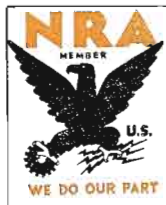


MID-SUMMER EDITION

# RADIO INDEX

THE ALL-WAVE RADIO MAGAZINE



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Complete Reallocation in Mexico  
New All-Wave World-Wide Antenna  
When Signals Cut Off and On  
A Radio Log for the Whole World  
The Beginner's Story of Radio

No. 80



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June 1, 1934



# RADIO INDEX

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Editor and Publisher



B. FRANCIS DASHIELL  
Technical Editor

PAGE TAYLOR  
Short Wave Editor

TENTH YEAR

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*With Colgate House Party, NBC Red, Saturdays, 9 p. m. EDST*

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# The MONTH'S CHANGES

## FREQUENCIES

590	XEPN	Piedras Negras, from 585
680	CMCQ	Havana, Cuba, from 767
720	XEFI	Chihuahua, from 1260
780	KFDY	Brookings, S. D., from 550
810	XFC	Aguascalientes, from 805
820	XETW	Mexico City, from 830
850	XETZ	Mexico City, from 1210
950	CMHD	Caibarien, Cuba, from 940
970	XEP	Mexico City, from 780
970	XES	Tampico, Tams., from 1020
1010	XEB	Mexico City, from 1030
1020	XEJ	Juarez, Chih., from 1015
1040	XEFG	Mexico City, from 1105
1080	XEAF	Nogales, Son., from 990
1100	XEWV	Veracruz, from 1095
1120	XEK	Mexico City, from 990
1160	XED	Guadalajara, from 1155
1180	XEFA	Mexico City, from 1250
1200	WMPC	Lapeer, Mich., from 1500
	XEU	Vera Cruz, from 1010
	XEY	Merida, Yuc., from 540
1210	XEA	Guadalajara, from 1000
	XEAB	Nuevo Laredo, from 1450
	XEC	Toluca, D. F., from 1000
	XEFJ	Monterrey, from 1000
	XEFV	Juarez, Chih., from 1400
	XETH	Puebla, Pue., from 1200
1280	XEBC	Agua Caliente, from 815
1300	CMCG	Havana, Cuba, from 1140
1310	XEFC	Merida, Yuc., from 1050
	XETB	Torreón, Coah., from 1380
	XEX	Monterrey, from 630
1320	KSO	Des Moines, from 1370
1340	XENT	Nuevo Laredo, from 1110
1370	XEFE	Nuevo Laredo, from 980
	XEL	Saltillo, Coah., from 1000
1420	XEAI	Mexico City, from 1090
	XEFB	Monterrey, from 1310
1500	WGAL	Lancaster, Pa., from 1310
	WJBK	Detroit, Mich., from 1370

## POWER

600	CFCO	Chatham, Ont., 50 to 100
610	XFX	Mexico City, 500 to 1000
630	KTRH	Houston, Tex., 500 to 250
650	KPCB	Seattle, Wash., 1000 to 250
670	WMAQ	Chicago, Ill., 5000 to 50000
860	XEMO	Tijuana, B. C., 1500 to 2500
930	WDBJ	Roanoke, Va., 250 to 500
980	XEAE	Tijuana, B. C., 800 to 250
1050	KNX	Hollywood, Cal., 25000 to 50000
1080	XEAF	Nogales, Son., 750 to 250
1260	WNBX	Springfield, Vt., 250 to 500
1280	XEBC	Agua Caliente, 2500 to 5000
1310	WLBC	Muncie, Ind., 100 to 50
1320	KGHF	Pueblo, Colo., 250 to 500

## NEW

640	XEOX	Saltillo, Coah.
740	XEPR	Mexico City, D. F.
750	XEMC	Merida, Yuc.
1200	XEMA	Tampico, Tams.
1200	XEWZ	Mexico City, D. F.
1210	WJIM	Lansing, Mich.
1210	XEE	Durango, Dgo.
1240	XFD	Orizaba, Ver.
1310	XFA	Aguascalientes, Ags.
1370	XEZZ	San Luis Potosi
1420	XEAZ	Leon, Guan.
1530	.....	Waterbury, Conn.
1530	.....	Kansas City, Mo.
1550	.....	Long Island City, N. Y.
1550	.....	Bakersfield, Calif.

## CALLS

1200	WBNO	New Orleans, La., from WBBX
1210	WJIM	Lansing, Mich., from WCBG
1410	WALA	Mobile, Ala., from WODX
1500	WRGA	Rome, Ga., from WFDV

## DELETED

1100	XEWW	Veracruz
1390	CMPN	Havana, Cuba
1430	WBAK	Harrisburg, Pa.

## OWNERS

840	CJOC	Taylor, Pearson & Carson Brdestg. Co. Ltd., Lethbridge, Alta.
930	CFAC	Taylor, Pearson & Carson Brdestg. Co. Ltd., Calgary, Alta.
980	XEAE	Adolfo Labastida, Jr., Ave. D542, Tijuana, B. C., Mex.
1060	WBAL	WBAL Broadcasting Co., Baltimore, Md.
1210	WJIM	Capital City Broadcasting Co., Lansing, Mich.
1240	XFD	Gobierno del Estado Veracruz, Orizaba, Ver., Mex.
1370	WHBD	Veebee Corp., Mount Orab, Ohio
1410	WALA	Pape Broadcasting Corp., Mobile, Ala.
1500	WDNC	Durham Radio Corp., Washington-Duke Hotel, Durham, N. C.
1500	WHEF	Attala Broadcasting Corp., Kosciusko, Miss.

## Summer DX Programs

550	KFYR	Bismarck, N. D., Second Tuesday morning of each month, 1:00-2:00 EST
560	XEAO	Mexicali, B. C., Mex., Saturday mornings, 4:00-5:00 EST
730	CMK	Havana, Cuba, Friday evenings, 11:00-midnight
780	CHWK	Chilliwack, B. C., Second morning each month, 2:30-4:00 EST
925	CMCD	Havana, Cuba, Sunday mornings, midnight-3:00 EST
1030	CFCN	Calgary, Alta., Friday mornings, midnight-2:00 EST
1100	CMCU	Havana, Cuba, First and last Sunday mornings, 3:00-5:00 EST
1110	KSOO	Sioux Falls, S. Dak., Monday mornings, 12:30-1:00 EST
1140	CMBW	Havana, Cuba, Sunday mornings, midnight-1:00 EST
1160	XED	Guadalajara, Jal., Mex., Every 24th morning, 2:00-5:00 EST
1200	WWAE	Hammond, Ind., First Saturday night each month, 1:00-2:00 EST
1210	CKBI	Prince Albert, Sask., Last Saturday night each month, 2:30-4:30 EST
	WGNV	Chester, Orange Co., N. Y., Third Monday morning, 12:30-1:00 EST
1250	WCAL	Northfield, Minn., First Wednesday morning each month 4:30-5:00 EST
1260	KOIL	Council Bluffs, Iowa, Friday mornings, 1:00-2:00 EST
	WTOC	Savannah, Ga., First Sunday morning 1:00-2:00
1310	CFJC	Kamloops, B. C., Intermittently Sunday mornings, 3:00-5:00 EST
	KIT	Yakima, Wash., Mornings 3:00-4:00 EST
1360	KGEE	Long Beach, Calif., Sunday mornings, 3:00-4:00 EST
	WGES	Chicago, Ill., Saturday and Sunday nights, midnight-3:00 EST
1370	KUJ	Walla Walla, Wash., First Monday morning, 3:45-4:00 EST
	WHBQ	Memphis, Tenn., Morning 15th each month, 3:00-4:00 EST
	WIBM	Jackson, Mich., Each Sunday morning except first Sunday, 1:00-3:00 EST
1420	WSPA	Spartanburg, S. C., Morning of 22nd of each month 4:00-5:00 EST
1430	WBNS	Columbus, Ohio, Tuesday mornings, 4:00-5:00 EST
1500	KPJM	Prescott, Ariz., Sunday mornings, 2:00-3:00 EST

# The BEGINNERS' STORY of RADIO

## PART NINE

### The Complete T.R.F. Receiver

• • • By B. FRANCIS DASHIELL

THE preceding eight chapters have been devoted to a study of the essentials of radio, and we have discovered how a number of electrical devices perform important duties in our radio sets. The underlying principles of these parts have been explained, while the standard symbols used in all schematic diagrams of radio circuits have been illustrated. At this time, therefore, we should be prepared to recognize these symbols when used in the description of radio circuits. Let us, then, assemble the different symbols, with which we are now familiar, in a schematic radio-circuit diagram, and proceed with the construction of a complete tuned radio-frequency receiver.

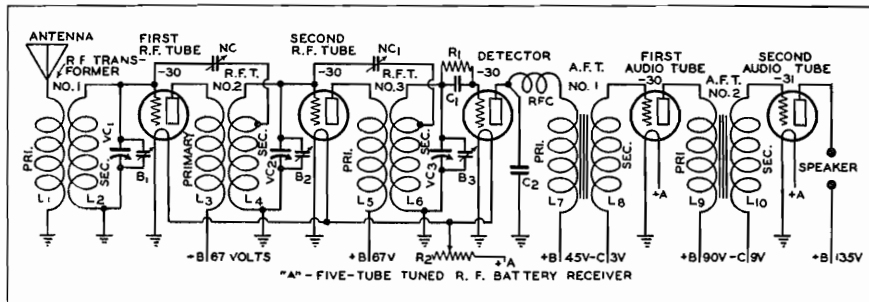
We find, in Part Three, illustrations G and H, a radio-frequency transformer; in Part Four, at H, a variable condenser; in Part Five, at D, the explanation of how a r.f. transformer is tuned by a variable condenser; also, at E, how several of these tuned units can be assembled in r.f. stages so as to form a tuned radio-frequency amplification circuit;

in Part Six, the description of the actions of radio tubes; in Part Seven, at F, a typical detector circuit; and, in Part Eight, the principles of audio amplification, with a standard circuit diagram illustrated at C.

### The Complete Diagram

We are ready, now, to take the tuned radio-frequency circuit (E), shown in Part Five, and add to it the detector (F) given in Part Seven. Then, to the latter, we will connect the audio-frequency circuit (C), of Part Eight. As a result of the combination of these independent circuits, we will have a complete five-tube tuned radio-frequency receiver of good selectivity and sensitivity. *Selectivity* is the degree to which a receiver is able to select and separate radio signals of different frequencies; *sensitivity* should not be confused with selectivity, for a receiver may have one without the other. Sensitivity is the distance-getting ability of a set and the degree of its responsiveness to extremely weak signals.

So, after we have assembled the three independent, elementary cir-



cuits into one unit, we find the result illustrated at A. At the left we see the primary ( $L_1$ ) of the *first* radio-frequency (No. 1) transformer connected between the antenna and the ground. Its secondary ( $L_2$ ) is tuned to resonance by the variable condenser ( $VC_1$ ). The upper, or high potential, end of this coil feeds an induced alternating current of radio frequency to the control-grid of the *first* r.f. tube; the lower, or low potential, end of the coil is grounded to the chassis. The plate of the first r.f. tube connects to the primary ( $L_3$ ) of the *second* radio-frequency transformer (No. 2), and its circuit then continues to a source of positive potential, such as a "B" battery. About 67 volts is the proper potential for this plate in an elementary circuit of this type.

#### The R. F. Circuit

The primary ( $L_3$ ) is coupled inductively to the secondary ( $L_4$ ) which is tuned by a second variable condenser ( $VC_2$ ). The upper end of the secondary feeds to the control-grid of the *second* radio-frequency tube, just as  $L_2$  fed the grid of the first r.f. tube. As before, the lower end of the secondary is grounded. The plate of the second r.f. tube connects to the primary ( $L_5$ ) of the *third* radio-frequency transformer (No. 3), and then continues to a positive "B" voltage. The coil ( $L_5$ ) is coupled inductively to its secondary ( $L_6$ ).

And the secondary ( $L_6$ ), similar to the secondaries  $L_2$  and  $L_4$ , is tuned by a third condenser ( $VC_3$ ). And it also feeds the amplified r.f. potential to the control-grid of a third tube, but which is not another r.f. amplifying tube. This is the detector tube, and a small grid-condenser ( $C_1$ ) is placed in series between  $L_6$  and the grid. Then it is shunted by a high-resistance grid-leak resistor ( $R_1$ ). The lower end of the detector grid-coil ( $L_6$ ) also is grounded, but in some cases, particularly if the detector is regenerative, the set will work better if the lower end is connected to the positive terminal of the "A" battery.

At this point we take leave of the radio-frequency amplifying portion of the assembled radio circuit. The greatly amplified r.f. signal from the antenna is now turned over by the secondary ( $L_6$ ) of the last of the three radio-frequency transformers to the input grid of the detector for detection and rectification. Then, after this effect has been accomplished, the detected signal must be further amplified for audio purposes.

#### The A. F. Circuit

If we follow the circuit given in A we can trace the detected signal as it passes from the plate of the detector tube. Its a.f. component enters the r.f. choke coil (RFC) and then goes into the primary ( $L_7$ ) of the *first* audio-frequency transformer (No. 1); the r.f. component is turned back by the reactance of the choke, and is passed readily through the bypass condenser ( $C_2$ ) into the neutral part of the circuit. After emerging from the primary ( $L_7$ ) this circuit continues to a source of positive potential ("B" battery), which, since the detector plate is involved, seldom is more than 45 volts.

Now, as we know, the secondary of the first a.f. transformer ( $L_8$ ) feeds its output to the grid of the *first* audio tube. But the lower end of this coil is not grounded; it must be connected to a source of negative electricity, such as a "C" battery of -3 to -6 volts. The pulsating-current output from the plate of the first audio tube (see Part Eight) controls the inductive operation of the primary ( $L_9$ ) of the *second* a.f. transformer, the lower end of which connects to a positive source of "B" voltage. The amplified potential in the secondary ( $L_{10}$ ) feeds the grid of the *second* or *output* audio power tube. The lower end of the secondary ( $L_{10}$ ) also connects to a negative "C" battery, but of greater negative potential.

The output from the plate of the audio power tube feeds directly into the loud speaker, or the primary of an *output transformer*. This plate

must be operated with a higher potential than the plates of any of the preceding tubes. There are several variations of audio amplification, as was explained in Part Eight, and the push-pull circuit (D), shown in Part Eight, may be substituted for the last audio tube in our completed assembly.

The three variable condensers used for tuning can be placed on a single shaft in a gang unit, so the three secondaries ( $L_3$ ,  $L_4$  and  $L_6$ ) will be tuned simultaneously. And, in order to offset slight mechanical inequalities in the condensers or windings of the coils, the tiny trimmer condensers ( $B_1$ ,  $B_2$  and  $B_3$ ) are used to equalize the resonance of the three r.f. stages.

### Building the Receiver

For those who may wish actually to construct this tuned radio-frequency receiver, the following specifications are given: The three r.f. transformers are wound on card, fiber or bakelite tubes that are about two inches in diameter and three inches long. Use double cotton covered copper wire, No. 26, for this purpose. The primary will have 12 turns, and the secondary 65 turns, both wound evenly and in the same direction. A space of about  $\frac{1}{8}$  of an inch is left between the ending of the primary winding and the beginning of the secondary winding. Illustration G, in Part Three, shows the arrangement of a radio-frequency transformer. Remember that all the transformers must be exact duplicates.

The secondaries are tuned simultaneously by a three-section, variable gang-condenser with each unit having similar capacities of .00035 mfd (350 mmfds). The small trimmer condensers may have capacities of about 50 mmfds. The two radio-frequency tubes, the detector and the first audio tubes, are of the -30 type, which uses two volts for the filament and draws a minimum of current. The negative terminals of the three filaments are grounded; the other three are brought together and connected to the positive terminal of the "A" battery through a series 20-ohm rheostat

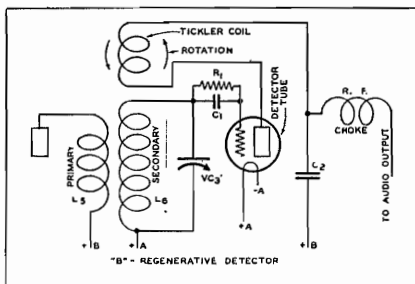
( $R_2$ ) used for the control of volume.

The resistance of the grid leak ( $R_1$ ) is from 2 to 4 megohms; the grid condenser ( $C_1$ ) has a capacity of .00025 mfd (250 mmfds); the bypass condenser ( $C_2$ ) has a capacity of .001 mfd (1000 mmfds); the radio frequency choke coil (RFC), between the detector plate and the first audio transformer, has a value of approximately 40 millihenrys; both of the audio transformers should have turn ratios of three to one.

### A Regenerative Detector

A *regenerative detector* and its subsequent amplification effects will add remarkably to the sensitivity of any t.r.f. receiver. Regeneration gives tremendous increases in the sensitivity of a detector. This means greater distance, and the actual reception of very weak signals. The regenerative detector requires a *three-circuit tuner*. The detector shown in the assembled circuit at A, utilizes a *two-circuit tuner* (the r.f. transformer). But we can add a third coil, and this will provide regenerative action.

This third coil, in a three-circuit tuner of a regenerative detector is called the *tickler coil*. Its position is indicated in illustration B. It has about 20 turns of wire, No. 26, wound on a short length of tube that will fit *within* the upper end of the secondary coil ( $L_6$ ). A shaft must be provided so the tickler can be rotated back and forth. The amount of regeneration obtained depends upon the position of the tickler, and we are thus enabled to regulate the amount of inductive *feed-back* returned by the de-



tector plate circuit into its own grid circuit.

### The Tickler Coil

The action of the tickler is simple. Look at illustration B. When a signal is induced in the secondary ( $L_6$ ) by the primary ( $L_5$ ), the grid of the detector tube is given an alternating-current charge. The detector plate current immediately rises and falls in pulsating waves (as we learned in Parts Six and Seven). These waves have the same frequency as the alternations impressed upon the grid of the tube by the grid coil ( $L_6$ ). Then, since the entire plate current is flowing also through the tickler, which is placed in series, a powerful magnetic field is created around the tickler. The tickler, then, induces another alternating current in the secondary ( $L_6$ ) in addition to the current originally induced by the primary ( $L_5$ ). In effect, this action is the same as if the secondary had two primary coils—one at either end. The additional induced current created by the magnetic field of the tickler seems to appear simultaneously with the original current and causes no interference. However, such feed-back action, which is re-impressed upon the grid of the detector and results in a re-amplified plate current, tends indefinitely to increase. The detector will break into oscillation with annoying howls and whistles, but the rotation of the tickler controls the point of oscillation, and a careful operator can prevent regenerative noises.

A tickler may be added to the typical detector circuit (F) in Part Seven. The coils of that circuit ( $L_1$  and  $L_2$ ), together with a tickler, will make the three-circuit tuner shown in B of this chapter. Regenerative receivers are not always held in high esteem because of their tendency to cause noises in nearby receivers by re-radiation. However, with some modifications, they are widely used for amateur and short wave reception. A small, well-designed tuned radio-frequency receiver with a regenerative detector will be hard to beat

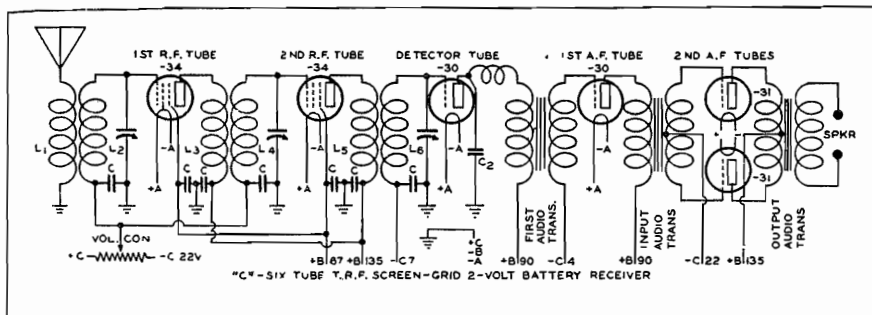
for distant reception of weak signals by means of phones. The several critical adjustments, however, have militated against tuned radio-frequency receivers using variable tickler control of regeneration. The regenerative detector, however, is one of the fundamental and elementary types.

### Neutralizing the Circuit

*Neutralization* will eliminate unstable receiver operation with oscillation noises. This condition is due to the capacity that exists between the grid and the plate of a three-electrode (triode) tube. These capacities must be balanced out by means of *neutralizing condensers*. Examine the r.f. circuit of the assembled receiver shown in A. Count down from the tops of the secondary coils  $L_4$  and  $L_6$  exactly 15 turns. Attach short lengths of wire and run the two ends to two tiny neutralizing condensers, each of 25 mmfd. capacity. Then connect the opposite ends of the condensers to the control grids of the first and second r.f. tubes, respectively. These condensers are shown at NC and NC<sub>1</sub> in A.

Neutralize the circuit as follows: Remove one filament wire from the socket of the first r.f. tube (with the unlighted tube remaining in the socket). Then, with all tubes in place and lighted, tune in a station on about 1000 kilocycles. Adjust the screw in the first neutralizing condenser (NC) with an insulated tool until the signal can no longer be heard. The adjustment will be critical. Replace the filament wire to its socket terminal, and the signal will again come in at normal strength. Next remove one filament lead from the socket of the second r.f. tube. Adjust the screw of the second neutralizing condenser (NC<sub>1</sub>) until the signal cannot be heard. Replace the filament wire, and the signal will again come in. The set is now properly neutralized. However, other adjustments may be required when signals are being received on 600 and 1500 kilocycles.





### A Screen-Grid T.R.F. Receiver

Neutralization is not necessary on sets that use screen-grid tubes. And, of course, it is not always used on sets that use the three-electrode tubes. In illustration C we observe that the circuit diagram of our assembled t.r.f. receiver may be so altered as to use pentode tubes in the r.f. stages, and push-pull power amplification in the audio output stage. The set will be more sensitive and selective; neutralization is not needed, and more power and better tone can be obtained from the loud speaker.

The circuit shown at C is essentially the same as that shown at A, except that more bypass condensers (C) are added (all of them being .01 mfd. capacity) and neither grid leak nor grid condenser is used with the detector. Two type-34 two-volt tubes are used. They are super-control pentodes and are very effective. The detector and first audio tubes are type -30s, as before, but two -31s are used in the push-pull power stage. Volume control is obtained by varying the negative bias to the grids of the r.f. amplifier tubes. A suitable potentiometer is used for this purpose.

(In the September issue of RADEX we shall show how an oscillator tube and circuit, and also intermediate-frequency stages of amplification, can be added to our elementary circuit. The result, then, will be the super-heterodyne receiver.)

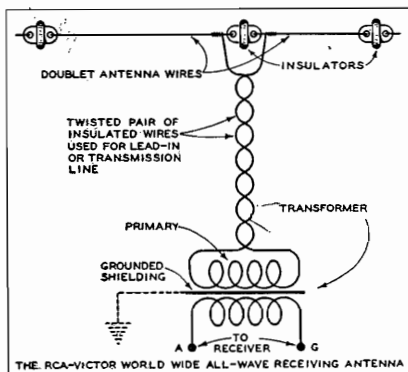
### New ALL-WAVE "WORLD WIDE Antenna"

IT HAS been known for a long time that there is an ideal length of antenna for every wave band. But, even if it were practicable to erect separate antennas for the broadcast, police, amateur and 49-meter, 31-meter, 25-meter, 19-meter and 16-meter bands, the problem of man-made static would remain. When the antenna is erected high in the air, remote from the sources of man-made static, a lead-in is needed to pick off the signals and bring them down to the receiver. This lead-in passes through the zone of electrical static impulses, and becomes the source of much of this type of annoying interference.

The RCA—Victor Company, in its experimental laboratories at Camden, N. J., after years of research conducted under severe electrical static conditions, has produced its new "World Wide Antenna." This remarkable system responds particularly well to the short waves, but is fully as efficient on the broadcast band.

#### Length Is Important

Experience has shown that, for short waves, antennas 29 feet and 100 feet in length are best to use. But the 29-foot antenna is best for all the wave lengths between 15 and 60 meters (the waves above 60 meters are not so critical to antenna length), while the 100-foot antenna is not so good on the 16- and 31-



meter bands. Proper choice of antenna length, then, will often decide the difference between satisfactory and unsatisfactory radio reception.

The "World Wide Antenna" consists of a doublet type of receiving antenna. A doublet, as shown in the illustration, is made of a single wire that is cut in the middle and joined by an insulator. RCA-Victor does not make these two halves equal in length, for the results of their long research indicate that the two portions of the doublet should be 29 feet and 16.6 feet in length. A doublet antenna has slight directional effects and should be pointed toward the direction from which most signals are expected, but for general use, it can be set in a line running northwest and southeast.

The new RCA antenna is excellent for reception on the commonly used short-wave bands, but is efficient on all other waves, such as the police, amateur, aircraft and broadcast bands. The wires furnished with the kit of parts are tinned at the proper points where connections should be made, and there can be no question of carelessness causing poor results through neglect to make the necessary measurements.

#### Special Parts are Vital

The lead-in from the antenna consists of a pair of twisted, insulated wires. They are quite similar to ordinary lamp cord. But this lead-

in has predetermined inductance and capacity effects, which have been calculated by the manufacturer. For these reasons the lead-in has a definite length in order to insure maximum transfer of radio energy from the antenna to the receiver. This lead-in must be used in the exact length furnished, and the remainder should be coiled behind the receiver if it is found to be longer than required.

When static impulses from nearby electrical appliances are picked up by the two twisted wires of the lead-in, the induced voltage in one wire will be canceled by the voltage in the other wire, both flowing in opposition to each other. Thus, this type of lead-in will eliminate its own surges of man-made static by the process of cancellation.

#### May Be Increased by Multiples

By using any number of multiples of the original length of lead-in furnished with the kit, it will be possible to locate the antenna high in the air and far removed from the sources of most man-made static. At the RCA laboratories an antenna 500 feet from the receiver responded perfectly to short waves! But, after three full lengths of lead-in have been used, the lead-in can be cut wherever desired. However, under these three full lengths, a decided detriment of efficiency is observed when less than the standard lengths are used. For instance, if  $2\frac{3}{4}$  lengths of lead-in are required, you must use three; if  $1\frac{1}{2}$ , use two; and if  $\frac{3}{4}$  of a length, use the full length.

At the lower end of the lead-in, adjacent to the receiver, a radio-frequency antenna-matching transformer is used. It is shielded, and the primary coil matches the inductance of the lead-in or transmission line. The secondary coil matches the impedance of the antenna coil of all present-day receivers. The result is a balanced system that works well because careful consideration has been given to all the variable fac-

*(Continued on page 42)*

# Thumb Nail SKETCHES

## *of the STARS*

**A**LBERT SPALDING was born in Chicago, and at the age of seven went abroad with his parents. He began the study of violin in Florence, Italy, continuing it on his return to America. His mother was a talented pianist, harpist, and singer; and his father, J. W. Spalding, sporting goods manufacturer, though not musically gifted, was equally in sympathy with his son's career.

After one season in America, the young violinist, still in his early twenties, received the remarkable opportunity to make a concert tour of Russia. Despite countless hectic experiences, Spalding appeared with outstanding success in the music centers of that country. Previous to this tour, he had made his European debut in Paris. At the age of 16 he had the honor of playing on the

occasion of Adelina Patti's last public appearance. He has played before audiences in practically every civilized nation on the globe.

During the war, Spalding enlisted as a private and served overseas in Italy. He received a commission as a ground officer in the aviation corps in 1917 and was subsequently decorated with the Cross of the Crown of Italy, the highest honor that can be bestowed on a foreigner. France decorated him with the Cross of the Chevalier of the Legion of Honor.

In the 20-odd years of Spalding's American recitals, he has established a tremendous following in all parts of the country and regularly makes almost one hundred performances a year. No other violinist has consistently played so often over a period of years. In New York alone, he has appeared more than one hundred times. His concert fees alone usually total close to a hundred thousand dollars a year.

America's foremost violinist is heard each Wednesday at 10:30 p. m. EDST, over a coast-to-coast Columbia network.

### The Birth of a Star

Gladys Swarthout was born on Christmas Day, 1904, in the town of Deep Water, Missouri, which she says has "a population just about large enough to fill one concert hall."

One of the most vivid impressions she retains from childhood is the arrival of a grand piano. Lessons followed but singing eventually outstripped piano and Gladys made her professional debut at the age of thirteen. One afternoon at a vaudeville matinee where she had gone against the wishes of her mother, she was summoned from the stage to answer the phone. Gladys cowered, expecting a terrible scolding.



*Albert Spalding*



*Gladys Swarthout*

But her fear and trembling were wasted, for she was invited to go to St. Joseph, Mo., that evening to substitute for her teacher, who was ill. The pay, fifty dollars, and her expenses seemed like a great deal to a girl of thirteen.

Encouraged by her success in St. Joseph, she pinned up her curls, and calmly announcing that she was nineteen, applied for the position of contralto soloist in a Kansas City church. The richness and maturity of her voice supported her statement, and she got the job.

While studying harmony, singing and theory at the Bush Conservatory in Chicago she got her first theatre engagements. They were with the Balaban and Katz Theatres and gave her practical stage experience. Her first important musical engagement came in 1923 when the directors of the Minneapolis Symphony Orchestra invited her to Minneapolis as soloist with that organization.

An audition was arranged with the Chicago Civic Opera Company and Gladys won a contract for the following season. The climax came four seasons ago when the Metropoli-

tan Opera opened its doors to her. She made her debut there as the blind mother, La Cieca, in Ponchielli's "Giaconda." In her first season she sang fifty-six performances, more than any other single artist that season. The most exciting event in her career came in 1931 when she was called upon to sing a role in "Norma" on two days' notice. There was time only for a piano rehearsal of the difficult duet which she had to sing with Rosa Ponselle, and then she went on in the Cleveland Public Auditorium before 12,000 people and received a tremendous ovation.

She had become the most famous boy-impersonator in the history of the Metropolitan—so much so that she heaves a sigh of relief every time she is allowed to wear really feminine clothes on the stage.

Gladys began singing on the air over NBC networks in 1932. She is enthusiastic about the radio because it reaches so many different kinds of people. Gladys is now heard in the Palmolive Beauty Box program each Tuesday at 10:00 p. m. EDST over an NBC (Red) network.

During the winter Miss Swarthout lives in New York. Her vacations she likes to spend abroad, especially in Italy. There she met her husband—in the opera house at Florence, for he, too, is a concert and opera singer. In private life she is Gladys Swarthout Chapman.

\* \* \* \*

One of the most delightful commercials ever offered a radio entertainer is that proposed to Johnny Marvin, Lonesome Singer of the Air. A tourist association wants him to spend the summer traveling about to various resorts, meanwhile visiting the microphone daily to sing and talk about the beauties of the territory. Johnny may take up the idea instead of his usual trip to his Thousand Island home.

\* \* \* \*

Sound effect, says Irene Rich, are the most fascinating part of radio to her. She received her first big

surprise during one of her first broadcasts when the script called for the sound of wolves running over snow. Irene turned and saw the serious-visaged sound effects technician producing the sounds by running his fingers through corn flakes in a tin cigarette box. A forest fire raging and a burning tree falling, she found, meant the cracking of cellophane in front of the microphone and the falling of a tiny twig held close to the mike.

\* \* \* \*

George Gershwin couldn't quite figure it out when a schoolboy approached him after three successive broadcasts and requested his autograph. When it happened the fourth time, Gershwin said: "Did you lose the other three, young man?" "No," said the youth, "I sold 'em for fifty cents apiece to the kids in Ma's music class."

\* \* \* \*

An actor friend several weeks ago inveigled the Men About Town trio into his new cabin monoplane for a trial spin. They were over the Alleghenies when the heating system went haywire and the temperature dropped clear out of sight. The trio was reduced to a duo for several hours after they landed, for the extreme cold caused Jack Parker, the tenor, to lose his voice completely. It returned to normal after an extended session before a steam radiator.

\* \* \* \*

Frank Black, who collects antiques in his spare time, says it's really the collector who pays and pays. Just as sure as he breaks the family bank to purchase a much coveted spool-legged table, he has to turn around and insure it against theft. At present he is paying premiums on close to a quarter of a million dollars insurance on a small but costly collection of antique treasures.

\* \* \* \*

In a recent poll of radio editors, Jack Benny was voted their favorite

comedian. Which reminds us that it was a newspaperman, a New York columnist, who gave the NBC headliner his start on the air. The writer invited Benny to appear on his broadcast as a guest star. Benny did and a sponsor listening in decided that he needed just such a personality for his program. He signed a contract with the comedian the next day.

\* \* \* \*

Each member of the Revelers quartette is a thorough musician. Any one of the four can take a sheet of music he has never seen before and sing it correctly at sight without ever having heard it played. Not one professional singer in a hundred has this ability.

\* \* \* \*

Lennie Hayton never goes to bed before dawn—he works on his arrangements from midnight until 2:00 a. m. and then tours the byways of Broadway. . . . Donald Novis, who has established himself as a film star, says he will stay in radio for at least six months instead of returning to the movies—simply because he likes radio.



*Mady Christians, a distinguished actress from the German stage, is now a permanent member of "The Big Show" on the Columbian Mondays at 9:30 p. m. EDST.*

# The Summer and the SHORT WAVES

••• By PAGE TAYLOR

**T**HIS edition of RADEX brings to a close another DX season, and there are more than a few shortwave fans who will not mourn its passing. Without a doubt the past twelve months have been the worst shortwave months ever experienced.

Just a year ago, this department promised good reception of the Australian stations during the summer, because the summer months are most favorable for Australian reception, but for some reason the stations failed to make the gain in reliability that was expected. Undaunted, however, we again venture the prophecy that good reception should be enjoyed from VX2ME, 3ME and 3LR, this prophecy being based on the fact that these stations have already begun to show considerable improvement in all sections of the country.

VK3LR, Melbourne, has moved up to 9580 kc/s. (31.29 meters) and works daily except Sunday, as early, sometimes, as 2:30 am, EST, until 6 or 6:30 am. Programs of the International Broadcasting Co. of London are featured. VK3LR can be addressed as follows: Research section, P. M. G. Department, 61 Little Collins St., Cl, Melbourne, Vic., Australia.

## A Letter from TGW

Another most interesting item, especially to old-timers who have written, fruitlessly, to Guatemalan stations for verifications, comes in the form of a letter from Mr. C. H. W. Nason, Director Technico de TGW. The letter follows:

"Some months ago I began receiving hot letters from U. S. listeners chaffing me for my failure to give confirmation of my signals. I now

have at hand a clipping from one of your issues, date unknown, where you have something to say in this matter under the heading "TGW Verifies." (Dec., 1933, page 29.)

"I am on the air nightly on 565 kc/s., having changed recently from 1130 kc/s. Early in February I gave an early morning program on 1130 and had some forty to fifty reports from the States, all of which were acknowledged. I hope shortly to be on the air on 5940 kc/s., in which event I will be anxious to receive reports from the USA.

"Had you troubled to listen in on the shortwaves you might have known that TGW was not amongst the sig-



*After presenting half a dozen programs each day for several years, Vera Eakin, staff pianist at WABC can still smile for the photographer man. If she had as many hours in the air as she has on the air, she would be the world's greatest aviatrix.*

nals and refrained from writing the article in question. I have turned over to TGX every report of his signals addressed to TGW through error. Phonetically, TGX is pronounced Tay Hay Eckis, and TGW is Tay Hay Doble-vay. There seems little reason for confusing the two."

We are not sure of the meaning of the phrase ". . . not amongst the signals," because in August, 1931, and again in August, 1933, TGW certainly was "amongst the signals," being reported by listeners in every part of North and Central America. Nevertheless, we are glad to learn that this station is now willing to confirm correct reports. We hope that Mr. Nason will receive many good letters from this country following the inauguration of his new station, and that these successful listeners will receive their Guatemalan verifications.

### The Stations of Colombia

According to information received from the Republic of Colombia, there are only seven shortwave stations in that country which broadcast programs regularly. Numerous stations have been heard here but in most cases they are amateurs who do not remain long on the air. Colombia has long been one of the most active shortwave countries and their "will-o'-the-wisp" stations afford considerable amusement in trying to get them properly identified and verified(!) before they leave the air for all time. Unfortunately, Colombia has an unfavorable reputation, due to the failure of nine-tenths of her stations to acknowledge letters.

The oldest station in Colombia is HJ1ABB. For a long time this station was known merely as "Barranquilla," then, after a period of silence, it returned to the air with the call sign HKD, a call which has been heard on all the continents with but 7½ watts power. When Colombia decided to give all her shortwave broadcasting stations an experimental status (as does the FRC in our

own country), the call was changed to HJ1ABB.

At the present time this popular station is well received in the United States and the quality of reception, as well as the quality of the musical programs, make HJ1ABB one of the best South American stations. English is used frequently and the slogan, "La Voz de Barranquilla," aids in identification. The studios are located in the proprietor's own building, Edificio Pellet, Plaza San Nicolás, but letters should be addressed to the owner, Sr. Elias J. Pellet B., Apartado 715, Barranquilla. HJ1ABB is on the air daily from 5 to 10 pm on 46.47 meters with 300 watts.

### The Other HJ's

A change in call letters cannot possibly affect reception, but when Sr. Uribe's station was known as HKF it was one of the best heard stations in this country. Now that the call sign has been changed to HJ3ABF, very inconsistent reception obtains. This station usually presents good musical programs, but the long and numerous dramatic presentations, in Spanish, of course, detract from the program value of this station as far as the North American listener is concerned.

HJ3ABF works on 48.5 meters with 50 watts power from noon to 2 pm and 7 to 11 pm daily; from 6 to 7 pm on Wednesdays and Saturdays, and English lessons are given on Mondays and Thursdays from 6:30 to 7 pm. HJ3ABF never answers reports, so readers may as well refrain from writing them. For those who wish to take a chance, however, letters can be addressed to Estacion HJ3ABF, Gustavo Uribe Th. y Rafal Moreno, Apartado Postal 317, Bogotá.

HJ5ABB, "La Voz del Valle," Cali, works on various wavelengths between 46 and 47.5 meters, from 7 to 10 pm on Tuesdays, Saturdays and Sundays. This station verifies only occasionally, so listeners should be particular that the station is prop-

erly identified before writing. HJ5ABB can be identified by the crow of a rooster.

HJ4ABB (formerly HKT), "La Voz de Caldas," is owned by Roberto Baena V., Apartado 157, Manizales, Colombia. Their programs are on the air (but heard infrequently) from 8 to 10 pm on Monday and Thursday on 41.5 meters. Mr. Baena always answers correct reports.

HJ4ABE, "Medellin Radio," is located in the Hotel Europa in Medellin, Colombia. It is not heard at present but the wavelength is believed to be about 50.6 meters. Reports are acknowledged.

Careful tuning between 8 and 11 pm near 40.5 meters will usually bring in HJ3ABD, "Colombia Broadcasting," a Bogota station owned by Alford Radio Laboratorios, Calle 16, numero 88-A. The chances of receiving a confirmation from this station are about as good as winning the Irish Sweepstakes.

Sr. Pompelio Sanchez C., Tunja, Colombia, advises us that he is the owner of two stations. One of these, HJ2ABA, is not now on the air. His other station is HJ2ABG, Cucuta, Norte de Santander, which works on 5975 kc/s. with 50 watts from 6 to 9 pm, EST, daily except Sunday. Some readers have reported an HJ2ABC in Cucuta, which may be this station. Sr. Sanchez says his identification signal is "en-re-mi-fa-do," which are notes of the scale, but whether he whistles them or plays them on a cymbalom, we do not know. Perhaps readers who have heard this signal can help.

#### From the Dominican

Several readers who have heard H11A report that the theme song is "Anchors Aweigh," an item which we are passing along, but which is not confirmed in a recent letter from Mr. Rafael Western, owner of the station. Mr. Western writes:

"My station is located in Santiago de los Caballeros, a city in the inland of the island which is the Do-

minican Republic. Its power is 7:5 watts, transmitting every day from noon to 1:30 pm and 7:30 to 9:30 pm, EST, and special programs every Sunday morning at 1 am for short-wave listeners. The frequency is 6.272 megs. or 47.8 meters. It was constructed by its owner. Our air trademark is "La Voz del Yaque." We usually have an exciting and varied program. Lots of dance music, featuring the Merangue, Bolero, Danzon, Criolla, Son, Rumba, and band concerts from Duarte Park by the Municipal Band."

Mr. W. A. Shane, Chief Engineer of Station VE9GW, advises us that his station transmits on 6.095 megs. with an antenna power of 500 watts on the following schedule: Monday, Tuesday, Wednesday, 2 to 11 pm; Thursday, 3 pm to midnight; Friday and Saturday, 7 am to midnight, and Sunday, 11:30 am to 8 pm, EST.

#### Re-Emphasising Secrecy

The information on airways stations contained in RADEX and the *DX Log of the World* was furnished by Mr. Paul Goldsborough, President of Aeronautical Radio, Inc., owners of the airways stations in this country. In sending the lists, Mr. Goldsborough requested that we bring to the attention of listeners the fact that messages from these stations are addressed communications and as such the message text (except Mayday calls), should not be divulged. "Mayday" is the phonetic spelling of the French words "m'aider," the call for help used by telephone stations just as SOS is used by code stations.

#### With the S. W. Radexers

C. R. Anderson, 1926 1st N. E., Mason City, Iowa, is one of the many readers who report VK3LR. "Very bad about not announcing calls," he writes. "I had to wait from 4 until 6:30 am for their letters. W8XAL announced the other evening that, to give interference-free reception from GSA, they would cease broadcasting from 6 to 8 pm to give GSA



a chance to come through, and would appreciate reports on this from listeners. I think it is a noble gesture on their part." (And so do we.) Mr. Anderson thinks that W1XAZ should not come on the air until VK2ME has signed off, and suggests that W3XAU might remain silent when the League of Nations station is on.

Paul Marsteller, 922 1/2 West 41st Drive, Los Angeles, Calif., says the reason for writing was that he had to tell someone how good his Philco 16X receiver is. His letter, in report form, continues, "JYK, 13.6 megs. and YJA, 9.862 megs., Japanese stations, have been heard after midnight, PST. I have recognized voice on five different waves. CJRX, Winnipeg, is heard between 5 and 7 pm, PST. XGW, 28.79 meters, calls London GDJ at 1:20 am, PST. XGW is in Shanghai, China. XAI is heard with good signal strength during the late afternoon and early evening on 9.600 megs. VK3LR, Melbourne, 9.580 megs (sure of this, as I heard the announcer give it), heard shortly after midnight and up to 2 am, PST. VUC, 6.110 megs., Calcutta (not positive of this one), heard between 6 and 6:30 am. PLE, 18.820 megs., Bandoeng, Java, a very powerful signal, in the late afternoons. PLV, 9.410, also in Bandoeng, is even better; 6:45 to 7 am, PST. Is heard at midnight on Monday, Wednesday and Friday calling Tokio. Most of these were received on a ten foot indoor length of copper wire. No ground was used in most cases. I have a three purpose Philco aerial that is peaked for the 49 meter band and it sure does work."

### News of the Japs

Some more Japanese information is contained in a letter from H. N. Walker, South Pine Road, Enoggera, Brisbane, Australia, who writes, "The Japanese have altered their stations somewhat and now the call J1AA is used by the 38 meter stations only. On 30.4 meters, testing phone with Berlin and other countries the call is JYS while on 21 meters, also on

phone with Berlin and VK2ME the call is JYK. I do not know the rest of the calls but I have written to JYS, the same location as J1AA, and later on I may be able to send more information. I also requested information on a Japanese on about 52 meters, a very good station, and another around 31 meters. I think the two latter stations are in Manchuria and I may receive a reply, as I wrote a seven page report."

"I have heard a station LSQ in Buenos Aires testing with a New York station," reports Robert L. Weber, West McHenry, Ill. "They announced their frequency as 19.5 megs. and promised to send QSL's to all who reported on their signals and modulation. Picked up K6XO testing again but don't know their location. This time they were playing Hawaiian music." K6XO is the experimental call sign for any of the telephone stations at Kahuku, Hawaii.



*Current events are presented to Columbia audiences in a new vein by James Thurber, Thursdays at 10:45 p. m. EDST. For several years Thurber has, in the pages of the "New Yorker," been renowned for his writings and his one-line-captioned sketches.*

Ansel E. Gridley, P. O. Box 1294, Sarasota, Fla., also reports LSQ, Hurlingham, Argentina, and adds that KNRA, on the schooner Seth Parker, wishes reports from listeners who are at least 1500 miles away from the station. Letters should be addressed to the NBC at 30 Rockefeller Plaza, New York City.

"Let me tell you what I have picked up on the shortwaves with a ten foot wire," requests L. N. Henry, 65 Pride Rd., Wilkensburg, Pa. "DJA, C, D, GSA, B, C, EAQ, 2RO, HJ1ABB and VE9JR are a few of my catches. I make it a habit to listen to GSB on Saturday and get the outline of their programs for the next week."

#### Failed to Tune Carefully

"I bought a Stewart-Warner model 301-A about four months ago, and at first had no luck with it, and gave up trying for about a month," advises Donald C. Hamilton, Jr., 5814 Murrayhill Place, Pittsburgh, Pa. "Last December I decided to try again, and began tuning more carefully, as has been advocated in RADEX. Now I have received a great many stations and am still getting more. My foreign stations are Daventry, Zeesen, EAQ, HIZ, HJ4ABB, HJ1ABB, L2RO, YV1BC and 3BC, PSK, VK2ME, etc. This may not be such a good record in comparison with some of those fine ones that other DX'ers get, but it is at least a proof that all discouraged shortwave listeners, such as I was, might have better success if they would take more care in tuning and in antenna construction."

"DGU, Nauen, Germany, 31.06 meters, telephone station, broadcasts fine music irregularly in the mornings," reports Clarence Sargent, 18 Clinton St., Dansville, N. Y. "DGU sends out a nice card to all who send them reports. LSX is rebroadcasting LR4 and wishes reports, which are acknowledged with a very worthwhile QSL card."

#### Bi-Lingual Announcements

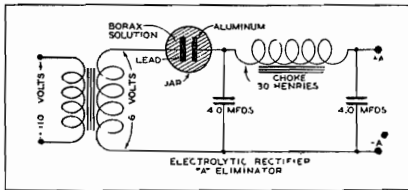
Charles Miller, 309 View Place, Covington, Ky., asks if it would not be possible to encourage foreign stations which are heard in this country to announce in English. The idea is a splendid one but it seems that we should also try to encourage our own stations to announce in Spanish for the benefit of the thousands of Spanish listeners in South America. Of the well-received foreign stations it is difficult to think of any, off hand, which do not announce in English, except Radio Coloniale at Pontoise, and even this station sometimes has news bulletins in our language. German stations announce in English, Spanish and German. PHI uses Dutch, Malay, French, English, Spanish, German and Portuguese. EAQ and CT1AA use English in addition to their own languages. All of the commercial broadcasting stations in South America use English at least once in a while. Truly enough, some of the small Colombian stations, which are really amateur stations, use only Spanish, but it is doubtful that some of these can afford the expense of an interpreter. Whenever it is possible for a station to do so, listeners in this country would appreciate announcements in English at least once in thirty minutes, and we are sure that if our own relay stations can find an extra moment between the chain program features, that our South American neighbors will appreciate an occasional Spanish announcement. We are glad to learn that W2XE has already adopted the regular practice of announcing in five languages, English, French, German, Spanish and Italian.

