Ohio WHEC ak 500 C (1) Rochester, N. Y. WIIP ak 500 C (1) Harrisburg, Pa. WNBR ae 500 (1) Memphis, Tenn. WOKO ae 500 C (1) Albany, N. Y.
1410	kc	ys.	(212	2.6)	1440 kcys. (208.2)
CKFC CKMO CMCQ KFJM KGNC WAAB WBCM WBCM WHIS WROK WSFA	ak ak ak ak ae ak	$\begin{array}{r} 50\\ 100\\ 250\\ 500\\ 1000\\ 500\\ 500\\ 500\\ 500\\ 500\\ $	5 5F (1) N(2.5 M (1) C(1)	Vancouver, B. C. Vancouver, B. C. Havana, Cuba Grand Forks, N. D. Marrillo, Texas Boston, Mass. Bay City, Mich. Bluefield, W. Va. Rockford, Ill. Montgomery, Ala.	CMOA z 150 Havana, Cuba KDFN ak 500 Casper, Wyo.
					(Dec)#
CKGB CRCY KABC KABR KALB	ak ak ak ak ak z	100 100 100 100 100 100	(211 F (.25) D	Timmins, Ont. Toronto, Ont. San Antonio, Texas Aberdeen, S. Dak. Alexandria, La.	CHGS ae 50 F Summerside, P.E.I CMHM z Clenfuegos, Cuba KGCX ak 1000 Wolf Point, Mont, KIEM ak 500 Eureka, Calif, KTBS ak 1000 N Shreveport, La. WGAR ak 500 MB(1) Cleveland, Ohio WHOM ae 250 Jersey City, N. J. WSAR ak 1000 M Fall River, Mass,
KBPS KCMC	ak ak	100 100	4 Y	Alexandria, La. Portland, Ore. Texarkana, Ark.	WIFI ak 500 Y Athens, Ga. XEF ak 100 Juarez, Chih.
KEUB KFIZ KGFF	z ak ak	100 100 100	(.25)	Price, Utah Fond du Lac, Wis. Shawnee, Okla.	1460 kcys. (205.4)
KGGC KGIW	ak ak	100	1	San Francisco, Cal. Alamosa, Colo.	CMKF z 50 Holguin, Cuba
KIDW KIUN	ak ak	100 100	î	Lamar, Colo. Pecos, Texas	KSTP ak 10000 R (25) St. Paul, Minn.
KNET KORE	z ae	100 100	D	Palestine, Texas Eugene, Ore. Abilene, Tex.	WJSV ak 10000 C Washington, D. C.
KRBC KRLC	ak ak	100 100	(.25) XZ	Abilene, Tex. Lewiston, Idaho	1470 kcys. (204.0)
KRLH KUMA	z ak	$\begin{array}{c} 100 \\ 100 \end{array}$	D	Lewiston, Idaho Midland, Tex. Yuma, Ariz.	KGA ak 5000 B Spokane, Wash
KWBG KXL	ak ak	$\frac{100}{100}$	4(.25)	Yuma, Ariz. Hutchinson, Kans. Portland, Ore.	WLAC ak 5000 C Nashville, Tenn.
WACO WAGM	ak ae	$\begin{array}{c} 100 \\ 100 \end{array}$	С	Waco, Texas Presque Isle, Maine Chattanooga, Tenn.	1480 kcys. (202.6)
WAPO WAZL WCBS	ak ak	100 100	D 2	Hazleton, Pa.	KOMA ak 5000 C Oklahoma City, Okla
WCHV	ak ak ak	100 100 100	3(.25)	Springfield, Ill. Charlottesville, Va.	WKBW ae 5000 C Buffalo, N. Y.
WELL WGPC	ak ak	100 100 100	3 (.23)	Charlottesville, Va. Rocky Mt., N. C. Battle Creek, Mich.	1490 kcys. (201.2)
WHFC WILM	ak aj	100	(.25)	Albany, Ga. Cicero, III. Wilmington, Del.	KFBK ak 5000 C Sacramento Calif
WJBO WJBR	ak z	100 100	ΧZ P	baton Kouge, La.	dovington, ky.
WJMS WLAP	ak ak	$\begin{array}{c} 100 \\ 100 \end{array}$	(.25)	Gastonia, N. C. Ironwood, Mich. Lexington, Ky.	1500 kcys. (199.9)
WLEU WMAS	ak ak	100 100	(.25) C(.25)	Erie, Pa. Springfield, Mass. Detroit. Mich. Joplin. Mo.	CJIC ak 100 Sault Ste. Marie. Ont. CMCN z Hayana Cuba
WMBC WMBH	ae ak	$\begin{array}{c} 100 \\ 100 \end{array}$	(.25) (.25)	Detroit. Mich. Joplin, Mo.	KAWM z 100 P Gallup, N. Mex.
WMFJ WMSD	ak ak	100 100		Daytona Beach, Fla. Sheffield Ala	KBST z 100 Big Spring, Tex.
WNN Y WPAD	z ak	100 100	(.43)	Watertown, N. Y. Paducah, Ky.	KDB ak 100 M(.25) Santa Barbara, Cal.
WPAR WPRP	ak z	$\begin{array}{c} 100\\ 100 \end{array}$		Parkersburg, W. Va. Ponce, P. R.	KGFI ak 100 (.25) Corpus Christi, Tex. KGKB ak 100 Tyler, Texas KGKY ak 100 (.25) Scottsbluff, Neb.
				-	A second se

	_		the second se	
KNEL	ak	100 100	D Brady, Texas C Austin, Texas	WOPI ae 100 Bristol, Tenn. WRDW ak 100 Augusta, Ga.
KNOW	ak			WRGA ak 100 (.25) Rome, Ga.
KOTN	ak	100	Tallan City M Dole	WSYB ak 100 Rutland, Vt.
KOVC	ak	100	T to Observe Lo	WTMV ak 100 East St. Louis, III.
KPLC	ak	100	Lake Charles, La.	WWRL ak 100 1 (.25) Woodside, N. Y.
KPLT	z.	100	D Paris, Texas	WWSW ae 100 (.25) Pittsburgh, Pa.
KPQ	ak	100	(.25) Wenatchee, Wash.	100 B Bishmond Va
KRNR	ak	100	(.25) Roseburg, Ore.	Z 100 P Kichinolia, va.
KROD	z	100	P El Paso, Texas	
KSJS	z	100	P Salina, Kans.	
KTEP	z	100	P El Paso, Texas	1510 kcys. (198.6)
KUTA	z	100	P Salt Lake City, Utah	1010 Reys. (190.0)
KVOE	ak	100	Santa Ana, Calif.	
кхо	ak	100	El Centro, Calif.	CFRC ak 100 F Kingston, Ont.
K Y CA	Z	100	(.25)P Prescott, Ariz.	CKCR ak 100 Waterloo, Ont.
WCNW	ak	100	1 (.25) Brooklyn, N. Y.	
WDNC	ae	100	C Durham, N. C.	
WGAL	ae	100	(.25) Lancaster, Pa.	1530 kcys. (196.0)
WHBB	ak	100	D Selma, Ala.	1000 RCy3. (190.0)
WHEF	ak	100	(.25) Kosciusko, Miss.	WBRY ak 1000 M Waterbury, Conn.
WJBK	ae	100	(.25) Detroit, Mich.	KXBY ak 1000 Kansas City, Mo.
WKBB	ak	100	(.25) E. Dubuque, III.	KADI ak 1000 IIII Kanoas entyt into
WKBV	ak	100	(.25) Richmond, Ind.	
WKBZ	ak	100	(.25) Muskegon, Mich.	
WKEU	ak	100	D Griffin, Ga.	1550 kcys. (193.4)
WMBO	ae	100	1 Brooklyn, N. Y.	1000 Rejor (2000)
WMEX	ak	100	(.25) Boston, Mass.	KPMC ak 1000 Bakersfield, Calif
WNBF	ae	100	C Binghamton, N. Y.	KING AR 1000 H N V
WNLC	ak	100	D New London, Conn.	WQXR ak 1000 New York, N. Y.

KEY TO SYMBOLS

Frequency is given in kilocycles; wave lengths in meters. Night power is shown in watts in third column. Daytime power is shown in parenthesis in fourth column in kilowatts, thus (.25) indicating 250 watts. Some stations outside the United States use a "split frequency." Their exact frequency is shown in fourth column.

Second Column Symbols

- Verifies reception for return . postage.
- Verifies only occasionally. h
- Does not verify. c
- Verification 10c: letter 25c. đ
- Sends own station stamp for h
- 10c. Sends own station stamp for 5c.
- Sends own station stamp for 1 postage.
- Has no stamps. k
- Verifies for 5c. m

Weather or time only. No information available.

Fourth Column Symbols

- National "Blue" network. в
- Columbia network. С
- Day time only. D

n

7

- Dn Day time with occasional evening hours. F
 - Canadian Brdestg. Corp.
- Mutual Brdestg. Sys. м
- National "Red" and "Blue" N

v

P

- networks. Has construction permit only.
- National "Red" network. R

As shown in the index by

Frequencies and Dial Numbers

- Sunday only. 8
- Sy Synchronized.
- Has permit to increase power. х
- Has permit to change location.
- Has permit to change frez quency.
- a-b-c. Small letters show stations using same transmitter.
- 1-2-3. Figures denote stations sharing time.
- No information.

Television

(Continued from Page 7)

these photographs was made by a camera, one at a time, but only a fraction of a second apart. They are then projected by throwing the shadows on a screen by means of a powerful light.

This rapidly changing series of pictures gives the illusion of continuous action. The eye cannot follow each individual picture, or observe the brief intervals between while the next view is being moved up in place and projected on the screen. Each picture shows the action that occurs a brief moment after that in each preceding picture. It appears that we "see" motion, but in order to get action the "frames" must be pictures or changed not less than 17 times a second. About 25 frames a second provide smoother action with no appreciable flicker.

(Next month we shall discuss further the operation of scanning the subjects or views to be transmitted, as well as motion by television).

Frequency in kilocycles in second column. Night power in watts in third column. Net work affiliations in fourth column: C Columbia, R National Red, B National Blue, N National Red and Blue. F Canadian, M Mutual.

ALABAMA	CALIFORNIA	Santa Rosa	Gainesville
Birmingham	Bakersfield	KSRO 1310 250	WRUF 830 5000
WAPI 1140 5000 N	KERN 1370 100 C	KGDM 1100 1000M	Jacksonville
WBRC 930 1000 C	C KPMC 1550 1000	KGDM 1100 1000M KWG 1200 100 N	WJAX 900 1000 N WMBR 1370 100 C
WSGN 1310 100	Berkeley	Visalia	Lakeland
Decatur WMFO 1370 100	KRE 1370 100	1190 250	WLAK 1310 100
Dothan	Beverly Hills KMPC 710 500M	Watsonville KHUB 1310 250	Miaml WIOD 1300 1000 N
WAGF 1370 250			WQAM 560 1000 C
Gadsden	Chico KHSL 950 250	COLORADO	Oriando
WJBY 1210 100 Huntsville	Del Monte	Alamosa	WDBO 580 1000 C Pensacola
WBHP 1200 100	KDON 1210 100M	KGIW 1420 100	WCOA 1340 500 C
Mobile WALA 1380 FOO	El Centro	Colorado Springs KVOR 1270 1000 C	St. Augistine
WALA 1380 500 C Montgomery	1000	Denver	WFOY 1210 100 St. Petersburg
WSFA 1410 500 C	Eureka KIEM 1450 500	KFEL 920 500M	WSUN 620 1000 N
Selma WHBB 1500 100	Fresno	KLZ 560 1000 C KOA 830 50000 N	Tallahassee
WHBB 1500 100 Sheffield	KMJ 580 500 C	KPOF 880 500	WTAL 1310 100 Tampa
WMSD 1420 100	Glendale	KVOD 920 500 B	WDAE 1220 1000 C
Tuscaloosa	KIEV 850 250	Durango KIUP 1370 100	West Palm Beach
WJRD 1200 100	Hollywood	Grand Junction	WJNO 1200 100 C
	KFWB 950 1000 KMTR 570 1000	KFXJ 1200 100	
ALASKA	KNX 1050 50000 C	Greeley KFKA 880 500	GEORGIA
Anchorage	Long Beach	Lamar	Albany
KFQD 780 250	KFOX 1250 1000 KGER 1360 1000	KIDW 1420 100	WGPC 1420 100
Juneau	Los Angeles	Pueblo KGHF 1320 500 B	Athens
KINY 1310 100 Ketchikan	KECA 1430 1000 B	Sterling	WTFI 1450 500 Atlanta
KGBU 900 500	KEHE 780 1000 KFAC 1300 1000	KGEK 1200 100	WATL 1370 100
	KFI 640 50000 R	CONNECTICUT	WGST 890 1000 C
ARIZONA	KFSG 1120 500	CONNECTICUT	WSB 740 50000 N Augusta
	KFVD 1000 250 KGFJ 1200 100	Bridgeport	WRDW 1500 100
Jerome VCD I 1210 100	KHJ 900 1000M	WICC 600 500M Hartford	Columbus
KCRJ 1310 100 Lowell	KRKD 1120 500	WDRC 1330 1000 C	WRBL 1200 100 Griffin
KSUN 1200 100	Merced KYOS 1040 250	WT1C 1040 50000 R	WKEU 1500 100
Phoenix KOY 1390 500	Modesto	WTHT 1200 100M New Britain	Macon
KOY 1390 500 KTAR 620 1000 N	KTRB 740 250	WNBC 1380 250	WMAZ 1180 1000 Rome
Prescott	Oakland KLS 1280 250	New Haven	WRGA 1500 100
KYCA 1500 100	KLX 880 1000	WELI 900 500	Savannah WTOC 1260 1000 C
Tucson KGAR 1370 100	KROW 930 1000	New London WNLC 1500 100	WTOC 1260 1000 C Thomasville
KVOA 1260 1000	Pasadena KPPC 1210 100	Waterbury WATR 1190 100	WPAX 1210 100
Yuma KUMA 1420 100	Redding	WATR 1190 100 WBRY 1530 1000M	Waycross WAYX 1200 100
KUMA 1420 100	KVCV 1200 100		WAIA 1200 100
	Sacramento KFBK 1490 5000 C	DELAWARE	
ARKANSAS	KROY 1310 100	DELAWARE	HAWAII
Blytheville	San Bernardino KFXM 1210 100M	Wilmington	Hilo
KLCN 1290 100	San Diego	WDEL 1120 250 WILM 1420 100	KHBC 1400 250 Honolulu
El Dorado KELD 1370 100	KFSD 600 1000 B KGB 1330 1000M	1420 100	KGMB 1320 1000 C
Fort Smith	KGB 1330 1000M San Francisco	BIGTBIOT	KGU 750 2500 N
KFPW 1210 100	KFRC 610 1000M	DISTRICT OF Columbia	
Hot Springs KTHS 1060 10000 N	KGGC 1420 100		IDAHO
Jonesboro	KGO 790 7500 B KJBS 1070 500	Washington WJSV 1460 10000 C	
KBTM 1200 100	KPO 680 50000 R	WMAL 630 250 B	Boise KIDO 1350 1000
Little Rock KARK 890 500 N	KSFO 560 1000	WOL 1310 100	Idaho Falls
KGHI 1200 100	KYA 1230 1000 N San Jose	WRC 950 500 R	KID 1320 500
KLRA 1390 1000 C	KOW 1010 1000		Lewiston KRLC 1420 100
Pine Bluff KOTN 1500 100	San Luis Obispo KVEC 1200 250	FLORIDA	Nampa
Siloam Springs	KVEC 1200 250 Santa Ana	Clearwater	KFXD 1200 100
KUOA 1260 2500	KVOE 1500 100	WFLA 620 1000 N	Pocatello KSEI 900 250
Texarkana KCMC 1420 100	Santa Barbara KDB 1500 100M	Daytona Beach	Twin Falls
	1500 100M	WMFJ 1420 100	KTFI 1240 1000