"I have a Philco 16-B, 11-tube, all-wave receiver, using a 100-foot non-directional cage aerial," reports Laurence Wolcott, 207 Railroad Ave., California, Mo., writing for the first time. "I have been DXing just two weeks and it certainly has given me a thrill. Among my s. w. stations so

*(Continued on page 42)*

# TROUBLES *and* TRIBULATIONS

## ● ● ● First Aid to Ailing Sets



### Electrolytic Rectifier

**I** WISH to build an electrolytic rectifier to use as an "A" eliminator for my small battery set. I have a 15 volt toy transformer. Please tell me how to make this rectifier.

It will be all right to take power from the secondary of the 15 volt toy transformer. But you will have to reduce the voltage down to six. Most toy transformers have a switching arrangement to get various potentials. We feel, however, that perhaps the amperage output of this device may be rather low to light your tubes. This depends, of course, on the kinds of tubes in the set.

The rectifier is made of two pieces of sheet lead and aluminum hung vertically and parallel in a glass jar filled with a saturated solution of distilled water and pure borax. There will be a bad hum due to the fact that the pulsating direct current obtained from the rectifier unit is not filtered and smoothed out. So all eliminators, therefore, have a filtering system of choke coils and condensers. You will need an audio choke of 30 henries, and two large 4.0 mfd. filter condensers.

In order to show how an eliminator should be connected we are indicating herewith the proper hookup.

### Philco 16-L Wave Trap

*I have a Philco 16-L all-wave receiver. In order to get peak performance the oscillation was raised by the*

*adjustment of what a serviceman called the "wave trap." I find that, while there seems to be no difference on short waves, the receiver is not as selective on the broadcast band. Will the adjustment of this wave trap alter the selectivity of the set? What is its function? How can I go about adjusting the wave trap myself?*

The wave trap on this receiver provides a method of tuning the set to the intermediate frequency, or 465 kilocycles. It is for the purpose of preventing interference on this particular frequency. Faulty adjustment of the wave trap circuit should have no bad effect on the selectivity of the set. It will hardly affect the short wave reception. Properly to adjust this trap set up an oscillator to give a frequency of 465 kilocycles, and adjust the receiver when tuned to a minimum signal at about 600 kilocycles. The trap is situated in the back of the chassis and is reached through a small hole with a neutralizing tool.

There is no reason why you cannot make some adjustments of this character yourself. Use proper tools and prevent body capacity from interfering.

### RCA 60 Power Tubes

*How can I use type -47 tubes in place of the -71As in my RCA 60 receiver?*

The type -47 consumes one-half the voltage but seven times the amperage (current) of a -71A tube. This means that the use of a -47 will add considerable current drain on your set. If there is an excessive generation of heat you may be forced to return to your -71A tube.

There is a "Na-ald" type of adapter on the market which fits into the -71A socket so that a -47 type can be used. The newer type 6A4 is a power am-

plifier which can also be used, with suitable adapter, in place of the -71A.

### A Tuning Meter

*How can I install a visual tuning meter in my 16-tube Midwest all-wave receiver?*

The visual tuning meter is a high resistance type of milliammeter used in the plate circuit. When the circuit is tuned to resonance the indicating hand swings over to its maximum position. This means that the signal is coming from the output at its greatest volume.

The Midwest 16-tube receiver utilizes four -45 power tubes—two pairs, each pair being connected in parallel as a single tube. The output transformer has three terminals to its primary. Each of the two outer terminals connect to the two parallel plates of one pair of -45 tubes. The center tap of this primary connects to the high potential B supply that feeds the plates of the -45s.

The connection of this center tap to its terminal of the primary of the output transformer must be opened, and the visual tuning meter inserted in series with this break in the wire. All you really do is to set the milliammeter in series with the plate current supply lead. Make sure that the rating of the meter is not less than the total output of your power tubes in milliamperes.

### Boosting R. F. Stages

*I would like to use an additional radio-frequency stage of amplification with my Kolster 1933 receiver. How is this done?*

An additional r.f. stage between the antenna and broadcast receiver was illustrated and explained in the May, 1934, issue of RADEX. This should serve your purpose.

### Those 2-Volt Tubes

*How about using two-volt tubes instead of the -01As in my Atwater Kent, model 20, receiver? No C battery is used with my set. But will not one be required with the two-volt tubes?*

The tubes in this set can be replaced with 2-volt tubes (-30s). It will be necessary to use exactly 2 volts on the A terminals of the receiver. A -31 power tube can be used in the last audio stage. This tube requires 135 volts on the plate, and a C battery. All the others use 90 volts, with the exception of the detector, which may require from 22 to 45 volts for its plate.

When the -31 is used it requires 22 volts negative C bias for the grid. Cut the lead to the -F of the secondary of the *second* audio transformer, where it attaches to the transformer terminal. Run a new wire from this terminal to the -22 volt post of a C battery. The positive end of the C battery is connected to -A and -B. Some improvement might be noted if the -F terminal of the first audio transformer is attached to a -3 volt C connection.

### "Cat Whiskers"

*What is a "cat-whisker" detector, and how does it work? Can it be used with a broadcast receiver?*

Before the days of electron tubes detection was accomplished by certain crystals which possessed the peculiar properties of passing electric currents in one direction. Pieces of galena, silicon or iron pyrites, when held in a metal clamp and lightly touched with a fine wire contact called the "cat-whisker," were utilized to rectify radio currents. The crystal detector cannot well be used in a broadcast receiver. It has been used in the so-called "reflex" circuits, and the output of a crystal detector receiver, when amplified by two stages of a.f. amplification, will give excellent tone on local stations.

### Touch System

*My Airline 6-tube set will stop playing suddenly, and I have discovered that if I short the first and second detector control-grids by touching them with my fingers, reception will come back. It seems as if I have to touch these grids to start the set to working, and then in a short while I have to do it all over again.*

We believe the trouble is due to an intermediate-frequency transformer coil being open or subject to a poor contact. Also, it is likely that a grid leak or grid filter resistor is defective which will let the grid of either the -32 or -34 detector tubes "float" and block up with electrons so as to hinder operation. The touching of the top caps temporarily discharges the accumulation of electrons and permits it again to work for a short time.

If the i.f. tuning is out of line this effect may also occur. We are tempted to suspect the i.f. stage of this receiver, and suggest that all of its parts related to the grid be carefully tested.

### Converter Supply

*How do I get the 180 volts from my Graybar 770 receiver to operate a short-wave converter?*

We suggest that you make the connection to a point (5) of the power pack unit, and place a 10,000 ohm resistor in series with the lead to the converter terminal. This should provide approximately 180 volts to the converter.

### 2A5 Power Tube

*Do I have to use a -47 power tube in my Philco 70 receiver? This set also cuts off at times. What do you think is the cause of the trouble?*

The -47 tube can be replaced with a 2A5. This 2A5 has the decided advantages of a heater-cathode type of construction and it has also a slightly higher output. It will reduce hum in the audio stage. The 59 type of tube, connected as a pentode, by attaching the suppressor-grid to the cathode, may also be used in place of the -47, with approximately the same advantages that have been indicated for the 2A5. However, the 2A5 is a 6-prong tube, and the 59 is a 7-prong tube, while the -47s has only 5 prongs. Special adapters, therefore, will be necessary, or new sockets must be installed.

The cutting off may be due to defective coupling condensers that couple the audio stages. A defective

condenser in the cathode circuit of the oscillator tube may also cause this trouble. This condenser can be replaced with a 0.1 mfd. bypass type. All tubes, particularly the oscillator, should be examined. Then, too, every grid leak, resistor of high value, and bypass condenser, should be subject to suspicion.

### 180 Volts Source

*How can I take 180 volts from my Majestic 30 receiver to operate the RADEX short-wave converter?*

Retrace the two wires leading to



*Elizabeth Day, a recruit to radio from the legitimate stage, does impersonations of various movie heroines in "Forty-five Minutes in Hollywood" each Sunday at 10:30 p. m. EDST on the See-Bee-Ess. Miss Day's last New York stage appearance was in "Dinner at Eight."*

the two plates of the first two -24 tubes, to where they join and then run as a single conductor to a tap on the voltage divider in the power unit. This point provides 180 volts. It is the middle tap on the resistance, with two other resistances being on either side of the point of contact.

#### A. K. Set Oscillates

*My Atwater Kent set oscillates when the hand is touched to the first r.f. transformer, detector tube, or first audio tube. The set works only when the ground is placed on the antenna post. The antenna proper does not seem to make any difference. What is wrong?*

This set has become unstable, and is only made so by grounding the antenna terminal. The effect that seems to be due to your body capacity further indicates the instability of the receiver. Since you have not indicated the model of your set we cannot give definite instructions, but generally a set in this condition will require neutralization, alignment or balancing, or all three, depending upon the type of circuit used. We assume, of course, that all other parts are in good condition.

#### Battery Set Whistles

*I have a battery superheterodyne, and it whistles when the volume is tuned on full. It uses seven -01As and one -71A. After a certain point is reached it begins to whistle. How can it be fixed?*

In some of the earlier receivers plate voltage volume control was used. It gave the set a tendency to oscillate on high volume levels. You have not indicated the type of set you have, but undoubtedly the method of self-oscillation that is used in this receiver is out of condition. It may use neutralizing condensers, suppressor resistors, reverse plate coils, etc., all of which may require readjustments or replacement. We cannot treat the case more specifically without more information as to the type and model. Readers are urged again to make sure they give the name and

model of the set in trouble; otherwise their questions cannot be given definite treatment.

#### Bosch Needs Neutralizing

*I have a model 66 Bosch cruiser with a separate Bosch power pack. Under the shield are three balancing screws. The two on the left are o. k., but the one to the right can either be loosened or tightened and it does not seem to affect the operation of the set. I can get perfect reception between 720 and 1500 kcs., but little volume between 720 and 545 kcs.*

Two of the adjustment screws operate neutralizing condensers for the second and third r.f. tubes, and the third screw operates the detector alignment condenser. The circuit should first be reneutralized, and then balanced and aligned for correct performance. See the March and April issues of RADEX for complete instructions. The second r.f. tube, which is neutralized first, is the center tube of the group of three. The third r.f. tube, which is neutralized second, is the front tube of the group of three.

One of these adjustable condensers may have been damaged in adjustment. This accounts for its having no effect on reception. When this is repaired or replaced the correct adjustments can then be made successfully.

#### Power Tubes Deteriorate

*I have a Silver Marshall, model F, originally using a -47. I changed this tube to a 2A5. For a couple of days I had fine tone, then the set took on a "tinny" sound and developed an oscillation. On testing the 2A5 it proved to have no emission. Now a noise has developed, resembling boiling water, which may be heard even when the volume is turned very low. This same noise appeared once before, when a -47 tube became inoperative after a very short period of use. Also, the set burned out a dial light before I changed to the 2A5 tube.*

The rapid loss of emission of the power tube, either -47 or 2A5, indicates  
(Continued on page 42)

# On the Editor's WAVELENGTH

**I**N view of the fact that we have just received official data concerning the broadcasting stations of Brazil and several other countries, we deem it advisable to repeat the lists of world stations in this issue. Hereafter this list will appear in the *DX Log of the World*, the next issue of which, the August-September-October number, will be found on the newsstands on or before August first. Beginning with the September issue of *RADEX*, the lists will include only the stations in North America as heretofore.

We have now established valuable contacts throughout the world and believe we will be able to keep the *DX Log of the World* up to the same high mark of accuracy that has characterized the indices in *RADEX*. As more and more of the foreign stations are being heard in America, the need for a world list is becoming of increasing importance. The *DX Log of the World* will be issued quarterly and the price will remain at ten cents.

## Secrecy of Radio Messages

The FRC issues a warning regarding the secrecy of certain radio messages and the heavy penalties provided for violations. Boiled down, Section 27 of the Radio Act of 1927 reads as follows: "No person receiving any radio communication shall divulge the contents to any person other than addressee. No person shall intercept any message and divulge the contents or use the information therein for his own benefit." Section 33 provides "Any person who shall violate any provision of this act shall be punished by a fine of not more than \$5,000 or by imprisonment of not more than five years or both for each offense."

Says the Commission: "Reports reaching the Commission indicate that the public is increasingly intercepting police and other short wave

communications. Congress has given serious consideration to a bill providing that 'no person shall use, operate or possess, in any vehicle any short-wave radio receiving set without a permit.' Police officials in some cities are in favor of such legislation as they claim their work in apprehending criminals has been interfered with by persons who intercepted messages intended solely for the police. However, the Commission is hopeful that no such legislation will be necessary as it would have a tendency to hinder experimental work in the shortwave field."

Reporting reception of telephone messages for the purpose of verifying is considered to be "divulging the contents" within the meaning of the law, by many of the ship and phone stations. Readers are cautioned



Everett Marshall, baritone star of the current Ziegfeld Follies and formerly of the Metropolitan Opera Company, may now be heard with Jerry Freeman's Orchestra in "Broadway Melodies" every Wednesday evening from 8:30 to 9:00 p. m. EDST by tuning in the proper station on the WABC-Columbia network.

therefore to avoid using any phone communication as a basis for a report of reception.

### Stamping Out Fraud

This magazine and a number of the DX Clubs have received letters from the secretary of the New Zealand DX Radio Association, asking cooperation in stamping out the practice of obtaining verifications by false or unethical procedure. Charles A. Morrison, President of the IDA, Bloomington, Ill., writes us: "My contention has been, and still is, that by far the vast majority of DXers are honest and use methods above reproach in obtaining verifications. I have also felt that too much publicity on this subject is harmful to the DX fraternity in general, giving the stations the idea that the majority of DXers are unfair and dishonest in their methods. This would inevitably lead the stations to regard each request with a skeptical and over-critical eye. As a matter of fact, the majority of reports are made, I believe, in all sincerity by DXers who would not write to a station if there were a question in their mind as to whether they actually heard the station. Nevertheless, the unfortunate fact remains that there are DXers using questionable methods. This small minority is creating a menace to the whole fabric of friendly relations existing between stations and listeners."

With this statement by Mr. Morrison, this magazine finds itself in full accord and joins him in his concluding appeal: "I call upon you members of every club and DXers who are not members of any club, never to write to a station requesting a verification unless you have some conclusive evidence that you heard that station. Call letters as a rule should be plainly heard unless, in rare cases, you hear other evidence so plainly that there is no doubt that you had this particular station. You should never request a verification unless you feel that you would yourself as a station official, say 'There is no doubt this man heard our sta-

tion.' Radio stations, I call upon you to aid in this campaign to put DXing upon a higher level by refusing to verify in cases where the listener has failed to give such conclusive evidence as may warrant a verification."

### Theory and Practice

Theory of radio and actual practice do not always seem to move together. Take, for instance, the theory that it is the vertical part of the antenna which actually picks up the radio wave. Theron Colegrove, radio operator on board the Tug, H. C. Cadmus, plying the waters off the southeastern states, questions this theory. Says he: "A number of years ago when WKAQ was operating on 940 or thereabouts, with 500 watts, I pulled him in with a fifty-foot aerial, using an old Atwater Kent 5-tube t. r. f. set with an extra screen-grid r. f. stage. I was on Lake Michigan at the time. The portion of my aerial which was vertical was but two or three feet long. Obviously with the situation I was in, the horizontal portion must have been doing its part or I wouldn't have heard WKAQ with fair speaker volume."

There is, of course, no doubt that satisfactory reception is possible without any part of the aerial in a vertical position. Thus if one were located in the top story of a high building with an aerial which was entirely horizontal and without any vertical lead-in whatever, there would be radio reception and probably it would be very good. On the other hand, we have the present tendency to erect transmitting antennae which are entirely vertical.

Mr. Colegrove wonders how far away man-made static may be heard. "While off Miami, I have heard a power leak so strong as to drown out 90 per cent of the stations audible at noon. At this time the nearest land was five miles away and the ship's generator was not running. This same noise seems to extend from Cape Canaveral (midway of the east coast of Florida) to a consider-



able distance beyond Miami and has been heard, around 80 meters, when the nearest power line was 15 miles away."

### Faults of Broadcasting

J. L. Wheeler, Jr., 16 California St., San Francisco, lists the following as among the reasons why program sponsors lose the goodwill of listeners and why stations are dialed out:

1. Shifting of programs without announcement, causing a listener to miss a favorite artist.

2. Curtailing a program in order to chisel-in with a few minutes of extraneous advertising.

3. Distracting laughter and applause by the studio audience and the silent acting by artists catering to this noisy audience.

4. Interrupting the continuity of a program with advertising which should be permitted only at the beginning or end.

5. Incompetent announcers who seem to consider all listeners morons; making asinine remarks to the artists; commenting on subjects of which they are ignorant; making flip-pant remarks about their own personal opinions; mispronouncing names and words and titles.

6. Insertion of personal propaganda by comedians and announcers not at all germane to the article advertised by the sponsor.

7. Reiteration ad nauseum of the latest tin-pan-alley song.

### An Early Station

C. O. Gould, 801 East Main Street, Stockton, Calif., sends us a newspaper clipping in which it is recalled that twelve years ago Mr. Gould established KJQ with five-watts on 360 meters and gave Stockton its first experience in radio broadcasting. The station was on the air from 5 to 6 p. m. and Sundays from 9 to 10 p. m. The microphone was held in the hand with a big phonograph horn attached to it. KJQ was conducted by Gould for four years and then abandoned when it was impossible for him to meet new broadcasting regulations. It is a far cry from this little five-



*The Cuckoos are back with Ray Knight, Mrs. Pennysfeather, Mary McCoy, Jack Arthur and Sally Belle Cox, the cry-baby girl. The act is pure burlesque and delicious nonsense. Robert Armbruster and his orchestra and the Sparklers Quartet share the spotlight in this half-hour of insanity. NBC-Blue Wednesdays. 9 p. m. EDST.*

water to the new WLW with 500,000.

That complete reallocation of Mexican broadcasting stations which we mentioned in the last issue was promulgated on April 7 and is now operative, according to official word from Mexico City. The reallocation resulted in the assignment of Mexicans on 19 clear U. S. channels and on nine U. S. regional channels and three U. S. locals. Only one assignment was made on a Canadian exclusive but six Canadian shared waves were allocated. The frequencies allotted in Mexico are all exact. Mexico evidently is giving up its practice of allotting split frequencies but the question remains whether the stations can and will adhere to their exact frequencies. The changes are being made in the indices in this issue.

### Abusing Privileges

Shall we discontinue our practice of giving the addresses of our correspondents? We have always done this so that other readers may write direct to those in whose reports they are particularly interested. We know that a great many have done this and in some cases, valuable friendships have resulted. We dislike discontinuing this service to our readers. It seems, however, that some readers abuse the privilege and write dis-

agreeable letters, usually anonymous, to any whose reports do not suit them. Then, too, some mail order houses seem to be using these addresses and swamp our correspondents with circulars of all kinds of schemes. We do not want to be the unwitting cause of annoyance to any of our readers and yet we believe our practice of giving mail addresses has been a helpful one. What do our readers think?

Rev. Samuel N. Morris, Pastor of the First Baptist Church, Stamford, Texas, thinks that our article, "Cleaning Up the Outlaws" in the April issue, gave the FRC more credit than was due them. "On August 22, 1933, complaints were filed in Lubbock against eighteen people for operating unlicensed radio stations," comments Mr. Morris. "One was convicted, one pleaded guilty, but all the others were either dismissed or acquitted. Three people tried in Sherman, Texas, were acquitted. Out of about thirty complaints and indictments there have been only three clear-cut convictions."

Thomas Huffaker, 2914 East 29th St., Kansas City, Mo., has a real ground. He had a two-foot hole bored from the floor of the basement 37 feet deep. He secured 50 feet of No. 14 heavily-insulated copper wire. Four feet of this were stripped and machine-wound around a piece of large copper pipe. The wire-wound pipe was then dipped into a vat of hot solder after oiling the inside of the pipe so that no solder would stick there. He put this in the hole in which there was and is 18 feet of water.

#### The Station's View Point

"Thursday, March 29," relates Warren E. Winkley, Hughson, Calif., "Luther E. Grimm, William Ellis and I visited Station KFBK. The chief announcer, William V. Connors, very courteously showed us around the station. He said repeatedly in the course of our talk, that the DXers were running the game into the ground with their constant requests

for special programs and their lack of consideration for the other fellow. Luther is a member of the National Radio Club; William belongs to the IDA and I belong to the Universal Radio DX Club. That was hard for us to take but what came next was even worse. Mr. Connors showed us some 40 or 50 requests for verification received recently. I was dumfounded. Out of the whole pile, I would not have verified more than 15 at the most. The rest were written on postcards and gave only a bare bit of the program, or if in letters either didn't enclose postage or left the station in doubt as to whether that station was heard or not. And most of them were members of some club or other. I think that the sooner the DXers realize that the stations are doing them a favor and not vice versa, more stations will put on DX programs and verify reports."

The KDKA DX Club is planning a broadcast especially dedicated to listeners in East Africa and Mozambique, on the night of Sunday, July 15, from midnight to 1 a. m., EDST, according to Joe Stokes, announcer, and major domo of the Club. A number of prominent DXers have been invited to make brief talks.

A new short wave club is announced by George E. Crouse, president of the R9 Listeners League, 140 East Gas Ave., York, Pa. The club has 45 members so far, from Canada, the U. S. and New Zealand. There are no dues or fees as yet. Thirty more members are desired. The object is the exchange of information regarding the short waves.

"The United States Radio DX Club was organized Jan. 1, 1933, under the name of the Shrewsbury Radio Club," writes Howard Morse, Secretary-Treasurer, 7 Water St., Shrewsbury, Mass. The dues are 75 cents a year and cover our monthly bulletin and tip card.

As noted in these pages some months ago, the band from 1500 to 1600 kcs. has been set aside in the U. S. for experimental broadcasting purposes. This is known as the "high



Presenting the Master of Ceremonies of NBC's Carefree Carnival, Ned Tollinger, which may be heard each Saturday at midnight figuring your time by Eastern Daylight Saving method. This program arrives via the Red Network.

fidelity" band. In this issue we are including the first stations which have been granted licenses to operate in this band—two on 1530 and two on 1550 kcs.

"Answering the SOS of A. E. Glover regarding KIIQ," responds Alfred W. Oppel, 186 Hollywood Ave., Irvington, N. J., "I quote from a letter received from the KMTR Radio Corp. of Hollywood: 'KIIQ is the 200-watt portable broadcast pickup transmitter of KMTR. It operates on a frequency of 2342 kc. and is used to relay programs from remote points for broadcasting over KMTR on 570. This station is built right into a truck and contains a gas engine-generator so that it may be operated in any location regardless of the presence of electric power.'"

Stuart Leland, New Canaan, Conn., thinks that the W2XI reported by J.

Armantrout, may be W2XR, Radio Pictures, Inc., Park Row, New York City. He says it may be heard between 5 and 6 p. m., EST., weekdays on about 1570 kcs. Stuart also suggests that Mr. Armantrout may have heard WPEL, West Bridgewater, Mass., a police station on 1574, and caught the call as WDL.

With the removal on May 13, of KFDY, Brookings, S. Dak., from 550 to 780 kcs., KFYZ, Bismarck, N. Dak., an NBC outlet, became an "unlimited time" station on 550. KFYZ is now on the air continuously from 7 a. m. to midnight each day, CST.

"I built the r. f. stage as per diagram in the April RADEX and it certainly is *fine!*" reports C. E. Gates, 514 Ivy Street, Pittsburgh, Pa. "It has pepped up my receiver wonderfully and the selectivity now compares favorably with a modern superhet."

Ian Bruce Murdoch, 17 Main St., West, Grimsby, Ont., editor of the DX page of the "Canadian Microphone" would like to receive DX reports and letters for publication in that paper.

S. C. Kellenberger, 135 Bloomingbank Road, Riverside, Ill., would like to hear from readers who have used a loop successfully with a superheterodyne, particularly an RCA-Victor R-50.

And now for the long-awaited vacation during which the staff of RADEX will be busy devising new ways of serving our great family and gathering new data from all over the world for the new season beginning with our September issue. Until then, au revoir.

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Marian Hopkinson, star in the Borden cheese show, "Forty-Five Minutes in Hollywood," over CBS Saturday nights, not only attends at least two different pictures featuring the same movie actress whose voice she is going to double, but she also reads all available biographical material in movie magazines to get personal background.

# Writing FINIS on the DX Season

## ● ● ● Balancing the Books

THE 1933-1934 radio season passes into the limbo of the lost with this issue. Some report it as exceedingly unfavorable, but on the other hand, many added more stations to their logs than ever before. Certainly more and more foreign stations have been appearing in our records. No longer are they limited to the two coasts but those living inland are reporting them with increasing frequency.

During the year we have had a wide reallocation in Canada and now we are closing with an almost complete shake-up in Mexico. Many other changes are brewing, but no longer will our readers need to wait for the September issue of RADEX to get these changes. The August-September-October edition of the *DX Radio Log of the World* will be on the newsstands late in July with its complete log of all the stations in the world on the broadcast band.

We will now empty the very last mail bag of the old season.

"I was one of those who tried for a long time but never could hear a foreign station," admits Joel H. Armantrout, 602 E. Magnolia St., Fitzgerald, Ga. "Then a DX friend of mine told me what to do. I took an old auto-radiator and soldered a lead-in wire to the copper top. I put a long pipe into the mouth and buried it about four feet in the ground. Every day I fill it up with water. It truly worked wonders. On March 11, I logged and kept LR5 for an hour. I also logged YV3BC and JOGK. I logged and kept CX26 for an hour and a half. On March 18, I listened to LR4 for 45 minutes. On March 24, I heard the station announcement of CP4 and on the 25th, RUS came in for 30 minutes and the station call of 2CO. Before installing this new ground, I was not able to

get anything outside the U. S., except Cuba, Mexico, Canada and Hawaii. I now have a total on the b. c. b. of 657. I have completely logged over 30 states. Would like to hear from any foreign DXer and will answer all letters."

### Uses a Pre-Amplifier

"I am another enthusiastic Midwest owner," begins Kenneth C. McCarrt, 213 State St., Lexington Ky. "I am the proud possessor of the G-10 all-wave model. To this I have attached my home-made one-tube preamplifier. With this combination I can play 100-watt stations on the West Coast at R-7-8 volume at night and WFAA at practically the same volume all day long any day in the week. I purchased the receiver a month ago and since then I have increased my log from 214 to 598 in 14 countries. This includes 355 on the b. c. band of which 150 are of 100 watts or less. I have every station of 10,000 watts or more on the North American continent except CFCN and XEYZ. However I haven't been able to get a squeak out of the TP's or SA's on the b. c. b. yet although I have heard several on the higher frequencies.

"I use a 30 foot, five-wire cage aerial, 25 feet high and a ground consisting of ten feet of copper tubing. I am considering suspending my aerial vertically and I would particularly like to hear from those who have had experience with vertical aerials of any type."

### Results with a Scott

Hundreds of Dxers would like to have half of this log: 2CO, 3AR, 5CK, 2YA, 5CL, 4QG, 3LO, 2BL, 4RK, 2GB, 2UE, 2CH, 2HD, 4BC, 4BH, KGU, HIX, WKAW, VOAS, YV1BC, HJN, LR5, VE9EK, 10-BP,

10-BQ, RXKR, PP, Radio Normandie, Turin, Trieste, Stuttgart, Frankfurt, Leipzig and Hilversum. Yet John DeMyer, 545 Baker St., Lansing, Mich., to whom it belongs, writes: "I thought I was a DXer until I read some of the reports in the April issue and now I find I am a rank novice. I belong to several radio clubs and correspond with a lot of DXers. I am not jealous of any DXer but, on the contrary, I am happy that one has been fortunate in pulling in one of those rare catches. I do some s. w. DX and have quite a few stations verified. My verified list includes all continents. I use a Scott all-wave receiver."

"This radio season is just about finished," concludes Earl R. Roberts, 2742 No. Gale St., Indianapolis, Ind., who has just returned to his old home after residence in Cambridge, Ohio. "I started last fall with 958 stations and now have 1046 logged—an increase of 88 stations. Some of the best of these were WDAH, KGDM, KLS, KRE, KCRJ, KSUN, KFBL, CX26, LR4, LR5, Beromunster, Fecamp, CMCO, CMCN, CMCQ, CFQC, CJOC, CMHI, CMPN, XEAL, XETZ, XEFG, etc. My total of 1046 contains 733 broadcast stations now on the air, 189 now deleted, two long wave (KDA, WWAS) and 132 short wave including 67 police, 56 airport, 7 fire and one commercial plane. The odd thing is that I do not have a short wave set or converter of any kind. My set tunes from 500 to 1900 kcs. and brings in harmonics of police and airport stations broadcasting on 2400 and 3200 kcs."

#### Reports Favorable Season

"This season was the most successful one since I have been at this great old pastime," decides Raymond C. Corbett, 619 12th St., Sacramento, Calif. "The only regret I have is the fact that it was about the poorest season for Australian stations. I did not add a single new one and only heard a few of the old standbys a couple of times. Have completely logged all of the stations in

the eleven far western states. Have also heard all in Kansas. The stations in N. A. that I consider my best are WEXL, WGH, WHAZ, WCSH, WTRC, WPAD, WLAP, WFDV, WKAQ, CMQ, CJCJ. The last three were received at 7 a. m. PST. I have 105 stations over 2000 miles away and 37 over 5000 miles. Most of these were received on a 1933 model 43-B Philco. I use two grounds but attribute my success to an aerial of about 150 feet. All the above stations were on the b. c. b. Would like to hear from other owners of a set similar to mine."

A prodigal DXer has returned. "I'll bet you thought me lost, strayed or stolen," writes Bruce P. Lundy, Jr., RD2, Jersey Shore, Pa. "I have been away the last two years and haven't had time to DX. I have now been back home a month and, boy, am I happy? I have added about 40 stations since I have been back. I have 18 to go yet to hit the 500 mark. This last weekend I had an enjoyable time. A friend allowed me to take his allwave 11-tube Philco. It was my first experience with the s. w. and I sure had fun. I didn't shut it off long enough to eat and I didn't sleep from the time I got it Saturday morning until I took it back Monday afternoon! I had Spain and England come in better than American stations. I had Rabat, Morocco, France and Italy. I was just all over the waves. Hello to all my old DX friends; will be glad to hear from any of them."

#### Have You Heard CDXR?

"I've been reading the letters in the last RADEX and decided it was about time for me to contribute one," justly concludes Leslie Scourfield, 299 Tunis St., Ingersoll, Ont. "To date I've received 580 stations from twelve countries. I have eight provinces and 46 states. My best are KGMB, 2YA, 2BL, CFCT, CX-26 and VOAS. I haven't been able to get any TA's or Japanese or Chinese stations as yet. I use a DeForest-Crosley 850, 1931 model. I am a mem-

ber of the Canadian DX Relay. We operate a half-watt station on 1280 kcs. on Saturday and Sunday mornings. Its call letters, of course, are CDXR. It's located in Goderich, Ont." Leslie says he received TGW on 560 on April first and that he has heard CMCQ on 678 of late. Can others verify these two changes?

"I have a new 'wrinkle' in DXing," announces James B. Crusan, 424 Smithfield St., Mount Pleasant, Pa. "I start a new log with each new copy of RADEX. One can log surprising totals each month. Last month I logged 339. I suggest that some DXers try this method." James goes on to ask: "Is it usual to receive amateurs on the 1900-2000 band, on a broadcast receiver? On my 7-tube Airline WG-24, by turning the adjustments slightly, I can receive these amateurs, my best being W5BQX in Mississippi, W1ENO, New Haven, Conn., and W3DMG, Frederick, Md. What is the cause of this?" This reader does not say what adjustments he makes but he undoubtedly is changing the capacity of his condensers. We would not recommend this to others as it may be a very difficult matter to put them back where they belong.

#### A New Recruit

"Here is another letter from a beginner," prefaces Clair E. Fultz, 17 15th Ave., Columbus, Ohio. "Last November I first saw Radex. Soon I became an ardent DXer and in the following four months logged a total of 606 stations. On the b. c. b., my log of 485 includes such stations as CKWX, CMGF, CMCW, KDB, KGfJ, KIEM, KPCB, KRE, XEFV, 2YA, 4QG, 5CK, 3AR, 2FC, 3YA, 2BL, 10BQ, KGU and WKAQ. On the s. w. I have 55 stations including DJC-D, COC, EAQ, FYA, GBP, GSA-B-D-E-F-G, G6RX, HBP, IRM, I2RO, HC2RL, HJ1ABB-3ABD, LSX, PHI, PSK, VK2ME-3ME, XETE, YV1BC-3BC, KFZ, KJTY, KNRA. Police stations add 66 to this log. Before summer I hope to pass 500 on the b. c. b. with my Philco 11-tube,

all-wave, model 16. Would like to hear from other users of this set especially those in New Mexico."

Here's a report on the Aussies from New York. "This morning the TP's were coming in great," writes Carl Forestieri, 463 East 185th St., New York City. "From 4:30 to 5:45 a. m. EST, I logged 2BL, 2FC, 3AR and 4QG and heard carriers that I am sure were 5CK, 3LO and 3YA. I just bought a new Atwater Kent 711 all-wave and it has performed very good both on the s. w. and the b. c. b. It is capable of 10 kc selectivity. At about 7 p. m. on a fair night, I can tune in WENR only 10 kc. from WABC. Although I am new at the s. w. game, I have logged, in a little over two weeks, six stations in England, three in Germany, FYA in France on three frequencies, three in Italy, two in Colombia, two in Australia and EAQ in Spain. I can tune in most of these European stations on the s. w. with neither aerial nor ground."

"I have never read any letters from Davenport so I am wondering if there are others interested in DX who live near here," observes Henry A. Kniegge, 1522 West 13th St., Davenport, Iowa. "I would like to hear from those persons and see what reception they get in this district. I have a Philco 7-tube Model 77 which I have used for four years. I DX only in winter and during the past three I have logged 330 stations with 205 veries. Some of my best in the 50-watt group are KGfK, WJBK, KRMD, WCAZ and WEXL; in the 100-watt are WBBZ, WHBY, WIBX, WFBE, WPAD, KGHI, CFco and WOPI; others are 10-AB, WIS, WCOC and XEW. The new WOC scheduled for Davenport will not be on the air for some time because of a hearing that must be held due to objections by a number of stations."

#### The New XFD

"In my verification from XEWW at Veracruz, the manager, Estaban Silva, states that they have been off the air since March 15 and that the

station has been bought by the Gobierno del Estado de Veracruz," reports L. G. Briscoe, 3743 Hutchison St., Montreal, Que. "The location will be changed from Veracruz to Orizaba, Ver. and frequency from 1100 to 1240 and call from XEWW to XFD. The inaugural program of this new station is to take place on May 1, 1934. Possible tests may be carried on before that date however." Leslie reports that his log now stands at 643 with 516 verified. His best are XEK, HIX, YV1BC, LR5, CX26, Poste Parisien, Radio Normandie, CKMO, VE9EK, KFPM, CMJP, KFXD, XEAC, XEFV, KGCX, KFXJ and a list of 100-watters in Southern Texas, Oklahoma and Louisiana.

Writes James T. Spalding, 672½ Atwood St., Louisville, Ky.: "I have not seen any reports lately from this city and none from users of the Philco 16-L, so will tell you something of the success I have been having. I have been a DX fan since the days of Harry Snodgrass of WOS and his 'Three O'Clock in the Morning.' I also enjoyed the old Kansas City Nighthawks at WDAF and many others that I can recall. Just lately I have gone back to DX again and my log since December 22, 1933, includes the following: 99 foreign stations of which 28 are on the b. c. b. and the rest on short waves. Included in this is CKCK at Kitchener, Ont., a 100-watter received in daytime and verified. Among my U. S. stations which number 201 b. c. and 33 s. w., I have verifications from the 50-watt WEXL at Royal Oak, Mich., the 100-watter at Silver Haven, Pa., and 30 other 100-watters. Adding phone stations, airports and a few ships, my total is 655, all received between Dec. 22 and March 31. I should like to see reports in RADEX from owners of the Philco 16-L."

#### Another Newcomer

"Your magazine seems to be the chief congregating place for DXers from all over the world," points out Elwin T. Smith, Box 82, Harrah,



*Mac McCloud, End Man of the Sinclair Minstrels, got his local color by riding through the South in a boxcar. He also acquired skill with the "bouncing ivories" called dice. You are cordially invited to attend this minstrel show each Monday evening at 9 p. m. EDST through the NBC-WJZ chain.*

Wash. "Would someone please move over and make a place for one from way out West in Washington? I am the possessor of an Airline 7-tube super. I have received some twenty Japs all told but have verifiable reports on only ten. As for the Australians I have not been so good; have 2CO, 2YA, 5CK, 3AR, 3YA, 4QG, 3LO, 2BL, 4RK, 3HA, 2UE, 4BC, 2SM and 4BH, all with fair volume. I believe 2FC would be good if it were not for the superior power of KGOA which takes that channel by storm. Could any eastern DXers give me any info on European stations. I would gladly exchange hints with others."

"I recently purchased one of the Perfect Phone Adapters and, after giving it a thorough tryout, I find that it is just about the finest thing of its kind for bringing in the distant stations," reports Charles L. Clarke, 214 White St., Waverly, Mass., who encloses a long list of the distant stations he has received including many 50 and 100-watters.

"I have had my Midwest 16-tube set only since March 9 and to date (April 24) have logged 303 stations," reports Harvey Scheirer, Jr., Fullerton, Pa. "My log includes six airway stations on the long waves, 188 on the b. c. b. (every channel except 540) 56 police, 8 airports and 45 s. w. stations. I have had three Californians, four Mexicans, several Texans and others ranging from 50 watts (WEXL, Royal Oak, Mich.) to 500,000 (W8XO, Cincinnati). On the s. w. I have received EAQ, CT1AA, DJA-B-C, GBC-P, GSA-B-C-D-F, I2RO, Pontoise, HI1A, CP5, HJ1ABB-3ABI, YV3BC, PSK, LSX. European stations, especially England, come in very good on a warm, clear afternoon."

#### Has 25 TP's

"I have a Dictator (nine tubes) and I find it a very good set although the Philco 7-tube I had in 1932 had it beaten for distance," submits Fred Knight, Portage and Essen Roads, Victoria, B. C. "On the Philco I logged 463 stations in little over a year; I had six in Cuba and one in Naltchik, USSR, two in England and all kinds of 100-watters in eastern U. S., Australia, New Zealand and Japan used to come in like locals. I started all over with the Dictator in February, 1933, and up to writing this letter, have 258 stations logged. On the new log I have 16 Japs, 5 Aussies, 3 Zedders, KZRM, 13 in Mexico. If any other readers use a Dictator I would like to hear from them."

"When I got my first issue of your magazine the middle of October, 1933, I started the fascinating hobby of DX. Since that time I have logged 415 stations, 100 of them 100 watts or less, and 46 police and 16 s. w. Every state but three is logged and all the provinces except Nova Scotia. Some of my best are KPCB, KFUO, KGFJ, KWG, WKAQ, 10-BQ, 10-BP, KFPF, GSA, DJC, G6RX, GBB, GBW and HJ2ABA. No luck for me on the TP's. I have an 80-foot aerial of the L type pointing north. My

ground is a pipe driven down ten feet. I am using a Crosley Dual 10, Model 170, tuning from 535 to 6100 kcs." This interesting report is from Warner Elliott, 433 Lillie Street, Chillicothe, Ohio.

#### The Pot and the Kettle

Not long ago a certain reader wrote a violent diatribe against those so-called DXers who claim to have received certain stations that they only assumed or guessed they heard. This same reader, whom we will call X, in a later letter reported having heard a station in Soviet Russia in the middle of the day. Now we are receiving letters, signed and unsigned, taking violent exception to X's claims. This magazine will not attempt to decide what reception is possible and what is not. We will publish any interesting reports submitted by DXers of standing. But here is the catch—if the reports are too obviously exaggerated, such DXers are pretty apt to lose their standing. In the case of Mr. X, he has already been dropped by one of the leading clubs.

"This season, while it supplied some of my most distant catches, has been very bad in regard to static," reports Albert Sandham, 99 Page St., St. Catharines, Ont. "This year I kept a separate seasonal log in addition to my complete one, and on counting them up today, I find that I have heard 461 different calls from Sept. 1, 1933, to May 1, 1934. This includes seven police stations and such catches as 4RK, 2FC, 5CK, LR5, FQN, CMHI and CMCW verified and PP and 2CO not yet verified. My grand total is now 750 with 410 verified. All were heard on an old 1929 Rogers. Have any readers verified CMBD, XEAE, XETW and XFB? I sent them each ten cents but without success."

"About a year ago, I wrote you about my work on the b. c. b.," recalls Wm. Wheatley, 124-22 Metropolitan Ave., Kew Gardens, N. Y. "My log then was 260 and I thought that was good. Now, through RADEX



and the CDXR, I have 565 stations with 305 verified. I have every state but Wyoming and every province of Canada but Manitoba, and nine other countries. I have 190 stations of 100 watts or less. These were all logged in about eighteen months but what sleep I've missed in order to pull them in. I put up a new aerial, a loop, about 180 feet long and 40 feet high, clear of all interference; it sure pulls them in and does it make my set sensitive, which by the way, is a Philco, Model 90, 9-tube."

### The New Million Watter

"I have been hearing new call letters from Cuba," notes Rudolph Kure, 3365 Clifton Ave., Cincinnati, Ohio. "They are COD on about 1225 kcs., Havana, the Universal Broadcasting Corp. Sometimes it seems as if they are broadcasting already. Then again, on April 8th, I heard an announcement over CMCA, 1230 kcs., Havana, that COD will be ready to go on the air in November." COD is a proposed new one million watt station for Havana. The promoters are now trying to sell stock in the U. S. Other reports have it that Dr. John R. Brinkly of the late-lamented XER is back of the super-project.

"Six weeks ago a friend introduced me to RADEX," advised Ovid Punch, 418 Erie St., Medina, N. Y. "Since then I have logged 150 stations. My best catch is WKAW. Have also received CMCW, KGCX, XEW, XEB, etc. As a rank novice I have to my credit a number of low-powered western stations including KGDM. I would like to hear from DXers anywhere."

"This year I have logged 504 stations and verified even 200," announces Clifford Drain, 622 Camden St., Parkersburg, W. Va. "As a rule the stations have been rather prompt in verifying but a few of them have not. I have received verifications after a lapse of 56 days. I have 24 of California's 43 and reports out to 11 others. I have 13 verified out of a possible 22 in Washington. I was tuned to 960 kc. and heard a station

that came on the air with a bugle call which was repeated two or three times. Someone started a piano solo immediately. Could not keep them very long. I had the same experience on 1455—same old bugle call. Can anyone tell me what stations these were?"

"My record now stands at 360 on the b. c. band, 58 on s. w. I now have logged every state in the Union and stations in Canada, Cuba, Porto Rico, Mexico and South America on the broadcast band. On short waves, I have veries from DJA, HBP, XETE, DJC, PRA3, HJ1ABB, YV3BC, EAQ, HC2RL, CE9GW, HI1A and DJA. I have logged LSN, LSX, GCW, GBB, HBL, VE9HX, YNF, KKP, and HPF. Some of the best amateurs I have logged are K6BIZ and K6CRW, Honolulu; VE5EF Vancouver; and PY2AK Brazil. I am still using a Philco 11-tube Model 16-B and welcome all letters particularly from Australia or New Zealand." This report comes from Donald W. Shields, Box 345, Roseville, Ohio.

### Otherwise It's All Right

"DXing from 6 p. m. to midnight is practically impossible here in this part of Long Island," complains R. W. Fales, Intervale Ave., Roslyn, N. Y. "WEAF blankets everything from 635 to about 675. WJZ is playing tiddily-winks with WJR. WABC is raising heck with WENR-WLS. Now WHN has raised its power to 1000 watts and completely cuts out WHO and KYW, both of which used to come in like a house afire. WNEW also comes in too loud, cleaning up everything from 1230 to 1260 kcs. Then we have WEVD-WBBR-WFAB-WHAZ which make things very uncomfortable around 1300." Aside from this, we gather that everything is lovely on Long Island.

"DX this season has been the best I have ever experienced despite the unusually heavy static which has been marring reception on various mornings." This favorable report comes from Carroll H. Weyrich, 6 N. Gor-

man Ave., Baltimore, Md. "This season I have verified 197 stations and increased my log from 416 to 613. My best veries are CX26, LR5, HHK, HIX, PP, YV1BC, VOAS, 10-AK, 10-BP and 10-BQ. I consider my best the 15-watter KFPM in Greenville, Tex. Honorable mention to KTSM and WDAH, by far the hardest stations to receive that I have ever tried for. Almost as good as KFPM is KFBL, Everett, Wash., 50 watts."

"I have an Emerson five-tube superhet that tunes from about 75 to 550 meters," states Donald C. Little, 54 Deepdale Drive, Great Neck, L. I. "In the three months I have used the set, I have received about 66 police, 20 airport and airplane, England, Mexico, Canada and 38 stations in the U. S., also numerous ship, experimental stations and plenty of hams. I have not had much luck with western stations. Would like to hear from anyone owning an Emerson like my own."

"Just three months ago I bought my first copy of your magazine," recalls Karl Thayer Soule, Jr., 198 Culver Road, Rochester, N. Y., "and from that time I have been an ardent DXer. For my three months' work I can show a log of 317 stations with 227 verifications and 40 reports out. My best verified catches are KFPM, KPCB, KFXJ, KXA\*, KGDM, KRGV, 10-BQ, 10-BP, KGIR, WKAQ, and KGCR. I have a report out to LR5. I am using a 7-tube Philco two years old."

#### An English Pioneer

"I suppose that I am really an 'old-timer,'" muses H. M. Campbell, 204 London Road, Twickenham, Middlesex, England. "I remember listening to the old Writtle station in 1921. I didn't try DXing, however, until under two years ago. I have been using a home-made two-tube receiver and have so far verified WIOD, WAAB, WNAC, WCAU, WPG, KMOX, WBT, WTAM, WJZ and WHAM besides numerous short-waves. I have reports out to WBZ,

WABC, WGY and WFBL. I have just rebuilt the set into a three-tube and am hoping to add considerably to my log.

"My log now stands at 276 in the U. S., 20 in Canada, 8 in Mexico and 16 police, making 292 in all," totals Ernest H. Griebel, 8 Wayne St., Carbondale, Pa. "I can get KSL and KFI at 9:00 p. m. loud enough to raise the roof. I have not succeeded in getting any TP's or TA's. I use a Sonora 8-tube 1929 model and a Majestic 8-tube Model 91. I have 41 states and the D. of C. In Kentucky I have all but WPAD; do they ever give a DX program? Is KOB on at any time after WCAU and WOAI sign off?"

"Does VAS broadcast any more at 1:00 a. m. AST?" asks R. G. Ludwig, 1463 Fernwood Ave., Toledo, Ohio. "I have tried for him several times unsuccessfully. What Mexican is on 1560 almost every night at about 9:45 EST? Since February, 1933, my best catches out of a log of 460 are HHK, WKAW, 4QG, HJN, LR5, YV3BC, KGU, PP, KPCB, CFBO, KXA, CHGS, KWG, CMCB, CMCO, KXA, XES and KFPM. My log includes all provinces and all states except Wyoming."

#### Likes the Kicks

"I enjoy everything in RADEX," comments W. T. Hall, 729 S. P. Building, Houston, Tex., "and, paradoxically speaking, I get a wonderful kick out of the kickers' kicks. Especially as to verifications. I can sympathize with the fellow that wants a verification and cannot get it. I quit asking for them a long time ago. If I *know* I heard the station, I go ahead and log it as heard. If I'm not perfectly sure of my ground, I just try again some time."

"With the reception of XEBC and XEAE, my log of Pacific coast stations stands at 60 with 56 verified," states Alfred Razzando, RD 1, Fayette City, Pa. "I have every state, all the provinces of Canada, Cuba, Mexico, Bahamas, PP in France and HJN in Colombia. Among my best

are 10-BI, 10-BQ, 10-AK, 10-BP, VAS, CKMO, CKMC, KWX, KXL, KPCB, KGFJ, KFXM, KPJM, KUJ, KDB, KERN, KWG and KJBS."

From Samuel A. Meyer, Jr., 83 Canterbury Road, Rochester, N. Y.: "My log has now reached a total of 391 of which I have verified only 148. I have never had the luck to tune in any TP's or TA's but I'm still hopping. My best catch is CMJP, 75 watts, Moron, Cuba. On the s. w. I have verified EAQ, Prado, HJ1ABB, HC2RL, CT1AA, YV1BC and YV3BC. Have heard DJA-B-C-D, GSB, HVJ, I2RO, HJ4ABB and VE9JR."

"I bought a new Philco Model 18-B in January and started logging," narrates Harvey E. Sells, 188 Pine St., N. E., Atlanta, Ga. To date I have 244 stations including 78 police, 7 Mexicans, 3 Canadians, 4 Cubans and 132 in the U. S. besides 20 amateurs. My location is very bad for distance and have not been able so far to get any of the foreign stations. Would be glad to hear from anyone using a similar set especially here in the South."

Another new DXer is George D. Sallade, 649, Vester Place, Sinking Spring, Pa., who writes: "I have just bought a Philco 16-B all-wave set. I have had it but two weeks and have logged 47 foreign stations located in 21 different countries. On the b. c. b. I can listen to 20 Pacific Coast stations any night in the week. Would like to hear from other owners of the same model and will answer all letters."

### Some Boiled Logs

"I now have over 300 stations to my credit," advises Gustave Solomon, 404 Bon Accord Block Winnipeg, Man. "I am still using the same 1931 Lyric 7-tube set. New catches include CRCS, CKCO, KFJZ, KVL, KMO, WAMC, WNRA, WAAT, WNAK, KTAR, XEAE, XEBC, XEB, XENT, WOV, WLWL, WCAZ (50 watts), WJBK, WICC and WCAC." Gustave gives the sked for CJRC as Monday to Friday inclusive, 8:15-10

a. m., noon to 2 p. m., 6 to 10 p. m. CST. Saturdays off at 10:30 p. m.

"Just a word about my set and DX in general here on the coast," briefs Stephen D. Warring, Piru, Calif. "My set is a 10-tube Patter-son PR-10 all-wave and gives me five to seven kc. separation on b. c. and about the same on s. w. My log to date numbers about 350 on the b. c. b. and 60 on the s. w. The aerial consists of a single strand No. 12 enameled copper wire about 165 feet in length."

"So far this season I have hunted in vain for the TP's," laments William N. Garrison, 122 E. William St., Bath, N. Y. "I can't even tune in 2YA which was an old standby with me last year at this time. I consider my best veries so far this season to be FQN, PP, Fecamp, HIX, LR5, VOAS, CJOC, VE9EK, and KXL. I was unable to secure enough information on Strasbourg and Stuttgart due to interference with WGN and WEEU respectively."

"I have a 6-tube Amplex battery set with a B Eliminator. I never thought I could get far away with it but last week I started to DX. We have no outside aerial and yet I have received stations all over the eastern U. S." Thus writes "the boy DXer," W. M. MacFarland, Jr., 221 Sylvania Ave., Rockledge, Pa.

"I have picked up the calls of 244 stations since Jan. 1, 1933," says Benjamin Genung, 340 Arch St., Spring City, Pa. "My best was WEXL and WJBK both 50-watters. We have two transmitters being built near here about which the owners are silent. NAA announces as Washington now and has a 3:45 p. m. EST program many days."

"Since I bought my new Crosley 6-tube, Model 173, my log has mounted to 249," says Robert Hoffman, 306 West School Lane, Germantown, Philadelphia. "I have 41 states. My best catches are KTAR, KOY, KFSD, KHQ, KWSC, KOMO, CMQ, KOH, WNRA and KTUL. Have logged both 10-BP and 10-BQ.

Would like to hear from anyone owning a Crosley 173."

"I have logged 238 stations including seven in Mexico, ten in Cuba and nine in Canada," reports Homer Koon, Shawmut, Ala. "I haven't logged any foreigners yet but I am still hoping. My best catches are WICC, CMJG, KFXJ, WJBK, CKCR and CKNC. On the West Coast I have KFI, KPO and KNX."

"I use a Majestic 8-tube set Model 72, on which I have logged 616 stations with 331 verified," states Donald S. Voorhies, 1717 East 19th St., Brooklyn, N. Y. "My best catches are KGBU, KGU, JOFK, JOBK, 6WF, 5CL, 3LO, LR4, LR8 and Heilsburg, Germany."

"With an Emerson midget and an indoor aerial, I can easily tune in many distant stations," says Manuel Velasques, 157 E. 103rd St., New York City. "I now have a log of 375 stations. I get the police calls and many hams. Would like to hear from other Emerson owners."

"On the night of Feb. 24, I logged seven TP's, one Cuban and one Argentine," writes Maurice Clark, 145 N. Oakdale Ave., Medford, Ore. "I use an Atwater Kent Model 40 6-tube and have a total of 228 stations."

"I guess you will think my log small in comparison with some," avers Tom O'Brien, 642 College Ave., Quincy, Ill. "My log consists of 82 on the b. c. b. and 13 s. w. My best are KDB, a 100-watter, and KGFI, also a 100-watter. Last night I received XEN and KTAT."

### This and That

W8XO is reaching Hawaii wonderfully clear and very loud and right on its own channel, reports E. Allen Creevey, 2621 E. Manoa Rd., Honolulu, who uses only a Ducon Dubilier Condenser for an aerial with his Gillfillan 7-tube superhet.

"Who can tell me what station on 1210, employing Spanish or a similar language and no English, broadcast a musical program which I heard from 4:54 to 5:30 a. m. April 2?" queries Ray H. Zorn, Troy Grove, Ill.

"I should like to submit for your outlaw list, WAR of Blairsville, Pa., and WCBA, Greensburg, Pa., on 820 and 850 respectively," postcards James B. Crusan, 424 Smithfield St., Mount Pleasant, Pa. Can any readers throw any light on these stations?

For the benefit of those who are trying for the Japs, Warren E. Winkley, Hughson, Calif., says JOAK announces regularly at 11:17, 12:45 and from 4:40 to 4:59; JOIK at 11:17, 2:30 and at sign-off. KZRM and XGOA announces every half hour.

"DX in this neck of the woods is terrible these months," complains George C. Wetmore, Jr., 44 Allview Ave., South Norwalk, Conn. "Between the snowstorms, rainstorms, blizzards and what-not, the DX is ruined."

"I heard a Cuban which stated it was broadcasting on 338 meters," says A. E. Bollier, 18 George St., Buffalo, N. Y. "The call sounded like CMKG but I am not sure. Will appreciate any information as I wish to write for verification."

Julia Sanderson and Frank Crumit are sending the names of shut-in and invalid fans throughout the country to the Florists Telegraph Association who will distribute baskets of flowers and bouquets to them on June 10th. . . . Morton Downey's softly-spoken "Goodnight, Lover" at the conclusion of his broadcasts is addressed to his wife, the former Barbara Bennett. . . . Isham Jones and his band will play at "The Hollywood" in Atlantic City this summer, broadcasting from the seashore spot three times weekly. . . . Pancho and his orchestra are booked for the summer season at the Westchester Country Club, Rye, N. Y.

Anyone may install an amateur radio transmitter in Brazil. The only regulations governing the matter are that the power must not be greater than 1000 watts, and a small annual fee must be paid.

# Assorted S. W. INFORMATION

**R**EADERS who are not acquainted with some of the radio abbreviations or expressions which are often seen and heard, may find something of interest in the assortment given below.

## The Spanish Alphabet

A, pronounced ah; B, bay; C, say or thay\*; D, day; E, ay; F, effay; G, hay; H, ah-hay; I, ee; J, ho-tah; K, kah; L, el-lay; M, em-may; N, en-nay; O, oh; P, pay; Q, koo; R, air-ray; S, ess-say; T, tay; U, oo; V, vay; W, doo-ble-vay; X, eckis, ay-kis, ek-key\*; Y, yay, ee-grek, ee-gray-ye-ah\*; 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 the various Spanish-speaking countries, which accounts for the difference in pronunciation of some of the letters. One, oo-no; Two, dose; Three, trace; Four, koo-at-tro; Five, thing-ko; Six, sase; Seven, sate; Eight, oh-cho; Nine, noo-ay-ve; Ten, diez.

## Amateur Abbreviations

To save the trouble of sending a lot of extra dots and dashes, many words are shortened by the amateurs and these short forms are often seen in print. The letter X is used for "trans-" as in "xmitter," "xmission," etc. "Xtal" is the shortened form for crystal. Schedule is spelled "sked."

You, u; Your, ur; Thanks, tnx or thanx; Good, gud; From, de; Phone, fone; Again, agn; Some, sum; Very, vy; And, es; With, wid; Please, pse; Best regards, 73; "Love and kisses," 88.

An 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." A good op is said to have a "gud fist."

While programs for retransmission are being lined up, some interesting lingo is sometimes used by the commercial ops, such as "Down in the mud," which means that the signals are of low volume, or the modulation is too low. Those who sing as if they were tired are said to have "lock jaw" and those who skip over notes, especially in scales, are "scoopers."

All radio operators, amateur and professional alike, seem to be "old men" and "young ladies," regardless of their respective ages. OM and YL are the abbreviations for "old man" and "young lady."

CQ is a general call to any station wishing to QSO.

A QSO is a communication between two stations.

A QSL is an acknowledgment, as a QSL card, which verifies reception of a transmission.

K means "go ahead." When an operator finishes his own part of a transmission and wishes the communicating station to reply, he terminates his own transmission by sending K in code, or, if using phone, says "K," or "dah dit dah" (the way K sounds in code), or he merely says "go ahead."

CUL means "see you later," or CU agn, "see you again."

QRA, a station's address.

QRM, interference from other stations, or local QRM can be interference caused by faulty electrical appliances nearby (man-made static).

QRN, Atmospherics, or natural static.

QRT, "quit."

QSA, The understandability of signals is expressed by the QSA Code, QSA1 being signals which are not at all intelligible and QSA5 being perfectly understandable signals.

QSB, fading.

R, The R Code describes the volume of signals, ranging from R1, the faintest signals which can be heard in the headphones, to R9, the very best signals on the loudspeaker.

A1, Continuous wave (code) emission.

A2, Interrupted continuous wave (code) emission.

A3, Voice emission.

CW, Continuous wave.

ICW, Interrupted continuous wave.

Condition A, Inverted modulation or "scrambled speech."

Condition B, Intelligible speech.

CMC, Canadian Marconi Co.

BBC, British Broadcasting Corp.

RCA, Radio Corporation of America.

NBC, National Broadcasting Co.

CBS, Columbia Broadcasting System.

AWA, Amalgamated Wireless (A/sia), Ltd.

A/sia, Australasia.

AT&T, American Telephone and Telegraph Co.

FRC, Federal Radio Commission.

PTT, (Bureau des, or Règè des) Postes, des Télégraphes et des Téléphones. The abbreviation PTT is often given, erroneously, as the call-sign of various French or French Colonial stations. It is the abbreviation for the governmental bureau or department which controls the station.

TSF, another common French abbreviation, which is translated by our words "wireless" or "radio." TSF is Télégraphie sans fil, or, telegraphy without wire.

M. S., (preceding the name of a ship), Motor Ship, or M. V., Motor Vessel.

H. M. S., His Majesty's Ship.

R. M. S., Royal Mail Ship.

AST, Atlantic Standard Time.

EST, Eastern Standard Time (EDST, "daylight time").

CST, Central Standard Time (CDST, "daylight time").

MST, Mountain Standard Time.

PST, Pacific Standard Time (PDST, "daylight time").

JST, Japanese Standard Time.

EAST, Eastern Australia Standard Time.

CET, Central European Time.

MEZ, The German abbreviation for CET.

LST, Local Standard Time.

GMT, Greenwich Mean Time.

GST, Greenwich Summer Time.

Greenwich Mean Time is the time system in which noon occurs at the time the sun passes over the meridian of Greenwich, England, and the standard time of nearly every locality in the world is calculated to agree with Greenwich in minutes and seconds, but to differ in hours by whole numbers. The true sun time of New York is 4 hours and 56 minutes slower than Greenwich, but the standard time differs by exactly five hours.

Publications which have readers in every part of the world, cater to only a minority of their subscribers when only Eastern Standard Time is given, as all their subscribers, except those living in the Eastern Time Zone, must convert the time to their own standard. A better way is to give time as RADEX does, in GMT and the five Standard times of North America.

GMT commences at midnight (0000) and continues through 24 hours to 11:59 pm (2359), without starting over at noon, as we do, thereby averting the necessity of using AM and PM. Thus, in GMT, 12:45 am is expressed 0045, and 12:45 pm is 1245. 1 pm is 1300, or 13 hours past midnight. To convert GMT into EST, it is necessary only to subtract 5 hours and no minutes (500) from GMT, because EST is exactly 5 hours slower than GMT. Thus, 1400 GMT is 900 EST, or 9:00 am. If the result of this subtraction is greater than 1200, subtract 1200. Thus, 2100 GMT, minus 500 gives 1600, or 16 hours past midnight. Subtract the 12 hours of the morning (1200) and obtain 400, or 4:00 pm, EST.

Persons living in the Central time zone must subtract 600, as their time

*(Continued on page 42)*

# RADIO *in* AUSTRALIA

● ● ● By EDWIN J. WETTON\*

I AM writing this article for **RAD-EX** at the suggestion of my friend, "Hi Frequency," (Clement Van Velsor) to give a short outline of broadcasting in Australia and an idea of how it compares with your system in America.

At the present time we have in this country about sixty stations which provide programs daily. These are divided into two classes, the "A" class or National, and the "B" class, the licensed broadcasting stations. There are, all told, eight National and four Relay stations which work in conjunction with the parent stations and form the National hook-up.

All of these stations depend upon the listener for the income to provide the programs and maintain the stations and out of the yearly license fee of 24 shillings (roughly, \$5.75 in your money), the Commission is able to provide programs from 7 a. m. until 11:30 p. m. or midnight and to 10:30 p. m. on Sundays.

Owing to our small population, the stations are unable to provide artists all the time so we have plenty of gramophone records during the daytime. These are interspersed with many talks by leading authorities on many subjects including sports. The National programs are put on daily from 8 to 10:30 p. m. and during this period the best artists and music are heard. Operas, musical comedies and dramas of note are all given in turn and the best musical and band features are provided. These programs come to us from the Sydney and Melbourne studios. Other programs of special merit are taken from Adelaide, Brisbane and Newcastle. Since the Commission took charge, they have broadcast all the leading operas and all the Gilbert and Sullivan operas from the leading theatres in Sydney and Melbourne.

Visiting artists are always sought after and most of them make an appearance before the microphone while they are here. In this direction, I must say, the Commission is very alert.

As a short-wave listener, I have been able to hear quite a number of your programs and I can honestly say that, as for the National programs, we have very little room for complaint and, above all, we have no advertising.

## The American Plan

Turning to the class "B" or licensed broadcasting stations, we have a very fine class of stations, largely Americanized in their system of working. These stations sell their time to sponsors who advertise their wares in this new and novel way. They are on the air from 6:00 a. m. until midnight daily, and some of the sponsored programs are very good indeed. Amongst them I might mention Pepsodent and the Wrigley people with whom you are, of course, familiar. It is surprising to see how the Australian business-man is taking to advertising on the air. In Sydney alone, we have six of these stations and they have all increased their power and the size of their studios considerably during the past twelve months. Broadcasts presented by them include horse-racing and greyhound-coursing with descriptions from the courses, and boxing and wrestling bouts are graphically described from the ringside.

The "B" stations have a very big listening audience and some of the clubs formed in connection with the individual stations, have astounded many, so great has their membership become. On many occasions our

\*46 Cooper Street, Strathfield, Sydney, New South Wales, Australia.

largest halls have been too small to hold the members.

It would be hard and somewhat unfair, to try to compare the broadcasting systems of our two countries but I believe we are particularly fortunate here because we have the choice of the European system in the "A" stations and straight-out broadcasting or the American system in the "B" class. Both are very popular but it would be hard to compare our tiny network with such a wonderfully organized system as you have in your country, though I will say that we are very satisfied and proud of our achievements in the broadcasting field.

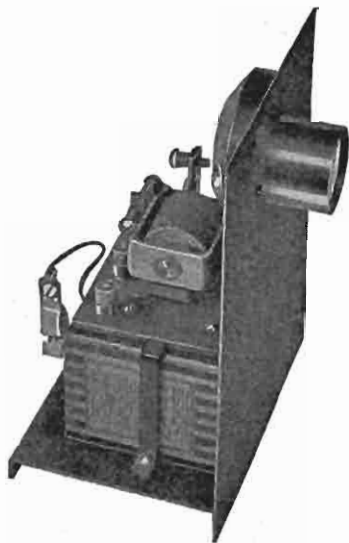
Editor's note: Mr. Van Velsor tells us that Mr. Wetton is an amateur and that he is a shut-in due to an accident and has to use a wheel-chair to get about. He made a four-tube short wave receiver with an additional stage of audio. He has an impressive log of s. w. stations and finds W8XK his most consistent American. Mr. Wetton is an enthusiastic radio fan and DXes for as long as eighteen hours a day. No doubt our Australian friend would be pleased to hear from some of his American colleagues.

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## The Electric Eye

**G**ARAGE doors are now being opened mysteriously whenever a car drives up; house doors open when one approaches them; drinking fountains send forth a stream when one bends over them. These are but a very few of the uses to which the "electric eye" is being put. J. Thos. Rhamstine, 500 East Woodbridge St., Detroit, Mich., has brought out a low-priced photo-electric relay which offers a wide field for experimenters.

This device consists of the photo-electric cell with the necessary dry batteries and a relay switch so that when the light entering the cell is interrupted the electric current flowing through the switch is turned on or off. In this way advertising signs



can be turned on as night approaches, boiler drafts can be opened or closed when the smoke becomes dense, objects may be counted mechanically.

In certain installations such as burglar alarms, it is necessary to have a light source to throw a beam of light in the "eye." In some cases infra-red rays are used as these are invisible to the observer and he would not know he was walking through such a ray. Mr. Rhamstine has also brought out a low-cost Light Source. These two devices permit of wide experimentation by those electrically inclined.

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Adding automatic volume control to old t. r. f. sets is possible, but it is not recommended. Satisfactory operation cannot be obtained because the available coupling devices will not match the impedance of the diodes and still have uniform gain throughout the b. c. b.

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VK3ME announces that VK3LR, Melbourne, is moving down to 9.580 megs. and broadcasting programs of the International Broadcasting Corp., London, from 3 until approximately 5:30 p. m. EST.



# When SIGNALS Cut Off *and* On

• • • By B. FRANCIS DASHIELL

**F**ROM the many letters RADEX receives from its readers who are experiencing intermittent reception, it appears that the cutting off and on of signals is one of the most common faults in radio receivers. The coming summer months provide a good time to give the set a thorough testing to find out the cause of that annoying intermittent reception. A brief discussion of this serious problem, therefore, will not be amiss at this time.

Locating the sources that cause a set suddenly to cut off is the most baffling and varied of all radio troubles. Usually the difficulty calls for expert treatment, particularly because the very nature of the trouble requires certain instrumental and set analyzer tests and a check on the voltage readings to the plates and screens of the tubes. However, with the aid of a good high reading voltmeter, one should be able to make his own diagnosis.

## Locating the Trouble

The fact that so many receivers are different (although fundamentally similar) precludes any attempt to give other than blanket instructions for the locating of intermittent reception. But the reader, working with a schematic wiring diagram of his set, together with the values of resistors and condensers, should be able to locate the various parts that will be mentioned in the following text as possible sources of trouble and worthy of examination.

Defective parts that cause intermittent operation usually will be found in some minor circuit. Unfortunately, these elements are difficult to deal with in the matter of isolation and testing, for the defects may be caused by seemingly insignificant effects. Intermittent reception—the sudden cutting off and on of signals

during operation of a receiver, occasionally only before it becomes fully warmed up, or, more frequently, not until some time after the set has become completely heated—will be found in most cases due to sudden changes in the electrical values of one or more of the many minor units in the circuit. High value resistors carrying little or no current, leaking or broken-down resistors or condensers, opening or shorting bypass condensers, defective tubes in sensitive circuits, mechanical faults in tuning units, broken wires and loose contacts that expand or contract with thermal changes, poor antenna and ground connections, dielectric imperfections in filtering condensers, and the ever present problem of faulty manufacturing, must be examined with suspicion.

## Failure of Resistors

When characterized by spontaneous volume changes intermittent reception, without doubt, will be found within the receiver. There are many resistors of high values, and those of the carbon type are known to change resistance values excessively when the voltage applied across them is increased above a certain critical point. Depending upon the position of such resistors in the circuit, bias voltages, plate or screen-grid voltages, coupling relationships, or signal bypassing, will result. High value resistors, which may be so affected, will be found in receivers in series with the plates of certain tubes to reduce the applied potential; in series with the screen-grids of that particular type of tubes; and as bleeders shunted between the screen-grids to the ground or chassis; in grid returns; for cathode biasing; in filter circuits; and in automatic volume control circuits. It is difficult to list all of the possible positions of these high resistance re-

sisters, but a glance at a circuit diagram will reveal their locations. But the foregoing will cover the probable locations in which defective resistors should be found causing intermittent reception.

Those sudden changes in potential that may be applied automatically across the terminals of high resistances are due, in part, to excessive line voltages, intense signal potentials, or to faulty parts within the receiver and power unit. It is then that a low-current carrying high-value resistor becomes overloaded and breaks down. At this point we frequently find that the usual testing equipment used by many servicemen utilizes only low voltages and is not suitable for testing defects of this character. Under such conditions, when trouble is intermittent, a defective resistor may test perfectly at the shop and show no trouble. Sets are returned as satisfactory only to have them soon recommence their cutting off and on at irregular intervals.

#### The Substitution Test

The surest way of testing for faults in high resistances is to substitute new resistors in place of the old ones that are under suspicion. Then operate the set as a final test. It may be necessary to test a number of resistors in this way before the real offender is located. This method is certain but, of course, slow. It is not necessary that the old resistor be shunted by one having a similar rating simply for test purposes. The final replacement, however, should be identical, but its wattage rating can be slightly higher. This may forestall any possibility of a similar breakdown from overloading in the future.

Bypass condensers are the cause of as much trouble of this nature as defective resistors. They will intermittently open, leak, or short circuit. Ordinarily a condenser effectively blocks the passage of a direct current, but sometimes it will develop considerable direct-current conductivity. This will short circuit the plate, con-

trol-grid, screen-grid or cathode to the ground intermittently, and thus suddenly change the volume. Then, also, a condenser may temporarily "heal", only to break down suddenly with another voltage surge and cut off reception. Bypass condensers should be tested also by the substitution method just as described for resistances.

#### Open Bypass Condensers

The cutting on or off of signals, accompanied by oscillation and howling, may be caused by the opening of screen-grid and cathode bypass condensers. In some receivers the fine wires that emerge from bypass condensers that are encased in small bakelite shells become broken. A simple way to determine this is to probe around the lugs with a fine, sharp pointed instrument having a well-insulated handle, while the set is operating. Coupling condensers, those that couple the audio stages, or the second detector with the audio stage, may cause intermittent operation if defective. Trouble also occurs in the oscillator circuit; volume controls; tone controls; and in the gang condenser units when plates touch or rotor contacts between the shaft and its bearings are imperfect. Cleaning and bonding the contacts are the obvious remedies.

The most common internal faults have been described above. But trouble also occurs in noisy, wire wound volume controls. They should be cleaned and filled with a little dry graphite, such as rubbing a soft lead pencil vigorously across the turns of wire. The shield of an antenna lead-in, when such is in use, may be loose and touch the wires within the set. Tubes, of course, are a common source of trouble. One or more of the internal elements may become broken away from their supports, or warped by heat, and touch as the tube becomes heated, thus shorting some circuit. Try placing several tubes in the automatic volume control socket, for with some tubes this operation is very critical. Switches used for

power, local-distance, tone control and all-wave changes often get loose and cause a set to cut off. Loose wires and other contacts are responsible too, for they may change with the heating and chilling of the parts of the chassis. Trouble has been located as poor contacts between one prong of a tube and its socket. Moving the tubes in their sockets may disclose the fault.

### Broken Wires

The primary windings of audio and output transformers have been known to burn out, and the tiny break occurring somewhere in the hundreds of feet of fine wire may alternately separate or close with a consequent cutting off or on of signals. A test of the primary coil with battery and voltmeter will disclose this fact. Radio frequency coils and chokes may have defective wire contacts. Examine each of these, particularly when in an antenna or grid circuit. Temporarily shorting r.f. choke coils with a piece of wire will remedy the trouble. Internal shorting of one of the intermediate stages is a possibility. Sometimes the drastic action of resoldering or "sweating" every soldered contact in the set will correct intermittent reception which cannot otherwise be located.

If the antenna leadin wire runs for any distance parallel to any electric conduit or wires it should be of the shielded or transmission line type. The line plug should be reversed, as in some cases this will clear up such trouble. A separate outside ground is often effective, or a 0.5 mfd. fixed condenser in series with the ground lead may help. Bonding of the joints in an electric conduit carrying the power wires, as well as its grounding, can be helpful. Make sure the conduit grounding at the meter is perfect. The only way to make sure that the pickup of the antenna is not affected by the house wiring is to place the antenna as far away from the house as possible, and use a transmission line leadin to the set. Al-

though developed primarily for man-made static noise reduction these antenna systems apply very well to the problem of intermittent reception.

### Our Cover Girl

From a Florida cottage to radio stardom was an overnight hop for petite Frances Langford, deep-voiced singer with the Colgate House Party, heard over an NBC (Red) network each Saturday at 9:00 p. m., EDST.

A local program director heard Frances sing at an American Legion party in her home town of Lakeland, Florida, interested Rudy Vallee in her career, and almost before she knew it she was headed for success on the air waves.

Three days after the vivacious little brunette signed her contract to star on the House Party program, she was given a featured part in "Pure in Heart," a new Broadway show. She also got an offer for her Florida orange ranch—at just twice what she paid for it—but she's holding on because she thinks a Florida land boom is underway.

Frances is just 21, and is trying to add to her 100-pound weight.

A new 10,000 watt station is being built in Capt Town, S. Africa. The erection of the building started on March 9 and is expected to be completed by the end of September.

**LEARN RADIO CODE  
QUICKLY AND EASILY AT  
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Amateur or Radio Operator . . .**

CANDLER Training Will Enable You to Build and Operate Your Own Amateur Station, to Read and Send Code and to Obtain Your Government License. Complete Home Study Course trains you thoroughly and quickly. **INEXPENSIVE.**

Write today for **BOOK OF FACTS** explaining everything. No obligation.

CANDLER SYSTEM CO., Dept. X10  
6343 So. Kedzie Ave., Chicago, Ill.



## FIRST AID

(Continued from page 20)

cates an excess of filament voltage, excess plate voltage, or an insufficient bias. Check the bias bypass condenser of the power stage, as well as the .02 mfd. signal coupling condenser. No difficulties should arise from substituting the 2A5 for the -47 as their characteristics are similar.

### Antenna Coil Shorted

*For perhaps an hour after my Columbia superheterodyn has been turned on there is an annoying crackling sound. This seems to disappear after the set is warmed up. A peculiar thing is that when the antenna is disconnected, all the tubes light up noticeably. The moment the antenna is touched to the post of the set, the lights in the tubes die down as though a load had been connected to them in series. What do you think of this happening?*

The only logical explanation for the tubes lighting up noticeably when the antenna is detached is that the antenna is shorted to the ground, and some other short to ground exists in connection with the power transformer primary coil. This trouble has occurred infrequently with d.c. line operated sets. You have not stated the model of the receiver, and as there

(Continued on page 52)

## ALL-WAVE Antenna

(Continued from page 8)

tors which enter into the design of an antenna system of this character.

A switch on the transformer eliminates the primary coil and one wire of the lead-in so the system can be converted instantly to the conventional type of "L" antenna. Loading coils are provided for use where space is not available for the full length of antenna. The manufacturer has also devised a number of ingenious arrangements to be

used when there is limited roof area. The price of the RCA-Victor "World Wide Antenna" is to be approximately \$7.00. The manufacturer is the RCA-Victor Co., Inc., Camden, N. J.

## On the Short Waves

(Continued from page 16)

far are W1XAZ, W8XK, W2XE, W3XAL, W1XAL, W9XF, VE9GW, VE9DY, W2XAF, W3XAU, KEZ, TGX, CMCI, HJ1ABB, EAQ, GSB-C, DJA, VQ7LO, LSX, I2RO, FYA, VK2ME-3ME and HRB. Last week I heard KNRA (Seth Parker Ship) testing with New York. The boat at that time was in Miami. It was heard at 6.6 or 6.45 megs."

This is the last RADEX until September, and the Editors wish every reader the very best of DX during the two summer months. Our readers should feel free to continue writing us, however, and communications requesting information will be acknowledged as quickly as possible.

## Short Wave Information

(Continued from page 36)

is 6 hours slower than Greenwich.

MST, subtract 7 hours.

PST, subtract 8 hours.

AST, subtract 4 hours.

Hawaii, subtract 10 hours and 30 minutes (1030). Thus, 2145 GMT, minus 1030 gives 1115, or 11:15 am, Hawaiian Time.

Wayne King is a rather old-fashioned fellow—when it rains he still wears unbuttoned galoshes which flap loosely around his ankles.

In Radio City there are 325 clocks synchronized with a master clock controlled by the meteorological office.

# WHAT'S ON THE AIR TONIGHT?

Fill in calls and dial numbers for those stations through which you best receive the three chains. You can then turn quickly to the one that has the feature you want.

COLUMBIA.....(C)	
Call	Dial

NATIONAL, Red (R)	
Call	Dial

NATIONAL, Blue.(B)	
Call	Dial

TIME: ED Eastern Daylight; E Eastern; C Central; M Mountain.  
For Pacific Time subtract one hour from Mountain.

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

**ED-8:00 p.m., E-5:00, C-4:00, M-3:00**  
**C — Bobby Rogers in 25th Century**  
 CKLW WAAB WABC WADC WBT  
 WCAO WCAU WDRG WEAN WHK  
 WJSV WKBW WOKO

**ED-8:15 p.m., E-5:15, C-4:15, M-3:15**  
**C — Bobby Benson; Sunny Jim**  
 WAAB WABC WCAU WDRG WEAN  
 WFBL WGR WHEC WHK WLBZ  
 WMAS WOKO WORC  
**B — U. S. Army Band**  
 KOIL KSO KWCR KWK KYW WBAL  
 WBZ WBZA WCKY WENR WHAM  
 WJZ WMAL WREN WSYR

**ED-8:30 p.m., E-5:30, C-4:30, M-3:30**  
**C — Chas. Barnet and Orchestra**  
 CKLW KLRA KLZ WAAB WADC  
 WBIG WBRG WCAO WDAE WDBJ  
 WDBO WDOO WDRG WDSU WFBL  
 WFEA WGST WHEC WHF WICC  
 WJAS WJSV WKBN WKBW WLAC  
 WLBW WLBZ WMAS WMBG WOKO  
 WORC WQAM WREC WSFA WJSV  
 WSPD WTAR WTOG

**ED-8:45 p.m., E-5:45, C-4:45, M-3:45**  
**B — Lowell Thomas**  
 CRCT KDKA WBAL WBZ WBZA  
 WFLA WGAR WHAM WIOD WJAX  
 WJR WJZ WLW WSYR  
**C — Dixie Circus**  
 CKLW WABC WBBM WBT WCAO  
 WCAU WJSV WNAC WOKO

**ED-7:00 p.m., E-6:00, C-5:00, M-4:00**  
**B — Amos 'n' Andy**  
 CRCT CRDKA WBAL WBZ WBZA  
 WCKY WFLA WGAR WHAM WIOD  
 WJR WJZ WLW WMAL WPTF  
 WRVA

**ED-7:15 p.m., E-6:15, C-5:15, M-4:15**  
**R — Gene and Glenn**  
 WBEN WCSH WEAF WEEI WFLA  
 WGY WIOD WIS WJAR WJAX  
 WKBF WPTF WRC WSAI WTAG  
 WTAM WWJ WWNC  
**B — Baby Rose Marie**  
 KDKA KOIL KSO KWCR KWK  
 WBAL WBZ WBZA WCKY WENR  
 WHAM WJZ WMAL WREN WSYR  
**C — Just Plain Bill**  
 CFRB CKLW WABC WCAO WCAU  
 WGR WHK WJSV WKRC WNAC

**ED-7:30 p.m., E-6:30, C-5:30, M-4:30**  
**C — Music in the Air**  
 WABC WCAO WCAU WDRG WEAN  
 WFBL WFEA WGR WHEC WICC  
 WJAS WJSV WLBZ WNAC WOKO  
 WORC

**R — Mollie Show**  
 KSD WBEN WCAE WCSH WDAF  
 WEAF WFBW WGY WHO WJAR  
 WMAQ WOC WOW WRC WTAG  
 WTAM

**B — George Gershwin; Katzman's Orch.**  
 KDKA KOIL KSO KWCR KWK  
 WBAL WBZ WBZA WENR WHAM  
 WJR WJZ WMAL WREN WSYR  
 WLW

**ED-7:45 p.m., E-6:45, C-5:45, M-4:45**  
**C — Boake Carter; Philco**  
 CKLW KMBC KMOX WABC WBBM  
 WBT WCAO WCAU WCCO WGR  
 WHAS WHK WJAS WJSV WNAC  
**R — The Goldbergs**  
 WBEN WCAE WCSH WDAF WEAF  
 WEEI WENR WFBW WGY WJAR  
 WLIT WOW WRC WSAI WTAG  
 WTAM WWJ

**ED-8:00 p.m., E-7:00, C-6:00, M-5:00**  
**C — Mary Eastman**  
 CKLW WABC WADC WCAH WDRG  
 WFBM WGN WGR WHEC WHK  
 WICC WJSV WMAS WMBG WMT  
 WNAC WORC WSPD WWA

**R — Soconyland Sketches**  
 WBEN WCAE WCSH WEAF WEEI  
 WGY WJAR WSAI WTAG WTAM  
 WVIC

**B — Yeast Foamers; Jan Garber**  
 KDKA KDYL KFI KGO KGW  
 KHQ KOA KOIL KOMO KSO KWCR  
 WBAL WBZ WBZA WGAR WHAM  
 WJR WJZ WKBF WLS WLW WMAL  
 WREN WSYR

**ED-8:15 p.m., E-7:15, C-6:15, M-5:15**  
**C — Edwin C. Hill**  
 CKLW KMBC KMOX WABC WADC  
 WCAO WCAU WCCO WDRG WEAN  
 WFBL WFBM WGN WGR WHK  
 WJAS WJSV WKRC WNAC WOKO  
 WSPD

**ED-8:30 p.m., E-7:30, C-6:30, M-5:30**  
**C — Bing Crosby**  
 CKLW KDB KERN KFBK KFPY  
 KFRG KGB KHJ KLZ KMBC KMJ  
 KMOX KOIN KOL KSL KVI KWJ  
 WABC WADC WCAO WCAU WDRG  
 WEAN WFBL WFBM WGN WGR  
 WHAS WHK WJAS WJSV WKRC  
 WNAC WOKO WOWO WSPD

**R — Voice of Firestone**  
 CFRB CRCT KFYP KPRC KSD  
 KTBS KTDS KVOO WBEN WCSH  
 WDAF WDAY WEAF WEBC WEEI  
 WFAA WFBW WFLA WGY WHO  
 WIOD WIS WJAR WJAX WJDX  
 WKY WLIT WLW WMAQ WMC  
 WOAJ WOW WRC WRC WVA WSB  
 WSM WSBM WSOB WTAG WTAM  
 WVIC WTMJ WWJ WWNC

**ED-8:45 p.m., E-7:45, C-6:45, M-5:45**  
**B — Babe Ruth; Baseball Comment**  
 KDKA KSO KWCR KWK WBAL  
 WBZ WBZA WCKY WGAR WHAM  
 WJZ WLS WMAL WREN WSYR

**ED-9:00 p.m., E-8:00, C-7:00, M-6:00**  
**C — Andre Kostelanetz' Orchestra**  
 CKLW KDB KERN KFBK KFH  
 KFPY KFRG KGB KGMB KHJ  
 KLRA KLZ KMBC KMJ KMOX KOH  
 KOIN KOL KOMA KSL KTAT KUSA  
 KVI KWG WABC WADC WBBM  
 WBNS WBRG WBT WCAO WCAU  
 WCCO WDAE WDBJ WDBO WDRG  
 WDSU WEAN WFBL WFBM WGST  
 WHAS WHEC WHK WICC WISN  
 WJAS WJSV WKBW WKRC WLAC  
 WLW WMBG WMT WNAC WOKO  
 WORC WOWO WPG WQAM WREC  
 WRR WSPD WTAR WTOG

**R — A. & P. Gypsies**  
 KSD WBEN WCAE WCSH WDAF  
 WEAF WEEI WGY WHO WJAR  
 WLIT WMAQ WOC WOW WRO  
 WSAI WTAG WTAM WVIC WWJ

**B — Sinclair Minstrels**  
 KDKA KFYP KOA KOIL KPRC  
 KSO KSTP KTBS KTBS KVOO  
 KWCR KWK WBAL WBZ WBZA  
 WDAY WEBC WFAA WFLA WGAR  
 WHAM WHA WIOD WIS WJAX  
 WJDX WJR WJZ WKY WLS WLW  
 WMC WOAJ WPTF WREN WRVA  
 WSB WSM WSBM WTMJ WWNO

**ED-9:30 p.m., E-8:30, C-7:30, M-6:30**  
**C — The Big Show**  
 CFRB CKLW KDB KERN KFBK  
 KFPY KFRG KGB KHJ KLZ KMBC  
 KMJ KMOX KOIN KOL KRLL  
 KSL KVI KWG WABC WADC  
 WBBM WBT WCAH WCAO WCAU  
 WCCO WDRG WDSU WEAN WFBL  
 WFBM WHAS WHK WICC WJAS  
 WJSV WKBW WKRC WLAC WNAC  
 WOKO WOWO WREN WSPD WTAR  
**R — Dol Monte Ship of Jay**  
 KDYL KOA KPRC KSD KSTP  
 KTBS KVOO WBEN WCAE WCSH  
 WEAF WEBC WEEI WFAA WFBW

**MONDAY—(Continued)**

WFLA WGY WHO WIOD WIS  
WJAR WJAX WKBF WKY WLIT  
WMAQ WOAI WOC WOV WRC  
WRVA WSAI WTAG WTAM WTMJ  
WVJ WWNC

**B — Jack Frost's Melody Moments**  
KDKA WBAL WENR WGAR WHAM  
WJR WJZ WLW

**ED-10:00 p.m., E-9:00, C-9:30, M-7:00**  
**B — Wayne King and Orchestra**  
CKLW KALE KDB KERN KFRC  
KGB KHJ KLZ KMBC KMOX  
KGIN KOL KSL KWG WAAB WABC  
WADC WBBM WCAO WCAU WCCO  
WDRB WEAN WFBL WFBM WGR  
WHAS WHK WJAS WJSV WKRC  
WOKO WOWO WSPD

**R — Contented Program**  
CFCF CRCT KDYL KFI KFJR  
KGO KGW KHQ KOA KOMO KPRC  
KSTP WCHS WFAE WFCB WEEL  
WFRB WJAR WLIT WMC WOAI  
WRC WSB WSM WTAG

**B — Packard; Walter Damrosch**  
KDKA KOIL KSO KWCR KWK  
WBAL WBZ WJAZ WCKY WENR  
WGAR WHAM WJR WJZ WKBF  
WMAL WREN WSYR

**ED-10:30 p.m., E-9:30, C-8:30, M-7:30**  
**C — Musical Album**  
CKAC CKLW KFH KLRA KLZ  
KMBC KRLD KSCJ KSL KTSa  
WAAB WACO WADC WBIG WBNS  
WBRC WBT WCAO WCAU WCCO  
WDAA WDBJ WDDB WDRC WDSU  
WEAN WFBM WFEA WGLC WHAS  
WHBC WHK WHP WJAS WJSV  
WKWB WLAC WLWB WLWZ WMAS  
WMBD WMBG WMT WNAK WOKO  
WORC WQAM WREC WSBT WSJS  
WSPD WTOC

**ED-11:00 p.m., E-10:00, C-9:00, M-8:00**  
**B — Amos 'n' Andy**  
KDYL KFI KGO KGW KHQ KOA  
KOIL KOMO KPRC KSTP KTHS  
KWK WBAP WDAF WENR WKY  
WMAQ WMC WOAI WREN WSB  
WSM WSMB WTMJ

**C — Fats Waller, Songs**  
CKLW KLRA KLZ KMBC KRLD  
KSL KTSa WAAB WABC WACO  
WADC WBIG WBNS WBRC WBT  
WCAO WDAE WDBJ WDDB WDRC  
WDSU WGLC WHAS WHEC WHK  
WHP WJAS WJSV WKBN WKWB  
WLAC WLWB WMBG WOKO WPG  
WQAM WREC WSBT WSJS WSPD  
WTOC

**ED-11:15 p.m., E-10:15, C-9:15, M-8:15**  
**R — Gene and Glenn**  
KTBS WAPI WAVE WFCB WHO  
WIBA WJDX WKY WMAQ WMC  
WOAI WOW WSB WSM WSMB  
WTMJ

**C — News Service**  
CFRB CKAC CKLW KFAB KFH  
KLRA KLZ KOMA KSCJ KTRH  
KTSa KVOR WAAB WABC WACO  
WADC WBBM WBNS WBRB WCAO  
WDAE WDBJ WDDB WDRC WDSU  
WFBL WGST WHEC WHP WIBW  
WIP WISN WJSV WKBN WKWB  
WKRC WLAC WLWB WLWZ WMAS  
WMBD WMBG WMT WNAK WODX  
WOKO WORC WPG WREC WSJS  
WSPD WTAR WTOC

**ED-11:30 p.m., E-10:30, C-9:30, M-8:30**  
**C — Charlie Davis and Orchestra**  
CFRB CKLW KFH KLRA KLZ  
KMBC KOMA KTRH KFOR WABC  
WADC WBNS WBRC WBT WCAO  
WDBJ WDDB WDDB WDRC WDSU  
WEAN WFBM WGLC WHAS WHEC  
WHP WIBW WICC WIP WJAS  
WJSV WKWB WLAC WLWB WLWZ  
WMAS WMBG WNAK WOKO WORC  
WPG WQAM WREC WSBT WSJS  
WSPD WTAR

**R — Voice of Firestone**  
KDYL KFI KFSD KGHK KGIR KGO  
KGU KGW KHQ KOA KOMO KTAR

**TUESDAY**

**ED-6:00 p.m., E-5:00, C-4:00, M-3:00**  
**C — Buck Rogers, See Monday**

**ED-6:15 p.m., E-5:15, C-4:15, M-3:15**  
**C — Bobby Benson, See Monday**

**ED-6:30 p.m., E-5:30, C-4:30, M-3:30**  
**R — Mid-Week Hymn Sing**  
KDYL KFJR KGIR KPO KPRC  
KTBS KTHS KVOD WDAY WFAE  
WFAP WFI WGY WHO WIBA WIS  
WJAX WJDX WMAQ WOAI WOC  
WRC WSAI WTAG WWNC

**C — Mischa Ruginsky and Ensemble**  
CKLW KLRA WAAB WABC WADC  
WBRC WBT WCAO WDAE WDBJ  
WDBO WDDB WDSU WFEA WGLC  
WGST WHEC WHP WICC WJAS  
WJSV WLAC WLWB WLWZ WMAS  
WMBG WOKO WORC WQAM WREC  
WSFA WSJS WSPD WTAR WTOC

**ED-6:45 p.m., E-5:45, C-4:45, M-3:45**  
**B — Lowell Thomas, See Monday**

**ED-7:00 p.m., E-6:00, C-5:00, M-4:00**  
**B — Amos 'n' Andy, See Monday**

**C — Morton Downey**  
CFRB CKLW KFAB KLRA KLZ  
KMBC KOMA KSCJ KTRH  
KTSa KVOR WABC WACO WADC  
WBNS WBRC WCAO WCCO WDAE  
WDBJ WDDB WDDB WDRC WDSU  
WFBM WFEA WGLC WGST WHEC  
WHP WIBW WICC WISN WJAS  
WLAC WLWB WLWZ WMBG WMT  
WOKO WORC WQAM WREC WSFA  
WSJS WSPD WTAR WTOC WVVa

**ED-7:15 p.m., E-6:15, C-5:15, M-4:15**  
**R — Gene and Glenn, See Monday**

**C — Just Plain Bill, See Monday**

**B — You and Your Government**  
KDKA KECA KEX KFSD KFJR  
KGA KGHK KGIR KJR KOA KOIL  
KPRC KTAR KTBS KTHS KVOD  
KWCR KWK KYA WAPI WVBZ  
WCKY WFLA WHAM WIBA WIS  
WJDX WJZ WMAL WOAI WPTF  
WREN WSMB WWNC

**ED-7:30 p.m., E-6:30, C-5:30, M-4:30**  
**C — Silver Dust Serenaders**  
WABC WCAU WDRC WFBL WGR  
WHEC WJAS WMAS WOKO WORC  
WVVa

**R — Tastyeast; East and Dumke**  
KSD WCHS WFAE WFRB WGY  
WJAR WMAQ WRC WSAI WTAM  
WTIC

**ED-7:45 p.m., E-6:45, C-5:45, M-4:45**  
**C — Boake Carter, See Monday**  
**R — Goldbergs, See Monday**

**ED-8:00 p.m., E-7:00, C-6:00, M-5:00**  
**R — Lee Roisman's Orchestra**  
KDYL KFI KGO KGW KHQ KOA  
KOMO KSD WBEN WCAE WCHS  
WEAF WEEL WFRB WFI WGY WHO  
WJAR WKBF WLS WMAQ WOC  
WOW WRC WSAI WSB WSM WSMB  
WTAG WTAM WTMJ WWJ

**B — Eno Crime Clues**  
KDKA KWK WBAL WBZ WBZA  
WGAR WHAM WJR WJZ WLW  
WMAL WMAQ WREN

**C — The Troopers**  
CKLW KLRA KMBC KMOX WABC  
WADC WBBM WBIG WBNS WBRC  
WBT WDAE WDBJ WDDB WDRC  
WDSU WFBM WGR WHEC WHK  
WICC WISN WJSV WKBN WKRC  
WLAC WMAS WMBG WNAK WPG  
WQAM WREC WSAI WSJS WSPD  
WTOC WWVA