ILL	INOI	5
Bloomin WJBC	gton 1200	100
Carthag WCAZ	1070	100
Champa		100
Chicage WAAF WBBM	920 770	1000
WCRD	1080	50000 C 5000
WCFL WCRW	970 1210	5000 B 100
WCRW WEDC WENR WGES WGN WJJD WLS WMAO	1210 1210 870 1360 720 1130 870	100 50000 N
WGES WGN	1360 720	500 50000M
WJJD WLS	1130 870	20000 N
WMAQ WMBI	670 1080	50000 N 5000
WSBC	1210	5000 100
	1420	100
	1200	100
WKBB	1500	100
East St. WTMV	1500	s 100
Harrisb WEBQ	urg 1210	100
Joliet WCLS	1310	100
Peoria WMBD	1440	500 C
Quincy WTAD	900	1000
Rockilor WROK	a 1410	500
Rock Is WHBF		100
Springf WCBS WTAX	1420 1210	100 100
Tuscela WDZ		250
Urbana WILL	580	250
	IDIAN	IA
Anderse WHBU		100
Elkhart WTRC	1310	100
Evansvi WEOA WGBF	030	100 500
Fort W WGL WOWO	ayne 1370 1160	100 G
Gary WIND	560	1000
Hamm WWAE	ond 1200	100
Indiana WFBM WIRE	npolis 1230	1000 C
WIRE	1400	1000 R

Muncie WLBC		100
WLBC New Alb WGRC Richmo	1310 any 1370	100
	1370 nd	250
WKBV South B	1500 end	100
South B WFAM WSBT	end 1200 1360	100 500 C
Terre H WBOW	aute 1310	100
West La WBAA	fayette 890	500
	OWA	
Ames WOI	640	5000
Boone KFGQ	1370	100
Cedar F WMT	tapids 600	1000 B
	ort 1370	100 C
Decorah KGCA KWLC	1270	100
KWLC	1270 1270	100
Des Mo KRNT KSO	Ines 1320 1430 1000	500 C 500 B 50000 R
WHO	1000	50000 R
lowa Ci WSUI	ty 880	500
Marsha KFJB	1200	100
Mason KGLO	City 1210	100
KGLO Shenan KFNF	doah 890	500
кма	930 ity 1330	1000
		1000 C
	ANSAS	
Abilene KFBI	1050	5000
Coffeyv KGGF	1010	1000
Dadge KGNO	City 1340	250
KIUL	1210	100
Great KVGB	Bend 1370	100
Hutchi KWBG	nson 1420	100
Kansas KCKN	City 1310	100
	1220 1220	1000
WREN	1220 ttan	1000 B
Manha KSAC Pittsbu	580	500
Pittsbu KOAM Salina	790	1000
Salina KSJS Topeka	1500	100
Topeka WIBW Wichit	580	1000 C
Wichit KANS KFH	1210 1300	100 1000 C
	NTUC	
Ashlan WCMI	a 1310	100
	_	

Covington WCKY 1490 5000 N	w
Lexington WLAP 1420 100	W
Louisville WAVE 940 1000 N	W
WHAS 820 50000 C Middlesboro	Ņ
WLMU 1210 100	W
Paducah WPAD 1420 100	W
LOUISIANA	Ŵ
Alexandria	-
Alexandria KALB 1420 100 Baton Rouge	-
Baton Rouge WJBO 1420 100 Lafavette	W
Lafayette KVOL 1310 100 Lake Charles	W
KPLC 1500 100	W
Monroe KMLB 1200 100 New Orleans	N W
WBNO 1200 100 WDSU 1250 1000	N N N
WIRW 1200 100	N N
WWL 850 10000 C	v
Shreveport KRMD 1310 100	v
KRMD 1310 100 KTBS 1450 1000 N KWKH 1100 1000 C	v
MAINE	v
	v
Augusta WRDO 1370 100 Bangor	v
WABI 1200 100 WLBZ 620 500 C	l v
Portland WCSH 940 1000 R WGAN 640 500	l v
WGAN 640 500 Presque Isle	١,
Presque Isle WAGM 1420 100	١,
MARYLAND	\
Baltimore	-
WBAL 760 2500 B WBAL 1060 10000 B	-
WCAO 600 500C	
WCBM 1370 100 WFBR 1270 500 R College Park	'
Cumberland	1
WTBO 800 250	1
Frederick WFMD 900 500 Hagerstown	
Hagerstown WJEJ 1210 100	
MASSACHUSETTS	1
Boston WAAB 1410 500M	
WAAB 1410 500M WBZ 990 50000 C WCOP 1120 500 WEEI 590 1000 C	
WEEI 590 1000 C	
IWHDH XX0 1000	
WMEX 1500 100 WNAC 1230 1000 R WORL 920 500	1
	1

	,	
Fall_RI	ver	
WSAR	1450	1000M
WLLH	1370	100M
New Bo	dford 1310	10034
WNBH Spring	1310 field	100M
Springf WBZA	990	1000 B
WMAS WSPR	1420 1140	100 C 500M
Worces	ter	
Worces WORC WTAG	1280	500 C 500 R
WING	500	30010
MI	CHIGA	N
Battle	Creek	10.000
WELL	1420	100
Bay CI WBCM	ty 1410	500
Calum	et	
WHDF Detroit	1370	100
WJBK	1500	100
WJBK WJR WMBC WWJ WXYZ	750 1420	50000 C 100
WWJ	920	1000 R
WXYZ East L	1240	1000 B
WKAR	ansing 850	1000
Flint WFDF	1310	100
Grand	Rapids 1270 1270	
Grand WASH WOOD	1270	500 N 500 N
Ironwo WJMS	bod	
WJMS	1420	100
Jackso WIBM		100
Kalam WKZO	azoo 590	1000 B
Lansin	g	
		100
WMPC	1200	100
Marqu WBEO	lette 1310	100
Muske WKBZ	gon	
WKBZ	1500 Oak	100
Royal WEXL	1310	50
MI	NNESO	та
Dulut KDAL WEBC	1 500	100
WEBC	1290	1000 N
Fergu: KGDE	1200	100
Hibbi WMFG	na	
Minne	apolis	100
Minne WCCO	810	50000 C
WDGY WLB	1180 1250 1250	1000 1000
WLB WTCN	1250	1000 B
Moor! KVOX	1310	100
North	field	1000
WCAL Roche KROC	1250 ster	1000
KROC	1310 ul	100
KSTP	1460	10000 R
WMIN		100
Virgir WHLB	1370	100

MISSISSIPPI	
Clarksdale WMFN 1210 100	
Gulfport WGCM 1210 100	
Hattiesburg WFOR 1370 100	
Jackson WJDX 1270 1000 N	
Kosciusko WHEF 1500 100	
Laurel WAML 1310 100	
Meridian WCOC 880 500	
Vicksburg WQBC 1360 1000	
MISSOURI	
Cape Girardeau	
KFVS 1210 100	
Columbia KFRU 630 500 Jefferson City	
KWOS 1310 100 Joplin	
WMBH 1420 100	
KCMO 1370 100 KMBC 950 1000 C	
WDAF 610 1000R	1
WHB 860 1000M St. Joseph KFEQ 680 2500	
KFEQ 680 2500 St. Louis	ł
KFUO 550 500 KMOX 1090 50000 C KSD 550 1000 R	
KSD 550 1000 R KWK 1350 1000 B WEW 760 1000 WH 1200 100	1
	I
Springfield KGBX 1230 500 KWTO 560 5000	I
MONTANA	
Billings KGHL 780 1000 N	l
Butta KGIR 1340 1000 N	
Great Falls KFBB 1280 1000 C Kalispell	
Kalispell KGEZ 1310 100 Lewistown	
Lewistown KDNC 1200 100 Missoula	
KGVO 1260 1000 C	
Wolf Point KGCX 1450 1000	
NEBRASKA	
Clay Center KMMJ 740 1000	
Kearney KGFW 1310 100	
Lincoln	
KFOR 1210 100 C	
WJAG 1060 1000	

		100 million (1990)
Norti K CNF	Platte	1000
Oma	ha 1430	
Oma KOIL WAAV WOW	1260 V 660	500
WOW Scott	590 sbluff	5000 R
KGKY	1500	100
	NEVAD	A
Reno KOH	1380	500 C
NEW	_	SHIRE
Lacon WLNH	1310	100
Manc WFEA	hester 1340	500 N
Ports WHEB	mouth	250
NE		
1		3E 1
Asbur WCAP	1280	500
Atlan WPG	1100	5000 C
Bridg	1210	100
Camd WCAM	en 1280	500
Jersey WAAT	City	500
WHOM	1450	250
WHBI	1250 1250 710	1000 1000
Newar WHBI WNEW WOR Red B	710	50000M
WBRB	1210	100
Trento WTNJ	1280	500
Zarepi WAWZ	1350	500
NEW	V MEX	100
Albuqu KGGM	uerque	
ROB	1180	250 10000
Carisb. KLAH	ad 1210	100
Clovis KICA	1370	100
Gallup KAWM	1500	100
Roswel KGFL	1370	100
Santa KRQA	Fe 1310	100
	W YOR	
Albany		
WABY WOKO	1370 1430	100 B 500 C
Auburr WMBO	1310	100
Bingha	mton	_
Brookly	1500 /n	100 C
WARD	1400	500
WBBC	1400	500 1
Brookly WARD WBBC WBBR WCNW WEGL	1400 1300 1500	500 1000 100

	E E	UII.
1	WLTH 1400 500 WMBQ 1500 100 WVFW 1400 500	
	WVFW 1400 500	1,
	Buffalo WBEN 900 1000 R WBNY 1370 100	,
1	WEBR 1310 100 B	
	WKBW 1480 5000 C WSVS 1370 50	1.
1	Canton WCAD 1220 500	V
	Elmira WESG 850 1000 C	V V
	Freeport WGBB 1210 100	
	Jamestown	K
	Newburgh	K
ĺ	WGNY 1210 100 New York	v v
I	WARC OLD FOOD C	
ł	WBNX 1350 10000 WBOQ 860 50000	K
I	WEAF 660 50000 R	[к
I	WARC 800 50000 C WBNX 1350 10000 WBOQ 860 50000 R WEAF 660 50000 R WEVD 1300 1000 WFAB 1300 1000	
I		K
I	WINS 1180 1000	K
ł	WJZ 760 50000 B WLWL 1100 5000	lк
l	WJZ 760 50000 B WLWL 1100 5000 WMCA 570 1000 WNEW 1250 1000	
ł	WNEW 1250 1000 WNYC 810 1000	
l	WNYC 810 1000 WOV 1130 1000 WQXR 1550 1000	-
l	Olean	4 1 1 1
ĺ		w
	Plattsburg WMFF 1310 250 Rochester	w
	WHAM 1150 50000 B	Ŵ
	Rochester 200 WHAM 1150 50000 B WHEC 1430 500 C WSA Y 1210 100	W W W
	Saranac Lake WNBZ 1290 100	
	Schenectady WGY 790 50000 R	w
	WGY 790 50000 R Syracuse	W W W
	Syracuse WFBL 1360 1000 C WSYR 570 1000 B	W
	Troy WHAZ 1300 500 Utica	W W W
	WIBX 1200 100 C	W W
	Watertown WNNY 1420 100 White Plains	
	White Plains WFAS 1210 100 Woodside	w
	Woodside WWRL 1500 100	w
	NORTH CAROLINA	wi wi
	Asheville WWNC 570 1000 N	w
	Charlotte WBT 1080 50000 C	-
	WSOC 1210 100 N Durham WDNC 1500 100 C	A K A
	Gastonia	KA A KV
	WJBR 1420 100 Greensboro	E
1	WBIG 1440 500 C	KĀ

	_	_
High WMFR	Point 1200	100
Kinst WFTC	n 1200	100
Raleig WPTF		
WPTF Rocky WEED	Mount	1000 N
		100
WMFD		100
Winst WAIR WSJS	1250 1310	250 100 C
NOR		KOTA
Bisma		
KFYR	550 Lake	1000 N
Devils KDLR	1210	100
Fargo WDA Y	940	1000 N
Grand KFJM	Forks 1410	500
James KRMC		100
Manda KGCU	1240	250
Minot KLPM	1240	250
Valley KOVC	City 1500	100
	OHIO	
		_
Akron WADC WJW	1320 1210	1000 C 100
Cantor WHBC	1200	100
WHBC Cincin WCPO WKRC WLW WSAI	nati 1200 550	100
WLW	700 50	1000 C 00000 N
	na	1000 R
WHK	1450 1390	500 B 1000 C
WGAR WHK WJAY WTAM	610 1070 5	500 50000 R
Columi WBNS WCOL WHKC	1430	500 C 100 N
WHKG	640	500
WOSU Dayton WHIO	570	750
WSMK	1260 1380	1000 C 200 C
Lima WBL Y	1210	100
Portsm WPA Y	outh 1370	100
Toledo WSPD	1340	1000 C
Youngs WKBN		500 C
Zanesvi WALR	lle 1210	100
OKL	АНОМ	A
Ada KADA	1200	100
Ardmor KVSO	1200	100
Elk City	,	
KASA	1210	100

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Enid		- 1	Philadelphia		Huron	250	Houston KPRC 920	1000 N
KCRC	1360	250		10000 R	KGDY 1340 Pierre	250	KPRC 920 KTRH 1290	1000 N
Muskog		100	WDAS 1370	100	KGFX 630	200	KXYZ 1440	1000
	1500	100	WF1L 560	1000 B	Ranid City		Kilgore	
Norman WNAD	1010	1000	WHAT 1310 WIP 610	100 1000	KOBH 1370	100	KOCA 1210	100
Oklahon		1	WPEN 920	250	WCAT 1200 Sioux Falls	100	Longview KFRO 1370	100
	1310	150	WRAX 920	250	KELO 1200	100		100
KGFG	1370	100	WTEL 1310	100	KSOO 1110	2500	Lubbock KFYO 1310	100
	1480	5000 C	Pittsburgh	D	Vermillion KUSD 890	500	Midland	100
WKY	900	1000 N		50000 B 500 C	KUSD 890 Watertown		KRLH 1420	100
Ponca C WBBZ	ity 1200	100 l	KQV 1380 WCAE 1220	1000 R	KWTN 1210	100	Palestine	
		100	WJAS 1290	1000 C	Yankton		KNET 1420	100
Shawne	B 1420	100	WWSW 1500	100	WNAX 570	1000 C	Pampa	
Tuisa			Reading				KPDN 1310	100
KTUL	1400	500 C	WEEU 830	1000 100	TENNESS	EE	Paris	
KVÕO	1140	25000 N	WRAW 1310	100			KPLT 1500	100
			Scranton WGBI 880	500	Bristol WOP1 1500	100	Pecos KIUN 1420	100
0	REGON		WQAN 880	250	WOP1 1500 Chattanooga	100	Port Arthur	100
			Sunbury		WAPO 1420	100	KPAC 1260	500
Astoria			WKOK 1210	100	WDOD 1280	1000 C	San Angelo	
KAST	1370	100	Wilkes-Barre		Jackson 1210	100	KGKL 1370	100
Corvalli			WBAX 1210	100	WTJS 1310 Knoxville	100	San Antonio	100
KOAC	550	1000	WBRE 1310	100	WNOX 1010	1000 C	KABC 1420 KMAC 1370	100
Eugene KORE	1420	100	Williamsport	100	WROL 1310	100	KONO 1370	100
			WRAK 1370	100	Memphis	100	KTSA 550	1000 C
Klamat KFJI	n rain 1210	100	York WORK 1320	1000	WHBQ 1370 WMC 780	1000 N		50000 C
Marshf			WORK 1320	1000	WNBR 1430	500	Sherman KRRV 1310	100
KOOS	120	0 250			WREC 600	1000 C	Temple	
Medfor	đ		PUERTO R	ICO	Nashville WLAC 1470	5000 C	KTEM 1370	100
	1310	100	Mayaquez		WSM 650	50000 N	Tyler KGKB 1500	100
Portlan	d		WPRA 1370	100	Springfield		Waco	
KALE KBPS	1300 1420	500 C 100	Ponce		WSIX 1210	100	WACO 1420	100 C
KEX	1180	5000 N	WPRP 1420	100			Weslaco	50 0
KFJR	1300	500	San Juan		TEXAS	6	KRGV 1260 Wichita Falls	
KGW	620	1000 R	WKAQ 1240 WNEL 1290	1000 1000			KGKO 570	250 C
KOIN KWJJ	940 1040	1000 C 500	WINEL 1270	1000	Abilene KRBC 1420	100		
KXL	1420	100			Amarillo	100	UTAH	
Rosebu	ra		RHODE ISL	AND	KGNC 1410	1000 N		
KRNR	1500	100			Austin	100 0	Cedar City	
Salem	1370	100	Newport WNRI 1200	100	KNOW 1500 Beaumont	100 C	KSUB 1310	100
KSLM	1370	100		100	KFDM 560	500	Ogden KLO 1400	500 B
		_	Providence WEAN 780	1000M	Big Spring	100	KLO 1400 Price	300 B
PENN	SYLV	NIA	WJAR 890	1000 R	KBST 1500 Brady	100	KEUB 1420	100
Allento		-	WPRO 630	500 C	KNEL 1500	100	Salt Lake Cit	y
WCBA	1440	500			College Stati		KDYL 1290	
WSAN	1440	500	SOUTH CAR	OLINA	WTAW 1120 Corpus Chris	500	KSL 1130 KUTA 1500	50000 C 100
Altoon: WFBG	a 1310	100			KGF1 1500	100	Kern 1000	
Easton	1910	100	Anderson WAIM 1200	100	Corsicana			
WEST	1200	100		100	KAND 1310	100	VERMO	NT
Erie		100	Charleston WCSC 1360	500 N	Dallas KRLD 1040	10000 C	Burlington	
WLEU Glensid	1420	100	Columbia		WFAA 800		WCAX 1200	100
WIBG	970	100	WIS 560	1000 N	WRR 1280	500	Rutland	100
Greens	burg		Greenville		Dublin KFPL 1310	100	WSYB 1500 St. Albans	100
WHJB	620	250 C	WFBC 1300	1000 N	El Paso	100	WQDM 1390	1000
Grove WSAJ	City 1310	100	Spartanburg		KROD 1500		Springfield	
Harris	ourg		WSPA 920	1000	KTSM 1310	100	WNBX 1260	1000
WHP	1430	500 C			WDAH 1310 1500		Waterbury WDEV 550	500
WKBO	1200	100	SOUTH DA	KOTA	Fort Worth	100		
Haziet WAZL	on 1420	100			KFJZ 1370			
	own		Aberdeen KABR 1420	100	KTAT 1240		VIRGIN	IA
Jonnst		100	KABR 1420	100	WBAP 800	50000 N		
WJAC	1310	100	De trac				Charlottesvil	e
	ter	100	Brookings KFDY 780	1000	Gaiveston KLUF 1370	100	Charlottesvil WCHV 1420	

Danville WBTM 1370	100	WISCONSIN	MANITOBA	Toronto
Harrisonburg WSVA 550	500	Eau Claire WEAU 1050 1000	Brandon	CFRB 690 10000 CKCL 580 100 CRCT 840 5000
Lynchburg	500	Fond du Lac KFIZ 1420 100	CKX 1120 100 F Winnipeg	CRCT 840 5000 1 CRCY 1420 100
WLVA 1200	100	Green Bay	CJRC 630 1000 F	Waterloo
Newport New WGH 1310	s 100	WHBY 1200 100 WTAQ 1330 1000	CKY 910 15000 F	CKCR 1510 100 Windsor
Norfolk WTAR 780	500 N	Janesville WCLO 1200 100	NEW BRUNSWICK	CKLW 1030 5000M CRCW 600 5001
Petersburg WPHR 880	500	LaCrosse WKBII 1380 1000	Fredericton	Wingham CKNX 1200 50
Richmond		Madison WHA 940 5000	CFNB 550 500 F Moncton	GRITA 1200 50
WBBL 1210 WMBG 1210	100 100 C	WIBA 1280 1000 N Manitowoc	CKCW 1370 100 F	PRINCE EDWARD
WRVA 1110 Roanoke	5000 C	WOM'T 1210 100 Milwaukee	St. John CHSJ 1120 500 F	ISLAND
WDBJ 930	1000 C	WEMP 1310 100		
		WISN 1120 250 C WTMJ 620 1000 N	N. W. TERRITORY	Charlottetown CFCY 630 1000 I
WASHINGT	ON	Poynette WIBU 1210 100	Aklavik	CHCK 1310 50
Aberdeen		Racine WRJN 1370 100	CJCU 1210 50	Summerside CHGS 1450 50 E
KXRO 1310 Bellingham	100	Sheboygan		
KVOS 1200	100	Stevens Point	NOVA SCOTIA	QUEBEC
Everett KRKO 1370	50	WLBL 900 2500 Superlor	Glace Bay VAS 685 2000	
Olympia KGY 1210	100	1200 100 Wausau	Halifax	Chicoutimi CRCS 950 100 F
Puilman	100	WSAU 1370 100	CHNS 930 1000 F Sydney	CRCS 950 100 F Hull
KWSC 1220	1000	WYOMING	CJCB 1240 1000 F	CKCH 1210 100 F Montmagny
Seattle KEEN 1370	100	Casper	Wolfville CKIC 1010 50	VE9EK 1185 10
KIRO 710 Kjr 970	1000 5000 B	KDFN 1440 500 Sheridan	Yarmouth	Montreal CFCF 600 400 N
KOL 1270 KOMO 920	1000 C 1000 R	KWYO 1370 100	CJLS 1310 100	CHLP 1120 100 F
KRSC 1120	100	CANADA	ONTARIO	CKAC 730 5000 C CRCM 910 5000 F
KTW 1220 KXA 760	1000 250	CANADA		New Cariisie CHNC 960 1000 F
Spokane KFIO 1120	100	ALBERTA	Brantford CKPC 930 100 F	Quebec
KFPY 890	1000 C	Calgary	Chatham (IDCO)	CHRC 580 100 CKCV 1310 100 F
KGA 1470 Khq 590	5000 B	CFAC 930 100 F CFCN 1030 10000	CFCO 630 100 F Cobalt	CRCK 1050 1000 F
Tacoma KMO 1330	250	CJCJ 690 100 F	CKMC 1210 50 Fort William	
CMO 1330 CVI 570	1000 C	CFRN 960 100 F	CKPR 730 100 F	SASKATCHEWAN
Walla Walla UJ 1370	100	CJCA 730 1000 F CKUA 580 500	Hamilton CHML 1010 100 F	
Wenatchee		Lethbridge CJOC 950 100 F	CKOC 1120 500 F Kingston	Moose Jaw CHAB 1200 100 F
CPQ 1500 Yakima	100	BRITISH COLUMBIA	CFRČ 1510 100 F Kirkland Lake	CJRM 540 1000 F
LTT 1310	100		CJKL 1310 100 F	Prince Albert CKB1 1210 100 F
		Chilliwack CHWK 780 100 F	London CFPL 730 100 F	Regina CKCK 1010 500 F
WEST VIRGI	NIA	Kamloops CFJC 880 100 F	North Bay CFCH 930 100 F	Saskatoon
Bluefield		Kelowna CKOV 630 100 F	Ottawa CKCO 1010 100 F	CFQC 840 1000 F Yorkton
VHIS 1410 Charleston	500	Prince Rupert CFPR 580 50	CRCO 880 1000 F Prescott	CJGX 1390 100
CHS 580 Clarksburg	500	Trail	CFLC 930 100	
/BLK 1370	100	CJAT 910 1000 F Vancouver	St. Catherines CKTB 1200 100 F	NEWFOUNDLAND
Fairmont /MMN 890	500 C	CJOR 600 500 CKCD 1010 100	Sault Ste, Marie CJIC 1500 100	
Huntington	1000	CKFC 1410 50	Stratford	St. John's
		CKMO 1410 100 F	CJCS 1210 50	VOAC 1065 40 VOAS 940 100
Parkersburg	100 1	CKWX 1010 100 F	Sudbury	YUAS 940 100
	100	CRCV 1100 1000 F Victoria	Sudbury CKSO 780 1000 F	VOAS 940 100 VOGY 840 400 VONF 1195 500