**ED-8:15 p.m., E-7:15, C-6:15, M-5:15**  
**C — Voice of Experience**  
CKLW KMBC KMOX KTRH WABC  
WBBM WBT WCAO WCAU WCCO  
WDRB WDSU WEAN WFBL WGR  
WHAS WHK WIBW WJAS WJSV  
WKRC WNAK WOWO

**ED-8:30 p.m., E-7:30, C-6:30, M-5:30**  
**B — Hudson; Conrad Thibault**  
KOIL KSO KWCR KWK WBAL WBZ  
WBZA WGAR WHAM WJZ WLW  
WLW WMAL WREN

**R — Wayne King and Orchestra**  
KPRC KSD KSTP WBEN WCAE  
WCHS WDAF WEAF WEEL WFAP  
WFI WGY WHO WJAR WKBF  
WKY WMAQ WMC WOAI WOC  
WOW WRC WSAI WSB WSM WSMB  
WTAG WTAM WTMJ WWJ

**C — "Accordiana"—Abe Lyman**  
CFRB CKLW KMBC KMOX WABC  
WBBM WCAO WCAU WCCO WDRC  
WEAN WFBL WFBM WGR WHEC  
WHK WJSV WKRC WNAK WOKO

**ED-9:00 p.m., E-8:00, C-7:00, M-6:00**  
**C — Maury H. B. Paul**  
CFRB CKLW KMBC KMOX KRLD  
KTRH WABC WBBM WCAO WCAU  
WCCO WDRC WDSU WEAN WFBM  
WHAS WHEC WHK WJAS WJSV  
WKWB WKRC WNAK WSPD

**R — Ben Bernie and Orchestra**  
KFJR KOA KPRC KSD KSTP  
WBAP WBEN WCAE WCHS WDAY  
WEAF WEEL WFRB WFI WGY  
WHO WJAR WKY WLW WMAQ  
WMC WOAI WOC WOW WRC  
WRVA WSB WSM WSMB WTAG  
WTAM WTMJ WWJ

**B — Household Musical Memories**  
KDKA KSO KWK WBAL WBZ WBZA  
WHAM WJR WJZ WKBF WLS  
WREN WSYR

**ED-9:15 p.m., E-8:15, C-7:15, M-6:15**  
**C — James Thurber; Humorist**  
CKLW KFH KLRA KLZ KMBC  
KMOX KOMA KSCJ KSL KTRH  
KTSa WABC WBBM WBNS WBRC  
WBT WCAU WCCO WDAE WDRC  
WDSU WEAN WFBM WFBM WGST  
WHAS WHEC WHK WIBW WICC  
WISN WJAS WJSV WKWB WKRC  
WLAC WMBD WMT WNAK WOKO  
WOWO WQAM WREC WSPD WTAR  
WTOC

**TUESDAY—(Continued)****ED-9:30 p.m., E-8:30, C-7:30, M-6:30**

**R — Texaco Fire Chief Program**  
 KDYL KFI KFSD KFYR KGHK  
 KGRG KGO KGW KHQ KOA KOMO  
 KPRC KSD KSTP KTAR KTBS  
 KVOO WBAQ WBNB WCAE WCHS  
 WDAF WDAY WFAE WFBC WFEI  
 WFRB WFI WFLA WGY WJO WJBA  
 WIOD WIS WJAR WJAX WJDX  
 WKY WLW WMAQ WMC WOAI  
 WOC WOV WPTF WRC WRVA  
 WSB WSM WSMB WTAC WTAM  
 WTMJ WWJ WNNC

**B — Eddie Duchin and Orchestra**  
 KDKA KOIL KSO KWCR KWK  
 WBAL WBZ WBZA WCKY WENR  
 WGAR WHAM WJR WJZ WMAL  
 WREN WSYR

**C — Minneapolis Symphony Orchestra**  
 CKLW KDB KERN KFBK KFPY  
 KFRC KGB KHJ KLZ KMBC KMJ  
 KMOX KOIN KOL KOMA KRLD  
 KSL KVI KWG WABC WABZ WBBM  
 WBRC WBT WCAO WCAU WCCO  
 WDRG WDSU WEAN WFBL WFBM  
 WHAS WHK WJAS WJW WKBW  
 WKRC WMBG WMT WNAC WNAX  
 WOKO WOV WSPD

**ED-10:00 p.m., E-9:00, C-8:00, M-7:00**

**R — Palmolive Beauty Box**  
 KDYL KFI KFSD KFYR KGHK  
 KGRG KGO KGW KHQ KOA KOMO  
 KSD KTAR KTBS WAI WAVE  
 WBNB WCAE WCHS WDAY WFAE  
 WFCB WFEI WFRB WFLA WGY  
 WJO WIOD WIS WJAR WJAX WJDX  
 WKY WLW WMAQ WMC WOAI  
 WOC WOV WPTF WRC WRVA  
 WSM WSMB WSMC WTAC WTAM  
 WTMJ WWJ WNNC

**C — Camel; Glen Gray's Orchestra**  
 CKLW KDB KERN KFBK KFH  
 KFPY KFRC KGB KHJ KLLA KLZ  
 KMBC KMJ KMOX KOIN KOL  
 KOMA KRLD KSCJ KSL KTRH  
 KTSA KVI KWG WAAB WABC  
 WACD WADC WBBM WBIG WBRC  
 WBT WCAE WCAO WCAU WCCO  
 WDE WDBJ WDBO WDDO WDRG  
 WDSU WFBL WFBM WFEA WJST  
 WHAS WHC WHK WHP WIBW  
 WICC WJAS WJW WKBB WKBN  
 WKBW WIRC WLAC WLBB WMAS  
 WMBD WMBG WMT WNAX WODX  
 WOKO WORC WOV WPG WQAM  
 WREC WSJS WSPD WTAR WTOC

**B — Ray Perkins; Harold Stokes**  
 KDKA KOIL KSO KWCR WBAL  
 WBZ WBZA WCKY WENR WGAR  
 WHAM WJR WJZ WMAL WREN  
 WSYR

**ED-10:30 p.m., E-9:30, C-8:30, M-7:30**

**C — Conflict; Drama**  
 CFRB CKLW KFH KLRA KLZ  
 KMBC KOMA KRLD KSCJ KTRH  
 KTSA KVOR WAAB WABC WACO  
 WADC WBNS WBRC WBT WCAO  
 WDAE WDBJ WDBO WDDO WDRG  
 WDSU WFBL WFBM WFEA  
 WGLC WGST WHEC WHP WICC  
 WIP WISN WJAS WJW WLAC  
 WLBB WLBB WMAS WMBD WMBG  
 WMT WNAX WODX WOKO WORC  
 WPG WQAM WREC WSJS WSPD  
 WTAR WTOC

**ED-11:00 p.m., E-10:00, C-9:00, M-8:00**

**B — Ames 'n' Andy, See Monday**  
**C — Harlem Serenade**  
 CKLW KFH KLRA KMBC KOMA

KSL KTRH\*KTSA KVOR WAAB  
 WABC WACO WADC WBNS WBRC  
 WBT WCAO WDAE WDBJ WDBO  
 WDDO WDRG WDSU WGLC WHAS  
 WHEC WHK WHP WIBW WIP  
 WJAS WJW WLW WMBG WODX  
 WOKO WREC WSJS WSPD WTAR  
 WTOC WVVVA

**ED-11:15 p.m., E-10:15, C-9:15, M-8:15**

**C — News Service; See Monday**  
**R — Gene and Glenn, See Monday**

**ED-11:30 p.m., E-10:30, C-9:30, M-8:30**

**C — Charles Barnett and Orchestra**  
 CFRB CKLW KFH KLRA KLZ  
 KMBC KOMA KSL KTRH KTSA  
 WABC WADC WBRC WCAO WDBJ  
 WDRG WDSU WEAN WFBL WFBM  
 WGST WHK WHP WIBW WISN  
 WJW WKBW WLAC WLW WMBD  
 WMBG WMT WNAC WOKO WORC  
 WQAM WREC WSBT WSJS WTAR  
 WTOC WVVVA

**ED-11:45 p.m., E-10:45, C-9:45, M-8:45**

**C — Voice of Experience**  
 KDB KERN KFBK KFPY KFRC  
 KGB KHJ KLZ KMJ KOIN KOL  
 KSL KVI KWG

**WEDNESDAY****ED-6:00 p.m., E-5:00, C-4:00, M-3:00**

**C — Buck Rogers, See Monday**  
**C — Bobby Benson, See Monday**

**ED-6:15 p.m., E-5:15, C-4:15, M-3:15**

**C — Bobby Benson, See Monday**  
**ED-6:30 p.m., E-5:30, C-4:30, M-3:30**

**C — Sam Robbins and Orchestra**  
 CKLW KLRA WAAB WADC WBIG  
 WBRC WCAO WDAE WDBJ WDBO  
 WDDO WDRG WDSU WFEA WGST  
 WHEC WHP WICG WJAS WJW  
 WKBN WLW WLBB WMAS WMBG  
 WOKO WORC WQAM WREC WSFA  
 WSJS WSPD WTAR WTOC

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

**B — Lowell Thomas, See Monday**  
**ED-7:00 p.m., E-6:00, C-5:00, M-4:00**

**B — Ames 'n' Andy, See Monday**  
**C — Vera Van, Songs**  
 KSCJ KSL KTSA WABC WBIG  
 WBT WCAO WCAU WDAE WDBO  
 WDRG WDSU WEAN WGLC WHAS  
 WISN WKBN WKBW WLAC WMAS  
 WMBG WMT WNAC WOKO WORC  
 WQAM WREC WSFA WSJS WTOC

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

**R — Gene and Glenn, See Monday**  
**C — Just Plain Bill, See Monday**

**ED-7:30 p.m., E-6:30, C-5:30, M-4:30**

**C — Music in Air, See Monday**  
**R — Mollie Show, See Monday**

**ED-7:45 p.m., E-6:45, C-5:45, M-4:45**

**C — Boake Carter, See Monday**  
**R — Goldburgs, See Monday**  
**B — Irene Rich in Hollywood**  
 KDKA WMAI WBZ WBZA WCKY  
 WENR WJW WMAL WMC WSB WSM  
 WSMB WSYR

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

**R — Jack Pearl, Baron Munchausen**  
 CFCC KDYL KFI KFYR KGO KGW  
 KHQ KOA KOMO KSD KTAR KTSB  
 KVOO WAVE WBNB WCAE WCKY

WCBS WDAF WDAY WEAF WEBC  
 WEEI WFRB WGY WHO WJBA  
 WJAR WJDX WLIT WMAQ WMC  
 WOAI WOV WPTF WRC WSAI  
 WSMB WTAC WTAM WTIC WTMJ  
 WWJ WVNC

**B — Eno Crims, See Tuesday****C — The Columbians**

CKLW KFH KLRA KMBC KMOX  
 KOMA KTAT KTUL WABC WADC  
 WBBM WBNB WCCO WDRG WFBM  
 WGR WHEC WHK WIBX WICC  
 WISN WJW WMAA WMBG WMT  
 WNAC WREC WRR WSPD WVVVA

**ED-8:15 p.m., E-7:15, C-6:15, M-5:15**

**C — Easy Aces**  
 CFRB CKLW KMBC KMOX WABC  
 WBBM WCAO WCAU WCCO WFBL  
 WFBM WGR WHAS WHK WJAS  
 WKRC WNAC WOKO WOV

**ED-8:30 p.m., E-7:30, C-6:30, M-5:30**

**C — Everett Marshall; Victor Alden**  
 CFRB CKAC CKLW KDB, KERN  
 KFBK KFPY KFRC KGB KHJ KLZ  
 KMBC KMJ KMOX KOIN KOL  
 KOMA KRLD KSL KVI KWG WABC  
 WBBM WBT WCAO WCAU WCCO  
 WDSU WGR WHAS WHK WIBW  
 WJAS WJW WKRC WLAC WNAC  
**R — Wayne King, See Tuesday**

**ED-8:45 p.m., E-7:45, C-6:45, M-5:45**

**B — Babe Ruth, See Monday**  
**ED-9:00 p.m., E-8:00, C-7:00, M-6:00**

**R — Hour of Smiles; Fred Allen**  
 KPRC KSD KSTP KTBS KVVO  
 WBNB WCAE WCHS WDAF WFAE  
 WFCB WFRB WGY WIOD WIS  
 WJAR WJAX WKY WLIT WLW  
 WMAQ WOAI WOV WPTF WRC  
 WRVA WSB WSM WSMB WTAC  
 WTAM WTIC WTMJ WWJ  
**C — Andre Kostelanetz, See Monday**  
**B — Ray Knight and Cuckoos**  
 KDKA KOIL KSO KWCR KWK  
 WBAL WBZ WBZA WCKY WGAR  
 WHAM WJR WJZ WKBK WLS  
 WMAL WREN WSYR

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

**C — Guy Lombardo—Burns and Allen**  
 CKLW KDB KERN KFBK KFPY  
 KFRC KGB KHJ KLZ KMBC KMJ  
 KMOX KOIN KOL KOMA KRLD  
 KSL KTRH KTSA KVI KWG WABC  
 WADC WBT WCAO WCAU WCCO  
 WDRG WEAN WFBL WFBM WGN  
 WHK WJAS WJW WKBW WKRC  
 WNAC WOKO WORC WOV WSPD

**B — Non-Spik Program**

KDKA KDYL KFI KGO KGW KHQ  
 KOA KOIL KOMO KSO KWCR KWK  
 WBAL WBZ WBZA WCKY WENR  
 WGAR WHAM WJR WJZ WKBK  
 WMAL WREN WSYR

**ED-10:00 p.m., E-9:00, C-8:00, M-7:00**

**R — Corn Cob Pipe Club**  
 KDYL KFI KFYR KGHK KGRG  
 KGO KGW KHQ KOA KOMO KSD  
 KSTP WBNB WCAE WCHS WDAF  
 WDAY WFAE WFCB WFEI WENR  
 WFRB WGY WHO WJBA WJAR  
 WLIT WLW WOC WOV WRC  
 WRVA WTAC WTAM WTIC WTMJ  
 WWJ

**B — Vincent Lopez and Orchestra**

KDKA KOIL KPRC KSO KTBS  
 KWCR KWK WAPI WAVE WBAL



### WEDNESDAY—(Cont'd)

WBZ WBZA WCKY WFAA WFLA  
 WGAR WHAM WIOD WJW WJAX  
 WJDX WJZ WKBF WKY WMAL  
 WMAQ WMC WQAI WPTF WREN  
 WSB WSM WSOB WSOE WSYR  
 WWNC

**ED-10:30 p.m., E-9:30, C-8:30, M-7:30**  
**B—Harry Richman; Jack Denny**  
 KDYL KFYZ KOA KOIL KPRC  
 KSO KSTP KWCR KWK WBAL  
 WCKY WDAY WEEC WENR WFAA  
 WGAR WHAM WJAX WJR WJZ  
 WKY WMAL WREN WRVA WSYR  
 WTMJ

**C—Albert Spalding; Conrad Thibault**  
 CFRB CKAC CKLW KDB KERN  
 KFBK KFYZ KFRC KGB KHJ  
 KLRA KLZ KMBC KMJ KMOX  
 KOIN KOL KOMA KSL KTAT  
 KTRH KTSR KVI KWG WABC  
 WBRG WCAO WCAU WCCO WDDO  
 WDRC WDSU WEAN WFBL WFBM  
 WGN WGR WGST WHAS WHK  
 WJAS WJSV WKRC WLAC WMT  
 WNAC WOKO WORC WOWO WREC  
 WRR

**ED-11:00 p.m., E-10:00, C-9:00, M-8:00**  
**B—Amos 'n' Andy, See Monday**  
**C—Nick Lucas, Songs**  
 CKLW KFH KLRA KLZ KMBC  
 KOMA KSL KTRH KTSR KWOR  
 WAAB WABC WACO WADG WBNS  
 WBT WCAO WDAE WDBJ WDBO  
 WDDO WDRC WDSU WGLC WHAS  
 WHEC WHP WIBW WIP WJAS  
 WJSV WLAC WLWG WMBG WODX  
 WOKO WOWO WPG WQAM WREC  
 WSJS WSPD WTR WTCO

**ED-11:15 p.m., E-10:15, C-9:15, M-8:15**  
**C—News Service, See Monday**  
**B—Ray Knight and Cuckoos**  
 CRFC CRCT KDYL KFI KFSD  
 KFYZ KGHJ KGIK KGO KGW  
 KHQ JOA KOMO KPRC KTAR  
 KTSB KTHS WAPI WAVE WBAP  
 WDAY WEEC WFLA WJW WJDX  
 WKY WMC WQAI WRVA WSB  
 WSM WSOB WSOE WTMJ WWNC  
**R—Gene and Glenn, See Monday**

**ED-11:30 p.m., E-10:30, C-9:30, M-8:30**  
**C—Little Jack Little**  
 KLRA WABC WBRG WBT WCAO  
 WDAE WDBJ WDBO WDRC WDSU  
 WEAN WGST WICC WIP WJSV  
 WLAC WLWB WMAS WMBG WNAC  
 WORC WPG WQAM WREC WSJS  
 WTR

**ED-12:00 mid., E-11:00, C-10:00 M-9:00**  
**R—Hour of Smiles; Fred Allen**  
 KDYL KFI KGO KGW KHQ KOA  
 KOMO

### THURSDAY

**ED-6:00 p.m., E-5:00, C-4:00, M-3:00**  
**C—Buck Rogers, See Monday**  
**B—Richard Himber and Orchestra**  
 KOIL KSO KWCR WBAL WBZ WBZA  
 WCKY WENR WHAM WJR WJZ  
 WMAL WREN WSYR

**ED-8:15 p.m., E-5:15, C-4:15, M-3:15**  
**C—Bobby Benson, See Monday**

**ED-8:30 p.m., E-5:30, C-4:30, M-3:30**  
**R—John B. Kennedy**  
 KDYL KFYZ KOA KPO KPRC KSD

KTBS KTHS KVOO WAPI WDAY  
 WFAF WFBR WPI WGY WJO WJBA  
 WIS WJAX WJDX WMAQ WMC  
 WOR WRG WSAI WSB WSMB WTAG  
 WWJ WWNC

**ED-8:45 p.m., E-5:45, C-4:45, M-3:45**  
**B—Lowell Thomas, See Monday**

**ED-7:00 p.m., E-6:00, C-5:00, M-4:00**  
**B—Amos 'n' Andy, See Monday**

**ED-7:15 p.m., E-6:15, C-5:15, M-4:15**  
**C—Just Plain Bill, See Monday**  
**R—Gene and Glenn, See Monday**

**ED-7:30 p.m., E-6:30, C-5:30, M-4:30**  
**B—Romantic Melodies; Don Ameche**  
 KDKA KDYL KFI KGO KGW KHQ  
 KOA KOIL KOMO KSO KWCR KWK  
 WBZ WBZA WCKY WENR WJZ  
 WMAL WREN WSYR  
**R—Molle Show, See Monday**  
**C—Silver Dust, See Tuesday**

**ED-7:45 p.m., E-6:45, C-5:45, M-4:45**  
**E—Boake Carter, See Monday**  
**R—Goldbergs, See Monday**

**ED-8:00 p.m., E-7:00, C-6:00, M-5:00**  
**C—Emery Deutsch Gypsy Violin**  
 CKAC CKLW KFAB KFH KLRA  
 KMBC KRLD KSCJ KTSR WABC  
 WACO WADC WBIG WBNS WBRG  
 WBT WCAU WCCO WDAE WDBJ  
 WDBO WDRC WDSU WFBM WFEA  
 WGLC WGR WHEC WHK WHP  
 WICC WISN WJAS WKBN WLAC  
 WLWB WLWB WMAS WMBG WMT  
 WOKO WORC WPG WQAM WREC  
 WSBT WSFA WSJS WSPD WTCO

**R—Rudy Vallee and Orchestra**  
 CRFC CRCT KDYL KFI KFYZ KGO  
 KHQ KHQ KOA KOMO KPRC KSD  
 KSTP KTAR KTHS WAPI WBAP  
 WBEW WCAE WCHS WDAF WDAY  
 WFAF WEEC WEEI WFER WFI  
 WFLA WGY WHO WIOD WJAR  
 WJAX WJDX WKY WLW WMAQ  
 WMC WOI WOC WOW WPTF WRG  
 WRVA WSB WSM WSMB WTAG  
 WTMJ WTMJ WWJ

**ED-8:15 p.m., E-7:15, C-6:15, M-5:15**  
**C—Easy Aces, See Wednesday**

**ED-8:30 p.m., E-7:30, C-6:30, M-5:30**  
**C—Presenting Mark Warnow**  
 CKLW KFAB KFH KLRA KMBC  
 KMOX KRLD KSCJ KTSR WABC  
 WACO WADC WBBM WBIG WBRG  
 WBT WCAO WCAU WCCO WDAE  
 WDBJ WDBO WDRC WDSU WEAN  
 WFBL WFBM WGR WHAS WHK  
 WISN WJAS WJSV WKRC WLAC  
 WMBG WMT WNAC WOKO WOWO  
 WPG WQAM WREC WSJS WSPD  
 WTCO WWVA

**ED-9:00 p.m., E-8:00, C-7:00, M-6:00**  
**C—Raffles; Amateur Grackman**  
 CKAC CKLW KFAB KFH KLRA  
 KLZ KMBC KRLD KSCJ KTSR  
 WABC WACO WADC WBIG WBNS  
 WBRG WBT WCAO WCAU WCCO  
 WDAE WDBJ WDBO WDRC WDSU  
 WEAN WFBM WFEA WGLC WHAS  
 WHEC WHK WHP WICC WISN  
 WJAS WJSV WKBN WKBW WLWB  
 WLWB WMAS WMBG WMT WNAC

WNAX WOKO WORC WPG WQAM  
 WRBC WSBT WSFA WSJS WSPD  
 WTCO

**R—Maxwell House Showboat**  
 KDYL KFI KFSD KGO KGW KHQ  
 KOA KOMO KPRC KSD KSTP KTAR  
 KTHS WAPI WBAP WBEW WCAE  
 WCKY WCHS WDAF WFAF WEEI  
 WFER WFI WFLA WGY WHO WIOD  
 WIS WJAR WJAX WJDX WKY  
 WMAQ WMC WQAI WOC WOW  
 WRC WRVA WSAI WSB WSM WSMB  
 WTAG WTAM WTMJ WWJ WWNC  
**B—Death Valley Days—Drama**  
 KDKA KOIL KSO KWCR KWK  
 WBAL WBZ WBZA WGAR WHAM  
 WJR WJZ WLS WLW WMAL WREN  
 WSYR

**ED-9:30 p.m., E-8:30, C-7:30, M-6:30**  
**C—Ford; Fred Waring's Orchestra**  
 CKLW KDB KFBE KFH KPRC  
 KGB KHJ KLRA KLZ KMBC KMOX  
 KOH KOIN KOMA KRLD KSCJ  
 KSL KTUL KVI KWOR WABC WACO  
 WADC WBBM WBIG WBRG WBT  
 WCAH WCAO WCAU WCCO WDAE  
 WDBJ WDBO WDDO WDRC WDSU  
 WEAN WFBL WFBM WFEA WGLC  
 WGST WHAS WHEC WHK WHP  
 WIBW WICC WJAS WJSV WKBN  
 WKBW WKRC WLAC WLWB WLWB  
 WMAS WMBD WMBG WMBR WMT  
 WNAC WNAX WDX WOKO WORC  
 WOWO WPG WQAM WREC WSJS  
 WSPD WTR WTCO  
**B—Eddie Duchin, See Monday**

**ED-10:00 p.m., E-9:00, C-8:00, M-7:00**  
**R—Paul Whiteman and Orchestra**  
 KDYL KFI KFYZ KGO KGW KHQ  
 KOA KOMO KPRC KSD KSTP KTBS  
 KTHS KVOO WBAP WBEW WCAE  
 WCHS WDAF WDAY WFAF WEEC  
 WEEI WFER WFLA WGY WHO  
 WJBA WIOD WIS WJAR WJAX  
 WJDX WKY WLW WMAQ WMC  
 WQAI WOC WOW WRC WRVA WSB  
 WSM WSMB WTAG WTAM WTMJ  
 WWJ WWNC  
**C—Camel Program, See Tuesday**

**ED-10:30 p.m., E-9:30, C-8:30, M-7:30**  
**C—Doris Lorraine; Cadets**  
 KLRA KMOX KOMA KTSR WABC  
 WBRG WBT WCAO WGST WHAS  
 WKRC WLAC WMBR WREC WRR  
**B—Archer Gibson, Organist**  
 KDKA KSO KWCR KYW WBAL WBZ  
 WBZA WCKY WGAR WHAM WJZ  
 WMAL WREN

**ED-10:45 p.m., E-9:45, C-8:45, M-7:45**  
**C—The Playboys**  
 CKAC CKLW KFH KLRA KLZ  
 KMBC KRLD KSCJ KSL KTSR  
 WAAB WABC WACO WADC WBIG  
 WBRG WBT WCAO WCAU WCCO  
 WDAE WDBJ WDBO WDRC WDSU  
 WFBM WFEA WGLC WHAS WHEC  
 WHK WHP WJAS WJSV WKBN  
 WKBW WLAC WLWB WLWB WMBD  
 WMBG WMT WNAX WOKO WORC  
 WQAM WREC WSBT WSJS WSPD  
 WTCO

**ED-11:00 p.m., E-10:00, C-9:00, M-8:00**  
**B—Amos 'n' Andy, See Monday**  
**C—Vera Van, Contralto**  
 CFRB CKAC CKLW KDB KFAB  
 KFH KLRA KLZ KMBC KOMA  
 KTRH KTSR KWOR WAAB WABC  
 WACO WADC WBBM WBNS WCAO



## THURSDAY—(Cont'd)

WCCO WDAE WDBJ WDBO WDOD  
WDRG WDSU WEAN WFBL WFBM  
WFEA WGST WHAS WHEC WHK  
WHP WIBW WIGG WIP WISN WJAS  
WJSV WKBN WKWB WLAC WLWB  
WLBZ WMAS WMBD WMT WNAX  
WODX WOKO WORC WQAM WREC  
WSBT WSJS WSPD WTAR WTOG  
WVVA

ED-11:15 p.m., E-10:15, C-9:15, M-8:15  
C — News Service, See Monday

R — Gene and Glenn, See Monday

ED-11:30 p.m., E-10:30, C-9:30, M-8:30

C — Isham Jones and Orchestra  
CFRB CKLW KFH KLRA KLZ  
KMBC KSL KTSa KVOR WABC  
WADC WBNS WBRC WBT WCAO  
WCAU WDAE WDBJ WDBO WDOD  
WDRG WDSU WEAN WFBL WFBM  
WGLC WHP WIBW WIGG WJAS  
WJSV WLAC WLWB WLBZ WMAS  
WMBG WNAC WOKO WORC WPG  
WQAM WREC WSBT WSJS WSPD  
WTAR WTOG WVVA

## FRIDAY

ED-8:00 p.m., E-5:00, C-4:00, M-3:00

C — H. V. Kaltenborn  
CFRB CKLW KLRA WAAB WABC  
WADC WBIG WBT WCAO WCAU  
WDAE WDBJ WDBO WDOD WDRG  
WFEA WGST WHEC WHK WICC  
WJSV WLAC WLWB WLBZ WMAS  
WOKO WORC WQAM WREC WSFA  
WSJS WSPD WTOG

ED-8:15 p.m., E-5:15, C-4:15, M-3:15  
C — Bobby Benson, See Monday

ED-8:30 p.m., E-5:30, C-4:30, M-3:30

C — Loreta Lee; Freddie Ric  
KLRA WAAB WABC WBIG WBRC  
WDAE WDBJ WDBO WDRG WLWB  
WMAS WMBG WORC WQAM WSJS  
WTOG

ED-8:45 p.m., E-5:45, C-4:45, M-3:45

C — Zoi Parenteau's Orchestra  
CKLW WAAB WABC WBT WCAU  
WDRG WEAN WFBL WFEA WHEC  
WJSV WKWB WLWB WOKO

B — Lowell Thomas, See Monday

ED-7:00 p.m., E-6:00, C-5:00, M-4:00

B — Amos 'n' Andy, See Monday

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

C — Just Plain Bill, See Monday

R — Gene and Glenn, See Monday

ED-7:30 p.m., E-6:30, C-5:30, M-4:30

C — Music in Air, See Monday

B — George Gershwin, See Monday

ED-7:45 p.m., E-6:45, C-5:45, M-4:45

B — Gus Van; Arlene Jackson

KDKA KBAL WBZ WBZA WCKY  
WENR WJZ WMAL WMC WSB WSM  
WSMB WSYR

C — Boake Carter, See Monday

R — Goldbergs, See Monday

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

R — Cities Service Concert

CRCT KDYL KOA KPRC KSD KTBS  
KTHS KYW WBEN WCAE WCSH  
WDAF WFEA WFCB WEEI WFEA  
WFRW WGY WHO WJAR WKY WLIT  
WOAI WOC WOV WRC WRVA WSAI  
WTAG WTAM WTIC WTMJ WWJ

B — Nestle's with Ethel Shutta

KDKA KWK WBAL WBZ WBZA  
WCKY WGAR WJR WJZ WLS WMAL  
WSYR

ED-8:15 p.m., E-7:15, C-6:15, M-5:15

C — Easy Aces, See Wednesday

ED-8:30 p.m., E-7:30, C-6:30, M-5:30

C — True Story Court

CKLW KMBC WABC WADC WBBM  
WCAO WCAU WCCO WDRG WEAN  
WFBL WHK WJAS WJSV WKWB  
WKRC WNAC WOKO

ED-8:45 p.m., E-7:45, C-6:45, M-5:45

B — Babe Ruth, See Monday

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

B — Phil Harris and Orchestra

CFCF KDKA KDYL KFI KGHL  
KGIR KGO KGW KHQ KOA KOIL  
KOMO KSO KWCR KWK WAPI  
WBAL WBZ WBZA WCKY WFAA  
WGAR WJZ WKY WLS WMAL  
WOAI WREN WSB WSM WSMB  
WSYR

R — Frank Munn; Abe Lyman

KSD WBEN WCSH WFEA WEEI  
WFRW WGY WJAR WLIT WMAQ  
WOW WRC WSAI WTAG WTAM  
WWJ

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

C — Little Jack Little

KMBC WABC WADC WBNS WDRG  
WFBM WHEC WHK WICC WISN  
WJSV WKWB WKRC WMAS WNAC  
WSPD WVVA

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

C — Jack Benny; Jack Whiting

CFRB CKAC CKLW KDB KERN  
KFBK KFH KFPY KFRC KGB KHJ  
KLRA KLZ KMBC KMJ KMOX  
KGIN KOL KOMA KRLL KSCJ KSL  
KTRH KTSa KVI KWG WABC  
WADC WBBM WBRC WBT WCAO  
WCAU WCCO WDOD WDRG WDSU  
WEAN WFBL WFBM WGST WHAS  
WHK WIBW WICC WJAS WJSV  
WKWB WKRC WLO WMBG WMT  
WNAC WOKO WOV WREC WSPD  
WTAR WTOG

B — Armour Program; Phil Baker

KDKA KDYL KFI KGO KGW KHQ  
KOA KOIL KOMO KPRC KSO KSTP

KTAR KWK WAPI WBAL WBZ

WBZA WECB WENR WFAA WGAR

WHAM WIOD WJAX WJR WJZ

WKY WMC WOA WREN WRVA

WSB WSM WSMB WTMJ WWNC

R — One Night Stand; Pick and Pat

KSD WBEN WCAE WCSH WDAF

WFEA WFRW WGY WJAR WLIT

WMAQ WOC WOV WRC WSAI

WTAG WTAM WTIC WWJ

ED-10:00 p.m., E-9:00, C-8:00, M-7:00

C — Schifitz Program

KDB KERN KFBK KFPY KFRC  
KGB KHJ KLRA KLZ KMJ KMOX  
KGIN KOL KOMA KSL KTRH  
KTSa KTUL KVI KWG WAAB  
WABC WADC WBBM WBNS  
WBT WCAO WCAU WCCO WDRG  
WDSU WEAN WFBL WHAS WHK  
WJAS WJSV WKWB WKRC WLAC  
WOKO WOV WREC WSPD WTAR

B — Fulton Oursler, Stories

CFCF CRCT KDKA KOIL KSO  
KWCR KWK WBAL WBZ WBZA  
WENR WGAR WHAM WJR WJZ  
WKBF WMAL WREN WSYR

R — First Nighter—Drama

CRCT KDYL KFI KGO KGW KHQ  
KOA KOMO KPRC KSD KSTP  
WAPI WBEN WCAE WCSH WDAF  
WFEA WFCB WEEI WFRW WGY  
WHO WJAR WKY WLIT WMAQ  
WOAI WOC WOV WRC WSAI WSB  
WSM WSMB WTAG WTAM WTIC  
WTMJ WWJ

ED-10:30 p.m., E-9:30, C-8:30, M-7:30

R — Jack Benny; Don Bestor

KDYL KFI KFYR KGO KGW KHQ  
KOA KOMO KPRC KSD KSTP  
KTBS KTHS WAPI WAVE WBEN  
WCAE WCSH WDAF WDAY WFEA  
WFCB WEEI WFRW WFLA WGY  
WHO WIBA WIOD WIS WJAR  
WJAX WJDX WKFB WKY WLIT  
WMAQ WMC WOA WOC WOV  
WPTF WRC WRVA WSB WSM  
WSMB WTAG WTAM WTIC WTMJ  
WWJ WWNC

C — Conflict, See Tuesday

ED-10:45 p.m., E-9:45, C-8:45, M-7:45

C — Edith Murray, Songs

CKAC CKLW KFH KLRA KLZ  
KMBC KRLL KSCJ KSL KTSa  
WAAB WABC WACO WADC WBIG  
WBNS WBT WCAO WDAE WDBA  
WDBO WDRG WDSU WFBM WFEA  
WGLC WHEC WHK WHP WIP  
WJAS WJSV WLAC WLWB WLBZ  
WMBD WMBG WMT WNAX WOKO  
WQAM WREC WSBT WSJS WSPD  
WTOG

ED-11:00 p.m., E-10:00, C-9:00, M-8:00

B — Amos 'n' Andy, See Monday

ED-11:15 p.m., E-10:15, C-9:15, M-8:15

C — News Service, See Monday

R — Gene and Glenn, See Monday

ED-11:30 p.m., E-10:30, C-9:30, M-8:30

C — True Story Court

KDB KERN KFBK KFPY KFRC  
KGB KHJ KLZ KMJ KMOX KOIN  
KOL KSL KVI KWG WHAS WOV  
C — Isham Jones, See Thursday

## SATURDAY

ED-6:00 p.m., E-5:00, C-4:00, M-3:00

B — Al Pearce and His Gang

KDYL KFI KFYR KGO KGW KHQ  
KOA KOIL KOMO KPRC KSO  
KSTP KTBS KTHS KVOD KWCR  
KYW WBAL WBZ WBZA WCKY  
WDAY WECB WFLA WHAM WIBA  
WIOD WIS WJAX WJDX WJR WJZ  
WKY WMAL WMC WOA WREN  
WSB WSM WSYR WWNC

C — Mischa Ruginsky and Ensemble

CFRB CKLW KFH KLRA KLZ  
KOMA KRLL WAAB WABC WADC  
WCAO WCAU WDAE WDBJ WDOD  
WDRG WDSU WEAN WGLC WGST  
WHK WISN WJAS WKWB WLAC  
WLWB WMBG WOKO WSBT WSJS  
WSPD WTOG

ED-6:30 p.m., E-5:30, C-4:30, M-3:30

C — Frederic William Wile

CKLW KLRA WAAB WABC WBIG  
WBRC WCAO WDAE WDBJ WDBO  
WDOD WDRG WDSU WFBL WFEA  
WGLC WGST WHEC WHP WJSV  
WKWB WLAC WLWB WLBZ WMAS  
WMBG WOKO WORC WQAM WREC  
WSJS WSPD WTAR WTOG

**SATURDAY—(Continued)**

**ED-6:45 p.m., E-5:45, C-4:45, M-3:45**  
**B — Flying with Capt. Al Williams**  
WBAL WBZ WBZA WCKY WGAR  
WHAM WJR WJZ WSYR  
**C — Charles Carlie, Tenor**  
CKLW KFH KLRA KLZ KOMA  
KRLD WABC WCAO WDAE WDBJ  
WDOD WDRC WDSU WEAN WFEA  
WGLC WGST WICC WISN WJAS  
WKBW WLAC WLWB WLWB WMAS  
WMBG WNAC WOKO WSBT WSJS  
WSPD WTOG

**ED-7:30 p.m., E-6:00, C-5:00, M-4:00**  
**B — John Herrick, Baritone**  
KDKA KOIL KSO KWCR KWK  
WBAL WBGY WGAR WJZ WKBW  
WMAL WMAQ

**C — Isham Jones and Orchestra**  
CFRB CKLW KFH KLRA KOMA  
KRLD KSCJ KTRH K TSA KVOR  
WABC WACO WADC WBRC WDAE  
WCAH WCAO WCAU WCCO WDBJ  
WDBJ WDOD WDOD WDRC WDSU  
WEAN WFBL WFEA WGR WGST  
WIBW WICC WJAS WJSV WLAC  
WLWB WLWB WMAS WNAC WOKO  
WORC WQAM WREC WSJS WSPD  
WTAR WWVA

**ED-7:30 p.m., E-6:30, C-5:30, M-4:30**  
**C — Silver Dust, See Tuesday**  
**B — Don Bestor and Orchestra**  
KDKA KGLL KWCR KYW KYW  
WBAL WBZ WBZA WCKY WGAR  
WHAM WJAR WJR WJZ WMAL  
WREN WBSYR

**ED-8:00 p.m., E-7:00, C-6:00, M-5:00**  
**C — Morton Downey Revue**  
CFRB CKLW KFH KLZ KMBC  
KMOX KOMA KSL K TAT KTRH  
K TSA WABC WACO WBBM WBNB  
WBT WCAO WCAU WCCO WDAE  
WDBO WDRC WDSU WEAN WFBL  
WGR WGST WHEC WHK WJAS  
WJSV WQRC WLAC WMBR WNAC  
WOKO WQAM WRR WSPD

**ED-8:30 p.m., E-7:30, C-6:30, M-5:30**  
**R — Floyd Gibbons**  
KFYR KPRC KSD KSTP WAPI  
WBAP WBEN WCAE WCSH WDAF  
WDAY WFAF WIBC WEEI WFER  
WFI WFLA WFO WIBA WIOD  
WIS WJAR WJAX WKY WLW  
WMAQ WMC WOC WOW WRC  
WRVA WSB WSM WSMB WTAG  
WTAM WTIC WTMJ WWJ

**ED-8:45 p.m., E-7:45, C-6:45, M-5:45**  
**C — Fate Waller**  
CFRB CKLW KFH KLRA KLZ  
KOMA KRLD WABC WACO WADC  
WCAO WDAE WDBJ WDOD WDRC  
WDSU WEAN WFBM WFEA WGLC  
WGR WGST WHK WICC WIP  
WISN WJAS WLAC WLWB WLWB  
WMAS WMBG WNAC WOKO WPG  
WSTB WSJS WSPD WTOG WWVA

**ED-9:00 p.m., E-8:00, C-7:00, M-6:00**  
**C — Andre Kostelanetz, See Monday**  
**R — Donald Novis; Frances Langford**  
KDYL KFI KFYR KGO KGW KHQ  
KOA KOMO KPRC KSD KSTP  
KTBS KTHS WAPI WBAP WBEN  
WCAE WCSH WDAF WDAY WFAF  
WIBC WEEI WFER WFI WFLA  
WGY WIBA WIOD WIS WJAR  
WJAX WJDX WKY WLW WMAQ

WMC WOAI WOW WPTF WRC  
WRVA WSB WSMB WTAG WTAM  
WTMJ WWJ WWNC

**ED-9:30 p.m., E-8:30, C-7:30, M-6:30**  
**B — Eddie Duchin, See Tuesday**  
**R — Beatrice Fairfax; Dramas**  
KDYL KFI KGO KGW KHQ KOA  
KOMO KSD WBEN WCAE WCSH  
WDAF WFAF WEEI WFER WFI  
WGY WJAR WLW WMAQ WOW  
WRC WTAG WTAM WWJ

**C — Ray Helton, Talks**  
CFRB CKLW KFH KLRA KLZ  
KOMA KRLD WABC WACO WADC  
WCAO WCAU WDAE WDBJ WDOD  
WDRC WDSU WEAN WFBM WFEA  
WGLC WGST WHK WICC WISN  
WJAS WKBW WLAC WLWB WLWB  
WMAS WMBG WNAC WOKO WSBT  
WSJS WSPD WTOG

**ED-9:45 p.m., E-8:45, C-7:45, M-6:45**  
**C — Fray and Braggotti**  
CFRB CKLW KFH KLRA KLZ  
KOMA KRLD WABC WACO WADC  
WCAO WCAU WDAE WDBJ WDOD  
WDRC WDSU WEAN WFBM WFEA  
WGLC WGST WHK WICC WISN  
WJAS WKBW WLAC WLWB WLWB  
WMAS WMBG WNAC WOKO WSBT  
WSJS WSPD WTOG

**ED-10:00 p.m., E-9:00, C-8:00, M-7:00**  
**R — Terralane Travelcade**  
KDYL KFI KGO KGW KHQ KOA  
KOMO KPRC KSD KSTP WBAP  
WBEN WCAE WCSH WDAF WFAF  
WEEI WFER WFI WFLA WGY  
WIOD WJAR WJAX WKY WLW  
WMAQ WOAI WOW WPTF WRC  
WRVA WSB WSMB WTAG WTAM  
WTMJ WWJ

**C — Byrd Expedition**  
CKLW KDB KERN KFBK KFH  
KFYR KPRC KGB KHJ KLRA  
KMBC KMJ KMOX KOIN KOL  
KOMA KRLD KTRH K TSA KVI  
KWG WAAB WABC WACO WADC  
WBBM WBRC WBT WCAO WCAU  
WCCO WDAE WEAN WGST WHAS  
WHEC WHK WHP WIBW WJSV  
WKBW WKRC WLAC WLWB WMBG  
WMT WOKO WORC WQAM WREC

**ED-10:30 p.m., E-9:30, C-8:30, M-7:30**  
**B — National Barn Dance**  
KDKA KDYL KFI KGO KGW KHQ  
KOA KOIL KOMO KSO KWCR KWK  
WBAL WBZ WLS WLA WGAR WHAM  
WJR WJZ WLS WLW WMAL WREN  
WSYR

**C — Elder Michaux Congregation**  
CFRB CKLW KFH KLRA KLZ  
KSCJ KSL KTRH K TSA KVOR  
WABC WACO WADC WBIG WBRB  
WCAO WCAU WDAE WDBJ WDOD  
WDOD WDRC WDSU WFBL WFEA  
WGLC WGR WGST WHEC WHP  
WIBW WICC WJAS WJSV WLWB  
WLWB WMAS WMBG WMT WOKO  
WORC WQAM WREC WSJS WSPD  
WTAR WTOG WWVA

**ED-11:00 p.m., E-10:00, C-9:00, M-8:00**  
**C — Sylvia Froos, Songs**  
CFRB CKLW KLRA KLZ KMBC  
KMOX KOMA KRLD KSCJ KSL  
KTRH K TSA KVOR WAAB WABC  
WACO WADC WBNB WBRC WBT  
WCAO WCAU WCCO WDAE WDBJ  
WDBO WDOD WDRC WDSU WEAN  
WFLB WFBM WFEA WGLC WHAS  
WHP WIBW WICC WISN WJAS

WJSV WLAC WLWB WLWB WMAS  
WMBD WMBG WMT WNAX WODX  
WOKO WORC WPG WQAM WREC  
WSJS WSPD WTAR WTOG

**ED-11:15 p.m., E-10:15, C-9:15, M-8:15**  
**C — News Service, See Monday**

**ED-11:30 p.m., E-10:30, C-9:30, M-8:30**  
**B — One Man's Family**  
CFRC CKLW KFYR KOA KPO  
KPRC KSD KSTP KTBS KTHS  
KVOO WBEN WCAE WDAF WDAY  
WEAF WFER WFI WFLA WGY  
WIO WIBA WIOD WIS WJAR  
WJAX WJDX WKY WMAQ WMC  
WOAI WOC WMB WRC WRVA  
WSAI WSB WSMB WTAG WTAM  
WWJ WWNC

**C — Little Jack Little**  
CFRB CKLW KLRA KLZ KOMA  
WABC WACO WADC WCAO WCAU  
WDAE WDBJ WDOD WDRC WDSU  
WEAN WFBM WGLC WHK WICC  
WKBW WLWB WLWB WMAS WMBG  
WNAC WOKO WSBT WSJS WSPD  
WTOG WWVA

**ED-12:00 p.m., E-11:00, C-10:00, M-9:00**  
**C — Ted Toroitte and Orchestra**  
CFRB CKLW KFH KLRA KLZ  
KMBC KMOX KOMA KTRH K TSA  
WABC WBNB WBRB WCAU WDOD  
WEAN WFBL WFBM WEAS WHP  
WIBW WICC WJAS WJSV WLAC  
WLWB WNAC WQAM WREC WSBT  
WSJS WSPD WTOG

**B — Jack Denny and Orchestra**  
KOIL KSO KWCR KWK KYW WBAL  
WBZ WBZA WCKY WGAR WHAM  
WJR WJZ WLW WMAL WREN  
WSYR

**R — Floyd Gibbons**  
KDYL KFI KFSK KGO KGW KHQ  
KOA KOMO

**SUNDAY**

**ED-11:15 a.m., E-10:15, C-9:15, M-8:15**  
**R — Major Bowes' Capitol Family**  
KDYL KFYR KOA KPRC KSTP  
KTBS KVOO WAPI WCAE WDAF  
WDAY WFAF WIBC WFEA WFER  
WFLA WGY WHO WIOD WJAR  
WJAX WKY WMAQ WMC WOAI  
WOC WRC WRVA WSAI WSMB  
WTAG WTAM WWNC

**ED-11:30 a.m., E-10:30, C-9:30, M-8:30**  
**C — Salt Lake Tabernacle Choir**  
CKLW KLRA KLZ KMBC KOMA  
KSL KTRH K TSA KVOR WABC  
WACO WADC WBIG WBRB WCAO  
WCCO WDBJ WDRG WDSU WEAN  
WFBL WFEA WGN WGR WGST  
WHAS WHEC WHP WIBW WICC  
WISN WJAS WJSV WLAC WLWB  
WMBD WMT WNAC WOKO WORC  
WPG WQAM WSBT WSFA WSJS  
WTAQ WTAR WWVA

**ED-12:15 p.m., E-11:15, C-10:15, M-9:15**  
**R — Gordon String Quartet**  
WCSH WFAF WEEI WFER WFI  
WJAR WRC WTAG  
**B — Baby Rose Marie**  
KDKA WBAL WBZ WBZA WHAM  
WJR WJZ WLW WMAL WBSYR