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COSTA RICA	XEL 780 1000 XELZ 1370 100	SAN LUIS POTOSI	Ciego de Avila CMJH 1360 100
	XEMX 1280 100		CMJI 1130 150
	XENC 860 50	San Luis Potosi XECZ 1370 100	CMJO 1180 50
San Jose	XEW 890 50000	XECZ 1370 100	Cienfuegos
TIEP 850 500	XEXM 610 500	XEXH 1250 250	CMHJ 1160 175
	XEYO 940 500		CMHM 1450
	Tacuba		CMHW 820 100
GUATEMALA	XEFA 1180 500	SINALOA	CMHX 760 200
	ALTA 1100 500		Cruces
		Mazatlan	CMHK 1330 250
Contractor City	DURANGO	XEBL 1220 50	
Guatemala City	DORANGO	l	Havana CMBD 1170 500
rGW 1210 10000			CMBG 1140 200
	Durango	SONORA	CMBN 850 150
	XEE 1210 50		CMBS 770 150
MEXICO		Hermosillo	CMBX 1070 500
		XEBH 930 500	CMBY 970 150
AGUACOAL IENTES	GUANAJUATO		CMBZ 1000 500
AGUASCALIENTES		Nogales XEAF 990 750	CMCA 1350 450
		770 750	CMCB 640 150
Aquascallentes	Leon		CMCD 950 250
	XEKL 1240 500	TAMAULIPAS	CMCF 810 600
			CMCG 680 1000 CMCJ 1100 500
XEXC 810 350			CMCJ 1100 500 CMCN 1450
	JALISCO	Matamoros	CMCO 1200 250
CHIHUAHUA		XEAM 750 25	CMCQ 1410 250
CHINDANUA		Nuevo Laredo	CMCR 1380 150
	Guadalajara	XEBK 1000 100	CMCU 1280 500
Chihuahua	XEAD 1060 125	XEFE 1340 250	CMCW 750 150
XEFI 1440 250	XED 1160 2500	XENT 910 150000	CMCX 570 150
XEF1 1440 250	Guzman	Reynosa	CMCY 1030 5000
Juarez	XEBA 1080 20	XEAW 960 50000	CMK 730 3000
CEFV 1210 100		Tampico	CMOA 1440 150
KEF 1450 100		XEFW 1310 250	CMOK 1460 150
KEJ 1020-1000 KEP 1160-500	LOWER CALIFORNIA	XES 990 250	CMOX 1320 200 CMO 880 500
KEP 1160 500			CMQ 880 500 CMW 600 1400
Parral	A - Wa California	LIER LODUS	CMX 920 1000
KEAT 1210 250	Agua Caliente XEEC 730 5000	VERACRUZ	
			Holguin CMKF 1460 250
COAHUILA	Mexicali XEAA 920 200	Cordoba XEAG 1310 10	
SUANOILA	XEAO 560 250		Manzanillo CMKM 1120 200
	Rosarito	Jalapa XEXB 1270 250	
Piedras Negras	XEAQ 1090 1000	XEXB 1270 250 XEXD 1340 350	Matanzas CMGC 1400 150
XELO 580 50000			CMGC 1400 150 CMGF 1120 150
XEPN 730 100000	Tijuana XEAC 980 250	Minatitlan	CMGH 790 500
	XEBG 820 1000	XEDW 1150 20	Moron
Saltillo XEAS 1160 50	XEC 1150 100	Veracruz	CMJP 1430 75
XEAS 1160 50 XEBX 640 250	XEMO 860 5000	XETF 1220 30	
XELA 1240 50	XEOK 760 2500	XEU 1010 250	Pinar del Rio CMAB 1340
1240 JU			
Torreon		YUCATAN	Sagua la Grande CMHA 1070 50
CETB 1310 125	MICHOACAN	10001101	
		Marida	Sancti Spiritus CMHB 1240 50
Villa Acuna		Merida XEBJ 1160 20	Santa Clara
XERA 840 350000	Morelia	XEFC 550 100	CMH1 1210 150
	XEI 1370 125	XEZ 630 500	Santiago
			CMKC 1250 150
D. F.			CMKD 1050 250
	NUEVO LEON	CUBA	CMKR 1400 100
Atzcapotzalco			CMKW 1330
XEMG 1060 100	1 Manufacture 1		
AEMIG 1000 100	Monterrey XEFB 870 200	Caibarien CMHD 1270 250	DOMINICAN
Gra. Anaya	XEFJ 1230 100		DOMINICAN REPUBLIC
XEDA 1220 200	XEH 720 250	Camaguey	REPUBLIC
	XET 690 500	CMJA 1010 300	
Mexico City	XEX 1310 125	CMJC 1390 150	Trujilio HIX 800 800
XEAL 660 1000		CMJE 1220 50 CMJF 1150 200	HIX 800 800
XEB 1030 10000		CMJF 1150 200 CMJK 780 250	
	PUEBLA	CMJL 1340 100	HAITI
XECW 1310 10			
XECW 1310 10 XEFO 940 5000		CMJX 830 500	Bost au Brings
XECW 1310 10	Puebla XETH 1210 100		Port-au-Prince HIIK 920 1000

	CFAC 930 100	CJIC 1500 100	CMAB 1340
	Calgary, Alta.	S. Ste. Marie, Ont,	Pinar del Rio, Cuba
	CFCF 600 400	CJKL 1310 100	
	Montreal, Que. CFCH 930 109	CJLS 1310 100	Havana, Cuba CMBG 1140 200
	North Bay, Ont.	Yarmouth, N. S.	Havana, Cuba
	CFCN 1030 10000	CJOC 950 100	CMBN 850 150 Havana, Cuba
	Caigary, Alta. CFCO 630 100	Lethbridge, Alta. CJOR 600 500	
	Chatham, Ont.	Vancouver, B. C.	Havana, Cuba
	CFCT 1450 75 Victoria, B. C.	CJRC 630 1000	CMBX 1070 500 Havana, Cuba
	CFCY 630 1000	Winnipeg, Man. CJRM 540 1000	
	Charlottetown, P.E.I	Moose Jaw Sask.	Havana, Cuba
	CFJC 880 100	CKAC 730 5000	CMBZ 1090 S00 Havana, Cuba
	Kamloops, B. C. CFLC 930 100	CKBI 1210 190	
	Prescott, Ont.	Prince Albert, Sask	Havana, Cuba
	CFNB 550 500	CKCD 1010 100	CMCB 640 150 Havana, Cuba
	Fredericton, N. B. CFPL 730 100	Vancouver, B. C. CKCH 1210 100	00000 000 000
	London, Ont.	Hull, Que.	Havana, Cuba
	CFPR 580 50 Prince Rupert, B. C.	CKCK 1010 500	CMCF 810 600 Havana, Cuba
	CFQC 840 1000	Regina, Sask. CKCL 580 100	00000 000 000
	Saskatoon, Sask.	Toronto, Ont.	Havana, Cuba
	CFRB 690 10000 Toronto, Ont.	CKCO 1010 100	CMCJ 1100 500 Havana, Cuba
<u> </u>	CFRC 1510 100	CKCR 1510 100	
	Kingston, Ont.	Waterloo, Ont.	Havana, Cuba
	CFRN 960 100 Edmonton, Alta.	CKCV 1310 100	CMCO 1200 250 Havana, Cuba
	CHAB 1200 100	Quebec, Que. CKCW 1370 100	C
	Moose Jaw, Sask.	Moneton, N. B.	Havana, Cuba
	CHCK 1310 50 Charlottetown, P. E. I.	CKFC 1410 50	CMCR 1380 150 Havana, Cuba
	CHGS 1450 50	Vancouver, B. C. CKGB 1420 100	000011 1000 100
	Summerside, P. E. I.	Timmins, Ont.	Havana, Cuba
	CHLP 1120 100 Montreal, Que.	Wolfville, N. S.	CMCW 750 150 Havana, Cuba
	CHML 1010 100	CKLW 1030 5000	
	Hamilton, Ont.	Windsor. Ont.	Havana, Cuba
	CHNC 960 1000 New Carlisle, Que.	CKMC 1210 59	CMCY 1030 5000 Havana, Cuba
	CHNS 930 1000	Cobalt, Ont. CKMO 1410 100	
	Halifax, N. S.	Vancouver, B. C.	Matauzas, Cuba
	CHRC 580 100 Quebec, Que.	CKNX 1200 50 Wingham, Ont.	CMGE 1370 150 Cardenas, Cuba
	CHSJ 1120 500	СКОС 1120 500	
	St. John, N. B. CHWK 780 190	Hamilton, Ont.	Matanzas, Cuba CMGH 790 500
	Chilliwack, B. C.	CKOV 630 100 Kelowna, B. C.	CMGH 790 500 Matanzas, Cuba
	CJAT 910 1000	CKPC 930 100	CMHA 1070 50
	Trail, B. C. CJCA 730 1000	Brantford, Ont.	Sagua la Grande, Cu. CMHB 1240 50
	Edmonton, Alta	CKPR 730 100 Fort William, Ont.	Sancti Spiritus, Cuba
	CJCB 1240 1000	CKSO 780 1000	
	Sydney, N. S. CJCJ 690 100	Sudbury, Ont.	Calbarien, Cuba CMHI 1210 150
	Calgary, Alta.	CKTB 1200 100 St. Catherines, Ont.	Santa Clara, Cuba
	CJCS 1210 50	CKUA 580 500	
	Stratford, Ont. CJCU 1210 50	Edmonton, Alta. CKWX 1010 100	Cienfuegos, Cuba CMHK 1330 250
	Aklavik, N. W. T.	Vancouver, B. C.	Cruces, Cuba
	CJGX 1390 100 Yorkton, Sask.	CKX 1120 100	
	TOTATOH, SASK.	Brandon, Man, CKY 910 15000	Cienfuegos, Cuba CMHW 820 100
1		Winnipeg, Man.	Cienfuegos, Cuba
			CMHX 760 200
			Gientuegos, Cuba

	CMJA 1010 300 Camaguey, Cuba	HIX 800 800 KERN 1370 10 Trujillo, D. R. Bakersfield, Calif.
	CMJC 1390 150	KABC 1420 100 KEUB 1420 10
	Camaguey, Cuba CMJE 1220 50	San Antonio, Texas Price, Utah KABR 1420 100 KEX 1180 500
	Camaguey, Cuba	Aberdeen, S. Dak. Portland, Ore.
	CMJF 1150 200 Camaguey, Cuba	KADA 1200 100 KFAB 770 1000 Ada, Okla. Lincoln, Neb.
	CMJH 1360 100	KALB 1420 100 KFAC 1300 100
	Ciego de Avila, Cuba	KALE 1300 500 KFBB 1280 100
	Ciego de Avila, Cuba	Portland, Ore. Great Falls, Mont. KAND 1310 100 KEPL 1050
	CMJK 780 250 Camaguey, Cuba	Corsicana, Texas Abilene, Kans,
	CMJL 1340 100 Camaguey, Cuba	KANS 1210 100 KFBK 1490 500 Wichita, Kans. Sacramento, Calif. Sacram
	CMJO 1180 50	KARK 890 500 KFDM 560 50
	Ciego de Avila, Cuba	KASA 1210 100 KEDY 780 100
	Camaguey, Cuba	Elk City, Okla. Brookings, S. D.
	CMJX 830 500 Camaguey, Cuba	KAST 1370 100 KFEL 920 500 Astoria, Ore. Denver, Colo. Denver, Colo. </td
	CMK 730 3000	KAWM 1500 100 KFEQ 680 250
	Havana, Cuba	KBIX 1500 100 St. Joseph, Mo.
	Santiago, Cuba	Muskogee, Okla. Boone Towa
	CMKD 1050 250	KBPS 1420 100 KFH 1300 100
	Santiago, Cuba CMKF 1460 250	KBST 1500 100 KEL 640 5000
	Holguin, Cuba	Big Spring, Texas KETM 1200 100 Los Angeles, Calif.
	CMKM 1120 209 Manzanillo, Cuba	Jonesboro, Ark. KFIO 1120 10
	CMKR 1400 100	KCKN 1310 100 Spokane, Wash. Kansas City, Kans. KFIZ 1420 10
	Santiago. Cuba CMKW 1330	KCMC 1420 100 Fond du Lac. Wis.
	Santiago, Cuba	Texarkana, Ark KFJB 1200 10 KCMO 1370 100 Marshalltown, Iowa
	CMOA 1440 150 Hayana, Cuba	Kansas City, Mo. Klamath Falls, Ore.
	CMOK 1460 150	KCRC 1360 250 KFJM 1410 50
	Havana, Cuba CMOX 1320 200	KCRI 1310 100 Grand Forks, N. D.
	CMOX 1320 200 Havana, Cuba	Jerome, Ariz. Portland, Ore.
	CMQ 880 500	KDAL 1500 100 KFJZ 1370 10 Duluth, Minn, 100 KFJZ 1370 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 <td< td=""></td<>
	Havana, Cuba CMW 600 1400	KDB 1500 100 KFKA 880 50
	Havana, Cuba	KDEN 1440 500 Greeley, Colo.
	CMX 920 1000 Havana, Cuba	Casper, Wyo.
	CRCK 1050 1000	KDKA 980 50000 KFNF 890 50
-	Quebec, Que. CRCM 919 5000	KDLR 1210 100 KEOP 1210 10
	Montreal, Que.	Devils Lake, N. D. Lincoln, Neb.
	CRC0 880 1000 Ottawa, Ont.	KDNC 1200 250 KFOX 1250 100 Lewistown, Mont. Long Beach, Calif. Long
	CRCS 950 100	KDON 1210 100 KFPL 1310 10
	Chicoutimi, Que, CRCT 840 5060	Del Monte, Calif. Dublin, Texas KDYL 1290 1000 KEPW 1210
	Toronto, Out.	Salt Lake City, Utah Fort Smith Ark
	CRCV 1100 1000	KECA 1430 1000 KFPY 890 100
	CRCW 600 500	KEEN 1370 100 KEOD 780 25
	Windsor, Ont.	Seattle, Wash. Anchorage, Alaska
	CRCY 1420 100 Toronto, Ont.	KEHE 780 1000 KFRC 610 100 Los Angeles, Calif. San Francisco, Calif. San F
	HHK 920 1000	KELD 1370 100 KFRO 1370 10
	Port-au-Prince, Halti	El Dorado, Ark. Longview, Texas
		Sioux Falls, S. Dak, Cotumbia, Mo.
		KFSD 600 103
		San Diego, Calif.