**ED-12:30 p.m., E-11:30, C-10:30, M-9:30**  
**B — Radio City Concert**  
CFRC CRCT KDKA KDYL KFI  
KFYR KGO KGW KHQ KOA KOL  
KOMO KPRC KSO KVOO WAPI

**SUNDAY—(Continued)**

WBAL WBZ WBZA WISK WDAY  
WBCB WGAR WHAM WIS WJDX  
WJRW WJZ WKY WMAL WOAI WRBN  
WSMB WSYR WYWC

**R — Chicago Round Table**

WBEN WCBH WDAF WEAF WEEI  
WFBR WFI WGY WHO WJAR  
WOC WOV WRC WSAI WTAG  
WTAM WWJ

**C — Madison Ensemble**

CKLW KFAB KLRA KLZ KMBC  
KSCJ KSL K TSA WABC WADC WBCB  
WACO WCAU WCCO WDAE WDBO  
WDSU WEAN WFEA WGLC WGR  
WHP WJSV WKBN WKWB WLAC  
WLWB WLWB WMAS WMBD WMT  
WNAC WOKO WORC WPG WQAM  
WREC WSPD WTOC

**ED-12:45 p.m., E-11:45, C-10:45, M-9:45**

**C — H. V. Kaltenborn**

CFRB CKLW KLRA KLZ KMBC  
KOMA KSCJ KTRH KVOR WABC  
WACO WADC WBNS WDBJ WCRB  
WCAU WCCO WDBJ WDOB WDSU  
WFBL WGLC WGR WHAS WHEC  
WIBW WISN WJAS WLAC WLWB  
WMBD WMT WNAC WNAH WODX  
WOKO WORC WOV WPG WQAM  
WREC WSJS WSPD WTAR WTOC  
WVVA

**ED-1:00 p.m., E-12:00, C-11:00, M-10:00**

**C — Church of the Air**

CFRB CKLW KLRA KLZ KOMA  
KTRH K TSA KVOR WAAB WABC  
WACO WADC WCCO WDBJ WDRB  
WDSU WFBL WGR WGST WHAS  
WHEC WHP WIBW WJAS WJSV  
WLAC WLWB WMT WOKO WPG  
WQAM WREC WSBT WSJS WTAQ  
WTAR WTOC WVVA

**ED-1:30 p.m., E-12:30, C-11:30, M-10:30**

**B — National Youth Conference**

KDKA KFI KFSD KFYR KGH  
KGR KGO KGW KHQ KOA KOIL  
KOMO KPRC KSO KTAR KTHS  
KVOO KWCR KWK WAPI WBAL  
WBZ WBZA WDAY WEBC WFAA  
WGAR WIBA WIOD WIS WJAX  
WJDX WJR WJZ WMAL WOAI  
WREN WRVA WSB WSM WSMB  
WSYR WYWC

**R — Miss Babo's Surprise Party**

KSD WBEN WCAE WCBH WDAF  
WEAF WEFI WFBR WFI WGY WHO  
WJAR WMAQ WOC WOV WRC  
WSAI WTAG WTAM WWJ

**C — Compinsky Trio**

CKLW KLRA KLZ KMBC KRLD  
KSCJ KSL K TSA WABC WACO  
WADC WBIG WBT WCAO WCCO  
WDAE WDBJ WDOB WDRB WDSU  
WGLC WHAS WHEC WHK WIP  
WISN WJSV WKBN WKWB WLAC  
WLWB WMBD WMT WOKO WORC  
WQAM WREC WSBT WSJS WSPD  
WTOC WVVA

**ED-2:00 p.m., E-1:00, C-12:00, M-11:00**

**R — Gene Arnold and Commandores**  
KDYL KFI KGO KGW KHQ KOA  
KOMO KPRC KVOO WBEH WCAE  
WCBH WEAF WEBC WEEI WFAA  
WFBR WGY WIBA WJAR WKY  
WLW WMAQ WOA1 WOV WPTF  
WRC WRVA WTAG WTAM WWJ  
WYWC

**C — Edith Murray, Songs**

CKLW KLRA KLZ KMBC KRLD  
KSCJ KSL K TSA WABC WACO  
WADC WBNS WBT WCAO WCCO

WDAE WDBJ WDBO WDSU WFEA  
WGLC WHAS WHEC WHP WICC  
WIP WISN WJSV WKBN WKWB  
WLAC WLWB WLZ WMAS WMT  
WNAC WOKO WORC WQAM WREC  
WSBT WSFA WSJS WSPD WVVA

**ED-2:30 p.m., E-1:30, C-12:30, M-11:30**

**C — Lazy Dan, Minstrel Man**

CKLW KDB KERN KFBK KFPY  
KPRC KGB KHJ KLZ KMBC KMJ  
KMOX KOIN KOL KOMA KRLD  
KSCJ KSL KVI KWG WABC WADC  
WBNS WBNS WBT WCAO WCAU  
WCCO WDRB WDSU WGST WHAS  
WHEC WHK WJAS WJSV WKWB  
WKRC WLAC WMBG WMT WNAC  
WOWO WTAR

**ED-3:00 p.m., E-2:00, C-1:00, M-12:00**

**C — Symphonic Hour**

CKAC CKLW KFAB KFH KLRA  
KLZ KMBC KRLD KSCJ KSL  
K TSA WABC WACO WADC WBNS  
WBT WCAO WCCO WDAE WDBJ  
WDBO WDRB WDSU WEAN WFBM  
WFEA WGLC WHAS WHEC WHK  
WHP WICC WISN WJSV WKBN  
WKWB WLAC WLWB WLZ WMAS  
WMBD WMT WNAC WOKO WORC  
WQAM WREC WSFA WSJS WSPD  
WTOC

**R — Talkie Picture Time**

KSD WAPI WHEN WCAE WCBH  
WDAF WEAF WEFI WFBR WGY  
WHO WJAR WJDX WLIT WMAQ  
WMC WOC WOV WRC WSAI WSB  
WSM WSMB WTAG WTAM WWJ

**B — Bar X Days and Nights**

CRCT KDKA KOIL KSO KWCR  
KWK KYW WBAL WBZ WMAL  
WKCY WGAR WJR WJZ WZLA  
WREN WSYR

**ED-4:00 p.m., E-3:00, C-2:00, M-1:00**

**R — Romance of Meat, Drama**

KFYR WBEN WCAE WCBH WDAF  
WDAY WEAF WEBC WEFI WFBR  
WGY WIBA WJAR WLIT WMAQ  
WOV WRC WSAI WTAG WTAM  
WWJ

**B — Dion Kennedy, Organist**

KDKA KDYL KFI KFYR KGH  
KGR KGO KGW KHQ KOA KOIL  
KOMO KPRC KSO KTHS KTHS  
KVOO KWCR KWK WAPI WBAL  
WBAP WBZ WBZA WDAY WEBC  
WFLA WHAM WIBA WIOD WIS  
WJAX WJDX WJZ WKFB WKY WLS  
WMAL WMC WOA1 WPTF WREN  
WRVA WSB WSM WSMB WSYR  
WYWC

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

**B — Princess Pat Pageant**

KDKA KOIL KSO KWCR KWK  
WBAL WBZ WBZA WENE WHAM  
WJZ WMAL WREN WSYR

**ED-5:00 p.m., E-4:00, C-3:00, M-2:00**

**B — National Vespers**

KDYL KECA KFSB KFYR KGH  
KGR KGO KGW KHQ KOA KOIL  
KPRC KSO KSTP KTAR KTHS  
KVOO KWCR KWK WAPI WBAL  
WBZ WBZA WCFL WKCY WDAY  
WEBC WFLA WGAR WEAM WIBA  
WIOD WIS WJAX WJDX WJR WJZ  
WKY WMAL WMC WOA1 WPTF  
WREN WRVA WSB WSM WSMB  
WYWC

**C — Chicago Knights**

CKLW KFAB KFH KLRA KLZ  
KMBC KRLD KSCJ K TSA WAAB

WABC WADC WBIG WBNS WBO  
WCAO WCCO WDAE WDBJ WDBT  
WDRB WDSU WEAN WFBM WFEA  
WGLC WHAS WHEC WHK WHP  
WICC WIP WISN WJSV WKBN  
WKWB WLAC WLWB WLZ WMAS  
WMBD WMT WOKO WORC WQAM  
WREC WSBT WSFA WSJS WSPD  
WTOC WVVA

**ED-5:15 p.m., E-4:15, C-3:15, M-2:15**

**C — Tony Wons; Keenan-Phillips**

CKLW KMBC KMOX WAAB WABC  
WADC WCAO WCAU WCCO WDRB  
WEAN WFBL WFBM WGR WHAS  
WHK WJAS WJSV WKRC WOKO  
WOWO WSPD

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

**R — Hoover Sentinels Concert**

KSD WBEN WCAE WCBH WDAF  
WEAF WEFI WFBR WFI WGY  
WJAR WMAQ WOV WRC WTAG  
WTAM WWJ

**C — Frank Crumit; Julia Sanderson**

CKLW KFAB KFH KMBC KMOX  
KOMA WAAB WABC WADC WCAE  
WCAO WCAU WDRB WDSU WEAN  
WFBL WFBM WGR WHEC WHK  
WICC WJSV WMAS WOKO WORC  
WSPD WTAR WVVA

**ED-6:00 p.m., E-5:00, C-4:00, M-3:00**

**R — Catholic Hour**

KDYL KECA KFYR KGH  
KGR KOA KOMO KPO KPRC  
KSTP KTAR KTHS KVOO WAPI  
WBAP WBEN WCAE WCBH WDAF  
WDAY WEAF WEBC WEFI WENR  
WFBR WFLA WGY WHO WIBA  
WIOD WIS WJAR WJAX WJDX  
WKY WLIT WMC WOA1 WOC WOV  
WRC WRVA WSAI WSB WSM  
WSMB WTAG WTAM WWJ WYWC

**ED-6:30 p.m., E-5:30, C-4:30, M-3:30**

**C — Smiling Ed McConnell**

CKLW KDB KERN KFAB KFBK  
KFH KFPY KFCR KGB KHJ KLZ  
KMBC KMOX KOIN KOL KRLD  
KSL KVI KWG WAAB WABC WBBM  
WBT WCAH WCAU WCCO WDSU  
WEAN WFBL WHAS WHEC WHP  
WJAS WJSV WKWB WKRC WLAC  
WMT WOKO WQAM WSPD WTAR  
WVVA

**R — Our American Schools**

CFCF CRCT KDYL KECA KFSB  
KFYR KGW KOMO KPO KPRC KSD  
KSTP KTAR KTHS KVOO WAPI  
WBAP WBEN WCAE WCBH WDAF  
WDAY WEAF WEBC WEFI WFBR  
WFLA WGY WHO WIBA WIOD  
WJAR WJAX WJDX WKY WLIT  
WMAQ WMC WOA1 WOC WRC  
WRVA WSAI WSB WSM WSMB  
WTAG WTAM WWJ WYWC

**ED-7:00 p.m., E-6:00, C-5:00, M-4:00**

**B — Silken Strings; Charles Previn**

KDKA KDYL KEI KGO KGW KHQ  
KOA KOIL KOMO KPRC KSO KTHS  
KWCR KWK WBAL WBZ WBZA  
WEBC WFLA WGAR WEAM WIBA  
WIS WJDX WJR WJZ WKY WLS  
WLW WMAL WMC WOA1 WPTF  
WREN WRVA WSB WSM WSPD  
WSYR WTAM

**C — Hampton Institute Choir**

CKLW KFAB KFH KLRA KLZ  
KRLD KSCJ K TSA WABC WACO  
WBIG WBNS WBT WCAO WDAE  
WDBJ WDOB WDRB WDSU WEAN  
WFBM WFEA WGLC WGR WHAS  
WHEC WHP WICC WIP WISN

**SUNDAY—(Continued)**

WJSV WKBN WLAC WLWB WLWB  
WMAS WNAW WOKO WORC WQAM  
WREC WSBT WSFA WSJS WSPD  
WTOC WVVVA

**ED-7:30 p.m., E-6:30, C-5:30, M-4:30**

**B — Ozzie Nelson; Joe Penner**  
KDKA KDYL KFI KFJR KGO KGW  
KHQ KOA KOIL KOMO KPRC KSO  
KSTP KTAR KVOO KWCR KWK  
WBAL WBZ WBZA WDAY WEBC  
WFAA WFLA WGAR WHAM WIBA  
WIOD WJAX WJDX WJR WJZ WKY  
WLS WLW WMAL WMC WOAI  
WPTF WREN WRVA WSB WSM  
WSMB WTMJ WWNC

**C — Nick Lucas, Songs**

CKLW KFAB KFH KLRA KLZ  
KMBC KRLD KSCJ KSL K TSA  
WABC WADC WBG WBNS WBT  
WCAO WCCO WDAE WDBJ WDR  
WDSU WEAN WFEA WGLC WGR  
WHCC WHK WHP WICC WIP  
WISN WJSV WKBN WLAC WLWB  
WLWB WMAS WMT WNAW WOKO  
WORC WQAM WREC WSBT WSFA  
WSJS WSPD WTOC

**ED-7:45 p.m., E-6:45, C-5:45, M-4:45**

**C — Rin Tin Tin Thriller**  
CKLW KMOX WABC WCAU WFBL  
WFBM WGN WGR WHAS WHK  
WJAS WJSV WKRC WNAW

**R — Fitch Program; Wendell Hall**

CFBC KSD WBEN WCAE WCHS  
WDAF WEAFF WFBZ WGY WHO  
WJAR WLIT WMAQ WOC WOW  
WRC WSAI WTAG WTAM WWJ

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

**R — Chase and Sanborn Hour**  
CFBC CRCT KDYL KFI KFJR KGO  
KGW KHQ KOA KOMO KPRC KSD  
KSTP KTAR KTHS KVOO WBEN  
WCAE WCHS WDAF WDAY WEAFF  
WEBC WFAA WFBZ WFLA WGY  
WHO WIOD WIS WJAR WJAX  
WJDX WKY WLIT WLW WMAQ  
WMC WOAI WOC WOW WPTF WRC  
WRVA WSB WSM WSMB WTAG  
WTAM WTIC WTMJ WWJ WWNC

**C — Freddie Rich Entertainers**

CKLW KFAB KFH KLRA KLZ  
KMBC KRLD DSCJ KSL K TSA  
WABC WACO WADC WBG WBNS  
WBT WCAO WCCO WDAE WDBJ  
WDBO WDRS WDSU WEAN WFBM  
WFEA WGLC WGR WHAS WHCC  
WHP WIP WISN WJSV WKBN  
WLAC WLWB WLWB WMAS WMT  
WNAW WOKO WORC WQAM WREC  
WSBT WSFA WSJS WSPD WTOC  
WVVVA

**ED-8:30 p.m., E-7:30, C-6:30, M-5:30**

**C — California Melodies**

CKLW KFAB KFH KLRA KLZ  
KMBC KRLD KSCJ K TSA WABC  
WACO WADC WBG WBNS WBT  
WCAO WCCO WDAE WDBJ WDBO  
WDRS WDSU WEAN WFBM WFEA  
WGLC WGR WHAS WHK WHP  
WICC WIP WISN WJSV WKBN  
WLAC WLWB WLWB WMAS WMT  
WNAW WOKO WORC WQAM WREC  
WSBT WSFA WSJS WSPD WTOC  
WVVVA

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

**C — Ward's Family Theatre**

CKLW KMOX WABC WADC WBBM  
WBNS WBRC WCAO WCAU WDRS  
WEAN WFBL WFEA WHK WICC  
WJAS WKBN WLWB WMAS WMBR  
WNAW WOKO WORC WSFA WVVVA

**R — Manhattan Merry-G-Round**

KDYL KFI KGO KGW KHQ KOA  
KOMO KSD WDAF WEAFF WFBZ  
WFI WGY WHO WJAR WMAQ WOC  
WOW WRC WSAI WTAM WTIC  
WVJ

**B — Gurf Headliners**

KAKA KPRC KTBS WBAL WBZ  
WBZA WFAA WFLA WGAR WHAM  
WIOD WIS WJAX WJDX WJR WJZ  
WLW WMAL WMC WOAI WRVA  
WSB WSM WSMB WSYR WWNC

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

**C — Ford; Fred Waring's Orchestra**

CFRB CKAC CKLW KFAB KFH  
KLRA KLZ KMBC KMOX KOH  
KOMA KRLD KSL KTRH K TSA  
KVR WAAB WABC WACO WADC  
WBBM WBG WBRC WBT WCAH  
WCAO WCAU WCCO WDAE WDBJ  
WDBO WDDO WDRS WDSU WEAN  
WFBL WFBM WFEA WGST WHAS  
WHCC WHK WHP WIBV WICC  
WISN WJAS WJSV WKBN WKBW  
WKRC WLAC WLWB WLWB WMAS  
WMBD WMBG WMT WOKO WORC  
WOW WPG WQAM WREC WSFA  
WSPD WTAQ WTAR WTIC WVVVA

**R — Album of Familiar Music**

CFBC CRCT KDYL KFI KGO KGW  
KHQ KOA KOMO KPRC KSD KSTP  
WAPI WBEN WCAE WCKY WCHS  
WDAF WEAFF WEEI WFAA WFBZ  
WFI WFLA WGY WHO WIOD WJAX  
WJAX WJDX WKY WMAQ WMC  
WOAI WOC WOW WPTF WRC  
WRVA WSAI WSB WSM WSMB  
WTAG WTAM WTMJ WWJ

**ED-9:45 p.m., E-8:45, C-7:45, M-6:45**

**B — Horlick's Health Adventures**

KDKA KOIL KSO KWK WBAL WBZ

WBZA WENR WHAM WJR WJZ  
WREN

**ED-10:00 p.m., E-9:00, C-8:00, M-7:00**

**C — Wayne King and Orchestra**

CKLW KDB KERN KFBK KFPY  
KPRC KGB KHJ KLZ KMBC KMJ  
KMOX KOIN KOL KRLD KSL KVI  
KWG WAAB WABC WADC WBBM  
WCAO WCAU WCCO WDRS WDSU  
WFBL WHAS WHK WJAS WJSV  
WKBW WKRC WOKO WOWO WSPD

**R — Chevrolet Program**

KDYL KFI KFSD KFJR KGH  
KGR KGO KGW KHQ KOA KOMO  
KPRC KSTP KTAR KTBS WAPI  
WBAP WBEN WCAE WCHS WDAF  
WDAY WEAFF WEBC WEEI WFBZ  
WFI WFLA WGY WIBA WIOD WIS  
WJAR WJDX WKY WMAQ WMC  
WOAI WOW WRC WRVA WSB WSM  
WSMB WTAG WTAM WTIC WTMJ  
WWJ WWNC

**B — Madame Schumann-Heink**

CFBC CRCT KDKA KOIL KSO  
KWCR KWK WBAL WBZ WBZA  
WCKY WENR WGAR WHAM WJR  
WJZ WMAL WREN WSYR

**ED-10:30 p.m., E-9:30, C-8:30, M-7:30**

**C — 45 Minutes in Hollywood**

CFRB CKLW KFH KLZ KMBC  
KMOX KOMA KSL KTAT K TSA  
WABC WACO WBBM WBNS WBT  
WCAO WCAU WCCO WDAE WDBO  
WDRS WDSU WEAN WFBL WGR  
WGST WHCC WHK WJAS WJSV  
WKRC WLAC WMBR WNAW WOKO  
WQAM WRR WSPD

**R — Hall of Fame**

KDYL KFI KGO KGW KHQ KOA  
KOMO KPRC KTBS KTHS WAPI  
WBAP WBEN WCAE WCHS WDAF  
WEAF WEEI WFBZ WFI WGY  
WJAR WJDX WKY WLW WMAQ  
WMC WOAI WOW WRC WSM  
WTAG WTAM WTIC WWJ

**ED-11:15 p.m., E-10:15, C-9:15, M-8:15**

**C — Little Jack Little**

CFRB CKAC CKLW KDB KFAB  
KFH KLRA KLZ KOMA KSCJ KTRH  
K TSA KVR WAAB WACO WADC  
WBBM WBNS WDRS WCAO WCAU  
WDAE WDBJ WDBO WDDO WDRS  
WDSU WFBL WFBM WGR WGST  
WHAS WHCC WHK WHP WIBV  
WICC WISN WJAS WJSV WKBN  
WKRC WLAC WLWB WLWB WMAS  
WMBD WMT WNAW WNAW WOKO  
WPG WQAM WREC WSBT WSJS  
WSPD WTAR WTOC

Lanny Ross returned from Holly-wood with the conviction that profes-sional jealousy is the cause of many divorces in the cinema capital. "It is difficult for movie stars to stay happily married," he told Captain Henry. "Well," observed the Show Boat's skipper, "you've got to give 'em credit—they all keep on tryin' and tryin'."

Amos 'n' Andy are the most punctual of performers. In their many years of association they have never been late for a broadcast, or even a rehearsal. Once in Chicago when the elevator service was tempo-rarily suspended they climbed eight-teen flights of stairs to be on time to the split second for a scheduled ap-pointment.

# CLASSIFIED INDEX TO CHAIN PROGRAMS

*Time in Eastern Daylight Saving*

## CONCERTS

Walter Damrosch, 10:00 p.m., Monday, B  
Hoover Sentinels, 5:30 p.m., Sunday, R  
Andre Kostelanetz, 9:00 p.m., Mon., Wed. and Sat., C  
Radio City, 12:30 p.m., Sunday, B  
Mischa Ruginsky, 6:30 p.m., Tues.: 6:00 p.m., Sat., C  
Albert Spalding, 10:30 p.m., Wednesday, C  
Symphonic Hour, 3:00 p.m., Sunday, C

## DANCE BANDS

Victor Alden, 8:30 p.m., Wednesday, C  
Charles Barnet, 6:30 p.m., Mon.; 11:30 p.m., Tues.: 7:45 p.m., Sat., C  
Leon Belasco, 6:45 p.m., Tuesday, C  
Ben Bernie, 9:00 p.m., Tuesday, R  
Don Bestor, 10:30 p.m., Friday, R  
Charlie Davis, 11:30 p.m., Monday, C  
Jack Denny, 10:30 p.m., Wed., B; 9:30 p.m., Fri., C  
Emery Deutsch, 8:00 p.m., Thursday, C  
Bobby Dolan, 8:00 p.m., Friday, B  
Eddie Duchin, 9:30 p.m., Tues., Thurs. and Sat., B  
Ted Fiorito, 12:00 mid., Saturday, C  
Jan Garber, 8:00 p.m., Monday, B  
Glen Gray, 10:00 p.m., Tues. and Thurs., C  
Phil Harris, 9:00 p.m., Friday, B  
Lennie Hayton, 10:00 p.m., Saturday, R  
Isham Jones, 11:30 p.m., Thurs. and Fri.: 7:00 p.m., Sat., C  
Wayne King, 8:30 p.m., Tues. and Wed., R; 10:00 p.m., Sun. and Mon., C  
Little Jack Little, 11:15 p.m., Sun.: 11:30 p.m., Wed.: 9:15 p.m., Fri.; 11:30 p.m., Sat., C  
Guy Lombardo, 9:30 p.m., Wednesday, C  
Vincent Lopez, 10:00 p.m., Wednesday, B  
Abe Lyman, 9:00 p.m., Fri., R; 8:30 p.m., Tues., C  
Ozzie Nelson, 7:30 p.m., Sunday, B  
Zoel Parenteau, 6:45 p.m., Friday, C  
Charles Previn, 7:00 p.m., Sunday, B  
Leo Reisman, 8:00 p.m., Tuesday, R  
Freddie Rich, 8:00 p.m., Sunday, C  
Sam Robbins, 6:30 p.m., Wednesday, C  
Rudy Vallee, 8:00 p.m., Thursday, R  
Fred Waring, 9:30 p.m., Sun. and Thurs., C  
Mark Warnow, 8:30 p.m., Thursday, C  
Ted Weems, 9:30 p.m., Friday, B  
Paul Whiteman, 10:00 p.m., Thursday, R  
Victor Young, 10:00 p.m., Sunday, R

## DIALOG

Fred Allen, 9:00 and 12:00 p.m., Wednesday, R  
Amos 'n' Andy, 7:00 and 11:00 p.m., daily, ex. Sat. and Sun., B  
Phil Baker, 9:30 p.m., Friday, B  
Jack Benny, 10:30 p.m., Friday, R  
Burns and Allen, 9:30 p.m., Wednesday, C  
Cuckoos, 9:00 and 11:15 p.m., Wednesday, B  
Jimmy Durante, 8:00 p.m., Sunday, R  
East and Dumke, 7:30 p.m., Tuesday, R  
Easy Aces, 8:15 p.m., Wed., Thurs. and Fri., C  
Gene and Glenn, 7:15 and 11:15 p.m., daily, except Sat. and Sun., R  
Lean and Mayfield, 9:00 p.m., Sunday, C  
Walter O'Keefe, 8:00 p.m., Friday, B  
Jack Pearl, 8:00 p.m., Wednesday, R  
Joe Penner, 7:30 p.m., Sunday, B  
Ray Perkins, 10:00 p.m., Tuesday, B  
Pick and Pat, 9:30 p.m., Friday, R  
Stoopnagle and Budd, 10:00 p.m., Tues. and Thurs., C  
Ed Wynn, 9:30 p.m., Tuesday, R

## DRAMA

Bar X Days, 3:00 p.m., Sunday, B  
Bobby Benson, 6:15 p.m., daily, except Sat. and Sun., C  
Big Show, 9:30 p.m., Monday, C  
Conflict, 10:30 p.m., Tuesday and Friday, C  
Death Valley Days, 9:00 p.m., Thursday, B  
Eno Crime Clues, 8:00 p.m., Tues. and Wed., B  
Beatrice Fairfax, 9:30 p.m., Saturday, R  
First Nighter, 10:00 p.m., Friday, R  
Goldbergs, 7:45 p.m., daily, ex. Sat. and Sun., R  
Just Plain Bill, 7:15 p.m., daily, except Sat. and Sun., C  
One Man's Family, 11:30 p.m., Saturday, R

Princess Pat, 4:30 p.m., Sunday, B  
Raffles, 9:00 p.m., Thursday, C  
Irene Rich, 7:45 p.m., Wednesday, B  
Rin Tin Tin Thriller, 7:45 p.m., Sunday, C  
Buck Rogers, 6:00 p.m., Mon. to Thurs., inc., C  
Romance of Meat, 4:00 p.m., Sunday, R  
Soconyland Sketches, 8:00 p.m., Monday, R  
Talkie Picture Time, 3:00 p.m., Sunday, R  
True Story Court, 8:30 and 11:30 p.m., Friday, C  
Ward's Family Theatre, 9:00 p.m., Sunday, C

## PIANO AND ORGAN

Fray and Braggiotti, 9:45 p.m., Saturday, C  
George Gershwin, 7:30 p.m., Mon. and Fri., B  
Archer Gibson, 10:30 p.m., Thursday, B  
Keenan and Phillips, 5:15 p.m., Sunday, C  
Dion Kennedy, 4:00 p.m., Sunday, B  
Ohman and Arden, 9:30 p.m., Sun., R; 8:30 Wed., C  
Playboys, 10:45 p.m., Thursday, C

## POPULAR PROGRAMS

A. & P. Gypsies, 9:00 p.m., Monday, R  
Album of Familiar Music, 9:30 p.m., Sunday, R  
Gene Arnold and Commodores, 2:00 p.m., Sunday, R  
Miss Babo's Surprise, 1:30 p.m., Sunday, R  
Major Bowes' Family, 11:15 a.m., Sunday, R  
Byrd Expedition, 10:00 p.m., Saturday, C  
California Melodies, 8:30 p.m., Sunday, C  
Chase and Sanborn, 8:00 p.m., Sunday, R  
Chevrolet Program, 10:00 p.m., Sunday, R  
Chicago Knights, 5:00 p.m., Sunday, C  
Cities Service Concert, 8:00 p.m., Friday, R  
Colgate House Party, 9:00 p.m., Saturday, R  
Contented Program, 10:00 p.m., Monday, R  
Corn Cob Pipe Club, 10:00 p.m., Wednesday, R  
Del Monte Ship, 9:30 p.m., Monday, R  
Dixie Circus, 6:45 p.m., Monday, C  
Fitch Program, 7:45 p.m., Sunday, R  
Fleischmann Hour, 8:00 p.m., Thursday, R  
Forty-Five Minutes in Hollywood, 10:30 p.m., Sunday, C  
Jack Frost's Melody, 9:30 p.m., Monday, B  
General Tire, 10:30 p.m., Friday, R  
Gulf Headliners, 9:00 p.m., Sunday, B  
Hall of Fame, 10:30 p.m., Sunday, R  
Hour of Smiles, 9:00 and 12:00 p.m., Wednesday, R  
Household Musical, 9:00 p.m., Tuesday, B  
Hudson Vocalians, 8:30 p.m., Tuesday, B  
Manhattan Merry-Go-Round, 9:00 p.m., Sunday, R  
Maxwell House Show Boat, 9:00 p.m., and 1:00 a.m., Thursday, R  
Molle Show, 7:30 p.m., Mon., Wed., Thurs. R  
Music on the Air, 7:30 p.m., Mon., Wed., Fri., C  
National Barn Dance, 10:30 p.m., Saturday, B  
Palmer House Promenade, 10:00 p.m., Tuesday, B  
Palmolive Beauty Box, 10:00 p.m., Tuesday, R  
Al Pearce and Gang, 6:00 p.m., Saturday, B  
Romantic Melodies, 7:30 p.m., Thursday, B  
Schlitz Program, 10:00 p.m., Friday, C  
Silken Strings, 7:00 p.m., Sunday, B  
Sinclair Minstrels, 9:00 p.m., Monday, B  
Terraplane Travelcade, 10:00 p.m., Saturday, R  
Texaco Fire Chief, 9:30 p.m., Tuesday, R  
Voice of Firestone, 8:30 and 11:30 p.m., Monday, R  
Yeast Foamers, 8:00 p.m., Monday, B

## RELIGIOUS

Catholic Hour, 6:00 p.m., Sunday, R  
Church of the Air, 1:00 p.m., Sunday, C  
Elder Michaux, 10:30 p.m., Saturday, C  
Mid-Week Hymn Sing, 6:30 p.m., Tuesday, R  
National Vespers, 5:00 p.m., Sunday, B  
Salt Lake Choir, 11:30 a.m., Sunday, C

## SINGERS

Baby Rose Marie, 7:15 p.m., Monday, B  
Irene Besley, 9:30 p.m., Friday, B  
Connie Boswell, 10:00 p.m., Tues. and Thurs., C  
Charles Carlile, 6:45 p.m., Saturday, C  
Richard Crooks, 8:30 and 11:30 p.m., every other Mon., R  
Bing Crosby, 8:30 p.m., Monday, C  
Morton Downey, 7:00 p.m., Tues.; 8:00 p.m., Sat., C  
Jessica Dragonette, 8:00 p.m., Friday, R

Mary Eastman, 8:00 p.m., Monday, C  
 Sylvia Froos, 11:00 p.m., Saturday, C  
 Tito Guizar, 6:30 p.m., Thursday, C  
 Wendell Hall, 7:45 p.m., Sunday, R  
 Harlem Serenade, 10:45 p.m., Tuesday, C  
 Harriet Hilliard, 7:30 p.m., Sunday, B  
 Jeannie Lang, 9:30 p.m., Friday, C  
 Frances Langford, 6:00 p.m., Sat., R; 10:00 p.m., Wed., B  
 Lazy Dan, 2:30 p.m., Sunday, C  
 Loretta Lee, 6:30 p.m., Friday, C  
 Doris Lorraine, 10:30 p.m., Thursday, C  
 Nick Lucas, 7:30 p.m., Sun.; 11:00 p.m., Wed., C  
 Madison Ensemble, 12:30 p.m., Sunday, C  
 Everett Marshall, 8:30 p.m., Wednesday, C  
 Nino Martini, 9:00 p.m., Wednesday, C  
 James Melton, 9:00 p.m., Sunday, C  
 Frank Munn, 9:30 p.m., Sun.; 9:00 p.m., Fri., R  
 Edith Murray, 2:00 p.m., Sun.; 10:45 p.m., Fri., C  
 Gertrude Niesen, 9:30 p.m., Monday, C  
 Donald Novis, 9:00 p.m., Saturday, R  
 Frank Parker, 9:00 p.m., Monday, R  
 Rosa Ponselle, 9:00 p.m., Monday, C  
 Virginia Rea, 9:30 p.m., Sunday, R  
 Revelers Quartet, 9:00 p.m., Sunday, B  
 Harry Richman, 10:30 p.m., Wednesday, B  
 Sanderson-Crumli, 5:30 p.m., Sunday, C  
 Schumann-Heink, 10:00 p.m., Sunday, B  
 Ethel Shutta, 8:00 p.m., Friday, B  
 Silver Dust Serenaders, 7:30 p.m., Tues., Thurs. and Sat., C  
 Mary Small, 1:30 p.m., Sunday; 6:45 p.m., Tuesday, R

Smiling Ed McConnell, 6:30 p.m., Sunday, C  
 Grete Stueckgold, 9:00 p.m., Saturday, C  
 Gladys Swarthout, 10:00 p.m., Tuesday, R  
 Tamara, 9:00 p.m., Sunday, R  
 Conrad Thibault, 8:30 p.m., Tues., B; 10:30 p.m., Wed., C  
 Lawrence Tibbett, 8:30 and 11:30 p.m., every other Mon., R  
 Vera Van, 7:00 p.m., Wed.; 11:00 p.m., Thurs., C  
 Fate Waller, 11:00 p.m., Monday; 8:45 p.m., Saturday, C  
 Jack Whiting, 9:30 p.m., Friday, C

#### TALKS

Boake Carter, 7:45 p.m., daily, except Sat. and Sun., C  
 Chicago Round Table, 12:30 p.m., Sunday, R  
 Flying Capt. Williams, 6:45 p.m., Saturday, B  
 Floyd Gibbons, 8:30 and 12:00 p.m., Saturday, R  
 Roy Helton, 9:30 p.m., Saturday, C  
 Edwin C. Hill, 8:15 p.m., Monday, C  
 Horlick's Health, 9:45 and 12:00 p.m., Sunday, B  
 H. V. Kaltenborn, 12:45 p.m., Sun.; 6:00 p.m., Fri., C  
 News Service, 11:15 p.m., daily, except Sunday, C  
 Our American Schools, 6:30 p.m., Sunday, R  
 Matury H. B. Paul, 9:00 p.m., Tuesday, C  
 Babe Ruth, 8:45 p.m., Mon., Wed. and Fri., B  
 Stories That Should Be Told, 10:00 p.m., Friday, B  
 Lowell Thomas, 6:45 p.m., daily, ex. Sat. and Sun., B  
 James Thurber, 9:15 p.m., Tuesday, C  
 Voice of Experience, 8:15 and 11:45 p.m., Tues., C  
 Frederick William Wile, 6:30 p.m., Saturday, C  
 Your Government, 7:15 p.m., Tuesday, B

## FIRST AID

(Continued from page 42)

are nearly 40 types of this make, we cannot be specific.

The crackling may undoubtedly be traced to a high resistor carrying appreciably no current, such as a grid resistor, or a bypass condenser which arcs across until the heat fuses the di-electric at the point of arcing. Tests of such parts should be made only by substitution, as direct test methods rarely disclose the trouble.

### Dial Reads Off

*The dial of my Philco model 15X is off in its tuning and I wish to bring it back to its normal setting. The higher the frequency the further off the dial reads from its normal setting.*

It is our belief that the high frequency padding condenser, which is also called the high frequency compensating condenser, is out of adjustment. The condenser is placed in shunt with the oscillator tuning condenser. You should set the receiver dial to 1400 kcs., and obtain an oscillator and set it also for 1400 kilocycles. Then adjust the padding condenser for maximum signal response. Any serviceman should be

able to make this adjustment very quickly.

### Buzzes and Hums

*My RCA model 60 has developed a strong buzzing hum. A serviceman tried to repair it, but admitted he could not stop the noise. He thinks that I need a new set of coils. But I am not certain about that. What do you believe?*

We think that this trouble is quite characteristic of improper neutralization of the r.f. or i.f. stages. This receiver uses triode tubes, as it was manufactured before the day of screen grid tubes, and requires neutralization adjustments.

Each of the intermediate-frequency stages and the radio-frequency stages, therefore, requires the proper adjustment for neutralization. In the March issue of RADEX you will find complete instructions for this work. Be sure to neutralize with the tubes that are to be used in their sockets. There is no reason why a good serviceman cannot properly adjust this receiver. We cannot understand what is meant by a new set of coils because, if they are r.f. or i.f. coils, there is nothing to wear out, and if a wire is broken it can easily be located and repaired.

## INDEX BY FREQUENCIES AND DIAL NUMBERS

Stations in North America are shown in black type. Power is shown in kilowatts, thus .025 is 25 watts. Odd frequencies are given in parenthesis.  
Kilocycles in larger type; meters in parenthesis.

**520 (576.6)**

LKH .7 Hamar, Nor. (519)  
OFH 13.2 Viipuri, Fin. (527)  
..... 5 Innsbruck, Aust. (519)  
..... 5 Ljubljana, Yug. (527)

**530 (565.7)**

HBZ 1. Bolzano, I. (536)  
RW24 2. Smolensk, USSR (531)  
..... 16. Wilno, Pol. (536)

**540 (555.2)**

CJRM 1. Moose Jaw, Sask.  
HAL 120. Budapest, Hun. (546)

**550 (545.1)**

KFUO .5 St. Louis, Mo.  
KFYR 1. Bismarck, N. D.  
KOAC 1. Corvallis, Ore.  
KSD .5 St. Louis, Mo.  
RW48 1.2 Tomsk, U. S. R. (554)  
TISO .25 San Jose, C. R.  
WDEV .5 Waterbury, Vt.  
WGR 1. Buffalo, N. Y.  
WKRC 1. Cincinnati, Ohio  
..... 60. Beromunster, Swi. (556)

**560 (535.4)**

IPA 3. Palermo, I. (565)  
KPFM .5 Beaumont, Tex.  
KLZ 1. Denver, Colo.  
KTAB 1. San Francisco, Calif.  
KWTO 1. Springfield, Mo.  
RW41 1.2 Syktyvkar, U.S.R. (563)  
WFI .5 Philadelphia, Pa.  
WIND 1. Gary, Ind.  
WLIT .5 Philadelphia, Pa.  
WNOX 1. Knoxville, Tenn.  
WQAM 1. Miami, Fla.  
XEAO .25 Mexicali, B. C.  
2CO 7.5 Corowa, Ausl.  
..... 60. Athlone, IFS (565)  
..... 120. Makhatch, U. S. R. (563)

**570 (526)**

FQN .25 St. Pierre, Miq.  
KGKO .25 Wichita Falls, Tex.  
KMTR .5 Hollywood, Calif.  
KVI .5 Tacoma, Wash.  
MYCY 1. Skinkyo, Manch.  
WKBN .5 Youngstown, Ohio  
WMCA .5 New York, N. Y.  
WNAX 1. Yankton, S. D.  
WOSU .75 Columbus, Ohio  
WSYR .25 Syracuse, N. Y.  
WVNC 1. Asheville, N. C.  
2YA 5. Wellington, N. Z.  
..... 100. Stuttgart, G. (574)  
..... 20. Cairo, Eg. (571)  
..... 10. Magnitogorsk, U. S. R. (571)

**580 (516.9)**

CE58 1. Santiago Chl. (585)  
CHRC .1 Quebec, Que.

CKCL .1 Toronto, Ont.  
CKUA .5 Edmonton, Alta.  
KMJ .5 Fresno, Calif.  
KSAC .5 Manhattan, Kans.  
RW35 10. Astrakhan, U.S.R. (589)  
RW38 1.2 Alexandrovsk, U. S. R.  
WCHS .5 Charleston, W. Va.  
WDBO .25 Orlando, Fla.  
WIBW 1. Topeka, Kans.  
WTAG .5 Worcester, Mass.  
YLZ 15. Riga, Lat. (583)  
ZTB .5 Bloemtn, S. Af. (589)  
ZLZ 3. Hobart, Ausl.

**590 (508.2)**

CMW 1.4 Havana, Cuba (595)  
HIX 1.5 Santo Domingo, D. R.  
JOAK2 10. Tokyo, Jap.  
KHQ 1. Spokane, Wash.  
LS10 3.5 Buenos Aires, Arg.  
RW42 10. Gorki, U. S. R. (598)  
WEEI 1. Boston, Mass.  
WKZO 1. Kalamazoo, Mich.  
WOW 1. Omaha, Neb.  
XEPN 50. Piedras Ngs. Coah  
..... 10. Nijni, U. S. R. (598)  
..... 120. Vienna, Aust. (592)

**600 (499.7)**

CFCF .5 Montreal, Que.  
CFGO .1 Chatham, Ont.  
CJOR .5 Vancouver, B. C.  
KFQD .25 Anchorage, Alas.  
KFSO 1. San Diego, Calif.  
SBD 10. Sundsvall, Swe. (601)  
WCAG .5 Storr, Conn.  
WCAO .5 Baltimore, Md.  
WICC .5 Bridgeport, Conn.  
WMT .5 Waterloo, Iowa  
WREC .5 Memphis, Tenn.  
XMHA .6 Shanghai, Chn.  
..... 6.5 R'dio Maroc, Mor. (601)  
..... Cairo, Eg.

**610 (491.5)**

CX4 1. Montevideo, Uru.  
IFI 20. Florence, I.  
JODK2 10. Keijo, Ko.  
KFRK 1. San Francisco, Calif.  
KZEG 1. Manila, P. I. (618.5)  
KZRM 50. Manila, P. I. (618.5)  
RW22 10. Oufa, U. S. R. (617)  
TIXA .0075 San Jose, C. R. (614)  
WDAF 1. Kansas City, Mo.  
WIP .5 Philadelphia, Pa.  
WJAY .5 Cleveland, Ohio  
XFX 1. Mexico City, D. F.  
3AR 5. Melbourne, Ausl.  
..... 10. Murmansk, U.S.R.

**620 (483.6)**

CE62 1. Santiago, Chl. (625)  
JOTK .5 Matsuye, Jap. (625)  
KGW 1. Portland, Ore.  
KTAR 1. Phoenix, Ariz.  
LVI 1.5 San Juan, Arg.  
RW31 10. Ivan-Vozn. U.S.R. (625)  
WFLA 1. Clearwater, Fla.  
WLBZ 5. Bangor, Me.  
WSUN 1. St. Petersburg, Fla.

WTMJ 1. Milwaukee, Wis.  
XOTN .5 Tientsin, Chn. (625)  
4ZP .5 Invereargill, N. Z.  
No. 1 15. Brussels, Belg.  
..... 1.2 Trondheim, Nor. (620)

**630 (475.9)**

CFCY .5 Charlottetown, P. E. I.  
CJGX .5 Yorkton, Sask.  
JODG .3 Hamamatsu, Jap. (635)  
KFRU .5 Columbia, Mo.  
KGFX .2 Pierre, S. D.  
KTRH .25 Houston, Tex.  
LS3 4.5 Buenos Aires, Arg.  
OKP 120. Prague, Cz. (638)  
RW28 .7 Vladivost'k, U.S.R. (635)  
WGBF .5 Evansville, Ind.  
WMAL .25 Washington, D. C.  
WOS .5 Jefferson City, Mo.  
XEZ .5 Merida, Yuc.  
XFG 2. Mex. City, D. F. (638.3)  
5CK 7.5 Crys, Brook. Aus. (635)

**640 (468.5)**

CMQ .5 Havana, Cuba (645)  
JOUK .3 Akita, J. (645)  
KFI 50. Los Angeles, Cal.  
RW17 1.2 Kazan, USSR. (644)  
RW56 1.2 Penza, USSR.  
WAIU .5 Columbus, Ohio  
WOI 5. Ames, Iowa  
XEOX .25 Saultillo, Coah.  
YN 15. Lyons, F. (648)  
..... 10. Petrozavodsk, U.S.R.

**650 (461.3)**

CAB 1. Canton, Chn. (658)  
CX6 5. Montevideo, Uru.  
JOOG .3 Asahikawa, J. (655)  
JQAK .5 Dairen, Manch. (652)  
KPCB .25 Seattle, Wash.  
RW46 10. Karaganda, USSR. (653)  
WSM 50. Nashville, Tenn.  
1YA 5. Auckland, N. Z.  
..... 60. Langenberg, G. (658)

**660 (454.3)**

CE66 1. Santiago, Ch. (665)  
EAJ22 1. Salamanca, Sp. (662)  
NR 50. Manchester, G.B. (668)  
WAAW .5 Omaha, Neb.  
WEAF 50. New York, N. Y.  
XEAL 1. Mexico City, D. F.  
XGOA 75. Nanking, Chn.  
ZTJ 15. Johannesburg, S. Af.  
2FC 5. Sydney, Aus. (665)  
..... 5. Bjorneborg, Fin. (662)

**670 (447.5)**

CMB 1. Kwangchow, Chn. (677)  
JFAK 10. Taihoku, For.  
LS4 6. Buenos Aires, Arg.  
MOHB 1. Harbin, Manch. (674)  
MTFY 1. Harbin, Manch. (674)  
RW23 1.2 Gzrnyi, USSR. (676)  
WMAQ 50. Chicago, Ill.  
..... 25. Sottens, Swi. (677)



INDEX BY FREQUENCIES AND DIAL NUMBERS

**680 (440.9)** [ ]  
**CMAF** 1. Havana, Cuba  
**CMCQ** 1. Havana, Cuba  
**HJN** 1. Bogota, Col. (681)  
**JOLK** .5 Fukuoka, J.  
**JOVK** .5 Hakodate, J.  
**KFEQ** 2.5 St. Joseph, Mo.  
**KFO** 50. San Francisco, Cal.  
**RDN** .5 San Salvador, E. S.  
**RW27** 4. Mak.-Kala, U.S.R. (689)  
**RW40** 1.2 Karang., U.S.R. (686.5)  
**RW74** 1.2 Teheboksarv. U.S.R.  
**VAS** 2. Glace Bay, N. S. (685)  
**WESG** 1. Elmira, N. Y.  
**WPTF** 1. Raleigh, N. C.  
 ..... 2.5 Belgrade, Yug. (686)

**690 (434.5)** [ ]  
**CFRB** 10. Toronto, Ont.  
**CJJC** .1 Calgary, Alta.  
**CX8** 1. Montevideo, Uru.  
**NAA** 1. Arlington, Va.  
**XET** .5 Monterrey, N. L.  
**XGOY** .5 Yunnan, Chn. (698)  
**6WF** 1. Perth, Aus.  
 ..... 7. Paris, F. (695)

**700 (428.3)** [ ]  
**CE70** 1. Santiago, Chl. (705)  
**JOJK** .5 Okayama, J.  
**SBA** 55. Stockholm, Swe. (704)  
**SCN** .25 Malmberget, Swe. (704)  
**VOVR** .5 St. John's, N. F.  
**VPB** 1.75 Coloniza. Cay. (705)  
**WLW** 50. Cincinnati, Ohio  
**XHHA** .1 Shanghai, Chn.

**710 (422.3)** [ ]  
**IIRO** 50. Rome, I. (713)  
**JOJK** 3. Kanazawa, J.  
**KMPC** .5 Beverly Hills, Cal.  
**TIFB** .03 San Jose, C. R. (714)  
**WOR** 5. Newark, N. J.  
**XEN** 1. Mex. City, D. F.

**720 (416.4)** [ ]  
**JFBK** 1. Tainan, For.  
**JORK** .5 Kochi, J.  
**RV9** 100. Kiev, U.S.R. (722)  
**RW28** 10. Vladivos, U.S.R. (725)  
**RW52** 10. Simferopol, U.S.R. (725)  
**WGN** 50. Chicago, Ill.  
**XEFI** .25 Chihuahua, Chih.  
**ZTD** 1. Durban S. Af. (723)  
**3YA** 2.5 Christchurch, N. Z.

**730 (410.7)** [ ]  
**CFPL** .1 London, Ont.  
**CJCA** 1. Edmonton, Alta.  
**CKAC** 5. Montreal, Que.  
**CMK** 2. Havana, Cuba  
**CX10** 1. Montevideo, Uru.  
**EAJ2** 3. Madrid, Sp. (731)  
**EAJ5** 1.5 Seville, Sp. (731)  
**JOSK** 1. Kokuya, J. (735)  
**6CL** 5. Adelaide, Aus.  
 ..... 20. Tallin, Est. (731)

**740 (405.2)** [ ]  
**CE74** 1. Santiago, Chl. (745)  
**KMMJ** 1. Clay Center, Neb.  
**TRB** .25 Modesto, Cal.  
**OFD** .5 Fori, Fin. (749)

**RW51** 1.2 Nalchik, U.S.R. (748.1)  
**WSEB** .25 Portsmouth, N. H.  
**WSB** 50. Atlanta, Ga.  
**XEPR** .25 Mexico City, D. F.  
 ..... 100. Munich, G.  
 ..... 5. Marseilles, F (749)

**750 (399.8)** [ ]  
**HS7PJ** Bangkok, Siam  
**JOBK1** 10. Osaka, J.  
**KGU** 2.5 Honolulu, T. H.  
**QAX** 1.5 Lima, Peru  
**QRA2** 1.5 Rio de Janeiro, Brz.  
**PRA8** .5 Recife, Brz.  
**RW64** 10. Vladikav., U.S.R. (752)  
**VQ7LO** 1. Nairobi, Ken.  
**WJR** 10. Detroit, Mich.  
**XEMC** .25 Merida, Yuc.  
**2YB** .1 New Plymouth, N. Z.  
 ..... 12. Katowice, Pol. (758)

**760 (394.5)** [ ]  
**CMBS** .2 Havana, Cuba  
**CMCQ** 1. Havana, Cuba (767)  
**KXA** .25 Seattle, Wash.  
**MR** 25. Daventry, G. B. (767)  
**WBAL** 10. Baltimore, Md.  
**WEW** 1. St. Louis, Mo.  
**WJZ** 50. New York, N. Y.  
**4QG** 5. Brisbane, Aus.

**770 (389.4)** [ ]  
**CX12** 1. Montevideo, Uru.  
**JOHK** 10. Sendai, J.  
**KFAB** 5. Lincoln, Neb.  
**RW26** 10. Stalino, U.S.R. (776)  
**RW36** 10. Arkhangel'sk, U.S.R.  
**VUM** .2 Madras, In.  
**WBBM** 25. Chicago, Ill.  
**1ZH** .04 Hamilton, N. Z.  
 ..... 2. Toulouse, F. (776)

**780 (384.4)** [ ]  
**CE78** 1. Valparaiso, Chl. (785)  
**CHWK** .1 Chilliwack, B. C.  
**CJCS** .5 Sudbury, Ont.  
**CKY** 5. Winnipeg, Man.  
**JOPK** .5 Shinoka, J.  
**KELW** .5 Burbank, Cal.  
**KFDY** 1. Brookings, S. D.  
**KTM** .5 Los Angeles, Cal.  
**LT1** 5. Rosario, Arg.  
**WEAN** .5 Providence, R. I.  
**WMC** .5 Memphis, Tenn.  
**WTAR** .5 Norfolk, Va.  
**XEYZ** 10. Mexico City  
 ..... .2 Alexandria, Eg.  
 ..... 120. Leipsig, G. (785)

**790 (379.5)** [ ]  
**CMJK** .5 Camaguey, Cuba  
**EAJ1** 5. Barcelona, Sp. (795)  
**JOJK** 10. Kumamoto, J.  
**KGO** 7.5 San Francisco, Cal.  
**LR10** 8. Buenos Aires, Arg.  
**RW37** 1. Moskva, U.S.R. (792.5)  
**WGY** 50. Schenectady, N. Y.  
**4YA** .5 Dunedin, N. Z.  
 ..... 16. Lwow, Pol. (795)  
 ..... 5. Santiago, Sp. (795)

**800 (374.8)** [ ]  
**LU2** .5 Bahia Blanca, Arg.  
**PRB7** .5 Rio de Janeiro, Brz.  
**TIGP** .075 San Jose, C. R.  
**SR** 50. Falkirk, G. B. (804)

**WBAP** 50. Fort Worth, Tex.  
**WFAA** 50. Dallas, Tex.  
**3LO** 5. Melbourne, Aus.  
 ..... 20. Salonica, Gr. (804)

**810 (370.2)** [ ]  
**CX14** 1. Montevideo, Uru.  
**EAJ4** 1.5 Galicia, Sp. (815)  
**P8GC** 1.2 Paris, F.  
**IMI** 50. Milan, I. (814)  
**JOCK1** 10. Nagoya, J.  
**PR6** 1. Sao Paulo, Brz. (815)  
**VUC** 3. Calcutta, In.  
**WCCO** 50. Minneapolis, Minn.  
**WNYC** .5 New York, N. Y.  
**XFC** .35 Aguascalientes, Ags.  
**ZTC** 1. Cape Town, S. Af.

**820 (365.6)** [ ]  
**CE82** 1. Santiago, Chl. (825)  
**CMGC** .03 Matanzas, Cuba  
**LV7** .5 Tucuman, Arg.  
**RW68** 1.5 Tehela., U.S.R. (824)  
**RW69** 4. Ijevsk, U.S.R. (826)  
**WHAS** 50. Louisville, Ky.  
**XETV** .5 Mexico City, D. F.  
**XQHB** .1 Shanghai, Chn.  
**2ZH** .065 Napier, N. Z.  
 ..... 12. Bucharest, Ru. (823)

**830 (361.2)** [ ]  
**CMC** .5 Havana, Cuba (835)  
**CMGA** .1 Colon, Cuba (834)  
**JOJK** 10. Sapporo, J.  
**KOA** 12.8 Denver, Colo.  
**LL** 2. Paris, Fr. (832)  
**LR5** .16 Buenos Aires, Arg.  
**RW39** 100. Moscow, U.S.R. (832)  
**TIEA** .0975 San Jose, C. R. (833)  
**WEEU** 1. Reading, Pa.  
**WHDH** 1. Boston, Mass.  
**WRUF** 5. Gainesville, Fla.

**840 (356.9)** [ ]  
**CJOC** .1 Lethbridge, Alta.  
**CKLW** 5. Windsor, Ont.  
**F31CD** 12. Saigen, Indo.  
**LTS** .35 Rosario, Arg.  
**VUB** 3. Bombay, In.  
**ZBW** 2. Hongkong, C. (845)  
**2YC** .2 Wellington, N. Z.  
 ..... 100. Berlin, G. (841)

**850 (352.7)** [ ]  
**CX16** .2 Montevideo, Uru.  
**EAJ3** 1.5 Valencia, Sp.  
**HSPI** 2.5 Bangkok, Siam (857)  
**JOJK** 10. Hiroshima, J.  
**KIEV** .1 Glendale, Cal.  
**KWKH** 10. Shreveport, La.  
**LKA** .35 Aalesund, Nor.  
**LKB** 1. Bergen, Nor.  
**LKP** .7 Porsgrund, Nor.  
**PRB3** .25 Juiz de Fora, Brz. (857)  
**RW52** 10. Simferopol, U.S.R. (859)  
**WWL** 10. New Orleans, La.  
**XETZ** .5 Mexico City, D. F.  
**XOST** .5 Tsinan, Chn. (857.1)  
**XQHA** 1. Shanghai, Chn.  
**ZBL** 3.4 Sydney, Aus. (855)  
 ..... 1. Sofia, Bul.  
 ..... 15. Strasbourg, F. (859)

**860 (348.6)** [ ]  
**CE86** 1. Santiago, Chl. (865)



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LKF .7 Fredrikstad, Nor.  
 LV10 .5 Buenos Aires, Arg.  
 PRA3 2.5 Rio de Janeiro, Brz.  
 TIVL .03 San Jose, C. R. (888)  
 WABC .50 New York, N. Y.  
 WHB .5 Kansas City, Mo.  
 XEMO 2.5 Tijuana, L. C.  
 ..... 1 Santiago, Chl.  
 ..... 16. Poznan, Pol. (888)

## 870 (344.6)

CMCF .25 Havana, Cuba (873)  
 CMX 1. Havana, Cuba (875)  
 JOAK1 10. Toyko, J.  
 LR 50. London, G. B. (877)  
 LR6 2.1 Buenos Aires, Arg.  
 WENR 50. Chicago, Ill.  
 WLS 60. Chicago, Ill.  
 YNCRG 1.5 Granada Venz

## 880 (340.7)

CE88 .1 Valparaiso, Chl. (885)  
 CJCB .05 Sydney, N. S.  
 CRGO 1. Ottawa, Ont.  
 CTIGL .15 Lisbon, Por. (885)  
 KFKA .5 Greeley, Colo.  
 KLX 1. Oakland, Cal.  
 KP0F .5 Denver, Colo.  
 PRB2 .25 Curitiba, Brz. (882)  
 WCOC .5 Meridian, Miss.  
 WGBI .5 Scranton, Pa.  
 WQAN .25 Soranto, Pa.  
 WSUI .5 Iowa City, Iowa  
 XHHV .1 Shanghai, Chn.  
 XT2BC .1 Caracas, Venz. (882)  
 6FR .5 Perth, Aus.  
 IZR .1 Auckland, N. Z.  
 ..... 7. Graz, Aust. (886)

## 890 (326.9)

CX18 .75 Montevideo, Uru.  
 KARK .25 Little Rock, Ark.  
 KFNF .5 Shenandoah, Ia.  
 KFPY 1. Spokane, Wash.  
 KSEI .25 Pocatello, Ida.  
 KUSD .5 Vermillion, S. D.  
 MTRV 1.5 Hoten, Manch. (897)  
 ORA 10. Helsinki, Fin. (895)  
 WGST .25 Atlanta, Ga.  
 WILL .25 Urbana, Ill.  
 WJAR .5 Providence, R. I.  
 WMMN .25 Fairmont, W. Va.  
 XETU .1 Pachuca, Hdo.  
 XEW .50 Mexico City  
 7HO .05 Hobart, Aus.  
 ..... 6.5 Cadiz, Sp. (896)  
 ..... 10. Toulouse, Fr. (895)

## 900 (333.1)

CE90 1. Santiago, Chl. (905)  
 JODK1 10. Keijo, Ko.  
 KGBU .5 Ketchikan, Alas.  
 KHJ 1. Los Angeles, Cal.  
 LY0 .5 Salta, Arg.  
 WBN 1. Buffalo, N. Y.  
 WJAX 1. Jacksonville, Fla.  
 WKY 1. Oklahoma City, Okla.  
 WLBL 2.5 Stevens Pt., Wis.  
 XHHI .1 Shanghai, Chn.  
 ZILY 2. Hoten, Manch.  
 ZPP .105 Wairoa, N. Z.  
 3MA .05 Mildura, Aus.  
 ..... 100. Hamburg, G. (904)

## 910 (329.6)

CMDE .15 Havana, Cuba

CMFJ .2 Camaguey, Cuba  
 CRGM .5 Montreal, Que.  
 LR2 8.5 Buenos Aires, Arg.  
 RW30 10. Dnepropetrovsk, URSR  
 TIGR .075 San Jose, C. R. (911)  
 4RK 5. Rockhamton, Aus.  
 ..... 5. Limoges, F. (913)

## 920 (325.9)

CE92 .1 Temuco, Chl.  
 CMCD .5 Havana, Cuba (925)  
 HHK 1. Port-au-Prince, Haiti  
 JOQK .5 Niigata, J.  
 KFEL .5 Denver, Colo.  
 KFXF .5 Denver, Colo.  
 KOMO 1. Seattle, Wash.  
 KPRC 1. Houston, Tex.  
 LY2 3. Cordoba, Arg.  
 OKB 32. Brno, Ck. (922)  
 PRC3 .25 Pelotas, Brz.  
 WAAF .5 Chicago, Ill.  
 WBSO .5 Babson Pk., Mass.  
 WJWJ 1. Detroit, Mich.  
 XEOK 2.5 Tijuana, B. C.

## 930 (322.4)

CFAC .1 Calgary, Alta.  
 CFCH .1 North Bay, Ont.  
 CFLC .1 Prescott, Ont.  
 CKPC .1 Brantford, Ont.  
 CKPR .05 Ft. William, Ont.  
 CT1BO .15 Lisbon, Por. (936)  
 CX20 2. Montevideo, Uru.  
 HSP3 Bangkok, Siam (938)  
 JOAG .5 Nagasaki, J.  
 KFWI .5 San Francisco, Cal.  
 KGBZ .5 York, Neb.  
 KMA .5 Shenandoah, Ia.  
 KROW .5 Oakland, Cal.  
 PRD2 1. Sao Paulo, Brz. (935)  
 WBRG .5 Birmingham, Ala.  
 WDBJ .5 Roanoke, Va.  
 XHHX .1 Shanghai, Chn.  
 XNPP 1. Peiping, Chn. (937)  
 3UZ .5 Melbourne, Aus.  
 No. 2 15. Brussels, Belg. (932)

## 940 (319)

CE94 1. Santiago, Chl. (945)  
 JONK .5 Nagano, J.  
 KOIN 1. Portland, Ore.  
 VOAS .1 St. John's, Nfld.  
 WAAT .3 Jersey City, N. J.  
 WAVE .1 Louisville, Ky.  
 WCSH 1. Portland, Maine  
 WDAY 1. Fargo, N. D.  
 WHA 1. Madison, Wis.  
 SBB 10. Goteborg, Swe. (941)  
 XEFO 5. Mexico City (XFO)  
 XHHE .1 Shanghai, Chn.  
 3ZR .3 Greymouth, N. Z.  
 ..... 12. Algiers Alg. (941)

## 950 (315.6)

CMHD .5 Calbarien, Cuba  
 CTIDH .01 Lisbon, Por. (952)  
 KFWB 1. Hollywood, Cal.  
 KQHL 1. Billings, Mont.  
 KMBC 1. Kansas City, Mo.  
 LR3 12. Buenos Aires, Arg.  
 PP 100. Paris, F. (959)  
 RV 10. Paris, F. (959)

RW55 1. Engels, URSR. (950)  
 RW40 1.2 Gomel, U.S.R. (959)  
 WRC .5 Washington, D. C.  
 XEAW 10. Reynosa, Tams.  
 XOPP 1. Peiping, Chn. (952.3)  
 2GB 3. Sydney, Aus.  
 ..... 60. Cairo, Eg.  
 ..... 60. Breslau, G.

## 960 (312.3)

CMBD .25 Havana, Cuba (965)  
 CMCW .15 Havana, Cuba (965)  
 CMJL .05 Camaguey, Cuba  
 CRCT 5. Toronto, Ont.  
 JOOK .3 Kyoto, J.  
 OFC .25 Jacobstad, Fin.  
 PRG6 1. Rio de Janeiro, Brz. (965)  
 RW13 10. Odessa, URSR. (968)  
 RW57 2. Traapoi, U.S.R. (968)  
 XHHF 1. Shanghai, Chn.  
 YV1BC .5 Caracas, Venz.  
 ZZF .15 Palmerston, N. Z.  
 5DN 1. Adelaide, Aus.  
 ..... 20. Grenoble, F. (968)  
 ..... 10. Odessa, U.S.R. (968)  
 ..... 2. Oukhta, URSR. (968)

## 970 (309)

CMGF .1 Matanzas, Cuba (971.5)  
 CX22 .25 Montevideo, Uru.  
 JOBG .5 Maebashi, J.  
 KJR 1.5 Seattle, Wash.  
 WCFL 6.5 Chicago, Ill.  
 W1BG .1 Glenside, Pa.  
 WR 50. Cardiff, G. B. (977)  
 XEP .5 Mexico City, D. F.  
 XES .25 Tampico, Tams.  
 XGOD 1. Hangchow, C. (977.5)  
 3BO .2 Bendigo, Aus.

## 980 (303.9)

CE98 1. Santiago, Chl. (985)  
 CNO .025 Casablanca, Mor. (988)  
 IGE 10. Genoa, I. (986)  
 JOXX .5 Tokushima, J.  
 KDKA 60. Pittsburgh, Pa.  
 XEAE .25 Tijuana, B. C.  
 ZPT .5 Pretoria, S. Af. (985)  
 ZJZ .25 Gisborne, N. Z.  
 6BY .05 Bunbury, Aus.  
 ..... 2. Craoow, Pol. (986)

## 990 (302.8)

JOFG .5 Fukui, J.  
 LR4 12. Buenos Aires, Arg.  
 PFB1 .20 Hiltersvorn, Hol. (995)  
 TITV .0075 San Jose, C. R. (999)  
 WBZ 50. Boston, Mass.  
 WBZA 1. Springfield, Mass.  
 WJEM .5 Tupelo, Miss.

## 1000 (299.8)

CMBZ .15 Havana, Cuba (1005)  
 CMBH .25 Santa Clara, Cu. (1007)  
 HJ3ABH 1. Bogota, Col.  
 KFVD .25 Los Angeles, Cal.  
 OKR 13.5 Bratislava, Ca. (1004)  
 PRA4 1. Bahia, Brz.  
 PRB4 1. Santos, Brz.  
 PRB8 .05 Mogy das Cruzes, Brz.  
 WHO 50. Des Moines, Ia.

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**WORK 1.** York, Pa.  
**ZP3 .3** Asuncion, Par.  
**4GR .05** Toowoomba, Ausl.  
 ..... 35 Hague, Hol.

## 1010 (296.9)

**CHML .06** Hamilton, Ont.  
**CHWC .5** Regina, Sask.  
**CKCD .1** Vancouver, B. C.  
**CKCK .5** Regina, Sask.  
**CKCO .1** Ottawa, Ont.  
**CKIC .05** Wolfville, N. S.  
**CKWX .1** Vancouver, B. C.  
**CMJO .05** Ciego de Avila, Cuba  
**CX24 10.** Montevideo, Uru.  
**KGGF .5** Coffeyville, Kans.  
**KQW .5** San Jose, Cal.  
**NN 50.** Mauchtr., G.B.(1013)  
**PR9 6.4** Amsterdam, Ho. (1013)  
**PRB9 .5** Sao Paulo, Brz. (1017)  
**TIGA .93** Cartago, CR. (1014)  
**WHN 1.** New York N. Y.  
**WIS .5** Columbia, S. C.  
**WNAD .5** Norman, Okla.  
**XEB 10.** Mexico City, D. F.  
**3HA .2** Hamilton, Ausl.  
 ..... 10. Tchrgv., USSR.(1013)

## 1020(293.9)

**CE102 .25** Santiago, Chl.  
**EAJ2 3** Madrid, Sp.(1022)  
**EAJ15 3.** Barcelona, Sp. (1022)  
**EAJ19 .7** Oviedo, Sp. (1022)  
**KYW 10.** Chicago, Ill.  
**WRAX .25** Philadelphia, Pa.  
**XEJ .25** Juarez, Chih.  
**XHHG 1** Shanghai, Ch.  
**2UE 3.** Sydney, Ausl. (1025)

## 1030 (291.1)

**CFCN 10.** Calgary, Alta.  
**CFNB .5** Fredericton, N. B.  
**CKNC .1** Toronto, Ont.  
**CMKC .15** Santiago, C. (1034)  
**CT2GL 5.** Parede, Por.  
**LR9 5.** Buenos Aires, Arg.  
 ..... 60. Heilsberg, G.(1031)  
 ..... 5. Parede, Por. (1031)

## 1040 (288.3)

**CE104 .02** Magallanes, Chl.  
**CMRG .225** Havana, Cuba (1048)  
**CMGB .15** Havana, Cuba (1048)  
**CP4 10.** La Paz, Bol.  
**CMGH .015** Matanzas, Cuba  
**KRLD 10.** Dallas, Tex.  
**KWJJ .5** Portland, Ore.  
**RW70 10.** Leningrad, USSR.  
**WKAR 1.** East Lansing, Mich.  
**WTIC 50.** Hartford, Conn.  
**XEFG .25** Mexico City, D. F.  
**XHHH .1** Shanghai, Chn.  
**8PI .05** Port Firie, Ausl. (1041)  
 ..... 2.5 Rennes, F.

## 1050 (285.5)

**CHNS .5** Halifax, N. S.  
**CMJG .05** Carnaguey, Cuba  
**CT1AA 2.** Lisbon, Por. (1056)  
**CT1AN .01** Lisbon, Por. (1056)  
**CT1BM .05** Lisbon, Por. (1056)

**CT1DS .01** Lisbon, Por. (1058)  
**CT1EB .05** Lisbon, Por. (1056)  
**CX26 2.** Montevideo, Uru.  
**IIBA 20.** Bari, I. (1059)  
**KFBI 5.** Abilene, Kans.  
**KNX 50.** Hollywood, Cal.  
**RW33 10.** Krasnodar, USSR.  
**SN 50.** Falkirk, G. B.  
**VOGY .075** St. John's, Nfld.  
**2CA .05** Canberra, Ausl.  
**4ZB .05** Dunedin, N. Z.  
**4ZM .05** Dunedin, N. Z.  
**4ZO .025** Dunedin, N. Z.  
 ..... 5 Berlin, G. (1058)

## 1060 (282.8)

**CE106 .02** Santiago, Chl.  
**CT1GK 2.** Lisbon, Por. (1063)  
**KTHS 10.** Hot Springs, Ark.  
**LT9 2** Santa Fe, Arg.  
**RW37 10.** Tiraspol, USSR. (1068)  
**WBAL 10.** Baltimore, Md.  
**WJAG 1.** Norfolk, Neb.  
**2ZV .4** Wellington, N. Z.  
**4MB .05** Maryborough, Ausl.

## 1070 (280.2)

**CE107 .1** Santiago, Chl.  
**KJBS .1** San Francisco, Cal.  
**WCAZ .1** Carthage, Ill.  
**WDX .1** Tuscola, Ill.  
**WTAM 50.** Cleveland, Ohio  
**2KY 1.5** Sydney, Ausl.  
 ..... 12. Bordeaux, F.(1077)

## 1080 (277.6)

**JOBK2 10.** Asaka, J. (1085)  
**LT3 3.5** Rosario, Arg.  
**PRA9 1.** Rio de Janeiro, Brz.  
**SCC 2.** Falun, Swe.(1086)  
**VOKV .03** St. John's, Nf. (1085)  
**WBT 50.** Charlotte, N. C.  
**WCBZ 5.** Zion, Ill.  
**WMBI 5.** Chicago, Ill.  
**XEAF .25** Nogales, Son.  
**XGOB .25** Lo Yang, Chn.  
**3SH .05** Swan Hill, Ausl.  
 ..... 7 Zagred, Yu. (1086)  
 ..... 5 Alexandria, Eg.

## 1090 (275.1)

**CE109 1** Vina del Mar, Chl.  
**CX25 2.** Montevideo, Uru.  
**EAJ1 7.** Barcelona, Sp. (1095)  
**EA37 7.** Madrid, Sp. (1095)  
**KMOX 50.** St. Louis, Mo.  
**PRC7 .25** Bello Horizonte, Brz.  
**PRG2 .5** Porto Alegre, Brz.  
**RW75 10.** Vinnitsa, USSR.(1095)  
 ..... 1.5 Poznan, Pol. (1098)

## 1100 (272.6)

**CE110 .1** Santiago, Chl. (1105)  
**CMHA .5** Sagua la Grande, Cu. (1103)  
**CMCU .5** Havana, Cuba  
**CRCV 1.** Vancouver, B. C.  
**INA 1.5** Naples, I. (1104)  
**KGDM .25** Stockton, Cal.  
**TIRCA 5.** San Jose, C. R.  
**WLWL .5** New York, N. Y.  
**WPG 5.** Atlantic City, N. J.  
**XEA .125** Guadalajara, Jal.

**XHHS .1** Shanghai, Chn.  
**7LA .3** Launceston, Ausl.  
 ..... 20. Madona, Lat. (1104)

## 1110 (270.1)

**HJ3ABD.05** Bogota, Col. (1115)  
**K900 1.** Sioux Falls, S. D.  
**LS5 4.5** Buenos Aires, Arg.  
**OKK 2.6** Koenos, Cz. (1113)  
**PRB5 .05** Sao Paulo, Brz.  
**WRVA .5** Richmond Va.  
**2HD .2** Newcastle, Ausl.  
**2ZR .05** Nelson, N. Z.  
 ..... 5. Heliopolis, Eg.  
 ..... 1. Thesalonik, Gr.

## 1120 (267.7)

**CHGS .05** Summerside, P. E. I.  
**CHLP .1** Montreal, Que.  
**CKOC .5** Hamilton, Ont.  
**CMHJ .06** Cienfuegos, Cuba (1125)  
**EAJ19 .7** Oviedo, Sp. (1121)  
**HAE 6.2** Nyiregyhaza, Hun. (1122)  
**KFIO .1** Spokane, Wn.  
**KFSG .5** Los Angeles, Cal.  
**KRKO .5** Los Angeles, Cal.  
**KRSC .1** Seattle, Wn.  
**LV5 .7** San Juan, Arg.  
**WDEL .25** Wilmington, Del.  
**WHAD .25** Milwaukee, Wis.  
**WISN .25** Milwaukee, Wis.  
**WTAW .5** College Station, Tex.  
**XEK 1.** Mexico City, D. F.  
**2UW 1.5** Sydney, Aus. (1125)  
 ..... 1. Belfast, IFS.(1122)

## 1130 (265.3)

**CX30 .5** Montevideo, Uru.  
**KSL 50.** Salt Lake City, Utah  
**SBH 10.** Horby, Swe. (1131)  
**TGW .5** Guatemala City  
**WJJD 20.** Chicago, Ill.  
**WVW 1.** New York, N. Y.  
**XEH .25** Monterey, N. L.  
**SP1 1.** Asuncion, Par. (1135)  
**6ML .3** Perth, Ausl. (1135)

## 1140 (263)

**CE114 .1** Santiago, Chl. (1145)  
**CMBJ .5** Havana, Cuba  
**CMBW .6** Havana, Cuba  
**CMCO .5** Havana, Cuba (1145)  
**CW30 10.** Tucuarembou, Uru.  
**I1T0 7.** Turin, I.  
**KV00 25.** Tulsa, Okla.  
**LN 50.** London, G. B. (1149)  
**WAPI 5.** Birmingham, Ala.  
**WN 50.** Cardiff, G. B. (1149)  
**XGCU .1** Shanghai, Chn.  
**3YB .025** Melbourne, Ausl.(1145)  
**4BC .6** Brisbane, Aus. (1145)

## 1150 (260.7)

**CMJH .05** Ciego de Avila, Cuba  
**LR8 5.** Buenos Aires, Arg.  
**PRA7 .05** Ribeirao Preto, Brz. (1153)  
**WHAM 50.** Rochester, N. Y.  
**YV17BMO .5** Maracaibo, Venz. (1153)  
**2WG .05** Wagga, Aus. (1155)  
**2ZM .11** Gisborne, N. Z.  
 ..... 11.2 Moravska, Cs. (1158)

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**1160 (258.5)**   
 LT5 .5 Resistencia, Arg.  
**WQWO 10.** Ft. Wayne, Ind.  
**WWVA 5.** Wheeling, W. Va.  
**XED 5.** Guadalajara, Jal.  
**XHHU 5.** Shanghai, Chn.  
 ..... 15. Mte. Ceneri, Sw. (1167)

**1170 (256.3)**   
**CMJE .06** Camaguey, C. (1175)  
**CX32 .5** Montevideo, Uru.  
**JOCK2 10.** Nagoya, J. (1175)  
**MRD .7** Toulouse, F. (1175)  
**PRAW .02** Campinas, Brz.  
**WCAU 60.** Philadelphia, Pa.  
**2ZD .008** Masterton, NZ.  
**4TO .1** Townsville, Aus.  
 ..... 10. Cophgen., Den. (1175)

**1180 (254.1)**   
**CMBN .15** Havana, Cuba (1185)  
**CMBX .5** Havana, Cuba (1185)  
**CMCJ .5** Havana, Cuba  
**CW32 .25** Salto, Uru.  
**KEX 5.** Portland, Ore.  
**KOB 10.** Albuquerque, N. M.  
**RW20 10.** Kharkov, USSR. (1185)  
**WDGY 1.** Minneapolis, Minn.  
**WINS .5** New York, N. Y.  
**WMAZ .5** Macon, Ga.  
**XEFA .5** Mexico City, D. F.  
**XHHM .1** Shanghai, Chn.  
**3DB .5** Melbourne, Aus.

**1190 (252)**   
**EAJ15 1.** Barcelona, Sp. (1193)  
**EAJ18 1.** Almeria, Sp. (1193)  
**HJ 015** S. Dom., D. R. (1195)  
**LS2 6.** Buenos Aires, Arg.  
**VE9EK .01** Montmy., Que. (1195)  
**VONF 6.** St. John's, Nl. (1195)  
**WATR .1** Waterbury, Conn.  
**WOAI 50.** San Antonio, Tex.  
**WZAZ 1.** Huntington, W. Va.  
**1ZB .05** Auckland, N. Z.  
**4MK .1** Mackay, Aus.  
 ..... 17. Frankfurt, G. (1195)  
 ..... 5. Freiburg, G. (1195)  
 ..... 1.5. Kaiserslautern (1195)  
 ..... Trier, G. (1195)  
 ..... 1.5. Cassel, G. (1195)

**1200 (249.9)**   
**CHAB .1** Moses Jaw, Sask.  
**CJAT .05** Trail, B. C.  
**CKTB .1** St. Catharines, Ont.  
**CMGB .03** Matanzas, Cu. (1205)  
**CMHW .1** Cienfuegos, Cuba  
**HJ3ABE.05** Bogota, Colo.  
**KBTM .1** Jonesboro, Ark.  
**KFB .1** Marshalltown, Ia.  
**KFXD .1** Nampa, Ida.  
**KFXJ .1** Grand Jct., Colo.  
**KGDE .1** Fergus Falls, Minn.  
**KGEK .1** Yuma, Colo.  
**KGFJ .1** Los Angeles, Cal.  
**KGHI .1** Little Rock, Ark.  
**KGYO .1** Missoula, Mont.  
**KMLB .1** Monroe, La.  
**KSUN .1** Lowell, Ariz.  
**KVOS .1** Bellingham, Wn.  
**KWG .1** Stockton, Cal.  
**VUL .1** Labore, In.  
**WABI .1** Bangor, Me.  
**WBBZ .1** Ponca City, Okla.

**WBHS .1** Huntsville, Ala.  
**WBNO .1** New Orleans, La.  
**WCAT .1** Rapid City, S. D.  
**WCAX .1** Burlington, Vt.  
**WCLO .1** Janesville, Wis.  
**WFAM .1** South Bend, Ind.  
**WFBC .1** Greenville, S. C.  
**WFBE .1** Cincinnati, Ohio  
**WHBC .1** Canton, Ohio  
**WHBY .1** Green Bay, Wis.  
**WIBX .1** Utica, N. Y.  
**WIL .1** St. Louis, Mo.  
**WJBL .1** LaSalle, Ill.  
**WJBL .1** Decatur, Ill.  
**WJBW .1** New Orleans, La.  
**WKBO .1** Harrisburg, Pa.  
**WKJC .1** Lancaster, Pa.  
**WMPC .1** Lapeer, Mich.  
**WNBO .1** Silverhaven, Pa.  
**WNBW .01** Carbondale, Pa.  
**WPHR .1** Petersburg, Va.  
**WRBL .1** Columbus, Ga.  
**WVAE .1** Hammond, Ind.  
**XEMA .1** Tampico, Tams.  
**XEU .1** Veracruz, Ver.  
**XEWZ .1** Mexico City, D. F.  
**XEY .01** Merida, Yuc.  
**XHHN .1** Shanghai, Chn.  
**YV3BC 1.** Caracas, Vnz.  
**3YL .5** Christchurch, N. Z.  
**5KA 1.** Adelaide, Aus.  
**10-AK .015** Stratford, Ont.  
**10-BP .015** Wingham, Ont.  
**10-BQ .015** Brantford, Ont.  
**10-BU .015** Canora, Sask.  
 No. 2 5. Prague, Cz. (1204)

**1210 (247.8)**   
**CFBO .1** St. John, N. B.  
**CHNC .1** New Carlisle, Que.  
**CKBI .1** Prince Albert, Sask.  
**CKCH .1** Hull, Que.  
**CKMC .05** Cobalt, Ont.  
**CKOV .05** Kelowna, B. C.  
**CX34 .5** Montevideo, Uru.  
**KASA .1** Elk City, Okla.  
**KDLR .1** Devils Lake, N. D.  
**KFJI .1** Klamath Falls, Ore.  
**KFOR .1** Lincoln, Neb.  
**KFPW .1** Ft. Smith, Ark.  
**KFVS .1** Cape Girardeau, Mo.  
**KFXM .1** San Bernardino, Cal.  
**KGGR .1** Watertown, S. D.  
**KGY .1** Olympia, Wn.  
**KIEM .1** Eureka, Cal.  
**KPPC .05** Pasadena, Cal.  
**KWEA .1** Shreveport, La.  
**KWVF .1** Hilo, Hawaii  
**WALR .1** Zanesville, Ohio  
**WBAX .1** Wilkes-Barre, Pa.  
**WBBL .1** Richmond, Va.  
**WBBS .1** Springfield, Ill.  
**WCRW .1** Chicago, Ill.  
**WEBQ .1** Harrisburg, Ill.  
**WEDC .1** Chicago, Ill.  
**WFB .1** White Plains, N. Y.  
**WGBB .1** Freeport, N. Y.  
**WGCM .1** Miss. City, Miss.  
**WGNV .1** Chester, N. Y.  
**WHBF .1** Rock Island, Ill.  
**WHBU .1** Anderson, Ind.  
**WIBU .1** Poynette, Wis.  
**WJBI .1** Red Bank, N. J.  
**WJBY .1** Gadsden, Ala.  
**WJEF .1** Hagerstown, Md.  
**WJIM .1** Lansing, Mich.  
**WJW .1** Akron, Ohio  
**WKFI .1** Greenwood, Miss.  
**WKOK .1** Sunbury, Pa.  
**WMBG .1** Richmond, Va.

**WOCL .05** Jamestown, N. Y.  
**WOMT .1** Manitowoc, Wis.  
**WPRO .1** Providence, R. I.  
**WQDX .1** Thomasville, Ga.  
**WSBC .1** Chicago, Ill.  
**WSEN .1** Columbus, Ohio  
**WSIX .1** Springfield, Tenn.  
**WSOC .1** Charlotte, N. C.  
**WTAX .1** Springfield, Ill.  
**XEA .25** Guadalajara, Jal.  
**XEAB .0075** Nuevo Laredo, Tams.  
**XEC .05** Toluca, D. F.  
**XEE .1** Durango, Dgo.  
**XEFJ .1** Monterrey, N. L.  
**XEFV .1** Juarez, Chih.  
**XEMZ .03** Tijuana, BC  
**XETH .1** Pueblo, Pue.  
**2CH 1.** Sydney, Aus.  
 ..... 5. Lille, F. (1213)

**1220 (245.8)**   
**CE122 .1** Santiago, Chl. (1225)  
**CW34 .25** Salto, Uru.  
**11TR 10.** Trieste, I. (1222)  
**KFKU .5** Lawrence, Kan.  
**KTW 1.** Seattle, Wn.  
**KWSC 1.** Pullman, Wn.  
**OFG .6** Abo, Fin.  
**WCAD .5** Canton, N. Y.  
**WCAE 1.** Pittsburgh, Pa.  
**WDAE 1.** Tampa, Fla.  
**WREN 1.** Lawrence, Kan.  
**2GF .05** Grafton, Ausl.  
**4ZF .007** Dunedin, N. Z.  
**4ZL .1** Dunedin, N. Z.  
**6KG .1** Kalgoorlie, Aus.  
 ..... Bloemendaal, Hol.  
 ..... 4. Cartagena, Sp.

**1230 (243.8)**   
**CFQC .5** Saskatoon, Sask.  
**CMBY .25** Havana, Cuba  
**CMCA .15** Havana, Cuba  
**KGGM .25** Albuquerque, N. M.  
**KYA 1.** San Francisco, Cal.  
**LSS 2.** Buenos Aires, Arg.  
**WFBM 1.** Indianapolis, Ind.  
**WNAC 1.** Boston, Mass.  
**WSBT .5** South Bend, Ind.  
**XGLS .1** Soochow, Chn.  
 ..... 5. Gleiwitz, G. (1231)

**1240 (241.8)**   
**CMAB .02** Pinar del Rio, C. (1249)  
**CMJN .05** Camaguey, Cu.  
**KGCU .25** Mandan, N. D.  
**KLPM .25** Minot, N. D.  
**KTAT 1.** Ft. Worth, Tex.  
**KTFI 1.** Twin Falls, Idaho  
**PRP1 1.0** Onoto, Por. (1249)  
**SCB .2** Eklitstuna, Swe.  
**SCP .4** Saffie, Swe.  
**SCU .3** Varberg, Swe.  
**WKAQ 1.** San Juan, P. R.  
**WXYZ 1.** Detroit, Mich.  
**XFD .25** Orozaba, Ver.  
**2NC 2.** Newcastle, Aus. (1245)  
**2ZL .048** Hastings, N. Z.  
**6CK 1.** Cork, I. F. S.  
 ..... 2. Nice, F. (1249)

**1250 (239.9)**   
**CE125 .1** Valparaiso, Chl.  
**CPX 5.** La Paz, Bol.

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**CX36** .25 Montevideo, Uru.  
**EAJ8** 3. Sn. Sebastian, Sp.(1258)  
**KFOX** 1. Long Beach, Cal.  
**SCL** .2 Kiruna, Swe. (1258)  
**WGAL** 1. Northfield, Minn.  
**WDSU** 1. New Orleans, La.  
**WGCP** 1. Newark, N. J.  
**WLB** 1. Minneapolis, Minn.  
**WNWE** 1. Newark, N. J.  
**WRHM** 1. Minneapolis, Minn.  
 No. 3 1. Rome, I. (1258)

**3TR** .05 Sale, Aus.  
**4ZC** .025 Cromwell, N. Z.  
 ..... 1. Sao Paulo, Brz. (1284)  
 ..... 1. Aberdeen, G. B. (1285)

**SBI** .25 Norrkoping, Swe. (1312)  
**SBJ** .25 Trollhattan, Swe. (1312)  
**SBK** .25 Karlstad, Swe. (1312)

## 1290 (232.4)

## 1260 (238)

**CE126** .1 Santiago, Chl. (165)  
**CFTP** .1 Edmonton, Alta.  
**OW36** .03 Salto, Uru.  
**KOIL** 1. Council Bluffs, Ia.  
**KRGV** .5 Harlingen, Tex.  
**KUOA** 1. Fayetteville, Ark.  
**KVOA** .5 Tucson, Ariz.  
**KVWG** .5 Brownsville, Tex.  
**SOV** .2 Orebro, Swe. (1258)  
**WLBW** .5 Erie, Pa.  
**WNBX** .5 Springfield, Vt.  
**WTOC** .5 Savannah, Ga.  
**1ZM** .017 Manurewa, N. Z.  
**3WR** .05 Wangaratta, Aus.  
 ..... 2. Augsburg, G. (1267)  
 ..... 2. Nurnberg, G. (1267)  
 ..... 25 Dresden, G. (1267)

**CMHL** .02 Cienfuegos, Cuba  
**CX38** .25 Montevideo, Uru.  
**KDYL** 1. Salt Lake City, Utah  
**KLCN** .1 Blytheville, Ark.  
**KTSA** 1. San Antonio, Tex.  
**PRA5** .1 Sao Paulo, Brz. (1295)  
**WBC** 1. Superior, Wis.  
**WJAS** 1. Pittsburgh, Pa.  
**WNBZ** .05 Saranac Lake, N. Y.  
**WNEL** .5 San Juan, P. R.  
**XEAC** .1 S. L. Pot., SLP. (1295)  
**XFB** 1. Jalapa, Ver.  
**4BK** .2 Brisbane, Aus.  
 ..... 25 Kiel, G. (1292)  
 ..... 5 Linz, Aust. (1294)  
 ..... 5 Dornbirn, Aust. (1294)  
 ..... 5 Klagenfurt, Aust. (1294)

**WAML** .1 Laurel, Miss.  
**WBEO** .1 Marquette, Mich.  
**WBOW** .1 Terre Haute, Ind.  
**WBRE** .1 Wilkes-Barre, Pa.  
**WCLS** .1 Joliet, Ill.  
**WDAH** .1 El Paso, Tex.  
**WEBR** .1 Buffalo, N. Y.  
**WEXL** .05 Royal Oak, Mich.  
**WFBG** .1 Altoona, Mich.  
**WFDL** .1 Flint, Mich.  
**WGH** .1 Newport News, Va.  
**WHAT** .1 Philadelphia, Pa.  
**WJAC** .1 Johnstown, Pa.  
**WLBC** .05 Muncie, Ind.  
**WLNH** .1 Laconia, N. H.  
**WMOB** .1 Auburn, N. Y.  
**WNBH** .1 New Bedford, Mass.  
**WOL** .1 Washington, D. C.  
**WRAP** .1 Reading, Pa.  
**WROL** .1 Knoxville, Tenn.  
**WSAJ** .1 Grove City, Pa.  
**WSGN** .1 Birmingham, Ala.  
**WSJS** .1 Winston-Salem, N. C.  
**WTEL** .1 Philadelphia, Pa.  
**WTSJ** .1 Jackson, Tenn.  
**WTRC** .05 Elkhart, Ind.  
**XECW** .01 Mexico City  
**XFCG** .1 Merida, Yuc.  
**XFEW** .07 Tampico, Tams.  
**XEJ** .125 Morelia, Mch.  
**XETB** .125 Torreon, Coah.  
**XEX** .05 Monterrey, N. L.  
**1ZJ** .05 Auckland, N. Z.  
**5AD** .3 Adelaide, Aus.  
 ..... 5 Flensburg, G. (1319)

## 1300 (230.6)

## 1270 (236.1)

**GMBC** .15 Havana, Cuba  
**GMCP** .15 Havana, Cuba  
**GT1EP** .05 Lisbon, Por. (1275)  
**KGCA** .1 Decorah, Ia.  
**KOL** 1. Seattle, Wn.  
**KVOR** 1. Colorado Springs, Colo.  
**KWLC** .1 Decorah, Ia.  
**LKD** .5 Bodo, Nor. (1276)  
**LKK** .5 Kristiansand, Nor. (1274)  
**LKS** .5 Stavanger, Nor. (1276)  
**LS9** .5 Buenos Aires, Arg.  
**TUA** .5 Tunis, Tun. (1275)  
**WASH** .5 Grand Rapids, Mich.  
**WFRB** .6 Baltimore, Md.  
**WJDX** 1. Jackson, Miss.  
**WOOD** .6 Grand Rapids, Mich.  
**XQHC** .5 Shanghai, Chn.  
**ZP4** .15 Asuncion, Par. (1275)  
**2SM** 1. Sydney, Aus.

**CE130** .1 Santiago, Chl. (1305)  
**CMCG** .5 Havana, Cuba  
**CMKJ** .02 Guantanamo, Cuba  
**CW38** .03 Salto, Uru.  
**HIZ** .01 San Domingo, D. R.  
**KALE** .5 Portland, Ore.  
**KFAC** 1. Los Angeles, Cal.  
**KFH** 1. Wichita, Kan.  
**KFJR** .5 Portland, Ore.  
**PRC4** .05 Amparo, Brz. (1304)  
**VOAC** .04 St. John's, Nfld.  
**WBBR** 1. Brooklyn, N. Y.  
**WEVD** 1. New York, N. Y.  
**WFAB** 1. New York, N. Y.  
**WHAZ** .5 Troy, N. Y.  
**WIOD** 1. Miami, Fla.  
**WOQ** 1. Kansas City, Mo.  
**3BA** .05 Ballarat, Aus.  
**3ZE** .05 Greymouth, N. Z.  
 ..... 25 Oliveira, Por. (1304)  
 ..... 5 Danzig, Dan. (1303)

## 1320 (227.1)

## 1280 (234.2)

**CE128** .5 Temuco, Chl.  
**KFB7** 1. Great Falls, Mont.  
**LU7** .2 Bahia Blanca, Arg.  
**ON4EX** .1 Ottomont, Belg. (1285)  
**ON4FG** .1 Dampremy, Belg. (1285)  
**ON4FO** .1 Brussels, Belg. (1285)  
**ON4GT** .1 Brussels, Belg. (1285)  
**ON4RC** .1 Brussels, Belg. (1285)  
**ON4RG** .1 Ghent, Belg. (1285)  
**ON4RW** .2 Liege, Belg. (1285)  
**WCAM** .5 Camden, N. J.  
**WCAP** .5 Asbury Park, N. J.  
**WDD1** .1 Chattanooga, Tenn.  
**WIBA** .6 Madison, Wis.  
**WORC** .5 Worcester, Mass.  
**WRR** .5 Dallas, Tex.  
**WTNJ** .5 Trenton, N. J.  
**XCBL** .5 Shanghai, Chn.  
**XECB** .4 Agua Caliente, L. C.  
**XEFW** .07 Tampico, Tams.

## 1310 (228.9)

**CE131** .1 Santiago, Chl. (1315)  
**CFJC** .1 Kamloops, B. C.  
**CHCK** .05 Charlottetown, P. E. I.  
**CJKL** .1 Kirkland Lake, Ont.  
**CJLS** .1 Yarmouth, N. S.  
**CKGV** .05 Quebec, Que.  
**CMGY** .5 Havana, Cuba (1316)  
**KCRJ** .1 Jerome, Ariz.  
**KFBK** .1 Sacramento, Cal.  
**KFGQ** .1 Boons, Ia.  
**KFPL** .1 Dublin, Tex.  
**KFPF** .016 Greenville, Tex.  
**KFXR** .1 Oklahoma City  
**KFYO** .1 Lubbock, Tex.  
**KGBX** .1 Springfield, Mo.  
**KGCX** .1 Wolf Point, Mont.  
**KGEZ** .1 Kalispell, Mont.  
**KGFW** .1 Kearney, Neb.  
**KIFH** .1 Juneau, Alas.  
**KIT** .1 Yakima, Wn.  
**KMED** .1 Medford, Ore.  
**KRMD** .1 Shreveport, La.  
**KTSM** .1 El Paso, Tex.  
**KXRO** .1 Aberdeen, Wn.  
**XFA** .1 Aguascalientes, Ags.  
**SBC** 1.25 Malmö, Swe. (1312)

## 1330 (227.1)

**CE132** .1 Rancagua, Chl. (1325)  
**CW39** .075 Florida, Uru.  
**KGHF** .5 Pueblo, Colo.  
**KGMB** .25 Honolulu, T. H.  
**KID** .25 Idaho Falls, Idaho  
**KSO** .5 Des Moines, Iowa  
**WADC** 1. Akron, Ohio  
**WSMB** .6 New Orleans, La.  
**2MO** .06 Gunnedah, Aus.  
**No. 2** .8 Budapest, Hun. (1321)

## 1330 (225.4)

**CMJI** .045 Cgo. de Avila, Cu. (1335)  
**CX40** .5 Montevideo, Uru.  
**KGB** 1. San Diego, Cal.  
**KNO** .25 Tacoma, Wn.  
**KSCJ** 1. Sioux City, Ia.  
**WDRC** 1. Hartford, Conn.  
**WSAI** 1. Cincinnati, Ohio  
**WTAQ** 1. Eau Claire, Wis.  
**4RO** .25 Rockhampton, Aus.  
 ..... 5. Montpellier, F. (1339)  
 ..... 1.5 Bremen, G.  
 ..... 1.5 Flensburg, G.  
 ..... 1.5 Hanover, G.  
 ..... 1.5 Madgeburg, G.  
 ..... 1.5 Stettin, G.