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t. Louis, Mo, IFVD 1000 250 sos Angeles, Calif. IFVS 1210 100 ape Girardeau, Mo. IFVS 950 1000 follywood, Calif. IFXD 1200 100 iampa, Idaho IFXJ 1200 100 irand Junction, Colo. IFXM 1210 100 an Bernardino, Calif. IFXM 1210 100 klahoma City, Okla. IFYO 1310 100 ubbock, Texas IFYR 550 1000 ismarck, N. D. IGA 1470 5000 pokane, Wash.		Pueblo, Colo. KGHI 1200 Little Rock, Ark. KGHL 780 Billings, Mont. KGIR 1340 Butte, Mont. KGIW 1420 Alamosa. Colo. KGKB 1500 Tyler, Texas KGKL 1370 San Angelo, Texas KGKL 570 Wichita Falls, Texas KGKY 1500 Scottsbluff, Neb.	100 1000 1000 100 100 250	Pecos, Texas KIUP 1370 10 Durango, Colo. KJBS 1070 500 San Francisco, Calif. KJR 970 500 Seattle, Wash. KLAH 1210 100 Carisbad, N. Mex. KLCN 1290 100 Bly theville, Ark. KLO 1400 500 Ogden, Utah KLPM 1240 255
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IFVS 1210 100 ape Girardeau, Mo. FWB 550 1000 fWB 550 1000 100 iampa, Idaho IFXD 1200 100 iranda, Idaho IFXJ 1200 100 irand Junction, Colo. IFXM 1210 100 irand Junction, Calif. IFXM 120 100 klahoma City, Okla. IFYO 1310 100 ubbock, Texas IFYR 550 1000 ismarck, N. D. IGA 1470 5000 pokane, Wash. 48h. 1470 5000		KGHL 780 Billings, Mont. KGIR 1340 Butte, Mont. KGW 1420 Alamosa. Colo. KGKB 1500 Tyler, Texas KGKL 1370 San Angelo, Texas KGKO 570 Wichita Falls, Texas KGKV 1500 Scottsbluff, Neb.	1000	KJBS 1070 500 San Francisco, Calif. Soat Soat KJR 970 Soat Seattle, Wash. Soat Soat KLAH 1210 100 Carisbad, N. Mex. KLCN 1290 Bly theville, Ark. KLO 1400 KLO 1400 500 Ogden, Utah KLPM 1240
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IZ10 100 an Bernardino, Calif. FXR 1310 100 klahoma City, Okla. 130 100 100 ubbock, Texas FYR 550 1000 ismarck, N. D. GA 1470 5000 pokane, Wash. Wash. 100 100		KGKL 1370 San Angelo, Texas KGKO 570 Wichita Falls, Texas KGKY 1500 Scottsbluff, Neb.	250	KLO 1400 50 Ogden, Utah KLPM 1240 256
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klahoma City, Okla. FYO 1310 100 ubbock, Texas FYR 550 1000 isimarck, N. D. GA 1470 5000 pokane, Wash.		Wichita Falls, Texas KGKY 1500 Scottsbluff, Neb.	5	
FYO 1310 100 ubbock, Texas		KGKY 1500 Scottsbluff, Neb.		
FYR 550 1000 Sismarck, N. D. 5000 GGA 1470 5000 pokane, Wash. 5000			100	KLRA 1390 100
sismarck, N. D. GA 1470 5000 pokane, Wash.		KGLO 1210	100	Little Rock, Ark, KLS 1280 250
pokane, Wash.	-	Mason City, Iowa	100	Oakland, Calif.
		KGMB 1320	1000	KLUF 1370 10
		Honolulu, T. H. KGNC 1410	1000	Galveston, Texas KLX 880 1000
ucson, Ariz.		Amarillo, Texas		Oakland, Calif.
			1000	KLZ 560 1000 Denver, Colo.
GBU 900 500		KGNO 1340	250	KMA 930 1000
		Dodge City, Kans		Shenendoah, Iowa KMAC 1370 100
				KMAC 1370 100 San Antonio, Texas
		~	2500	KMBC 950 1000
		Honolulu, T. II.		Kansas City, Mo. KMED 1310 100
		Missoula, Mont.	1000	Medford, Ore.
			1000	KMJ 580 500
			100	Fresno, Calif. KMLB 1200 100
		Olympia, Wash.		Monroe, La.
			250	KMMJ 740 1000 Clay Center, Neb.
GDY 1340 250		1	1000	KMO 1330 250
		Los Angeles, Calif.		Tacoma, Wash. KMOX 1090 50000
			1000	KMOX 1090 50000 St. Louis, Mo.
1010 100		KHSL 950	250	KMPC 710 500
		-	250	Beverly Hills, Calif. KMTR 570 1000
		Watsonville, Calif.		Hollywood, Calif.
			100	KNEL 1500 100 Brady, Texas
GFI 1500 100		KID 1320	500	KNET 1420 100
		Idaho Falls, Idaho		Palestine, Texas KNOW 1500 100
			1000	KNOW 1500 100 Austin, Texas
		KIDW 1420	100	KNX 1050 50000
			500	Hollywood, Calif. KOA 830 50008
earney, Neb.		Eureka, Calif.	500	Denver, Colo.
		KIEV 850	250	KOAC 559 1000 Corvallis, Ore.
		KINY 1310	100	KOAM 790 1000
		Juneau, Alaska		Pittsburg, Kans,
			1000	KOB 1180 10000 Albuquerque, N. M.
	-	KIT 1310	100	KOBH 1370 100
		Yakima, Wash.		Rapid City, S. Dak, KOCA 1210 103
				KOCA 1210 103 Kilgore, Texas
		1		KOH 1380 503 Reno, Nev.
	'ucson, Ariz. 'ucson, Ariz. GGE 130 an Diego, Calif. GGEU 900 Sono Sono Cetchikan, Alaska GGEX 1230 pringfield, Mo. GGCA 1270 becorah, Iowa GGCU 1240 Caudan, N. D. GGCX 1450 Yolf Point, Mont. GGDE 1200 'ergus Falls, Minn GGEM 1300 'ergus Falls, Minn GGER 1300 ionog Beach, Calif. GEF 1420 ialspell, Mont. GGFI 1300 ioalspell, Mont. GGFJ 100 bawnee, Okla. GGFJ GGFJ 100 bos Angeles, Calif. GGFL GGFJ 100 bos Angeles, Calif. GGFL GGFL 1370 100 bos Angeles, Calif. GGFW GGFW 1310 </td <td>ucson, Ariz. GB 130 GGE 130 an Diego, Calif. GGEU 900 control of the second s</td> <td>Jucson, Ariz. Amarillo, Texas GGB 1330 1000 An Diego, Calif. North Platte, Neb. GGB 1330 500 KGNF 1430 North Platte, Neb. GGB 1230 500 Ketchikan, Alaska GGCA 1270 Decorah, Iowa KGO GCCU 1240 Jandan, N. D. KGV0 GCCU 1240 Jandan, N. D. KGV0 GCC 12200 100 Volf Point, Mont. GCGP GGD 1200 KGW Varon, Calif. GGP GGD 1300 KGW 1220 Juron, S. D. Los Angeles, Calif. GGET 1310 100 Calispell, Mont. Spokane, Wash. GGFT 1320 100 Kildona City, Okla. Chico, Calif. GGFI 1300 100 KHGW 1310 100 Kashamacity, Neb. GGET 1370 GGFJ 1300 100 Kildona City, Okla. <</td> <td>Ducson, Ariz. Amarillo, Texas GGB 1330 1000 An Diego, Calif. KGNF 1430 GBU 900 500 KGBX 1230 500 KGCA 1230 500 KGCA 1230 500 KGCA 1230 500 KGCA 1270 100 KGCA 1270 100 KGCA 1270 100 KGCA 1260 1000 Mandan, N. D. KGVO 1260 GCCL 1240 250 KGVO 1260 1000 Volf Point, Mont. GCD 100 GCD 1340 250 Muron, S. D. KHJ 900 1000 GGET 1310 1000 KHJ 950 1000 GGET 1310 100 KHJ 950 1000 GGET 1310 100 KHHS 950 250 GGET</td>	ucson, Ariz. GB 130 GGE 130 an Diego, Calif. GGEU 900 control of the second s	Jucson, Ariz. Amarillo, Texas GGB 1330 1000 An Diego, Calif. North Platte, Neb. GGB 1330 500 KGNF 1430 North Platte, Neb. GGB 1230 500 Ketchikan, Alaska GGCA 1270 Decorah, Iowa KGO GCCU 1240 Jandan, N. D. KGV0 GCCU 1240 Jandan, N. D. KGV0 GCC 12200 100 Volf Point, Mont. GCGP GGD 1200 KGW Varon, Calif. GGP GGD 1300 KGW 1220 Juron, S. D. Los Angeles, Calif. GGET 1310 100 Calispell, Mont. Spokane, Wash. GGFT 1320 100 Kildona City, Okla. Chico, Calif. GGFI 1300 100 KHGW 1310 100 Kashamacity, Neb. GGET 1370 GGFJ 1300 100 Kildona City, Okla. <	Ducson, Ariz. Amarillo, Texas GGB 1330 1000 An Diego, Calif. KGNF 1430 GBU 900 500 KGBX 1230 500 KGCA 1230 500 KGCA 1230 500 KGCA 1230 500 KGCA 1270 100 KGCA 1270 100 KGCA 1270 100 KGCA 1260 1000 Mandan, N. D. KGVO 1260 GCCL 1240 250 KGVO 1260 1000 Volf Point, Mont. GCD 100 GCD 1340 250 Muron, S. D. KHJ 900 1000 GGET 1310 1000 KHJ 950 1000 GGET 1310 100 KHJ 950 1000 GGET 1310 100 KHHS 950 250 GGET

	KOIL 1260 1000 Omaha, Nebr.	KROD 1500 100 El Paso, Texas	KUTA 1500 10 Salt Lake City, Utah
-	KOIN 940 1000	KROW 930 1000	KVCV 1200 10
	Portland, Ore. KOL 1279 1000	Oakland, Calif. KROY 1310 100	Redding, Calif. KVEC 1200 25
	Seattle, Wash.	Sacramento, Calif.	San Luis Obispo, Calif.
	KOMA 1480 5000 Okiahoma City, Okla.	KRQA 1310 100 Santa Fe, N. Mex.	KVGB 1370 10 Great Bend, Kans.
	KOMO 920 1000 Seattle, Wash.	KRRV 1310 100 Sherman, Texas	KVI 570 100 Tacoma, Wash.
	KONO 1370 100	KRSC 1120 100	KVOA 1260 100
	San Antonio, Texas KOOS 1200 250	KSAC 580 500	Tucson, Ariz. KVOD 920 50
	Marshfield, Ore.	Manhattan, Kans. KSCJ 1330 1000	Denver, Colo. KVOE 1500 10
	Eugene, Ore.	Sloux City, Iowa	Santa Ana, Calif.
	Fine Bluffs, Ark.	KSD 550 1000 St. Louis, Mo.	KVOL 1310 10 Lafayette, La.
	KOVC 1500 100	KSEI 900 250	KVOO 1140 2500
	Valley City, N. Dak KOY 1390 500	Pocatello, Idaho KSFO 560 1000	Tulsa, Okla. KVOR 1270 100
	Phoenix, Ariz.	San Francisco, Calif.	Colorado Spgs., Colo.
	KPAC 1260 500 Port Arthur, Texas	KSJS 1500 100 Salina, Kans.	KVOS 1200 10 Bellingham, Wash.
	KPDN 1310 100 Pampa, Texas	KSL 1130 50000 Salt Lake City, Utah	KVOX 1310 10 Moorbead, Minn.
	KPLC 1500 100	KSLM 1370 100	KVSO 1210 10
	Lake Charles, La. KPLT 1500 100	Salem, Ore. KSO 1430 500	Ardmore, Okla. KWBG 1420 10
	Paris, Texas	Des Moines, Iowa	Hutchinson, Kans.
	KPMC 1550 1000 Bakersfield, Calif.	KSOO 1110 2500 Sioux Falls, S. D.	KWG 1200 10 Stockton, Calif.
	KPO 680 50000	KSRO 1310 250	KWJJ 1040 50
	San Francisco, Calif.	Santa Rosa. Calif. KSTP 1460 10000	Portland, Ore. KWK 1350 100
	Denver, Colo.	St. Paul, Minn. KSUB 1310 100	St. Louis, Mo.
	KPPC 1210 100 Pasadena, Calif.	Cedar City, Utah	KWKH 1100 1000 Shreveport, La.
	KPQ 1500 100 Wenatchee, Wash.	KSUN 1200 100 Lowell, Ariz.	KWLC 1270 10 Decorah, Iowa
H	KPRC 920 1000	KTAR 620 1000	KWOS 1310 10
	Houston, Texas	Phoenix, Ariz. KTAT 1240 1000	Lefferson City, Mo. KWSC 1220 100
	Pittsburgh, Pa.	Fort Worth, Texas	Pullman, Wash.
	KQW 1010 1000 San Jose, Calif.	Shreveport, La.	KWTN 1210 10 Watertown, S. D.
	KRBC 1420 100	KTEM 1370 100 Temple, Texas	KWTO 560 500 Springfield, Mo.
	Abilene, Texas KRE 1370 100	KTFI 1240 1000	KWYO 1370 10
	Berkeley, Calif. KRGV 1260 500	Twin Falls, Idaho KTHS 1060 10000	Sheridan, Wyo. KXA 760 25
	Weslaco, Texas	Hot Springs, Ark.	Seattle, Wash.
	KRKD 1120 500 Los Angeles, Calif.	KTRB 740 250 Modesto, Calif.	KXBY 1530 100 Kansas City, Mo.
	KRKO 1370 50 Everett, Wash.	KTRH 1290 1000	KXL 1420 10 Portland, Ore.
	KRLC 1420 100	Houston. Texas KTSA 550 1000	KXO 1500 10
	Lewiston, Idaho KRLD 1040 10000	San Antonio, Texas KTSM 1310 100	El Centro, Calif. KXRO 1310 10
	Dallas, Texas	El Paso, Texas	Aberdeen, Wash.
	KRLH 1420 100 Midland, Texas	KTUL 1400 500 Tulsa, Okla.	KXYZ 1440 100 Houston, Texas
	KRMC 1310 100	KTW 1220 1000	KYA 1230 100
	Jamestown, N. Dak. KRMD 1310 100	KUJ 1370 100	San Francisco, Calif. KYCA 1500 10
	Shreveport, La.	Walla Walla, Wash.	Prescott, Ariz.
	KRNR 1500 100 Roseburg, Ore.	KUMA 1420 100 Yuma, Ariz.	KYOS 1040 25 Merced, Calif.
	KRNT 1320 500 Des Moines, Iowa	KUOA 1260 2500 Siloam Springs, Ark.	KYW 1020 1000
	KROC 1310 100	KUSD 890 500	Philadelphia, Pa.