## 1340 (223.7)

**CE134** .15 Santiago, Chl.  
**CW40** .03 Puyo, Uru.  
**KGDY** .25 Haysan, S. D.  
**KGIR** .5 Butte, Mont.  
**KGNO** .25 Dodge City, Kan.  
**LKN** .08 Notodden, Nor. (1348)

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LKR .15 Rjukan, Nor. (1348)  
 WCOA .5 Pensacola, Fla.  
 WLEC .25 Portland, Me.  
 WSPD .1 Toledo, Ohio  
 XENT 30. Nuevo Laredo, Tams.  
 2XN .05 Lismore, Aus.  
 4ZR .004 Balclutha, N. Z.  
 2RN 1.2 Dublin, IFS. (1348)  
 No. 2 4. Milan, I. (1348)  
 ..... 2. Radio-Vitus F. (1348)  
 ..... 5. Salzburg, Aust. (1348)  
 ..... 5. Tartu, Est. (1348)  
 ..... 2.2 Tartu, Est. (1348)  
 ..... 1.7 Lodz, Pol. (1348)  
 ..... 5. Konigsberg, G. (1348)

## 1350 (222.4)

CMGN .25 Havana, Cuba (1357)  
 CMCR .15 Havana, Cuba (1357)  
 KIDO 1. Boise, Ida.  
 KWK 1. St. Louis, Mo.  
 LKM .1 Tromso, Nor. (1357)  
 L56 3.5 Buenos Aires, Arg.  
 WAWZ .25 Zarephath, N. J.  
 WBNX .25 New York, N. Y.  
 WHC 5. Charlottesville, Va.  
 3KZ .2 Melbourne, Aus.  
 No. 2 1. Turin, I. (1357)  
 ..... 5. Christianssand, Nor. (1357)

## 1360 (220.4)

GMJP .075 Moron, Cuba  
 CW41 .05 San Jose, Uru.  
 KGER 1. Long Beach, Cal.  
 PRC5 .1 Belem, Brz.  
 WCS 5. Charleston, S. C.  
 WFL 1. Syracuse, N. Y.  
 WGES 5. Chicago, Ill.  
 WQBC .5 Vicksburg, Miss.  
 XQHD 2. Shanghai, Chn.  
 ..... 1.7 Torun, Pol. (1366)

## 1370 (218.8)

GHSJ .1 St. John, N. B.  
 GMGE .03 Cardenas, Cuba (1376)  
 CX42 1. Montevideo, Uru.  
 KERC .1 Enid, Okla.  
 KERN .1 Bakersfield, Calif.  
 KFBL .06 Everett, Wn.  
 KFFJM .1 Grand Forks, N. D.  
 KFJZ .1 Ft. Worth, Tex.  
 KGAR .1 Tucson, Ariz.  
 KGFG .1 Oklahoma City  
 KGFL .1 Roswell, N. M.  
 KGKL .1 San Angelo, Tex.  
 KICA .1 Clovis, N. M.  
 KLUF .1 Galveston, Tex.  
 KMAC .1 San Antonio, Tex.  
 KONO .1 San Antonio, Tex.  
 KOOS .1 Marshfield, Ore.  
 KRE .1 Berkeley, Cal.  
 KUJ .1 Walla Walla, Wn.  
 KYL .1 Seattle, Wn.  
 KWKC .1 Kansas City, Mo.  
 KWYO .1 Sheridan, Wyo.  
 SCF .15 Hudiksvall, Swe. (1375)  
 WBTM .1 Danville, Va.  
 WCBM .1 Baltimore, Md.  
 WDAS .1 Philadelphia, Pa.  
 WGL .1 Ft. Wayne, Ind.  
 WGLC .1 Hudson Falls, N. Y.  
 WHBD .1 Mt. Orab, Ohio  
 WHBQ .1 Memphis, Tenn.  
 WHDF .1 Calumet, Mich.  
 WHET .1 Dothan, Ala.  
 WIBM .1 Jackson, Mich.  
 WJTL .1 Atlanta, Ga.

WLEY .1  
 WLVA .1  
 WMBR .1  
 WPF 1.  
 WQDM .1  
 WRAK .1  
 WRDO .1  
 WRJN .1  
 WSVS .05  
 XEFE .1  
 XEFZ .1  
 XEL .01  
 XEZZ .1  
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Lexington, Mass.  
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 Augusta, Me.  
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 W5FA .5  
 2KO .2  
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 Montgomery, Ala.  
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## 1420 (211.1)

CE142 .1 Santiago, Chl. (1425)  
 CKGB .1 Timmins, Ont.  
 CW44 .1 Paysandu, Uru.  
 KABC .1 San Antonio, Tex.  
 KBPS .1 Portland, Ore.  
 KCMC .1 Texarkana, Ark.  
 KFIZ .1 Fond du Lac, Wis.  
 KGFF .1 Shawnee, Okla.  
 KGCC .1 San Francisco, Calif.  
 KGIW .1 Alamosa, Colo.  
 KGIX .1 Las Vegas, Nev.  
 KICK .1 Carter Lake, Iowa  
 KIDW .1 Lamar, Colo.  
 KORE .1 Eugene, Ore.  
 KUMA .1 Yuma, Ariz.  
 KXL .1 Portland, Ore.  
 OFE 1.2 Tampere, Fin.  
 OFR 1.2 Tampere, Fin.  
 WACO .1 Waco, Tex.  
 WAGM .1 Presque Isle, Me.  
 WAMC .1 Anniston, Ala.  
 WAZL .1 Hazleton, Pa.  
 WEED .1 Greenville, N. C.  
 WEHS .1 Cicero, Ill.  
 WELL .05 Battle Creek, Mich.  
 WENC .1 Albany, Ga.  
 WHDL .1 Tupper Lake, N. Y.  
 WHFC .1 Cicero, Ill.  
 WILCM .1 Wilmington, Del.  
 WJBO .1 Baton Rouge, La.  
 WJMS .1 Ironwood, Mich.  
 WKBI .1 Cicero, Ill.  
 WLAP .1 Lexington, Ky.  
 WLBF .1 Kansas City, Kans.  
 WLEU .1 Erie, Pa.  
 WMAS .1 Springfield, Mass.  
 WNBC .1 Detroit, Mich.  
 WNBH .1 Joplin, Mo.  
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 WPAD .1 Paducah, Ky.  
 WSPA .1 Spartanburg, S. C.  
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 XEFB .1 Monterrey, N. L.  
 XHHK .1 Shanghai Chn.  
 1ZS .05 Auckland, N. Z.  
 3AW .3 Melbourne, Ausl. (1425)  
 ..... 1. Newcastle, G. B. (1429)  
 ..... 2. Bezier, F. (1429)

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CE138 .1 Santiago, Chl. (1385)  
 CMJC .15 Camaguey, Cu. (1382)  
 CW42 .02 Artigas, Uru.  
 KOH .5 Reno, Nev.  
 KQV .5 Pittsburgh, Pa.  
 SCX .2 Halsingborg, Swe. (1384)  
 TSG .075 Guatemala City, Guat.  
 WKBH 1. LaCrosse, Wis.  
 WSMK .2 Dayton, Ohio  
 4BH .6 Brisbane, Ausl.  
 No. 2 2. Warsaw, Pol. (1384)

## 1390 (215.7)

CE139 .1 Rancaagua, Chl.  
 CJRC .1 Winnipeg, Man.  
 HIH .016 San Pedro de M., D. R. (1396)  
 KLRA 1. Little Rock, Ark.  
 KOY .5 Phoenix, Ariz.  
 SCR .05 Uddevalla, Swe. (1393)  
 SCS .2 Umea, Swe. (1393)  
 WHK 1. Cleveland, Ohio  
 3GN .05 Goulburn, Ausl.  
 ..... 01 Valparaiso, Chl.  
 ..... 5. Radio-Lyons, F. (1393)

## 1400 (214.2)

CMCM .05 Havana, Cuba (1405)  
 CW43 .02 Melo, Uru.  
 FPZ .25 Shanghai, Chn.  
 KLO .5 Ogden, Utah  
 KTUL .25 Tulsa, Okla.  
 SCE .2 Halmstad, Swe. (1402)  
 WARD .5 Brooklyn, N. Y.  
 WBAA .5 Lafayette, Ind.  
 WBBC .5 Brooklyn, N. Y.  
 WKB 5. Indianapolis, Ind.  
 WLTH .5 Brooklyn, N. Y.  
 WVFV .5 Brooklyn, N. Y.  
 2ZO .05 Palmerston, N. Z.  
 3GL .05 Geelong, Ausl.

## 1410 (212.6)

CKFC .05 Vancouver, B. C.  
 CKMO .1 Vancouver, B. C.  
 CMCH .05 Havana, Cuba  
 CX44 1. Montevideo, Uru.  
 SCW .2 Ornskoldsvik, Swe (1411)  
 KGRS 1. Amarillo, Tex.  
 WAAB .5 Boston, Mass.  
 WALA .5 Mobile, Ala.  
 WBCM .5 Bay City, Mich.  
 W DAG .1 Amarillo, Tex.  
 WHSL .5 Sheboygan, Wis.  
 WHIS .25 Bluefield, W. Va.  
 WRBX .25 Roanoke, Va.

## 1430 (209.7)

CE143 .1 Magallanes, Chl.  
 HAE2 1.25 Magyarovar, Hun. (1438)  
 HAE3 1.25 Miskolc, Hun. (1438)  
 HAE4 1.25 Pecs, Hun. (1438)  
 KEA 1. Los Angeles, Calif.  
 KGNF .5 No. Platte, Neb.  
 KWCR .25 Cedar Rapids, Iowa  
 RV10 100. Minsk, U.S.R. (1438)  
 WBNS .5 Columbus, Ohio  
 WFEA .5 Manchester, N. H.  
 WHEC .5 Rochester, N. Y.  
 WHP .5 Harrisburg, Pa.  
 WNB 5. Memphis, Tenn.  
 WOKO .5 Albany, N. Y.  
 2WL .05 Wollongong, Ausl. (1435)

## 1440 (208.2)

CMBL .2 Havana, Cuba (1446)  
 CSIRS 1. Oporto, Por. (1448)

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<p><b>KDFN</b> .6 Casper, Wyo.  <b>KLS</b> .25 Oakland, Calif.  <b>KXYZ</b> .25 Houston, Tex.  <b>TXF5</b> .0075 Cartago, C. R. (1441)  <b>WBIG</b> .5 Greensboro, N. C.  <b>WBCA</b> .25 Allentown, Pa.  <b>WBRD</b> .5 Peoria, Ill.  <b>WSAN</b> .25 Allentown, Pa.  <b>WTAD</b> .5 Quincy, Ill.</p>	<p><b>WLAC</b> 5. Nashville, Tenn.  <b>3AK</b> .05 Melbourne, Ausl.  <b>4ZW</b> .05 Dunedin, N. Z.            ..... 3 Plymouth, G.B. (1474)            ..... 25 Bilbao, Sp. (1477)            ..... 1. Bournemouth, G. B. (1474)</p>	<p><b>WCNW</b> .1 Brooklyn, N. Y.  <b>WDNC</b> .1 Durham, N. C.  <b>WGAL</b> .1 Lancaster, Pa.  <b>WHEF</b> .1 Kosciusko, Miss.  <b>WJBK</b> .05 Detroit, Mich.  <b>WKBB</b> .1 E. Dubuque, Ill.  <b>WKBY</b> .1 Richmond, Ind.  <b>WKBY</b> .1 Ludington, Mich.  <b>WKEU</b> .1 LaGrange, Ga.  <b>WMBQ</b> .1 Brooklyn, N. Y.  <b>WNEX</b> .1 Chelsea, Mass.  <b>WNBF</b> .1 Binghamton, N. Y.  <b>WPOI</b> .1 Bristol, Tenn.  <b>WFEN</b> .1 Philadelphia, Pa.  <b>WRDW</b> .1 Augusta, Ga.  <b>WRGA</b> .1 Rome, Ga.  <b>WYSB</b> .1 Rutland, Vt.  <b>WWRL</b> .1 Wadeside, N. Y.  <b>WWSW</b> .1 Pittsburgh, Pa.  <b>2AY</b> .05 Albany, Ausl.            ..... 10 Riga, Lat. (1510)</p>	<p><b>1450 (206.8)</b> [ ]</p> <p><b>CE145</b> .1 Rancagua, Chl.  <b>CFCT</b> .05 Victoria, B. C.  <b>CKX</b> .5 Brandon, Man.  <b>CX46</b> .25 Montevideo, Uru.  <b>KTBS</b> 1. Shreveport, La.  <b>SCA</b> .15 Boras, Swe.  <b>SCI</b> .2 Kalmars, Swe. (1456)  <b>TIEP</b> .0075 San Jose, C. R.  <b>WGAR</b> .5 Cleveland, Ohio  <b>WHOM</b> .25 Jersey City, N. J.  <b>WSAR</b> .5 Fall River, Mass.  <b>WTFI</b> .5 Athens, Ga.  <b>3ZM</b> .05 Christchurch, N. Z.            ..... .01 Valparaiso, Chl.            ..... 1.5 Radio-Agen, F. (1456)            ..... 10. Fecamp, F. (1456)            ..... 10. Normandie, F. (1456)</p>	<p><b>1480 (202.6)</b> [ ]</p> <p><b>CMBK</b> .015 Havana, Cu. (1485)  <b>CW47</b> .1 Canelones, Uru.  <b>KOMA</b> 5. Oklahoma City, Okla  <b>SCD</b> .2 Gavle, Swe. (1483)  <b>WKBW</b> 5. Buffalo, N. Y.  <b>6IX</b> .05 Perth, Ausl.</p>	<p><b>1490 (201.2)</b> [ ]</p> <p><b>CX48</b> 2.5 Montevideo, Uru.  <b>EAJ28</b> .25 Bilbao, Sp. (1492)  <b>ONACE</b> .1 Chatelineau, Blg. (1492)  <b>ON4EB</b> .1 Antwerp, Blg. (1492)  <b>SCT</b> .15 Upsala, Swe. (1492)  <b>WCKY</b> 5. Covington, Ky.            ..... 1. Bordeaux, F. (1492)            ..... 1. Binche, Blg. (1492)            ..... 2. Nimes, F. (1492)            ..... 6. Turku, Fin. (1492)</p>	<p><b>1500 (199.9)</b> [ ]</p> <p><b>CRCS</b> .1 Chicoutimi, Quo.  <b>KDB</b> .1 Santa Barbara, Calif.  <b>KGFI</b> .1 Corpus Christi, Tex.  <b>KGFK</b> .1 Moorhead, Minn.  <b>KGKB</b> .1 Tyler, Texas  <b>KGKY</b> .1 Scottsbluff, Neb.  <b>KNOW</b> .1 Austin, Tex.  <b>KOTN</b> .1 Pine Bluff, Ark.  <b>KPJM</b> .1 Prescott, Ariz.  <b>KPQ</b> .1 Wenatchee, Wash.  <b>KREG</b> .1 Santa Ana, Calif.  <b>KXO</b> .1 El Centro, Calif.  <b>SJM</b> .25 Kristinehamn, Swe.</p>	<p><b>1510 (198.6)</b> [ ]</p> <p><b>CFRC</b> .1 Kingston, Ont.  <b>CKCR</b> .1 Waterloo, Ont.  <b>KIFS</b> .1 Ft. Klamath, Ore. (1518)  <b>SCH</b> .25 Jonkoping, Swe. (1515)            ..... 1. Liege Exp., Blg.            ..... 1. Verviers, Blg.            ..... 1. Verviers, Blg.</p>	<p><b>1530 (196.0)</b> [ ]</p> <p>..... 1. Waterbury, Conn.            ..... 1. Kansas City, Mo.  <b>SCJ</b> .2 Karlskrona, Swe.</p>	<p><b>1550 (193.4)</b> [ ]</p> <p>..... 1. Long Island City, N. Y.            ..... 1. Bakersfield, Calif.</p>
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Frequency in second column, power in watts in third

<p><b>ALABAMA</b></p> <p><b>Anniston</b>  <b>WAMC</b> 1420 100</p> <p><b>Birmingham</b>  <b>WAPI</b> 1140 5000  <b>WBRC</b> 930 500  <b>WSGN</b> 1310 100</p> <p><b>Dothan</b>  <b>WHET</b> 1370 100</p> <p><b>Gadsden</b>  <b>WJBY</b> 1210 100</p> <p><b>Huntsville</b>  <b>WBHS</b> 1200 100</p> <p><b>Mobile</b>  <b>WALA</b> 1410 500</p> <p><b>Montgomery</b>  <b>WSFA</b> 1410 500</p> <p><b>Muscle Shoals</b>  <b>WNRA</b> 1420 100</p> <p><b>ALASKA</b></p> <p><b>Anchorage</b>  <b>KFQD</b> 600 250</p>	<p><b>Junsau</b>  <b>KIFH</b> 1310 100</p> <p><b>Ketchikan</b>  <b>KGBU</b> 900 500</p> <p><b>ARIZONA</b></p> <p><b>Jerome</b>  <b>KCRJ</b> 1310 100</p> <p><b>Lowell</b>  <b>KSUN</b> 1200 100</p> <p><b>Phoenix</b>  <b>KOY</b> 1390 1000  <b>KTAR</b> 620 1000</p> <p><b>Prescott</b>  <b>KPJM</b> 1500 100</p> <p><b>Tucson</b>  <b>KGAR</b> 1370 100  <b>KVOA</b> 1260 500</p> <p><b>Yuma</b>  <b>KUMA</b> 1420 100</p> <p><b>ARKANSAS</b></p> <p><b>Blytheville</b>  <b>KLCN</b> 1290 100</p> <p><b>Fayetteville</b>  <b>KUOA</b> 1260 1000</p>	<p><b>Fort Smith</b>  <b>KFPW</b> 1210 100</p> <p><b>Hot Springs</b>  <b>KTHS</b> 1060 10000</p> <p><b>Jonesboro</b>  <b>KBTM</b> 1200 100</p> <p><b>Little Rock</b>  <b>KARK</b> 890 250  <b>KGHI</b> 1200 100  <b>KLRA</b> 1390 1000</p> <p><b>Pine Bluff</b>  <b>KOTN</b> 1500 100</p> <p><b>Texarkana</b>  <b>KCMC</b> 1420 100</p> <p><b>CALIFORNIA</b></p> <p><b>Bakersfield</b>  <b>KERN</b> 1370 100            ..... 1550 1000</p> <p><b>Berkeley</b>  <b>KRE</b> 1370 100</p> <p><b>Beverly Hills</b>  <b>KMPC</b> 710 500</p> <p><b>Burbank</b>  <b>KELW</b> 780 500</p>	<p><b>El Centro</b>  <b>KXO</b> 1500 100</p> <p><b>Eureka</b>  <b>KIEM</b> 1210 100</p> <p><b>Fresno</b>  <b>KMJJ</b> 580 500</p> <p><b>Glendale</b>  <b>KIEV</b> 850 100</p> <p><b>Hollywood</b>  <b>KFWB</b> 950 1000  <b>KMTR</b> 570 500  <b>KNX</b> 1050 50000</p> <p><b>Long Beach</b>  <b>KFOX</b> 1250 1000  <b>KGER</b> 1360 1000</p> <p><b>Los Angeles</b>  <b>KECA</b> 1430 1000  <b>KFAC</b> 1300 1006  <b>KFI</b> 640 50000  <b>KFSG</b> 1120 500  <b>KFVD</b> 1000 250  <b>KGFJ</b> 1200 100  <b>KHJ</b> 900 1000</p>
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KRKD 1120 500	<b>DISTRICT OF COLUMBIA</b>	WCRW 1210 100	<b>Cedar Rapids</b>	
KTM 780 500		WEDC 1210 100		KWCR 1430 250
<b>Modesto</b>		WENR 870 50000		<b>Council Bluffs</b>
KTRB 740 250		WGES 1360 500		KOIL 1260 1000
<b>Oakland</b>		WGN 720 50000		<b>Decorah</b>
KLS 1440 250		WJJD 1130 20000		KGCA 1270 100
KLX 880 1000		WLS 870 50000		KWLC 1270 100
KROW 930 500		WMAQ 670 50000		<b>Des Moines</b>
<b>Pasadena</b>		WMBI 1080 5000		KSO 1320 250
KPPC 1210 50		WSBC 1210 100		WHO 1000 50000
<b>Sacramento</b>		<b>Cicero</b>		<b>Iowa City</b>
KFBK 1310 100		WEHS 1420 100		WSUT 880 500
<b>San Bernardino</b>		WHFC 1420 100		<b>Marshalltown</b>
KFXM 1210 100		WKBI 1420 100		KFJB 1200 100
<b>San Diego</b>		<b>Decatur</b>		<b>Shenandoah</b>
KFSD 600 1000		WJBL 1200 100		KPNF 890 500
KGB 1330 1000		<b>East Dubuque</b>		KMA 930 500
<b>San Francisco</b>		WKBB 1500 100		<b>Sloux City</b>
KFRC 610 1000	<b>Harrisburg</b>	KSCJ 1330 1000		
KFWI 930 500	WEBQ 1210 100	<b>Waterloo</b>		
KGGC 1420 100	<b>Joliet</b>	WMT 600 500		
KGO 790 7500	WCLS 1310 100	<b>KANSAS</b>		
KJBS 1070 100	<b>LaSalle</b>	<b>Abilene</b>		
KPO 680 50000	WJBC 1200 100	KFBI 1050 5000		
KTAB 560 1000	<b>Peoria</b>	<b>Coffeyville</b>		
KYA 1230 1000	WMBD 1440 500	KGGF 1010 500		
<b>San Jose</b>	<b>Quincy</b>	<b>Dodge City</b>		
KQW 1010 500	WTAD 1440 500	KGNO 1340 250		
<b>Santa Ana</b>	<b>Rockford</b>	<b>Kansas City</b>		
KREG 1500 100	WROK 1410 500	WLBK 1420 100		
<b>Santa Barbara</b>	<b>Rock Island</b>	<b>Lawrence</b>		
KDB 1500 100	WHBF 1210 100	KFKU 1220 500		
<b>Stockton</b>	<b>Springfield</b>	WREN 1220 1000		
KGDM 1100 250	WCBS 1210 100	<b>Manhattan</b>		
KWG 1200 100	WTAX 1210 100	KSAC 580 500		
<b>COLORADO</b>	<b>Tuscola</b>	<b>Topeka</b>		
<b>Alamosa</b>	WDZ 1070 100	WIBW 580 1000		
KGIV 1420 100	<b>Urbana</b>	<b>Wichita</b>		
<b>Colorado Springs</b>	WILL 890 250	KFH 1300 1000		
KVOR 1270 1000	WZion 1000	<b>INDIANA</b>		
<b>Denver</b>	WCBD 1080 5000	<b>Anderson</b>		
KFEL 920 500	<b>WIND 560 1000</b>	WBHU 1210 100		
KFXF 920 500	<b>Hammond</b>	Elkhart		
KLZ 560 1000	WVAE 1200 100	WTRC 1310 50		
KOA 830 12500	<b>Indianapolis</b>	<b>Evansville</b>		
KPOF 880 500	WFBM 1230 1000	WGBF 630 500		
<b>Grand Junction</b>	WKBF 1400 500	<b>Fort Wayne</b>		
KFXJ 1200 100	<b>Muncie</b>	WGL 1370 100		
<b>Greeley</b>	WLBC 1310 50	WOWO 1160 10000		
KKFA 880 500	<b>Richmond</b>	<b>Gary</b>		
<b>Lamar</b>	WKBY 1500 100	WIND 560 1000		
KIDW 1420 100	<b>South Bend</b>	<b>Hammond</b>		
<b>Pueblo</b>	WFAM 1200 100	WVAE 1200 100		
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<b>Yuma</b>	<b>Terre Haute</b>	WFBM 1230 1000		
KGEK 1200 100	WBOW 1310 100	WKBF 1400 500		
<b>CONNECTICUT</b>	<b>West Lafayette</b>	<b>Muncie</b>		
<b>Bridgeport</b>	WBAA 1400 500	WLBC 1310 50		
WICC 600 500	<b>IOWA</b>	<b>Richmond</b>		
<b>Hartford</b>	<b>Ames</b>	WKBY 1500 100		
WDRC 1330 1000	WOI 640 5000	<b>South Bend</b>		
WTIC 1040 50000	<b>Boone</b>	WFAM 1200 100		
<b>Storrs</b>	KFGQ 1310 100	WSBT 1230 500		
WCAC 600 500	<b>Carter Lake</b>	<b>Terre Haute</b>		
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WATR 1190 100	<b>MAINE</b>	<b>West Lafayette</b>		
..... 1530 1000	<b>Augusta</b>	WBAA 1400 500		
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<b>MARYLAND</b> <b>Baltimore</b> WBAL 1060 10000 WCAO 600 250 WCBM 1370 100 WFBR 1270 500 <b>Cumberland</b> WTBO 1420 100 <b>Hagerstown</b> WJEJ 1210 100	<b>MISSISSIPPI</b> <b>Greenwood</b> WKFI 1210 100 <b>Hattiesburg</b> WFPB 1370 100 <b>Jackson</b> WJDX 1270 1000 <b>Kosciusko</b> WHEF 1500 100 <b>Laurel</b> WAML 1310 100 <b>Meridian</b> WCOC 880 500 <b>Mississippi City</b> WGCM 1210 100 <b>Tupelo</b> WJEM 990 500 <b>Vicksburg</b> WQBC 1360 500	<b>NEVADA</b> <b>Las Vegas</b> KGIX 1420 100 <b>Reno</b> KOH 1380 500	<b>NEW HAMPSHIRE</b> <b>Laconia</b> WINH 1310 100 <b>Manchester</b> WFFA 1430 500 <b>Portsmouth</b> WHEB 740 250
<b>MASSACHUSETTS</b> <b>Babson Park</b> WBOS 920 500 <b>Boston</b> WAAB 1410 500 WBZ 990 50000 WEEI 590 1000 WHDH 830 1000 WNAC 1230 1000 <b>Chelsea</b> WMEX 1500 100 <b>Fall River</b> WSAR 1450 250 <b>Lexington</b> WLEY 1370 100 <b>New Bedford</b> WNBH 1310 100 <b>Springfield</b> WBZA 990 1000 WMAS 1420 100 <b>Worcester</b> WORC 1280 500 WTAG 580 500	<b>MISSOURI</b> <b>Cape Girardeau</b> KFVS 1210 100 <b>Columbia</b> KFRR 630 500 <b>Jefferson City</b> WOS 630 500 <b>Joplin</b> WMBH 1420 100 <b>Kansas City</b> KMBC 950 1000 KWKC 1370 100 WDAF 610 1000 WHB 860 500 WQO 1300 1000 ..... 1530 1000 <b>St. Joseph</b> KFEO 680 2500 <b>St. Louis</b> KFUO 550 500 KMOX 1090 50000 KSD 550 500 KWK 1350 1000 WEW 760 1000 WIL 1200 100 <b>Springfield</b> KGBX 1310 100 KWTO 560 1000	<b>NEW JERSEY</b> <b>Asbury Park</b> WCAP 1280 500 <b>Atlantic City</b> WPG 1100 5000 <b>Camden</b> WCAM 1280 500 <b>Jersey City</b> WAAJ 940 300 WHOM 1450 250 <b>Newark</b> WGCP 1250 250 WNEW 1250 1000 WOR 710 5000 <b>Red Bank</b> WJBI 1210 100 <b>Trenton</b> WTNJ 1280 500 <b>Zarephath</b> WAWZ 1350 250	<b>NEW MEXICO</b> <b>Albuquerque</b> KGGM 1230 250 KOB 1180 10000 <b>Clovis</b> KICA 1370 100 <b>Roswell</b> KGFL 1370 100
<b>MICHIGAN</b> <b>Battle Creek</b> WELL 1420 50 <b>Bay City</b> WBCM 1410 500 <b>Calumet</b> WHDF 1370 100 <b>Detroit</b> WJKB 1500 50 WJR 750 10000 WMBC 1420 100 WJW 920 1000 WXYZ 1240 1000 <b>East Lansing</b> WKAR 1040 1000 <b>Flint</b> WFDF 1310 100 <b>Grand Rapids</b> WASH 1270 500 WOOD 1270 500  <b>Ironwood</b> WJMS 1420 100 <b>Jackson</b> WIBM 1370 100 <b>Kalamazoo</b> WKZO 590 1000 <b>Lansing</b> WJIM 1210 100 <b>Lapeer</b> WMPC 1200 100 <b>Ludington</b> WKBZ 1500 100 <b>Marquette</b> WBEO 1310 100 <b>Royal Oak</b> WEXL 1310 50	<b>MONTANA</b> <b>Billings</b> KGHL 950 1000 <b>Butte</b> KGRJ 1340 500 <b>Great Falls</b> KFBB 1280 1000 <b>Kalispell</b> KGEZ 1310 100 <b>Missoula</b> KGVO 1200 100 <b>Wolf Point</b> KGCX 1310 100	<b>NEW YORK</b> <b>Albany</b> WOKO 1430 500 <b>Auburn</b> WMBO 1310 100 <b>Binghamton</b> WBNF 1500 100 <b>Brooklyn</b> WARD 1400 500 WBBC 1400 500 WBBR 1300 1000 WCNW 1500 100 WLTH 1400 500	<b>NORTH CAROLINA</b> <b>Asheville</b> WUNC 570 1000 <b>Charlotte</b> WBT 1080 50000 WSOC 1210 100 <b>Durham</b> WDNC 1500 100 <b>Greensboro</b> WBIG 1440 500 <b>Greenville</b> WEED 1420 100 <b>Raleigh</b> WPTF 680 5000 <b>Winston-Salem</b> WSJS 1310 100
<b>MINNESOTA</b> <b>Fergus Falls</b> KGDE 1200 100	<b>NEBRASKA</b> <b>Clay Center</b> KMMJ 740 1000	<b>NORTH DAKOTA</b> <b>Bismarck</b> KFYR 550 1000	



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**Minot**  
 KLPM 1240 250

**OHIO**

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**Canton**  
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 KMED 1310 100

**Portland**  
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 KBPS 1420 100  
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 KFJR 1300 500  
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 KXL 1420 100

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 WSAN 1440 250  
**Altoona**  
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**Carbondale**  
 WNBW 1200 10  
**Erie**  
 WLBW 1260 500  
 WLEU 1420 100  
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 WLIT 560 500  
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**Pittsburgh**  
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 WGBI 880 250  
 WQAN 880 250  
**Silverhaven**  
 WNBO 1200 100  
**Sunbury**  
 WKOK 1210 100  
**Wilkes-Barre**  
 WBAX 1210 100  
 WBRE 1310 100  
**Williamsport**  
 WRAK 1370 100  
**York**  
 WORK 1000 1000

**PHILIPPINES**

**Manila**  
 KZEG 618.5 1000  
 KZRM 618.5 50000

**PORTO RICO**

**San Juan**  
 WKAQ 1240 1000  
 WNEL 1290 500

**RHODE ISLAND**

**Providence**  
 WEAN 780 500  
 WJAR 890 500  
 WPRO 1210 100

**SOUTH CAROLINA**

**Charleston**  
 WCSC 1360 500  
**Columbia**  
 WIS 1010 500  
**Greenville**  
 WFBC 1200 100  
**Spartanburg**  
 WSPA 1420 100

**SOUTH DAKOTA**

**Brookings**  
 KFDY 780 1000  
**Huron**  
 KGDY 1340 250  
**Pierre**  
 KGFX 630 200  
**Rapid City**  
 WCAT 1200 100  
**Sioux Falls**  
 KSOO 1110 1000  
**Vermillion**  
 KUSD 890 500  
**Watertown**  
 KGCR 1210 100  
**Yankton**  
 WNAX 570 1000

**TENNESSEE \***

**Bristol**  
 WOPI 1500 100  
**Chattanooga**  
 WDDO 1280 1000  
**Jackson**  
 WTJS 1310 100  
**Knoxville**  
 WNOX 560 1000  
 WROL 1310 100  
**Memphis**  
 WHBQ 1370 100  
 WMC 780 500  
 WNBR 1430 500  
 WREC 600 500  
**Nashville**  
 WLAC 1470 5000  
 WSM 650 50000  
**Springfield**  
 WSIX 1210 100

**TEXAS**

**Amarillo**  
 KGRS 1410 1000  
 WDAG 1410 1000  
**Austin**  
 KNOW 1500 100  
**Beaumont**  
 KFDM 560 500  
**Brownsville**  
 KWWG 1260 500  
**College Station**  
 WTAW 1120 500  
**Corpus Christi**  
 KGFI 1500 100  
**Dallas**  
 KRLD 1040 10000  
 WFAA 800 50000  
 WRR 1280 500  
**Dublin**  
 KFPL 1310 100  
**El Paso**  
 KTSAM 1310 100  
 WDAH 1310 100  
**Fort Worth**  
 KFJZ 1370 100

**KTAT** 1240 1000  
**WBAP** 800 50000  
**Galveston**  
 KLUF 1370 100  
**Greenville**  
 KFPM 1310 15  
**Harlingen**  
 KRGV 1260 500  
**Houston**  
 KPRC 920 1000  
 KTRH 630 250  
 KXYZ 1440 250  
**Lubbock**  
 KFYO 1310 100  
**San Angelo**  
 KGKL 1370 100  
**San Antonio**  
 KABC 1420 100  
 KMAC 1370 100  
 KONO 1370 100  
 KTSA 1290 1000  
 WOAI 1190 50000  
**Tyler**  
 KGKB 1500 100  
**Waco**  
 WACO 1420 100  
**Wichita Falls**  
 KGKO 570 250

**UTAH**

**Ogden**  
 KLO 1400 500  
**Salt Lake City**  
 KDYL 1290 1000  
 KSL 1130 50000

**VERMONT**

**Burlington**  
 WCAX 1200 100  
**Rutland**  
 WSYB 1500 100  
**St. Albans**  
 WQDM 1370 100  
**Springfield**  
 WNBX 1260 500  
**Waterbury**  
 WDEV 550 500

**VIRGINIA**

**Arlington**  
 NAA 690 1000  
**Charlottesville**  
 WEHC 1350 500  
**Danville**  
 WBTM 1370 100  
**Lynchburg**  
 WLVA 1370 100  
**Newport News**  
 WGH 1310 100  
**Norfolk**  
 WTAR 780 500  
**Petersburg**  
 WPHR 1200 100  
**Richmond**  
 WBLL 1210 100  
 WMBG 1210 100  
 WRVA 1110 5000  
**Roanoke**  
 WDBJ 930 500  
 WRBX 1410 250

**WASHINGTON**

**Aberdeen**  
 KXRO 1310 100  
**Bellingham**  
 KVOS 1200 100  
**Everett**  
 KFBL 1370 50

# INDEX BY LOCATIONS

<b>Olympia</b>	
KGY 1210	100
<b>Pullman</b>	
KWSC 1220	1000
<b>Seattle</b>	
KJR 970	5000
KOL 1270	1000
KOMO 920	1000
KPCB 650	250
KRSC 1120	100
KTW 1220	1000
KVL 1370	100
KXA 760	250
<b>Spokane</b>	
KFIO 1120	100
KFPY 890	1000
KGA 1470	5000
KHQ 590	1000
<b>Tacoma</b>	
KMO 1330	250
KVI 570	500
<b>Walla Walla</b>	
KUJ 1370	100
<b>Wenatchee</b>	
KPO 1500	100
<b>Yakima</b>	
KIT 1310	100
<b>WEST VIRGINIA</b>	
<b>Bluefield</b>	
WHIS 1410	250
<b>Charleston</b>	
WCHS 580	500
<b>Fairmont</b>	
WMMN 890	250
<b>Huntington</b>	
WSAZ 1190	1000
<b>Wheeling</b>	
WWVA 1160	5000
<b>WISCONSIN</b>	
<b>Eau Claire</b>	
WTAO 1330	1000
<b>Fond du Lac</b>	
KFIZ 1420	100
<b>Green Bay</b>	
WBHY 1200	100
<b>Janesville</b>	
WCLO 1200	100
<b>LaCrosse</b>	
WKBH 1380	1000
<b>Madison</b>	
WHA 940	1000
WBA 1280	500
<b>Manitowoc</b>	
WOMT 1210	100
<b>Milwaukee</b>	
WHAD 1120	250
WISN 1120	250
WTMJ 620	1000
<b>Paynette</b>	
WIBU 1210	100
<b>Racine</b>	
WRJN 1370	100
<b>Sheboygan</b>	
WHBL 1410	500
<b>Stevens Point</b>	
WLBL 900	2500
<b>Superior</b>	
WBC 1290	1000
<b>WYOMING</b>	
<b>Casper</b>	
KDFN 1440	500
<b>Sheridan</b>	
KWYO 1370	100

<b>CANADA</b>		
<b>ALBERTA</b>		
<b>Calgary</b>		
CFAC 930	100	
CFCN 1030	10000	
CJJC 690	100	
<b>Edmonton</b>		
CFTF 1260	100	
CJCA 730	1000	
CKUA 580	500	
<b>Lethbridge</b>		
CJOC 840	100	
<b>BRT. COLUMBIA</b>		
<b>Chilliwack</b>		
CHWK 780	100	
<b>Kamloops</b>		
CFJC 1310	100	
<b>Kelowna</b>		
CKOV 1210	50	
<b>Trail</b>		
CJAT 1200	50	
<b>Vancouver</b>		
CJOR 600	500	
CKCD 1010	100	
CKFC 1410	50	
CKMO 1410	100	
CKWX 1010	100	
CRCV 1100	1000	
<b>Victoria</b>		
CFCT 1450	50	
<b>MANITOBA</b>		
<b>Brandon</b>		
CKX 1450	500	
<b>Winnipeg</b>		
CJRC 1390	100	
CKY 780	5000	
<b>NEW BRUNSWICK</b>		
<b>Fredericton</b>		
CFNB 1030	500	
<b>St. John</b>		
CFBO 1210	100	
CKSJ 1370	100	
<b>NOVA SCOTIA</b>		
<b>Glace Bay</b>		
VAS 685	2000	
<b>Halifax</b>		
CFNS 1050	500	
<b>Sydney</b>		
CJCB 880	50	
<b>Wolfville</b>		
CKIC 1010	50	
<b>Yarmouth</b>		
CJLS 1310	100	
<b>ONTARIO</b>		
<b>Brantford</b>		
CKPC 930	100	
10-BQ 1200	15	
<b>Chatnam</b>		
CFCO 600	100	
<b>Cobalt</b>		
CKMC 1210	50	
<b>Fort William</b>		
CKPR 930	50	
<b>Hamilton</b>		
CHML 1010	50	
CKOC 1120	500	
<b>Kingston</b>		
CFRC 1510	100	
<b>Kirkland Lake</b>		
CJKL 1310	100	
<b>London</b>		
CFPL 730	100	

<b>North Bay</b>	
CFCH 930	100
<b>Ottawa</b>	
CKCO 1010	100
CRCO 880	1000
<b>Prescott</b>	
CFLC 930	100
<b>St. Catharines</b>	
CKTB 1200	100
<b>Stratford</b>	
10-AK 1200	15
<b>Sudbury</b>	
CJCS 780	500
<b>Timmins</b>	
CKGB 1420	100
<b>Toronto</b>	
CFRB 690	10000
CKCL 580	100
CRCT 960	5000
CKNC 1030	100
<b>Waterloo</b>	
CKCR 1510	100
<b>Windsor</b>	
CKLW 840	5000
<b>Wingham</b>	
10-BP 1200	15
<b>PRINCE EDWARD ISLAND</b>	
<b>Charlottetown</b>	
CFCY 630	500
CHCK 1310	50
<b>Summerside</b>	
CHGS 1120	50
<b>QUEBEC</b>	
<b>Chicoutimi</b>	
CRCS 1200	100
<b>Hull</b>	
CKCH 1210	100
<b>Montmagny</b>	
VE9EK 1195	10
<b>Montreal</b>	
CFCF 600	500
CHLP 1120	100
CKAC 730	5000
CRCM 910	5000
<b>New Carlisle</b>	
CHNC 1210	100
<b>Quebec</b>	
CHRC 580	100
CKCV 1310	50
<b>SASKATCHEWAN</b>	
<b>Canora</b>	
10-BU 1200	15
<b>Moose Jaw</b>	
CHAB 1200	100
CJRM 540	1000
<b>Prince Albert</b>	
CKBI 1210	100
<b>Regina</b>	
CHVC 1010	500
CKCK 1010	500
<b>Saskatoon</b>	
CFQC 1230	500
<b>Yorkton</b>	
CJGX 630	500
<b>NEWFOUNDLAND</b>	
<b>St. John's</b>	
VOAC 1300	40
VOAS 940	100
VOGY 1050	75
VOKW 1085	30
VONF 1195	5000
VOWR 700	500

<b>MIQUELON</b>	
<b>St. Pierre</b>	
FQN 574	250
<b>CENTRAL AMERICA</b>	
<b>COSTA RICA</b>	
<b>Cartago</b>	
TIFS 1441	7.5
TIGA 1014	30
<b>San Jose</b>	
TICR 912	75
TIEA 833	7.5
TIEP 1450	7.5
TIFB 714	30
TIGP 800	75
TIRCA 1100	500
TISO 550	250
TITV 999	7.5
TIVL 869	30
TIXA 614	7.5
<b>GUATEMALA</b>	
<b>Guatemala City</b>	
TGW 1350	500
TGX 1380	75
<b>NICARAGUA</b>	
<b>Granada</b>	
YNCRG 870	150
<b>EL SALVADOR</b>	
<b>San Salvador</b>	
RDN 680	500
<b>MEXICO</b>	
<b>AGUASCALIENTES</b>	
<b>Aguascalientes</b>	
XFA 1310	100
XFC 810	350
<b>BAJA CALIFORNIA</b>	
<b>Agua Caliente</b>	
XBBC 1280	5000
<b>Mexicali</b>	
XEAO 560	250
<b>Tijuana</b>	
XEAE 980	250
XEMO 860	2500
XEMZ 1210	30
XEOK 920	2500
<b>CHIHUAHUA</b>	
<b>Chihuahua</b>	
XEFI 720	250
<b>Juarez</b>	
XEFV 1210	100
XEJ 1020	250
<b>COAHUILA</b>	
<b>Piedras Negras</b>	
XEPN 590	50000
<b>Saltillo</b>	
XEL 1370	10
XEOX 640	250
<b>Torreón</b>	
XETB 1310	125
<b>D. F.</b>	
<b>Mexico City</b>	
XEA1 1420	100
XEAL 660	1000
XEB 1010	10000
XECW 1310	10
XEFA 1180	500
XEFG 1040	250
XEFO 940	5000
XEFZ 1370	100
XEK 1120	100
XEN 710	1000

## INDEX BY LOCATIONS

XEO	940	5000
XEP	970	500
XEPR	740	250
XETW	820	500
XETZ	850	500
XEW	890	50000
XEWZ	1200	100
XEYZ	780	10000
XFG	638	2000
XFO	940	5000
XFX	610	1000
<b>Toluca</b>		
XEC	1200	50
<b>DURANGO</b>		
Durango		
XEE	1210	100
<b>GUANAJUATO</b>		
Leon		
XEAZ	1420	100
<b>HIDALGO</b>		
Pachuca		
XETU	890	100
<b>JALISCO</b>		
Guadalajara		
XBA	1200	250
XED	1160	500
<b>MICHOACAN</b>		
Morolia		
XEI	1310	250
<b>NUEVO LEON</b>		
Montrey		
XEFB	1420	100
XEFJ	1210	100
XEH	1130	250
XET	690	500
XEX	1310	50
<b>PUEBLA</b>		
Puebla		
XETH	1210	100
<b>SAN LUIS POTOSI</b>		
San Luis Potosi		
XEAC	1295	100
XEZZ	1370	100
<b>SONORA</b>		
Nogales		
XEAF	1080	250
<b>TAMAULIPAS</b>		
Nuevo Laredo		
XEAB	1210	7.5
XEFE	1370	100
XENT	1340	30000
Reynosa		
XEAW	950	10000
Tampico		
XEFW	1310	70
XEMA	1200	100
XES	970	250
<b>VERACRUZ</b>		
Jalapa		
XFB	1290	1000
Orizaba		
XFD	1240	250
Veracruz		
XEU	1200	100
<b>YUCATAN</b>		
Merida		
XEFC	1310	100
XEMC	750	250
XEY	1200	10
XEZ	630	500

### WEST INDIES

<b>CUBA</b>		
Calbarion		
CMHD	950	500
Camaguey		
CMJC	1382	150
CMJE	1170	50
CMJF	910	200
CMJG	1050	50
CMJK	790	500
CMJL	960	50
CMJN	1240	50
Cardenas		
CMGE	1375	30
Ciego de Avila		
CMJH	1150	50
CMJI	1335	45
CMJO	1010	50
Cienfuegos		
CMHJ	1125	60
CMHL	1290	20
CMHW	1200	100
Colon		
CMGA	834	100
Cruces		
CMHK	1215	50
Guantanamo		
CMKJ	1300	20
Havana		
CMAF	680	1000
CMBC	1270	150
CMBD	965	250
CMBG	1048	225
CMBJ	1147	500
CMBK	1485	15
CMBL	1445	200
CMBN	1185	150
CMBS	765	200
CMBW	1140	600
CMBX	1185	500
CMBY	1230	250
CMBZ	1005	150
CMC	835	500
CMCA	1230	150
CMCB	1048	150
CMCD	925	500
CMCF	873	250
CMCG	1305	500
CMCH	1410	50
CMCJ	1180	500
CMCM	1405	50
CMCN	1357	250
CMCO	1145	500
CMCP	1270	150
CMCQ	680	1000
CMCR	1357	150
CMCU	1100	500
CMCW	965	150
CMCY	1316	500
CMDE	915	150
CMK	730	2000
CMQ	645	500
CMW	595	1400
CMX	875	1000
Matanzas		
CMBG	1205	30
CMGC	820	30
CMGF	971.5	100
CMGH	1040	15
Moron		
CMJP	1360	75
Pinar del Rio		
CMAB	1249	20
Sagua la Grande		
CMHA	1103	500
Santa Clara		
CMHI	1007	250
Santiago		
CMKC	1034	150