	TGW 1210 100 Guatemala, Gua.	000	WAWZ 1350 500		WBZ 990 500 Boston, Mass.
200		ioo	Zarephath, N. J. WAYX 1200 100	1.	WBZA 990 10
	San Jose, C. R.		Wayeross, Ga.		Springfield, Mass.
_	VAS 685 20	000	WAZL 1420 100	0.0	WCAD 1220 5
	Glace Bay, N. S.		Hazleton, Pa.		Canton, N. Y.
	VE9EK 1185	10	WBBA 890 500		WCAE 1220 10
	Montmagny, Que.		West Lafayette, Ind.		Pittsburgh, Pa.
	VOAC 1065	40	WBAL 760 2500		WCAL 1250 10 Northfield, Minn,
-	St. John's, Nild. VOAS 940 1		Baltimore, Md. WBAL 1060 10000	-	WCAM 1280 5
	St. John's, Nfld.		WBAL 1060 10000 Baltimore, Md.	11	Camden, N. J.
		100	WBAP 800 50000		WCAO 600 5
	St. John's, Nfld.		Fort Worth, Texas		Baltimore, Md.
		500	WBAX 1210 100		WCAP 1280 5
	St. John's, Nfid.		Wilkes-Barre, Pa.		Asbury Park, N. J.
	VOWR 681 ! St. John's, Nfld.	500	WBBC 1400 500		WCAT 1200 1 Rapid City, S. D.
		500	Brooklyn, N. Y. WBBL 1210 100		WCAU 1170 500
	Boston, Mass.		WBBL 1210 100 Richmond, Va.		Philadelphia, Pa.
		000	WBBM 770 50000		WCAX 1200 1
	Chicago, Ili.		Chicago, Ill		Burlington, Vt.
		500	WBBR 1300 1000		WCAZ 1070 1
	Jersey City, N. J. WAAW 660	500	Brooklyn, N. Y.		Carthage, Ill. WCBA 1440 5
	Omaha, Neb.	500	WBBZ 1200 100		WCBA 1440 5 Allentown, Pa.
-		000	Ponca City, Okla. WBCM 1410 500		WCBD 1080 50
	New York, N. Y.		Bay City, Mich.		Chicago, Ill.
		100	WBEN 900 1000		WCBM 1370 1
	Bangor, Maine	L	Buffalo, N. Y.		Baltimore, Md.
		100	WBEO 1310 100		WCBS 1420 1 Springfield, Ill.
	Albany, N. Y. WACO 1420	100	Marquette, Mich. WBHP 1200 100		WCCO 810 500
	Waco, Texas		Huntsville, Ala.		Minneapolis, Minn.
		000	WBIG 1440 500		WCFL 970 50
	Akron, Ohio		Greensboro, N. C.	· · · · · · · · · · · · · · · · · · ·	Chicago, Ill.
		250	WBLK 1370 100		WCHS 580 5
	Dothan, Ala. WAGM 1420	100	Clarksburg, W. Va.		Charleston, W. Va. WCHV 1420 1
	Presque Isle, Me.		WBLY 1210 100 Lima, Ohio		Charlottesville, Va.
		100	WBNO 1200 10	,	WCKY 1490 50
	Anderson, S. C.		New Orleans, La.		Covington, Ky.
		250	WBNS 1430 50)	WCLO 1200 1
	Winston-Salem, N. C. WALA 1380	500	Columbus, Ohio		Janesville, Wis.
	Mobile, Ala.	300	WBNX 1350 1000 New York, N. Y.	,	WCLS 1310 1 Joliet, Ill.
		100	WBNY 1370 10		WCMI 1310 1
	Zanesville, Ohio		Buffalo, N. Y.		Ashland, Ky.
	WAML 1310	109	WBOQ 860 5000)	WCNW 1500
	Laurel, Miss.		New York, N. Y.		Brooklyn, N. Y.
	WAPI 1140 5 Birmingham, Ala.	000	WBOW 1310 100 Terre Haute, Ind.		WCOA 1340
		100	WBRB 1210 10		Pensacola, Fla. WCOC 880
	Chattanooga, Tenn.		Red Bank, N. J.	,	Meridian, Miss,
		500	WBRC 930 100		WCOL 1210
	Brooklyn, N. Y.		Birmingham, Ala.		Columbus, Ohio
		500	WBRE 1310 104)	WCOP 1120
-	Grand Rapids, Mich. WATL 1370	100	Wilkes-Barre, Pa.		Boston, Mass.
,	Atlanta, Ga.	100	WBRY 1530 100)	WCPO 1200
		100	Waterbury, Conn. WBT 1080 5000		Cincinnati, Ohlo WCRW 1210
	Waterbury, Conn.		Charlotte, N. C.		Chicago, Ill.
		000	WBTM 1370 10)	WCSC 1360
	Louisville, Ky.		Danville, Va.		Charleston, S. C.
			1		
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WCSH 940 Portland, Me.	1000	WEVD 1300 1000 New York, N. Y.	WGST 893 1000 Atlanta, Ga.
WDAE 1220	1000	WEW 760 1000	WGY 790 50000
Tampa, Fla.	1000	St. Louis, Mo. WEXL 1310 50	Schenectady, N. Y. WHA 949 5006
WDAF 610 Kansas City, Mo.	1000	Royal Oak, Mich.	Madison, Wis.
WDAH 1310	100	WFAA 800 50000	WHAM 1150 50000
El Paso, Texas WDAS 1370	100	Dallas, Texas WFAB 1300 1000	Rochester, N. Y. WHAS 820 50004
Phi'adelphia, Pa.	100	New York, N. Y.	Louisville, Ky.
WDAY 940	1000	WFAM 1200 100	WHAT 1310 100 Philadelphia, Pa.
	1000	South Bend, Ind. WFAS 1210 100	WHAZ 1300 50
Roanoke, Va.		White Plains, N. Y.	Troy, N. Y.
WDBO 580 Orlando, Fla.	1000	WFBC 1300 1000 Greenville, S. C.	WHB 860 100 Kansas City, Mo.
WDEL 1120	250	WFBG 1310 100	WHBB 1500 10
Wilmington, Del.		Altoona, Pa.	Selma, Alabama
WDEV 550 Waterbury, Vt.	500	WFBL 1360 1000 Syracuse, N. Y.	WHBC 1200 10 Canton, Ohio
WDGY 1180	1000	WFBM 1230 1000	WHBF 1210 10
Minneapolis, Minn.		Indianapolis, Ind.	Rock Island, Ill. WHBI 1250 100
WDNC 1500 Durham, N. C.	100	WFBR 1270 500 Baltimore, Md.	WHBI 1250 100 Newark, N. J.
WDOD 1280	1000	WFDF 1310 100	WHBL 1300 25
Chattanooga, Tenn		Flint, Mich. WFFA 1340 500	Sheboygan, Wis. WHBQ 1370 10
WDRC 1330 flartford, Conn.	1000	WFEA 1340 500 Manchester, N. H.	Memphis, Tenn.
WDSU' 1250	1000	WFIL 560 1000	WHBU 1210 10
New Orleans, La. WDWS 1370	100	Philadelphia, Pa. WFLA 620 1000	Anderson, Ind. WHBY 1200 10
Champaign, Ill.	100	Clearwater, Fla.	Green Bay, Wis.
WDZ 1020	250	WFMD 900 500 Frederick, Md.	WHDF 1370 10 Calumet, Mich.
Tuscola, Ill. WEAF 660	50000	WFOR 1370 100	WHDH 830 100
New York, N. Y.		Hattiesburg, Miss.	Boston, Mass.
WEAN 780	1000	WFOY 1210 160 St. Augustine, Fla.	WHDL 1400 25 Olean, N. Y.
Providence, R. I. WEAU 1050	1000	WFTC 1200 100	WHEB 740 25
Fau Claire, Wis.		Kinston, N. C.	Portsmouth, N. H.
WEBC 1290 Duluth, Minn.	1000	WGAL 1500 100 Lancaster, Pa.	WHEC 1430 50 Rochester, N. Y.
WEBQ 1210	100	WGAN 640 500	WHEF 1500 10
Harrisburg, Ill.	100	Portland, Me. WGAR 1450 500	WHFC 1420 10
WEBR 1310 Buffalo, N. Y.	100	Cleveland, Ohio	Cicero, Ill.
WEDC 1210	100	WGBB 1210 100	WHIO 1260 100
Chicago, Ill. WEED 1420	190	WGBF 630 500	Dayton, Ohio WHIS 1410 50
Rocky Mount, N.		Evansville, Ind.	Bluefield, W. Va.
WEEI 590	1000	WGBI 880 500 Scranton, Pa.	Greensburg, Pa.
Boston, Mass. WEEU 830	1000	WGCM 1210 100	WHK 1390 100
Reading, Pa.		Gulfport, Miss.	Cleveland, Ohio
WEGL 1400 Brooklyn, N. Y.	500	WGES 1360 500 Chicago, Ill.	WHKC 640 50 Columbus, Ohio
WELL 900	500	WGH 1310 100	WHLB 1370 10
New Haven, Conn.	100	Newport News, Va. WGL 1370 100	Virginia, Minn. WHN 1010 100
WELL 1420 Battle Creek, Mich		Fort Wayne, Ind.	New York, N. Y.
WEMP 1310	100	WGN 720 50000	WHO 1000 5000
Milwaukee, Wis. WENR 870	50000	Chicago, Ill. WGNY 1210 100	Des Moines, Iowa WHOM 1450 23
Chicago, Ill.		Newburgh, N. Y.	Jersey City, N. J.
WEOA 1370	100	WCPC 1420 100 Albany, Ga.	WHP 1430 50 Harrisburg, Pa.
Evansville, Ind. WESG 850	1000	WGR 550 1000	WIBA 1280 19
Elmira, N. Y.		Buffalo, N. Y.	Madison, Wis.
WEST 1200	100	WGRC 1370 250 New Albany, Ind.	WIBG 970 19 Gienside, Pa.
Easton, Pa.		-	

		-
	WIBM 1370	100
	Jackson, Mich. WIBU 1210	100
	Poynette, Wis. WIBW 580	1000
	Topeka, Kans. WIBX 1200	100
	Utica, N. Y. WICC 600	500
	Bridgeport, Conn.	
	WIL 1200 St. Louis, Mo.	100
	WILL 580 Urbana, Ill. WILM 1420	250
	WILM 1420 Wilmington, Del.	100
	WIND 560 Gary, Iud.	1000
	WIND 560 Gary, Ind. WINS WINS 1180 New York, N. Y. WIOD	1900
	WIOD 1300 Miami, Fia.	1000
	WIP 610 Philadelphia, Fa.	1000
	WIRE 1400	1000
	Indianapolis, Ind. WIS 560	1000
	Columbia, S. C. WISN 1120	250
	Milwaukee, Wis WJAC 1310	100
	Johnstown, Pa. WJAG 1060 Norfolk, Neb.	1000
		1000
	WJAR 890 Providence, R. I. WJAS 1290	1000
-	Pittsburgh, Pa. WJAX 900	1000
	Jacksonville, Fla. WJAY 610	500
	Cleveland, Ohio WJBC 1290	100
	Bioomington, Iil. WJBK 1500	100
	Detroit, Mich.	
	WJBL 1200 Decatur, Ill.	100
	WJBO 1420 Baton Rouge, La.	100
	WJBR 1420 Gastonia, N. C. WJBW 1200	100
	WJEW 1200 New Orleans, La.	100
		100
	Gadsden, Ala. WJDX 1270 Jackson, Miss.	1000
	WJEJ 1210	100
	Hagerstown, Md. WJIM 1210	100
	Lansing, Mich. WJJD 1130	20000
	WJMS 1420	100
	WJNO 1200	100
	W. Palm Beach, Fl	
	Detroit, Mich.	

	WJRD 1200	100
	WJRD 1200 Tuscaloosa, Ala. WJSV 1460	100
		10000
	Washington, D. C. WJTN 1210	
	Jamestown N V	50
	WJW 1210 Akron, Ohio	100
	Akron, Ohio	
	WJZ 760 New York, N. Y.	50000
	WKAQ 1240	1000
	San Juan, P. R.	
	WKAR 850 East Lansing, Mic	1000 b.
	WKBB 1500	100
J	East Dubuque, Ill	
	WKBH 1380	1000
	LaCrosse, Wis. WKBN 570	509
	Youngstown, Ohio	
	WKBO 1200 Harrisburg, Pa.	100
	WKBV 1500	100
	Richmond, Ind.	
	WKBW 1480	5000
	Buffalo, N. Y. WKBZ 1500	100
	Muskegon, Mich.	
	WKEU 1500	100
	Griffin, Ga. WKOK 1210	100
	Sunbury, Pa.	
		1000
-	Cincinnati, Ohio WKY 900	1000
	Oklahoma City, Ol	
	WKZO 590	1000
	Kalamazoo, Mich. WLAC 1470	5000
	WLAC 1475 Nashville, Tenn. WLAK 1310	
	WLAK 1310	100
	Lakeland, Fla. WLAP 1420	100
	Lexington, Ky.	
	WLB 1250 Minneapolis, Minn	1000
	WLBC 1319	100
	Muncie, Ind.	
	WLBL 900	2500
	Stevens Point, Wis WLBZ 620	s. 500
	Bangor, Me.	
	WLEU 1420	100
	Erie, Pa. WLLH 1370	100
	Lowell, Mass.	
	WLMU 1210 Middlesboro, Ky. WLNH 1310	100
-	WLNH 1310	100
	Laconia, N. H.	
	WLS 870 Chicago, Ill.	50000
	WLTH 1400	500
	Brooklyn, N. Y.	
	WLVA 1200 Lynchburg, Va.	100
		500000
	Cincinnati, Ohio	
	WLWL 1109 New York, N. Y.	5000

	WMAL 630	250
	Washington, D. C. WMAQ 670	50900
	Chicago, Ill. WMAS 1420	100
	Springfield, Mass.	
	Macon, Ga.	1000
	WMRC 1420	100
	WMBD 1440	500
	Detroit, Mich. WMBD 1440 Peoria, Ill. WMBG 1210	100
	Richmond, Va.	
	WMBH 1420 Joplin, Mo.	100
	WMB1 1080 Chicago, Ill.	5000
	WMB0 1310	100
-	WMBO 1310 Auburn, N. Y. WMBQ 1500	100
	Brooklyn, N. Y. WMBH 1370	100
	Jacksonville, Fla.	
	WMC 780 Memphis, Tenn.	1000
	WMCA 570	1000
	New York, N. Y. WMEX 1500	100
	Boston, Mass. WMFD 1370	190
	Wilmington, N.C.	
	WMFF 1310 Plattsburg, N. Y.	250
	WMFG 1210	100
	Hibbing, Minn. WMFJ 1420	100
	Daytona Beach, F WMFN 1210	la. 100
_	Clarksdale, Miss. WMFO 1370	100
	Decatur, Ala. WMFR 1200	
	WMFR 1200 High Point, N. C.	100
	WMIN 1370	100
	St. Paul, Minn. WMMN 890	500
	WMMN 890 Fairmont, W. Va. WMPC 1200 Lapaar Mich	100
_	Lapeer, mich.	
	WMSD 1420 Sheffield, Ala.	100
	WMT 600 Cedar Rapids, Iow	1000 a
	WNAC 1230	1080
	Boston, Mass. WNAD 1010	1000
	Norman, Okla.	1000
	WNAX 570 Yankton, S D.	
	WNBC 1380 New Britain, Conn	250
	WNBF 1500	100
	WNRH 1310	100
	New Bedford, Mas WNBR 1430	50C
	Memphis, Tenn.	

	WNBX 1260 1000	WPRO 630 Providence, R. I.	500	WSGN 1310 100 Birmingham, Ala.
	Springfield, Vt. WNBZ 1290 100	WPRP 1420	100	WSIX 1210 100
	Saranac Lake, N. Y.	Ponce, P. R.		Springfield, Tenn. WSJS 1310 100
	WNEL 1290 1000 San Juan, P. R	Raleigh, N. C	1000	Winston-Salem, N. C.
	WNEW 1250 1000 New York, N. Y.	WQAM 568 Miami, Fla.	1000	WSM 650 50000 Nashville, Tenn.
0	WNLC 1500 100 New London, Conn.	WQAN 880 Scranton, Pa.	250	WSMB 1320 1000 New Orleans, La.
	WNNY 1420 180	WQBC 1360	1000	WSMK 1380 200 Dayton, Ohio
	Watertown, N. Y. WNOX 1010 1000	WQDM 1390	1000	WSOC 1210 100
	Knoxville, Tenn. WNRI 1200 100	St. Albans, Vt. WQXR 1550	1000	Charlotte, N. C. WSPA 920 1000
	Newport, R. I. WNYC 810 1000	New York, N. Y. WRAK 1370	100	Spartanburg, S. C. WSPD 1340 1000
	New York, N. Y.	Williamsport, Pa.		Toledo, Ohio WSPR 1140 500
	WOAI 1190 50000 San Antonio, Texas	Reading, Pa.	100	Springfield, Mass.
	WOC 1370 100 Davenport, Iowa	WRAX 920 Philadelphia, Pa.	250	WSUI 880 500 Iowa City, Iowa
	WOI 640 5000	WRBL 1200	100	WSUN 620 1000 St. Petersburg, Fla.
	Ames, Iowa WOKO 1430 500	Columbus, Ga. WRC 950	500	WSVA 550 500
-	Albany, N. Y. WOL 1310 100	Washington, D. C. WRDO 1379	100	Harrisonburg, Va. WSVS 1370 50
	Washington, D. C.	Augusta, Me. WRDW 1500	100	Buffalo, N. Y. WSYB 1500 100
	WOMT 1210 100 Manitowoc, Wis.	Augusta, Ga.		Rutland, Vt.
	WOOD 1270 500 Grand Rapids, Mich.	WREC 600 Memphis, Tenn.	1000	WSYR 570 1000 Syracuse, N. Y.
	WOPI 1500 100 Bristol, Tenn.	WREN 1220 Lawrence, Kans.	1000	WTAD 900 1000 Quincy, Ill.
	WOR 710 50000	WRGA 1500 Rome, Ga.	100	WTAG 580 500 Worcester, Mass.
	Newark, N. J. WORC 1280 500	WRJN 1370	100	WTAL 1310 100 Tallahassee, Fla.
	Worcester, Mass. WORK 1320 1000	Racine, Wis. WROK 1410	500	WTAM 1070 50000
	York, Pa. WORL 920 500	Rockford, Ill. WROL 1310	100	Cleveland, Ohio WTAQ 1330 1000
	Boston, Mass.	Knoxville, Tenn. WRR 1280	500	Green Bay, Wis. WTAR 780 500
-	WOSU 570 750 Columbus, Ohio	Dallas, Texas		Norfolk, Va.
	WOV 1130 1000 New York, N. Y.	WRUF 830 Gainesville, Fla.	5000	College Station, Tex.
	wow 590 5000 Omaha, Neb.	WRVA 1110 Richmond, Va.	5000	WTAX 1210 100 Springfield, Ill.
	WOWO 1160 10800	WSAI 1330	1000	WTBO 880 250 Cumberland, Md.
	Fort Wayne, Ind. WPAD 1420 100	Cincinnati, Ohio WSAJ 1310	100	WTCN 1250 1000
	Paducah, Ky. WPAR 1420 100	Grove City, Pa. WSAN 1448	500	Minneapolis, Minn. WTEL 1310 100
	Parkersburg, W. Vs. WPAX 1210 100	Allentown, Pa. WSAR 1450	1000	Philadelphia, Pa. WTFI 1450 500
	Thomasville, Ga.	Fall River, Mass. WSAU 1370	100	Athens, Ga. WTHT 1200 100
	WPAY 1370 100 Portsmouth, Ohio	Wausau, Wis.		Hartford, Conn.
	WPEN 920 250 Philadelphia, Pa.	WSAY 1210 Rochester, N. Y.	100	WTIC 1040 50000 Hartford, Conn.
	WPG 1100 5000	WSAZ 1190 Huntington, W. V	1000 'a.	WTJS 1310 100 Jackson, Tenn
	Atlantic City, N. J. WPHR 880 500	WSB 740	50000	WTMJ 620 1000
-	Petersburg, Va. WPRA 1370 100	Atlanta, Ga. WSBC 1210	190	Milwaukee, Wis. WTMV 1500 100
	Mayaguez, P. R.	Chicago, Ill. WSBT 1360	500	East St. Louis, III.
		South Bend, Ind. WSFA 1410	500	
		Mongtomery, Ala.		

			7	-	
	WTNJ 1280 Trenton, N. J.	500	XECW 1310 10 Mexico City, D. F.)	XEPN 730 100000 Piedras Negras, Coah.
	WTOC 1260 1	000	XECZ 1370 100		XERA 840 350000
	Savannah, Ga. WTRC 1310		San Luis Potosi, S.L.P. XED 1160 2500		Villa Acuna, Coah. XES 990 250
	WTRC 1310 Elkhart, Ind.	100	XED 1160 2500 Guadalajara, Jal.		XES 990 250 Tampico, Tams.
	WVFW 1400	500	XEDA 1220 200		XET 690 500
	Brooklyn, N. Y. WWAE 1200	100	Gra. Anaya; D. F. XEDW 1150 20		Monterrey, N. L. XETB 1310 125
	Hammond, Ind.	100	XEDW 1150 20 Minatitlan, Ver.	'	Torreon, Coah.
	WWJ 920 1	000	XEE 1210 50		XETF 1220 30
	Detroit, Mich. WWL \$50 10	000	Durango, Dgo. XEF 1450 100		Veracruz, Ver. XETH 1210 100
	New Orleans, La.		Juarez, Chih.		XETH 1210 100 Puebla, Pue.
		000	XEFA 1180 500		XEU 1010 250
	Asheville, N. C. WWRL 1500	100	Tacuba, D. F. XEFB 870 200		Veracruz, Ver. XEW 890 50000
	Woodside, N. Y.		Monterrey, N. L.		Mexico City, D. F
		100	XEFC 550 250		XEX 1310 125
	Pittsburgh, Pa. WWVA 1160 5	000	Merida, Yuc. XEFE 1340 250		Monterrey, N. L. XEXB 1270 50
	Wheeling, W. Va.		Laredo, Tams.		Jalapa, Ver.
	WXYZ 1240 1 Detroit, Mich.	000	XEFI 1440 250 Chibushua Chib	1	XEXC 810 350
		200	Chihuahua, Chih. XEFJ 1230 100		Aguascalientes, Ags. XEXD 1340 350
	Mexicali, B. C.		Monterrey, N. L.		Jalapa, Ver.
		250	XEFO 940 5000	_	XEXH 1250 250 San Luis Potosi, S.I.P.
	Tijuana, L. C. XEAD 1060	125	Mexico City, D. F. XEFV 1210 100		XEXM 610 500
	Guadalajara, Jai		Juarez, Chih.		Mexico City, D. F.
	XEAF 990 . Nogales, Son.	250	XEFW 1310 250 Tampico, Tams.		XEXS 1000 100 Portable in Mexico
	XEAG 1310	10	XEH 720 250		XEYO 940 500
	Cordoba, Ver.		Monterrey, N. L.		Mexico City, D. F. XEZ 630 500
	XEAL 660 11 Mexico City, D. F.	000	XEI 1370 125 Morelia, Mich.		XEZ 630 500 Merida, Yuc.
	XEAM 750	25	XEJ 1020 1000	1	
	Matamoros, Tams. XEAO 560	250	Juarez, Chih. XEJP 1130 100	-	
	Mexicali, B. C.		Mexico City, D. F.		
		000	XEK 990 100		
	Rosarito, L. C. XEAS 1160	50	Mexico City, D. F. XEKL 1240 500		
	Saltillo, Coah.		Leon, Guan.		
	XEAT 1210 2 Parral, Chih.	250	XEL 780 1000		
	XEAW 960 500	00	Mexico City, D. F. XELA 1240 50		
	Reynosa, Tams.		Saltillo, Coah.		
	XEB 1030 100 Mexico City, D. F.	100	XELO 580 50000 Piedras Negras, Coah.		
	XEBA 1.080	20	XELZ 1370 100		
	Guzman, Jal. XEBC 730 50	00	Mexico City, D. F.		
	Agua Caliente, L. C.		XEMG 1060 100 Atzeapotzaleo, D. F.		
,	XEBG 820 10	00	XEMO 860 5000	0.000	
	Tijuana, B. Cfa. XEBH 930 5	00	Tijuana, L. C. XEMX 1280 100		
1	Hermosillo. Sonora		Mexico City, D. F.		
	XEBJ 1160 Merida, Yuc.	20	XENC 860 50		
,	XEBK 1000 1	00	Mexico City, D. F. XENT 910 150000		
	Nuevo Laredo, Tams.	_	Nuevo Laredo, Tams.		
	XEBX 640 2 Saltillo, Coah.	50	XEOK 760 2500 Tijuana, L. C.		
,	XEBZ 1160 1	oó	XEOX 640 500		
	Mexico City, D. F.		Saltillo, Coah.		
	KEC 1150 1 Fijuana, L. C.	00	XEP 1160 500 Juarez, Chih.		
		L			

	Eastern Time 00 P. M. P. P. W2XAF. Sch tdy. 9.530 1 1 W2XE. Wayne, 6.120 1 1 W2XE. Wayne, 11.830 1 1 1 W2XE. Wayne, 11.630 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
0.00 Weekdays	9.590
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. 15.210 6.100	h, 6.140
9.100 <td>., 15.210</td>	., 15.210
Cy., 7.380	cy., 6.100
y. 5.980	y., 7.380
. 6.672	Cy., 5.980
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Caracas, 6.375	Caracas, 6.165
RMO, Marc'bo,5.850	RC, Caracas, 6.375
IRV. Valencia. 6.520	YV5RMO, Marc'bo,5.850
v4. Pontolse, 11.720	YV6RV, Valencia, 6.520
	TPA4, Pontolse, 11.720

night-time area and the receiver in daylight, so tuners should try for Europeans in this band in the early evening and for Australians near dawn. Below 10 megacycles the difficulty in tuning increases; here the path of the transmission should be as nearly as possible completely in daylight. It has been noted that shortwave reception follows certain definite trends. Stations between 5 and 7 megacycles favor darkness between the transmitter and the receiver. Transmitters working between about 8 and 10 megacycles are best when the station is in a

At night tune for South America between 5 and 10 megs. Europeans are good in the early evening and some of the higher powered Europeans are good all night. In the early morning tune for Australia and Asia between 6 and 10 megs. During the daytime tune for Europe, Africa and South America below 10 megacycles.

Eastern Time P. M. HJ1ABG, Bar'q'lla, 9.580 12:15	12:30 12:45 13:00 13:15 14:00 14:15 14:30 14:45 15:00 15:15 15:30 15:45 16:30 16:45 16:30 16:45 17:30 17:45 18:30 17:45 18:30 19:15 19:30	20:15 20:30 20:45 21:00 21:15 21:30 21:45 22:00 22:15 22:30
HJ1ABJ, S'ta M'ta, 6.025		
HJ2ABD, Bucar'ga, 5.980		
HJ3ABF, Bogota, 6.170		
HJ3ABH, Bogota, 6.012	Sunday	
HJ3ABH, Bogota, 6.012		Weekdays
HJ4ABA, Medellin, 11.720		-
HJ4ABD, Medeilin, 5.760		
HJ4ABE, Medellin, 5.930		
HJ4ABP, Medellin, 6.135		Weekdavs
HJ5ABD, Call, 6.490	1	Su
HP5B, Panama Cy., 6.030		
HP5J, Panama Cy., 9.590		
HRN, Tegucigalpa, 5.875		-
I2RO, Rome, 9.635	Monday, Wednesday, Friday	iday
I2RO, Rome, 11.810		
OAX4D, Lima, 5.780		Wednesday, Saturday
OAX4G, Lima, 6.230		
ORK, Brussels, 10.330		
Prado, Riobamba, 6.620		Thursday
PRF5, Rio de Jan., 9.500		
RAN, Moscow, 9.530		
TGWA, Gtmla. Cy., 6.000	Wkds.	Weekdays
TG1X, Gtmla. Cy., 9.450	Wkds.	
TG2X, Gtmla. Cy., 5.940		
TIEP, San Jose, 6.710		
TIGPH, San Jose, 5.820		
TIPG, San Jose, 6.385	Weekdays	
TIRCC, San Jose, 6.550	Daily Daily Su.	u. Th.
TI5HH, SanRamon, 5.520		
TI8WS, Punt'rnas, 7.550		
VK3LR, Melb'rne, 9.580		
W1XAL, Boston, 6.040	Sunday M. Tu. Th	
W1XAL, Boston, 11.790		
W1XK, Millis, 9.570		-
W2XAD, Sch'tdy, 15.330		

HJIABB, Bar'q'lla, 9.560	HJIABB. Bar'q'lla, 9.560	HIZ. Truillo, 6.315	HIX, Trujillo, 6.130	H1H, San Fedro, 0.51 ⁺		HC2BI, Guvanull, 6.650	HC2FT Guvaouil. 4.600	HCJB, Quito, 8.900	HBP, Geneva, 7.797	HBL, Geneva, 9.595	GSP, Daventry, 15.310	GSO, Daventry, 15.180	GSF, Daventry, 15,140	GSD, Daventry, 11.750	GSC, Daventry, 9.580	GSB, Daventry, 9.510	GSA, Daventry, 6.050	HAT4, Budapest, 9.125	EAQ, Madrid, 9.862 Saturday	DJN, Berlin, 9.540	DJD, Berlin, 11.770	DJB, Berlin, 15.200	DJA, Berlin, 9.560	CT1AA, Lisbon, 9.650	CRCX, Toronto, 6.090	CO9JQ, Camaguey, 8.665	COCO, Havana, 6.010	COCH, Havana, 9.428	COCD, Havana, 6.130	COCD, Havana, 6.130	CJRX, Winnipeg, 11.720	CJRX, Winnipeg, 11.720	CJRO, Winnipeg, 6.150	CJRO, Winnipeg, 6.150	CFCX, Montreal, 6.005	CEC, Santiago, 10.670	P. M. THE P. M. THE 12:00 12:16 12:30 13:15 13:30 13:45 14:30 14:15 14:30
		WEds.			Sunday	Sunday			Sa.									Sunday	Dally					Tuesday, Thursday, Saturday					Sur	Weekdays		Sunday		Sunday			14:45 15:00 15:15 15:30 15:45 16:00 16:15 16:30 16:45 17:00 17:15 17:30 17:45 18:00 18:15 18:30 18:45 19:00 19:15
Weekdave				Theday Friday	Weekdays	Tuesday	W., Sa.	Daily except Monday																					Sunday		Weekdays		weekuays				19:30 19:45 20:00 20:15 20:30 20:45 21:40 21:45 22:00 22:15 22:00 22:15 22:30 22:45 23:45 23:30

W9XF, Chicago, 6.100	W8XK, Pittsbg., 21.540	W2XE, Wayne, 21.520	W2XAD, Sch'tdy, 15.330	W1XK, Millis, 9.570	VPD, Suva, 13.075	VK3ME, Meid lie, 9.510	WEAVE Malbine 0 510	VK3LR. Melb'ne. 9.580	VK2ME, Sydney, 9.585	TPA4, 11.720, Paris	TPA3, Paris, 11.880	TPA2, Paris, 15.250	RV15, Khabarovsk, 4.273	RNE, Moscow, 12.000	RNE, Moscow, 12.000	RKI, Moscow, 15.090	PHI, Hliversum, 11.725	JVN, Nazaki, 10.660	JVM, Nazaki, 10.740	HVJ, Vatican City, 15.120	HAS3, Budapest, 15.370	GSP, Daventry, 15.310	GSO, Daventry, 15.180	GSH, Daventry, 21.470	GSG, Daventry, 17.790	GSF, Daventry, 15.140	GSD, Daventry, 11.750	GSB, Daventry, 9.510	DJQ, Berlin, 15.280	DJN, Berlin, 9.540	DJE, Berlin, 17.760	DJD, Berlin, 11.770	DJB, Berlin, 15.200	DJA, Berlin, 9.560	CFCX, Montreal, 6.005	
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Central Time P. M.	Central Time P. M.	Central Time P. M.	Central Time A. M.	from p.m. hours. Thus, 18:00 is 6 p.m. and 23:00 is 11:00 p. the lines below and paste them over the EST lines. The 09:00 and 21:00.
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16:00	16:00	16:00	04:00	m. The time lines used in charts are for Eastern Standard following strips are for Central Standard Time. For MST, st
16:15	16:15	16:15	04:15	Cen c
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16:45	16:45	16:45	04:45	used in charts are for Eastern St: e for Central Standard Time. For
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18:45	18:45	18:45	06:30	r No
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20:15	20:15	20:15	08:15	10 10
20:30	20:30	20:30	08:30	: 00
20:45	20:45	20:45	08:45	10
21:00	21:00	21:00	09:00	30 p.m. The time lines used in charts are for Eastern Standard. Those living in other zones may clip out The following strips are for Central Standard Time. For MST, start with 10:00 and 22:00. For PST with
21:15	21:15	21:15	09:15	r z.
21:30	21:30	21:30	09:30	0.00
21:45	21:45	21:45	09:45	F
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22:15	22:15	22:15	10:15	es may cli For PST
22:30	22:30	22:30	10:30	6

DON'T Miss THIS ...

DAILY

1321 EST, News, 2RO, 9635 kcs.
1630, News, W1NAL, 11790 (except Sunday)
1800, News, W1NAL, 11700 (except Sunday)
2230, News, DJC, 6020; DJD, 11770.
2330, News, TPA4, 11715

EVERY SATURDAY

0000, KDKA Dx Club, KDKA, 980; W8XK, 6140 1400, Metropolitan Opera, W2XAD, 15330; W2XAF;

9530: W3XAL, 17780. 2200, American DXers' Program, HJ1ABP, 9600

2300, Northern Messenger, CJRO, 6150; CJRX, 11720

EVERY SUNDAY

0000, Far North Broadcasts, KDKA, 980; W8XK, 6140

EVERY MONDAY

1930, Modern Radio Course, W1XAL, 6040 2045, Code Practice lessons, W1XAL, 6040

EVERY MONDAY, WEDNESDAY, FRIDAY

1800, American Hour, 2RO, 9635

Feb. 17 1125, Opera from RNE or RV96

Feb. 22

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1700, Geo. Washington Memorial, DJC, 6020; DJD, 11770.

1930, "Radiotelegraph Transmitters," W1XAL, 6040 Feb. 27

0930, Music Hall and Variety Entertainment, TPA2, 15243 Feb. 28

1400, Concert from Radio-Paris, TPA3, 11880

QUICK INDEX TO STATION DATA

North American Broadcast

By FrequenciesMar.	'37,	p.	67
By Locations Mar.	'37,	p.	76
By Calls	'37,	p.	82
Frequency Checks Mar.	'37,	p.	44
Owners' Addresses Oct.	'36,	р.	59
Time on the AirDec.	'36,	p.	59

Shortwaves

1.6 megs. to 6 megs	'37,	p.	53
6 megs. to 400 megs Mar.	'37,	p.	59
By Locations	'37,	p.	61
By Calls	'37,	р.	65

Foreign Broadcast

By	Frequencies	Dec.	'36, p. 43
	Locations		'36, p. 52
		Dec.	

Long Wave

	Frequencies									
By	Locations				5		.Apr.	'3 6,	p.	51
By	Calls					×.	. Apr.	'36,	р.	52

Miscellaneous

Roster of DX Clubs Mar. '36, p. 14 Columbia Network Stations Jan. '37, p. 47 Mutual Network Stations Feb. '37, p. 16 Canadian Network Stations Mar. '37, p. 49

THE INTERNATIONAL CLOCK

An accurate timepiece that tells not only your own time but the time in every other locality in the world as well. Attractively designed, in a brushed brass case, it makes a pleasing addition to the radio room.

Actual size 5¼ inches high and 4¼ inches wide. 40 hour movement. Winds and sets just like any ordinary clock.

Has a.m. and p.m. divided dial as well as 24-hour dial. Indicates minutes and quarter hours.

JUST WHAT DXERS NEED

Ohio residents add 3% sales tax.

Sent Postpaid \$4.95

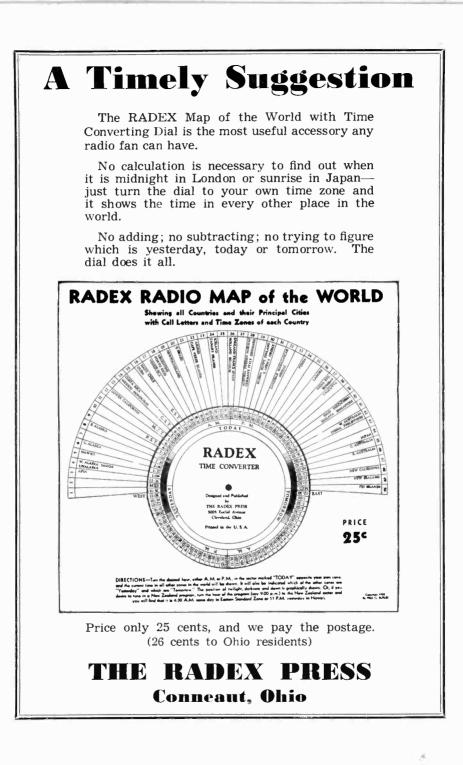
THE RADEX PRESS CONNEAUT, O.

INSURE YOUR RADIO ENJOYMENT SEND THIS BLANK TODAY

The Radex Press Conneaut, Ohio:

Enclosed find \$.....for which send me postpaid my choice of your offers as checked below:

Program "slates"	🗌 1 for 10c	🗋 2 for 15c	□ 4 for 25c
🗌 One Radio World	Map and Time Co	nverter	
□ One copy of the r	next RADEX		
🗌 One year's subscr	iption to RADEX,	10 issues	\$1.75
🗌 Two years	\$3.25 🔲 T	hree years	\$1.75
Beginner's Story ((If you live in Ohlo,	of Radio	s Tax. No tax on su	
Write Name Plainly		5-11-13	
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City and State 107	- <u> </u>		



1 sometimes think there should be a law requiring everyone to spend some of his spare time training for the future. I once thought all the cards were stacked against me. Now I'm making good money. Maybe my experience will show you the way to better pay too.



I THOUGHT RADIO WAS A PLAYTHING

But Now My Eyes Are Opened -- I'm Making Over \$30 a Week!

\$30 a week. Man allve, I used to think anyone making that much was just plain lucky.

A short time ago I was just barely getting by. It was the same old story—a little job; a salary as small as the job.

If you had told me that I would soon be making \$30 and more a week in my own Radio bushness— I'd thought you were crazy. To me, Radio was a plaything. Now I know it's a big business where specialized training pays rich rewards.

But I am getting ahead of my story—let me tell you how it all started. I was hard up because I had been kildling myself—that's all—not because I had to be. I thought a fellow either had to be lucky or have a string of college degrees to make good money.

One day I picked up a magazine and an ad attracted me because it seemed to fit my case. It said, "I will train you to start a spare time or full time Radio service business of your own WITHOUT CAPITAL."

"They're trying to kid somebody," I thought, "but I'll find out what it's all about."

I wrote in, and within a few days received a 64-page book, teiling about the opportunities in Radio: how I could prepare right at home in my spare time, and how they would show me how to start making money in my neighborhood selling and repairing Radio sets. It would have sounded too good to be true if it had not been backed up by nearly 100 letters from fellows who had taken their ourse and were very enthusiastic about 1t.

What has happened since seems almost like a dream. I started to take their course, and soon I was ready to start making money in my neighborhood—as much as \$5 and \$15 a week. It wasn't long until I had saved enough money to start a full time business of my own.

That business in a surprisingly short time grew to the point where I am clearing over \$30 a week. All this took place under the watchful guidance of my friends at the National Radio Institute. They also offered to train me for jobs in Broadcasting Stations, Radio Factories, Radio Jobbers and Dealers. Aviation Radio, Television, Short Wave Stations, Antomobile, Police Radio, Loud Speaker Systems, and other branches of Radio,

THINK IT OVER

Friend—you may not be as bad off as I was but think it over—are you satisfied? Are you making as much money as you need? Would you sign a contract to stay where you are for the next ten years at the same salary? Those are the thinks you have to think about—because no one is going to make it his business to push you ahead you must make it your own business.

TAKE MY TIP

Write for their book, "Rich Rewards in Radio." It won't cost you anything except a postage stamp. It shows you alot of things which I don't believe you know now about Radio—a lot of facts and figures on the opportunities in this new, fastgrowing field—where the jobs are, what they pay, how to get ready for them. Beginners as well as experienced men are making as much as 5500 to \$1,500 a year more as a result of N. R. I. Training. And at the same time they send the book, "Rich Rewards in Radio," they'll send you, without any cost or obligation. a Free Lesson, to prove that their training is easy, practical, fascinating. Their Gause and Remedy," is valuable. And when you read this lesson, you'll know why so many fellows have mastered N. R. I. Training and are now making good money as Radio Experts.

You are not placing yourself under any obligation by writing for this material as they will gladly send it to anyone who is ambitions and wants to get ahead. Mail the coupon in an envelope or paste it on a le posteard. Just address Mr. J. E. Smith, President, National Radio Institute, Dept. 7CO, Washington, D. C.

J. E. Smith, President,	MAIL THIS
National Radio Institute	
Dept. 7CO, Washington, D. C.	COUPON

Dear Mr. Smith:

Without obligation, send me the sample lesson and your book about spare time and full time Radio opportunities, and how I can train for them at home in spare time. (Piease print plain(y.)

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