### DOMINICAN REPUBLIC

San Pedro de		
Marcoris		
HIH	1395	15
Santo Domingo		
HIJ	1195	15
HIX	598	1500
HIZ	1300	10
<b>HAITI</b>		
Port-au-Prince		
HHK	920	1000
<b>SOUTH AMERICA</b>		
<b>ARGENTINE</b>		
Bahia Blanca		
LU2	800	500
LU7	1280	200
Buenos Aires		
LR2	910	6000
LR3	950	12000
LR4	990	12000
LR5	830	16000
LR6	870	2100
LR8	1150	5000
LR9	1030	5000
LR10	790	8000
LS2	1190	5000
LS3	630	4500
LS4	670	6000
LS5	1110	4500
LS6	1350	3500
LS8	1230	2000
LS9	1270	5000
LS10	590	3500
LV	10860	500
Cordoba		
LV2	880	500
Resistencia		
LT5	1160	500
Rosario		
LT1	780	5000
LT3	1080	3500
LT8	840	350
Salta		
LV9	900	500
San Juan		
LV1	620	1500
LV5	1120	700
Tucuman		
LV7	820	500
<b>BOLIVIA</b>		
La Paz		
CPX	1250	5000
CP4	1040	10000
<b>BRAZIL</b>		
Amparo		
PRC4	1304	.05
Bahia		
PRA4	1000	.05
Belem		
PRC5	1360	.1
Bello Horizonte		
PRC7	1090	.25
Campinas		
PRAW	1170	.02
Curitiba		
PRB2	882	.25
Juiz de Fora		
PRB3	857	.25

Mogy das Cruzes		
PRB8	1000	.05
Pelotas		
PRC7	920	.25
Porto Alegre		
PRC2	1090	.5
Recife		
PRA8	750	.5
Riberirao Preto		
PRA7	1153	.05
Rio de Janeiro		
PRA2	750	1.5
PRA3	860	2.5
PRA9	1080	1.
PRB7	800	.5
PRC6	965	1.
Santos		
PRB4	1000	1.
Sao Paulo		
PRA5	1295	.1
PRA6	815	1.
PRB5	1110	.05
PRB9	1017	.5
PRD2	935	1.
<b>CHILE</b>		
Chillan		
CEI13	1130	100
Concepcion		
CEI08	1080	100
Magallanes		
CEI04	1040	100
CEI19	1190	100
CEI43	1430	100
Rancagua		
CEI32	1325	100
CEI39	1390	100
CEI45	1450	100
Santiago		
CE58	585	1000
CE62	625	1000
CE66	665	1000
CE70	705	1000
CE74	745	1000
CE78	785	1000
CE82	825	1000
CE86	865	1000
CE90	905	1000
CE94	945	1000
CE98	985	1000
CE100	1005	100
CE102	1025	250
CE106	1065	500
CE107	1075	100
CE110	1105	100
CE114	1145	100
CE118	1185	100
CE122	1225	100
CE126	1265	100
CE130	1305	100
CE131	1315	100
CE134	1345	150
CE138	1385	100
CE142	1425	100
CE146	1465	500
Temuco		
CE92	920	100
CE128	1280	500
Valparaise		
CE88	885	100
CE105	1050	100
CE121	1210	100
CE125	1250	100
Vina del Mar		
CE101	1010	100
CE109	1090	105
<b>COLOMBIA</b>		
Bogota		
HJN	681	1000

## INDEX BY LOCATIONS

HJ3ABD 1115	50	<b>Klagenfurt</b>		<b>Tampere</b>		<b>Kaiserslautern</b>	
HJ3ABE 1200	100	.. 1294	500	OFB 1420	1200	..... 1195	1500
HJ3ABH 1000	1000	<b>Linz</b>		<b>Turku</b>		<b>Kiel</b>	
<b>PARAGUAY</b>		..... 1294	500	..... 1492	600	..... 1292	250
<b>Asuncion</b>		<b>Salzburg</b>		<b>Vilpuri</b>		<b>Konigsberg</b>	
ZP1 1135	1000	..... 1348	500	OFH 527	13200	..... 1348	500
ZP3 1000	300	<b>Vienna</b>		<b>FRANCE</b>		<b>Langenberg</b>	
ZP4 1275	150	..... 592	120000	<b>Bezlers</b>		..... 658	60000
ZP5 1465	150	<b>BELGIUM</b>		..... 1429	2000	<b>Leipzig</b>	
<b>PERU</b>		<b>Antwerp</b>		<b>Bordeaux</b>		..... 785	120000
<b>Lima</b>		ON4EB 1492	100	..... 1077	12000	<b>Magdeburg</b>	
OAX 750	1500	<b>Binche</b>		..... 1492	1000	..... 1330	1500
<b>URUGUAY</b>		..... 1492	100	<b>Fecamp</b>		<b>Munich</b>	
<b>Artigas</b>		<b>Brussels</b>		..... 1456	10000	..... 740	100000
CW42 1380	20	ON4FO 1285	100	<b>Grenoble</b>		<b>Nurnberg</b>	
<b>Canelones</b>		ON4CT 1285	100	..... 968	20000	..... 1267	2000
CW47 1480	100	ON4RC 1285	100	<b>Lille</b>		<b>Stattin</b>	
<b>Florida</b>		No. 1 620	15000	..... 1213	5000	..... 1330	1500
CW39 1320	75	No. 2 932	15000	<b>Limoges</b>		<b>Stuttgart</b>	
<b>Melo</b>		<b>Chattelineau</b>		..... 913	500	<b>Trier</b>	
CW43 1400	20	ON4CE 1492	100	<b>Lyons</b>		..... 1195	2000
<b>Montivideo</b>		<b>Dampremy</b>		YN 648	15000	<b>GREAT BRITAIN</b>	
CX4 610	1000	ON4FG 1285	100	RL 1393	5000	<b>Aberdeen</b>	
CX6 650	5000	<b>Ghent</b>		..... 749	5000	..... 1285	1000
CX8 690	1000	ON4RG 1285	100	<b>Montpellier</b>		<b>Bournemouth</b>	
CX10 730	1000	<b>Liege</b>		..... 1339	5000	..... 1474	1000
CX12 770	1000	ON4RW 1500	100	<b>Nice</b>		<b>Cardiff</b>	
CX14 810	1000	<b>Ottomont</b>		..... 1249	20000	WR 977	50000
CX16 850	200	ON4EX 1285	100	<b>Nimes</b>		WN 1149	50000
CX18 890	750	<b>Verviers</b>		..... 1492	200	<b>Davenport</b>	
CX20 930	2000	ON4CE 1500	100	<b>Paris</b>		MR 767	25000
CX22 970	250	No. 2 1500	100	FPTT 695	7000	<b>Falkirk</b>	
CX24 1010	10000	<b>BULGARIA</b>		FRGC 810	1200	SN 1050	50000
CX26 1050	2000	<b>Sofia</b>		LL 832	2000	SR 804	50000
CX28 1090	2000	..... 850	1000	PP 959	100000	<b>London</b>	
CX30 1130	500	<b>CZECHOSLOVAKIA</b>		RV 959	60000	LN 1149	50000
CX32 1170	500	<b>Bratislava</b>		<b>Radio-Agen</b>		LR 877	50000
CX34 1210	500	OKR 1004	13500	..... 1456	1500	<b>Manchester</b>	
CX36 1250	250	<b>Brno</b>		..... 1456	10000	NN 1013	50000
CX38 1290	250	OKB 922	32000	<b>Radio-Vitus</b>		NR 668	50000
CX40 1330	500	<b>Kosice</b>		..... 1348	2000	<b>Newcastle</b>	
CX42 1370	1000	OKK 1113	2600	<b>Rennes</b>		..... 1429	1000
CX44 1410	1000	<b>Moravska</b>		..... 1040	2500	<b>Plymouth</b>	
CX46 1450	250	..... 1158	11000	<b>Strasbourg</b>		..... 1474	300
CX48 1490	2500	<b>Praha</b>		SPTT 859	15000	<b>GREECE</b>	
<b>Paysandu</b>		OKP 638	120000	<b>Toulouse</b>		<b>Thesalonik</b>	
CW40 1340	30	No. 2 1204	5000	MRD 1175	700	..... 1110	1000
CW44 1420	100	<b>DANZIG</b>		..... 776	2000	<b>HOLLAND</b>	
<b>Salto</b>		<b>Danzig</b>		..... 895	10000	<b>Amsterdam</b>	
CW32 1180	250	..... 1303	500	<b>GERMANY</b>		PH9 1013	6400
CW34 1220	250	<b>DENMARK</b>		<b>Augsburg</b>		<b>Bloemendaal</b>	
CW36 1260	30	<b>Copenhagen</b>		..... 1267	2000	..... 1220	....
CW38 1300	30	..... 1175	10000	<b>Berlin</b>		<b>Hague</b>	
<b>San Jose</b>		<b>ESTONIA</b>		..... 841	100000	..... 1000	350
CW41 1360	50	<b>Tallinn</b>		..... 1058	500	<b>Hilversum</b>	
<b>Tucuaurembo</b>		<b>Tartu</b>		<b>Bremen</b>		PFBI 995	20000
CW30 1140	....	..... 731	20000	..... 1330	1500	<b>HUNGARY</b>	
CW46 1460	30	..... 1348	500	<b>Breslau</b>		<b>Budapest</b>	
<b>VENEZUELA</b>		..... 1348	2200	..... 950	60000	HAC 546	1200
<b>Caracas</b>		<b>FINLAND</b>		<b>Cassel</b>		HAL 546	120000
YV1BC 960	5000	<b>Abo</b>		..... 1195	1500	No. 2 1321	800
YV2BC 882	100	OFG 1220	600	<b>Dresden</b>		<b>Magyarovar</b>	
YV3BC 1200	1000	<b>Bjorneborg</b>		..... 1267	250	HAE-2 1438	1250
YV17BMO	1153	..... 662	500	<b>Flensburg</b>		<b>Miskolc</b>	
<b>EUROPE</b>		<b>Helsinki</b>		..... 1330	1500	HAE-3 1438	1250
<b>AUSTRIA</b>		OFA 895	10000	<b>Frankfurt</b>		<b>Nyiregyhaza</b>	
<b>Dornbirn</b>		<b>Jacobstad</b>		..... 1195	17000	HAE 1122	6200
..... 1294	500	OFB 960	250	<b>Frelburg</b>		<b>Pecs</b>	
<b>Graz</b>		<b>Porl</b>		..... 1195	5000	HAE-4 1438	1250
..... 886	7000	OFD 749	500	<b>Gleiwitz</b>		<b>IRELAND</b>	
<b>Innsbruck</b>		<b>GERMANY</b>		..... 1231	5000	<b>Athlone</b>	
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		..... 1040	2500	..... 904	100000		
		<b>Strasbourg</b>		..... 1330	1500		
		..... 1474	300	<b>Heilsberg</b>			
		<b>GREECE</b>		..... 1031	60000		
		<b>Thesalonik</b>					
		..... 1110	1000				
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		<b>Amsterdam</b>					
		PH9 1013	6400				
		<b>Bloemendaal</b>					
		..... 1220	....				
		<b>Hague</b>					
		..... 1000	350				
		<b>Hilversum</b>					
		PFBI 995	20000				
		<b>HUNGARY</b>					
		<b>Budapest</b>					
		HAC 546	1200				
		HAL 546	120000				
		No. 2 1321	800				
		<b>Magyarovar</b>					
		HAE-2 1438	1250				
		<b>Miskolc</b>					
		HAE-3 1438	1250				
		<b>Nyiregyhaza</b>					
		HAE 1122	6200				
		<b>Pecs</b>					
		HAE-4 1438	1250				
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		<b>Athlone</b>					
		..... 565	60000				

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<b>Cork</b> 6CK 1240 1000	<b>Warsaw</b> No. 2 1384 2000	<b>Karlskrona</b> SCJ 1530 200	<b>Krasnodar</b> RW33 1050 10000
<b>Dublin</b> 2RN 1348 1000	<b>Wilno</b> ..... 536 16000	<b>Karlstad</b> SBK 1312 250	<b>Leningrad</b> RW70 1040 10000
<b>ITALY</b>	<b>PORTUGAL</b>	<b>Kiruna</b> SCL 1258 200	<b>Magnitogorsk</b> ..... 571 10000
<b>Barl</b> IIBA 1059 20000	<b>Lisbon</b> CTIAA 1056 2000	<b>Kristinehamn</b> SCM 1500 250	<b>Makhatch</b> RW27 689 4000
<b>Bolzano</b> IIBZ 536 1000	CTIAN 1056 10	<b>Malmberget</b> SCN 704 250	..... 563 120000
<b>Firenze</b> IFI 610 20000	CTIBM 1056 50	<b>Malmo</b> SBC 1312 1250	<b>Minsk</b> RV10 1438 100000
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<b>Palermo</b> IPA 565 3000	CTIEB 1056 50	<b>Stockholm</b> SBA 704 55000	<b>Nijni</b> ..... 598 10000
<b>Rome</b> IIRO 713 50000	CTIGK 1063 2000	<b>Sundsvall</b> SBD 601 10000	<b>Odessa</b> RW13 968 10000
<b>No. 2</b> 1258 500	CTIGL 885 150	<b>Trollhattan</b> SBJ 1312 250	<b>Oufa</b> RW22 617 10000
<b>Trieste</b> IITR 1222 10000	<b>Oliveira</b> ..... 1304 250	<b>Uddevalla</b> SCR 1393 50	<b>Oukhta</b> ..... 968 2000
<b>Turin</b> IITO 1140 7000	<b>Oporto</b> CSIRS 1448 1000	<b>Umea</b> SCS 1393 200	<b>Penza</b> RW56 640 1200
<b>No. 2</b> 1357 1000	PRPI 1249 1500	<b>Upsala</b> SCT 1492 150	<b>Petrozavodsk</b> ..... 648 10000
<b>LATVIA</b>	<b>Parede</b> CTIGL 1031 5000	<b>Verberg</b> SCU 1240 300	<b>Simferopol</b> RW52 859 10000
<b>Madonna</b> ..... 1104 20000	<b>ROUMANIA</b>	<b>SWITZERLAND</b>	<b>Smolensk</b> RW24 531 2000
<b>Riga</b> YLZ 583 15000	<b>Bucharest</b> ..... 823 12000	<b>Basle</b> ..... 1375 500	<b>Stalino</b> RW26 776 10000
..... 1510 10000	<b>SPAIN</b>	<b>Berne</b> ..... 1375 500	<b>Sykytyvkar</b> RW41 563 1200
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<b>Bodo</b> LKD 1276 500	<b>Madrid</b> EAJ2 731 3000	<b>U. S. S. R.</b>	<b>Tiraspol</b> RW57 1068 10000
<b>Fredrikstad</b> LKI 868 700	EAJ7 1095 7000	<b>Alexandrovs</b> RW38 580 1200	<b>Tomsk</b> RW48 554 1200
<b>Hamar</b> LKH 519 700	<b>Oviedo</b> EAJ19 1022 700	<b>Arkhangelsk</b> RW36 770 10000	<b>Vinnitza</b> RW75 1095 10000
<b>Kristiansand</b> LKK 1274 500	<b>Salamanca</b> EAJ22 662 1000	<b>Astrakhan</b> RW35 589 10000	<b>Vladikavkaz</b> RW64 752 10000
<b>Notodden</b> LKN 1348 80	<b>San Sebastian</b> EAJ8 1258 3000	<b>Dnepropetrovsk</b> RW30 913 10006	<b>Vladivostok</b> RW28 635 700
<b>Porsgrund</b> LKP 850 700	<b>Seville</b> EAJ5 731 1500	<b>Engels</b> RW55 959 1000	<b>RW28</b> 725 10000
<b>Rjukan</b> LKR 1348 150	<b>Valencia</b> EAJ3 850 1500	<b>Gomel</b> RW40 959 1200	
<b>Stavanger</b> LKS 1276 500	Spain has many stations of 100 watts or less on 1492 and 1500 kcs. For complete list see Index by Calls.	<b>Gorki</b> RW42 598 10000	
<b>Tromsoe</b> LKM 1357 100	<b>SWEDEN</b>	<b>Groznyl</b> RW23 676 1200	
<b>Trondheim</b> ..... 629 12000	<b>Boras</b> SCA 1450 150	<b>Ijevsk</b> RW69 825 4000	
<b>POLAND</b>	<b>Eskilstuna</b> SCB 1240 200	<b>Ivanovo</b> RW31 625 10000	
<b>Cracow</b> ..... 986 2000	<b>Falun</b> SCC 1086 2000	<b>Karaganda</b> RW46 653 10000	
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<b>Lodz</b> ..... 1348 1700	<b>Halmstad</b> SCE 1402 200	<b>Kharkov</b> RW20 1185 10000	
<b>Lwow</b> ..... 795 16000	<b>Halsingborg</b> SCC 1384 200		
<b>Poznan</b> ..... 868 16000	<b>Horby</b> SBH 1131 10000		
..... 1098 1500	<b>Hudiksvall</b> SCF 1375 150		
	<b>Jonkoping</b> SCH 1515 250		

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<b>Hongkong</b>			<b>Kokura</b>			<b>Rabat</b>			<b>Newcastle</b>		
BZW	845	2000	JOSK	735	1000	.....	601	6500	2HD	1110	200
<b>Kwangchow</b>			<b>Kumamoto</b>			<b>TUNISIA</b>			2KO	1415	200
CMB	677	1000	JOGK	790	10000	<b>Tunis</b>			2NC	1245	2000
<b>Lo Yang</b>			<b>Kyoto</b>			TUA	1275	500	<b>Perth</b>		
XGOB	1090	250	JOOK	960	300	<b>UNION S. AFRICA</b>			6IX	1480	50
<b>Nanking</b>			<b>Maebashi</b>			<b>Bloemfontaine</b>			6ML	1135	300
XGOA	660	75000	JOGB	970	500	ZTB	589	500	6PR	880	500
<b>Peiping</b>			<b>Matsuye</b>			<b>Cape Town</b>			6WF	690	5000
XNPP	937	1000	JOTK	625	500	ZTC	810	1000	<b>Port Pirie</b>		
XOPP	952.3	100	JONK	940	500	<b>Durban</b>			5PI	1041	50
<b>Shanghai</b>			<b>Nagano</b>			ZTD	723	1000	<b>Rockhampton</b>		
FFZ	1400	250	JOAG	930	500	<b>Johannesburg</b>			4RK	910	5000
XGCU	1140	100	JOCK-1	810	10000	ZTJ	667	15000	4RO	1330	250
XHHE	940	100	JOCK-2	1175	10000	<b>Pretoria</b>			<b>Sale</b>		
XHHF	960	100	<b>Nilgata</b>			ZTP	985	500	3TR	1280	50
XHHG	1020	100	JQOK	920	500	<b>OCEANIA</b>			<b>Swan Hill</b>		
XHHH	1040	100	<b>Okayama</b>			<b>AUSTRALIA</b>			3SH	1080	50
XHHI	900	100	JOKK	700	500	<b>Adelaide</b>			<b>Sydney</b>		
XHHK	1420	100	<b>Osaka</b>			5AD	1310	300	2BL	855	3400
XHHM	1180	100	JOBK-1	750	10000	5CL	730	5000	2CH	1210	1000
XHHN	1200	100	JOBK-2	1085	10000	5DN	960	1000	2FC	665	5000
XHHS	1100	100	<b>Sapporo</b>			5KA	1200	1000	2GB	950	3000
XHHU	1160	500	JOIK	830	10000	<b>Albury</b>			2KY	1070	1500
XHHV	880	100	<b>Sendai</b>			2AY	1500	50	2SM	1270	1000
XHHX	920	100	JOHK	770	10000	<b>Ballarat</b>			2UE	1025	3000
XMHA	600	600	<b>Shizuoka</b>			3BA	1300	50	2UW	1125	1500
XQHA	850	1000	JOJK	780	500	<b>Bendigo</b>			<b>Toowoomba</b>		
XQHB	820	100	<b>Tokushima</b>			3BO	970	200	4GR	1000	50
XQHC	1270	500	JOXK	980	500	<b>Brisbane</b>			<b>Townsville</b>		
XQHD	1360	200	<b>Tokyo</b>			4BC	1145	600	4TO	1170	100
XQHT	1460	1000	JOAK-1	870	10000	4BH	1380	600	<b>Ulverstone</b>		
<b>Soochow</b>			JOAK-2	590	10000	4BK	1290	200	7UV	1460	200
XGLS	1230	100	<b>KOREA</b>			4QG	760	5000	<b>Wagga</b>		
<b>Tientsin</b>			Keijo			<b>Bunbury</b>			2WG	1155	50
XOTN	625	500	JODK-1	900	10000	<b>Canberra</b>			<b>Wangaratta</b>		
<b>Tsinan</b>			JODK-2	610	10000	2CA	1050	50	3WR	1260	50
XOST	857.1	500	<b>MANCHURIA</b>			<b>Corowa</b>			<b>Wollongong</b>		
<b>Yunnan</b>			Dairn			2CO	560	7500	2WL	1435	50
XGOY	698	500	JOAK	652	500	<b>Crystal Brook</b>			<b>NEW ZEALAND</b>		
<b>FORMOSA</b>			<b>Harbin</b>			5CK	635	7500	<b>Auckland</b>		
Taihoku			MOHB	674	1000	<b>Geelong</b>			1YA	650	500
JFAK	670	10000	MTFY	674	1000	3GL	1400	50	1ZB	1190	50
<b>Tainan</b>			<b>Hoten</b>			<b>Goulburn</b>			1ZJ	1310	50
JFBK	720	1000	MTBY	897	1500	2GN	1390	50	1ZR	880	100
<b>INDIA</b>			ZILY	900	2000	<b>Grafton</b>			1ZS	1420	50
<b>Bombay</b>			<b>Skinkyo</b>			2GF	1220	50	<b>Balclutha</b>		
VUB	840	2000	MYCY	570	1000	<b>Gunnedah</b>			4ZR	1340	5
<b>Calcutta</b>			<b>SIAM</b>			2MO	1320	50	<b>Christchurch</b>		
VUC	810	2000	Bangkok			<b>Hamilton</b>			3YA	720	2500
<b>Lahore</b>			HSPI	857	2500	3HA	1010	200	3YL	1200	500
VUL	1200	100	HSP3	938	...	<b>Hobart</b>			3ZM	1450	50
<b>Madras</b>			HSPJ	750	...	7HO	890	50	<b>Cromwell</b>		
VUM	770	200	<b>AFRICA</b>			7ZL	580	3000	4ZC	1280	25
<b>INDO-CHINA</b>			<b>ALGERIA</b>			<b>Horsham</b>			<b>Dunedin</b>		
<b>Saigon</b>			Algiers			3HS	1370	50	4YA	790	500
F31CD	840	12000	.....	941	12000	<b>Kalgoorlie</b>			4ZB	1050	50
<b>JAPAN</b>			<b>EGYPT</b>			6KG	1220	100	4ZF	1220	7
<b>Akita</b>			Alexandria			<b>Launceston</b>			4ZL	1220	100
OUK	645	300	.....	780	200	7LA	1100	300	4ZM	1050	50
<b>Asahikawa</b>			.....	1080	500	<b>Lismore</b>			4ZO	1050	25
JOCG	655	300	<b>Calro</b>			2XN	1340	50	4ZW	1470	50
<b>Fukui</b>			.....	571	20000	<b>Mackay</b>			<b>Gisborne</b>		
JOFG	990	500	.....	600	...	4MK	1190	100	2ZJ	980	250
<b>Fukuoka</b>			.....	950	...	<b>Maryborough</b>			2ZM	1150	110
JOLK	680	500	<b>Heliopolis</b>			4MB	1060	50	<b>Greymouth</b>		
<b>Hakodate</b>			.....	1110	500	<b>Melbourne</b>			3ZE	1300	50
JOVK	680	500	<b>KENYA</b>			3AK	1470	50	3ZR	940	300
<b>Hamamatsu</b>			Nairobi			3AR	610	5000	<b>Hamilton</b>		
JODG	635	300	VQZLO	750	1000	3AW	1425	300	1ZH	770	40
<b>Hiroshima</b>			<b>MOROCCO</b>			3DB	1180	500	<b>Hastings</b>		
JOFK	850	10000	Casablanca			3KZ	1350	200	2ZL	1240	48
<b>Kanazawa</b>			CNO	983	25	3LO	800	5000			
JOJK	710	3000	<b>EGYPT</b>			3UZ	930	500			
<b>Kochi</b>			.....	571	20000	3YB	1145	25			
JORK	720	500	<b>ALGERIA</b>			<b>Mildura</b>					
			Algiers			3MA	900	50			

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<b>Invercargill</b>	<b>2ZD</b> 1170	<b>8</b>	<b>New Plymouth</b>	<b>Wairoa</b>
<b>4ZP</b> 620	<b>Napier</b>		<b>2YB</b> 750	<b>2ZP</b> 900
<b>Manurewa</b>	<b>2ZH</b> 820	<b>65</b>	<b>Palmerston N.</b>	<b>Wellington</b>
<b>IZM</b> 1260	<b>Nelson</b>		<b>2ZF</b> 960	<b>2YA</b> 570
<b>Masterton</b>	<b>2ZR</b> 1110	<b>50</b>	<b>2ZO</b> 1400	<b>2YC</b> 840
				<b>5000</b>
				<b>200</b>

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<b>CAB</b> Canton, Ch.	<b>658</b>	<b>CHWC</b> Regina, Sask.	<b>1010</b>	<b>CMCW</b> Havana, Cuba	<b>965</b>
<b>CE58</b> Santiago, Chl.	<b>585</b>	<b>CHWK</b> Chilliwack, B. C.	<b>780</b>	<b>CMCY</b> Havana, Cuba.	<b>1316</b>
<b>CE62</b> Santiago, Chl.	<b>625</b>	<b>CJAT</b> Trail, B. C.	<b>1200</b>	<b>CMDE</b> Havana, Cuba.	<b>915</b>
<b>CE66</b> Santiago, Chl.	<b>665</b>	<b>CJCA</b> Edmonton, Alta.	<b>730</b>	<b>CMGA</b> Colon, Cuba.	<b>834</b>
<b>CE70</b> Santiago, Chl.	<b>705</b>	<b>CJCB</b> Sydney, N. S.	<b>880</b>	<b>CMGB</b> Matanzas, Cuba.	<b>1295</b>
<b>CE74</b> Santiago, Chl.	<b>745</b>	<b>CJCH</b> Calgary, Alta.	<b>690</b>	<b>CMGC</b> Matanzas, Cuba.	<b>820</b>
<b>CE78</b> Santiago, Chl.	<b>785</b>	<b>CJCS</b> Sudbury, Ont.	<b>780</b>	<b>CMGE</b> Cardenas, Cuba.	<b>1375</b>
<b>CE82</b> Santiago, Chl.	<b>825</b>	<b>CJGX</b> Yorkton, Sask.	<b>630</b>	<b>CMGF</b> Matanzas, Cuba.	<b>971.5</b>
<b>CE86</b> Santiago, Chl.	<b>865</b>	<b>CJKL</b> Kirkland Lake, Ont.	<b>1310</b>	<b>CMGH</b> Matanzas, Cuba.	<b>1640</b>
<b>CE88</b> Valparaiso, Chl.	<b>885</b>	<b>CJLS</b> Yarmouth, N. S.	<b>1310</b>	<b>CMHA</b> Sagua la Grande, Cuba	<b>1103</b>
<b>CE90</b> Santiago, Chl.	<b>905</b>	<b>CJOC</b> Lethbridge, Alta.	<b>840</b>	<b>CMHO</b> Caibarien, Cuba.	<b>950</b>
<b>CE92</b> Temuco, Chl.	<b>920</b>	<b>CJOR</b> Vancouver, B. C.	<b>600</b>	<b>CMHI</b> Santa Clara, Cuba.	<b>1007</b>
<b>CE94</b> Santiago, Chl.	<b>945</b>	<b>CJRC</b> Winnipeg, Man.	<b>1390</b>	<b>CMHJ</b> Cienfuegos, Cuba	<b>1125</b>
<b>CE98</b> Santiago, Chl.	<b>985</b>	<b>CJRM</b> Moose Jaw, Sask.	<b>540</b>	<b>CMHK</b> Cruces, Cuba.	<b>1215</b>
<b>CE100</b> Santiago, Chl.	<b>1005</b>	<b>CKAC</b> Montreal, Que.	<b>730</b>	<b>CMHL</b> Cienfuegos, Cuba.	<b>1290</b>
<b>CE101</b> Vina del Mar, Chl.	<b>1010</b>	<b>CKBI</b> Prince Albert, Sask.	<b>1210</b>	<b>CMHW</b> Cienfuegos, Cuba.	<b>1200</b>
<b>CE102</b> Santiago, Chl.	<b>1020</b>	<b>CKGD</b> Vancouver, B. C.	<b>1010</b>	<b>CMJG</b> Camaguey, Cuba.	<b>1382</b>
<b>CE104</b> Magallanes, Chl.	<b>1040</b>	<b>CKCH</b> Hull, Que.	<b>1210</b>	<b>CMJE</b> Camaguey, Cuba.	<b>1170</b>
<b>CE105</b> Valparaiso, Chl.	<b>1050</b>	<b>CKCK</b> Regina, Sask.	<b>1010</b>	<b>CMJF</b> Camaguey, Cuba.	<b>910</b>
<b>CE106</b> Santiago, Chl.	<b>1065</b>	<b>CKCL</b> Toronto, Ont.	<b>580</b>	<b>CMJG</b> Camaguey, Cuba.	<b>1050</b>
<b>CE107</b> Santiago, Chl.	<b>1075</b>	<b>CKGO</b> Ottawa, Ont.	<b>1010</b>	<b>CMJH</b> Ciego de Avila, Cuba.	<b>1150</b>
<b>CE108</b> Concepcion, Chl.	<b>1080</b>	<b>CKGR</b> Waterloo, Ont.	<b>1510</b>	<b>CMJI</b> Ciego de Avila, Cuba.	<b>1335</b>
<b>CE109</b> Vina del Mar, Chl.	<b>1080</b>	<b>CKGV</b> Quebec, Que.	<b>1310</b>	<b>CMJK</b> Camaguey, Cuba.	<b>790</b>
<b>CE110</b> Santiago, Chl.	<b>1105</b>	<b>CKFC</b> Vancouver, B. C.	<b>1410</b>	<b>CMJL</b> Camaguey, Cuba.	<b>880</b>
<b>CE113</b> Chillan, Chl.	<b>1130</b>	<b>CKGB</b> Timmins, Ont.	<b>1420</b>	<b>GMJN</b> Camaguey, Cuba.	<b>1240</b>
<b>CE114</b> Santiago, Chl.	<b>1145</b>	<b>CKIC</b> Wolfville, N. S.	<b>1010</b>	<b>CMJO</b> Ciego de Avila, Cuba.	<b>1010</b>
<b>CE118</b> Santiago, Chl.	<b>1185</b>	<b>CKLW</b> Windsor, Ont.	<b>840</b>	<b>CMJP</b> Moron, Cuba.	<b>1380</b>
<b>CE119</b> Magallanes, Chl.	<b>1190</b>	<b>CKMC</b> Cobalt, Ont.	<b>1210</b>	<b>CMK</b> Havana, Cuba.	<b>730</b>
<b>CE121</b> Valparaiso, Chl.	<b>1215</b>	<b>CKMO</b> Vancouver, B. C.	<b>1410</b>	<b>CMKC</b> Santiago, Cuba.	<b>1034</b>
<b>CE122</b> Santiago, Chl.	<b>1220</b>	<b>CKNC</b> Toronto, Ont.	<b>1030</b>	<b>CMKJ</b> Guantanamo, Cuba.	<b>1390</b>
<b>CE125</b> Valparaiso, Chl.	<b>1255</b>	<b>CKOC</b> Hamilton, Ont.	<b>1120</b>	<b>CMQ</b> Havana, Cuba.	<b>645</b>
<b>CE126</b> Santiago, Chl.	<b>1260</b>	<b>CKOV</b> Kelowna, B. C.	<b>1210</b>	<b>CMW</b> Havana, Cuba.	<b>595</b>
<b>CE128</b> Temuco, Chl.	<b>1285</b>	<b>CKPC</b> Preston, Ont.	<b>630</b>	<b>CMX</b> Havana, Cuba.	<b>875</b>
<b>CE130</b> Santiago, Chl.	<b>1305</b>	<b>CKPR</b> Fort William, Ont.	<b>930</b>	<b>CNO</b> Casablanca, Mor.	<b>963</b>
<b>CE131</b> Santiago, Chl.	<b>1315</b>	<b>CKTB</b> St. Catherine's, Ont.	<b>1200</b>	<b>CPX</b> La Paz, Bol.	<b>1250</b>
<b>CE132</b> Rancagua, Chl.	<b>1325</b>	<b>CKUA</b> Edmonton, Alta.	<b>580</b>	<b>CP4</b> La Paz, Bol.	<b>1040</b>
<b>CE134</b> Santiago, Chl.	<b>1345</b>	<b>CKWX</b> Vancouver, B. C.	<b>1010</b>	<b>CRCM</b> Montreal, Que.	<b>910</b>
<b>CE138</b> Santiago, Chl.	<b>1380</b>	<b>CKX</b> Brandon, Man.	<b>1450</b>	<b>CRGO</b> Ottawa, Ont.	<b>880</b>
<b>CE139</b> Rancagua, Chl.	<b>1390</b>	<b>CKY</b> Winnipeg, Man.	<b>780</b>	<b>CRGS</b> Chicoutimi, Que.	<b>1500</b>
<b>CE142</b> Santiago, Chl.	<b>1425</b>	<b>CKY</b> Winnipeg, Man.	<b>780</b>	<b>CRCT</b> Toronto, Ont.	<b>860</b>
<b>CE143</b> Magallanes, Chl.	<b>1430</b>	<b>CKMAB</b> Pinar del Rio, Cuba.	<b>1243</b>	<b>CRCV</b> Vancouver, B. C.	<b>1100</b>
<b>CE145</b> Rancagua, Chl.	<b>1450</b>	<b>CKMAF</b> Havana, Cuba.	<b>680</b>	<b>CSIRS</b> Oporto, Por.	<b>1448</b>
<b>CE146</b> Santiago, Chl.	<b>1465</b>	<b>CKMB</b> Kwangchow, Chn.	<b>677</b>	<b>CTIAA</b> Lisbon, Por.	<b>1058</b>
<b>CFAC</b> Calgary, Alta.	<b>930</b>	<b>CKMBC</b> Havana, Cuba.	<b>1270</b>	<b>CTIAN</b> Lisbon, Por.	<b>1058</b>
<b>CFBO</b> St. John, N. B.	<b>1210</b>	<b>CKMBD</b> Havana, Cuba.	<b>995</b>	<b>CTIBM</b> Lisbon, Por.	<b>1058</b>
<b>CFCF</b> Montreal, Que.	<b>600</b>	<b>CKMBG</b> Havana, Cuba.	<b>1048</b>	<b>CTIBO</b> Lisbon, Por.	<b>936</b>
<b>CFCH</b> North Bay, Ont.	<b>930</b>	<b>CKMBJ</b> Havana, Cuba.	<b>1147</b>	<b>CTIBP</b> Lisbon, Por.	<b>1275</b>
<b>CFCN</b> Calgary, Alta.	<b>1030</b>	<b>CKMBK</b> Havana, Cuba.	<b>1485</b>	<b>CTIDH</b> Lisbon, Por.	<b>952</b>
<b>CFCO</b> Chatham, Ont.	<b>600</b>	<b>CKMBL</b> Havana, Cuba.	<b>1445</b>	<b>CTIDS</b> Lisbon, Por.	<b>1058</b>
<b>CFCT</b> Victoria, B. C.	<b>1450</b>	<b>CKMBN</b> Havana, Cuba.	<b>1185</b>	<b>CTIEB</b> Lisbon, Por.	<b>1058</b>
<b>CFCY</b> Charlottetown, P. E. I.	<b>630</b>	<b>CKMBS</b> Havana, Cuba.	<b>795</b>	<b>CTIHK</b> Lisbon, Por.	<b>1088</b>
<b>CFJC</b> Kamloops, B. C.	<b>1310</b>	<b>CKMBW</b> Havana, Cuba.	<b>1140</b>	<b>CTIGL</b> Paredo, Por.	<b>1031</b>
<b>CFLC</b> Prescott, Ont.	<b>930</b>	<b>CKMBX</b> Havana, Cuba.	<b>1185</b>	<b>CTIQA</b> Tucuaembu, Uru.	<b>1180</b>
<b>CFNB</b> Fredericton, N. B.	<b>1030</b>	<b>CKMBY</b> Havana, Cuba.	<b>1230</b>	<b>CW32</b> Salto, Uru.	<b>1180</b>
<b>GFPL</b> London, Ont.	<b>730</b>	<b>CKMBZ</b> Havana, Cuba.	<b>1005</b>	<b>CW34</b> Salto, Uru.	<b>1229</b>
<b>GFQC</b> Saskatoon, Sask.	<b>1230</b>	<b>CMGA</b> Havana, Cuba.	<b>1230</b>	<b>CW36</b> Salto, Uru.	<b>1250</b>
<b>GFBR</b> Toronto, Ont.	<b>690</b>	<b>CMGB</b> Havana, Cuba.	<b>1048</b>	<b>CW38</b> Salto, Uru.	<b>1300</b>
<b>GFRC</b> Kingston, Ont.	<b>1510</b>	<b>CMGD</b> Havana, Cuba.	<b>925</b>	<b>CW39</b> Florida, Uru.	<b>1320</b>
<b>GFTP</b> Edmonton, Alta.	<b>1260</b>	<b>CMGF</b> Havana, Cuba.	<b>873</b>	<b>CW40</b> Paysandu, Uru.	<b>1340</b>
<b>GHAB</b> Moose Jaw, Sask.	<b>1200</b>	<b>CMGG</b> Havana, Cuba.	<b>1305</b>	<b>CW41</b> San Jose, Uru.	<b>1380</b>
<b>GHCK</b> Charlottetown, P. E. I.	<b>1310</b>	<b>CMGH</b> Havana, Cuba.	<b>1410</b>	<b>CW42</b> Artigas, Uru.	<b>1380</b>
<b>GHGS</b> Summerside, P. E. I.	<b>1120</b>	<b>CMGJ</b> Havana, Cuba.	<b>1180</b>	<b>CW43</b> Melo, Uru.	<b>1420</b>
<b>GHLP</b> Montreal, Que.	<b>1120</b>	<b>CMGM</b> Havana, Cuba.	<b>1405</b>	<b>CW44</b> Paysandu, Uru.	<b>1490</b>
<b>GHML</b> Hamilton, Ont.	<b>1010</b>	<b>CMGN</b> Havana, Cuba.	<b>1357</b>	<b>CW47</b> Tucuaembu, Uru.	<b>1480</b>
<b>GHNC</b> New Carlisle, Que.	<b>1210</b>	<b>CMCP</b> Havana, Cuba.	<b>1270</b>	<b>CW48</b> Canelones, Uru.	<b>1490</b>
<b>GHNS</b> Halifax, N. S.	<b>1050</b>	<b>CMCO</b> Havana, Cuba.	<b>1145</b>	<b>CX4</b> Montivideo, Uru.	<b>810</b>
<b>GHPR</b> St. John, N. B.	<b>1370</b>	<b>CMCQ</b> Havana, Cuba.	<b>680</b>	<b>CX6</b> Montivideo, Uru.	<b>950</b>
<b>GHRC</b> Quebec, Que.	<b>580</b>	<b>CMCR</b> Havana, Cuba.	<b>1357</b>	<b>CX8</b> Montivideo, Uru.	<b>880</b>
<b>CHSJ</b> St. John, N. B.	<b>1370</b>	<b>CMCU</b> Havana, Cuba.	<b>1100</b>	<b>CX10</b> Montivideo, Uru.	<b>790</b>

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CX12	Montivideo, Uru.	770	HAL	Budapest, Hun.	546	KBFL	Everett, Wash.	1370
CX14	Montivideo, Uru.	810	HAL2	Budapest, Hun.	1321	KFDM	Beaumont, Texas	560
CX16	Montivideo, Uru.	850	HHK	Port-au-Prince, Haiti	1920	KFDY	Brookings, S. D.	780
CX18	Montivideo, Uru.	890	HIH	San Pedro de M., D. R.	1396	KFEL	Denver, Colo.	920
CX20	Montivideo, Uru.	930	HIJ	Santo Domingo, D. R.	1195	KFEQ	St. Joseph, Mo.	680
CX22	Montivideo, Uru.	970	HIK	Santo Domingo, D. R.	598	KFGQ	Boone, Iowa	1310
CX24	Montivideo, Uru.	1010	HIZ	Santo Domingo, D. R.	1300	KFHH	Wichita, Kans.	1300
CX26	Montivideo, Uru.	1050	HJN	Bogota, Colombia	681	KFI	Los Angeles, Calif.	640
CX28	Montivideo, Uru.	1090	HJABD	Bogota, Colombia	1115	KFIO	Spokane, Wash.	1120
CX30	Montivideo, Uru.	1130	HJABE	Bogota, Colombia	1200	KFIZ	Grand Lac, Wis.	1420
CX32	Montivideo, Uru.	1170	HJABH	Bogota, Colombia	1000	KFJB	Marshalltown, Iowa	1200
CX34	Montivideo, Uru.	1210	HSP1	Bangkok, Siam	857	KFJI	Klamath Falls, Ore.	1210
CX36	Montivideo, Uru.	1250	HSP3	Bangkok, Siam	938	KFJM	Grand Forks, N. D.	1370
CX38	Montivideo, Uru.	1290	HSTP7	Bangkok, Siam	750	KFJR	Portland, Ore.	1300
CX40	Montivideo, Uru.	1330	IFI	Firenze, I.	610	KFJZ	Fort Worth, Texas	1370
CX42	Montivideo, Uru.	1370	IGE	Genoa, I.	986	KFKA	Greeley, Colo.	860
CX44	Montivideo, Uru.	1410	IMI	Milan, I.	814	KFKU	Lawrence, Kans.	1220
CX46	Montivideo, Uru.	1450	INA	Naples, I.	1104	KFNF	Shenandoah, Iowa	990
CX48	Montivideo, Uru.	1490	IPA	Palermo, I.	565	KFOR	Lincoln, Neb.	1250
EAJ1	Barcelona, Sp.	795	I1BA	Bari, I.	1059	KFOX	Long Beach, Calif.	1210
EAJ2	Madrid, Sp.	731	I1BZ	Bolzano, I.	536	KFPI	Dublin, Texas	1310
EAJ3	Valencia, Sp.	850	I1RO	Rome, I.	713	KFPM	Greenville, Texas	1310
EAJ4	Santiago, Sp.	492	I1TO	Turin, I.	1140	KFPW	Fort Smith, Ark.	1210
EAJ5	Seville, Sp.	731	I1TR	Trieste, I.	1222	KFPY	Spokane, Wash.	890
EAJ6	Pampeluna, Sp.	1492	JFAK	Taihoku, For.	670	KFQD	Anchorage, Alaska	600
EAJ7	Madrid, Sp.	1095	JFBK	Tainan, For.	720	KFRQ	San Francisco, Calif.	610
EAJ8	San Sebastian, Sp.	1258	JOAG	Nagasaki, J.	903	KFRU	Columbia, Mo.	630
EAJ9	Malaga, Sp.	1492	JOAK-1	Tokyo, J.	870	KFSB	San Diego, Calif.	680
EAJ10	Saragossa, Sp.	1492	JOAK-2	Tokyo, J.	690	KFSG	Los Angeles, Calif.	1120
EAJ11	Tarragona, Sp.	1500	JOBG	Maebashi, J.	970	KFUO	St. Louis, Mo.	550
EAJ12	Alicoy, Sp.	1492	JOBK-1	Osaka, J.	750	KFVD	Los Angeles, Calif.	1000
EAJ13	Palma de Mirca, Sp.	1492	JOBK-2	Osaka, J.	1085	KFVS	Cape Girardeau, Mo.	1210
EAJ14	Castillon, Sp.	1500	JOGG	Asahikawa, J.	855	KFWB	Hollywood, Calif.	950
EAJ15	Barcelona, Sp.	1022	JOJK-1	Nagoya, J.	810	KFWI	San Francisco, Calif.	960
EAJ16	Grenada, Sp.	1492	JOJK-2	Nagoya, J.	1175	KFXD	Nampa, Idaho	1200
EAJ17	Mercia, Sp.	1492	JODG	Hamamatsu, J.	635	KFXF	Denver, Colo.	920
EAJ18	Lagrona, Sp.	1193	JODK-1	Keijo, Ko.	800	KFXJ	Grand Jct., Colo.	1200
EAJ19	Oviedo, Sp.	1022	JODK-2	Keijo, Ko.	610	KFXM	San Bernardino, Calif.	1210
EAJ20	Sabadell, Sp.	1492	JOFG	Fukui, J.	990	KFYR	Oklahoma City, Okla.	1310
EAJ21	Melilla, Sp.	1492	JOJK	Hiroshima, J.	850	KFYO	Lubbock, Texas	1310
EAJ22	Salamanca, Sp.	662	JOJK	Kumamoto, J.	770	KFYR	Bismarck, N. D.	550
EAJ23	Gandia, Sp.	1492	JOHK	Sendai, J.	780	KGA	Spokane, Wash.	1470
EAJ24	Cordoba, Sp.	1492	JOIK	Sapporo, J.	830	KGAR	Tucson, Ariz.	1370
EAJ25	Tarrasa, Sp.	1500	JOJK	Kanazawa, J.	710	KGB	San Diego, Calif.	1330
EAJ26	Antequerra, Sp.	1500	JOJK	Okayama, J.	700	KGBU	Ketchikan, Alaska	900
EAJ27	Burgos, Sp.	1492	JOJK	Fukuoka, J.	680	KGBX	Springfield, Mo.	1310
EAJ28	Bilbao, Sp.	1492	JONK	Nagano, J.	940	KGBZ	York, Neb.	930
EAJ29	Alcala de Hrs., Sp.	1500	JOOK	Kyoto, J.	960	KGCA	Decorah, Iowa	1270
EAJ30	Onteniente, Sp.	1500	JOJK	Shizuoka, J.	780	KGCR	Watertown, S. D.	1210
EAJ31	Alicante, Sp.	1492	JOJK	Niigata, J.	920	KGCU	Mandan, N. D.	1240
EAJ32	Santander, Sp.	1500	JORK	Kochi, J.	720	KGCV	Wolf Point, Mont.	1310
EAJ33	Tarragona, Sp.	1492	JOJK	Kokura, J.	735	KGDE	Fergus Falls, Minn.	1200
EAJ34	Gijon, Sp.	1492	JOJK	Matsuye, J.	625	KGDM	Steckton, Calif.	1100
EAJ35	Villanueva, Sp.	1500	JOJK	Akita, J.	645	KGDM	Huron, S. D.	1340
EAJ36	Jatiba, Sp.	1500	JOJK	Hakodate, J.	890	KGEG	Yuma, Colo.	1200
EAJ37	Linares, Sp.	1500	JOJK	Tokushima, J.	980	KGER	Long Beach, Calif.	1360
EAJ38	Gerona, Sp.	1500	JOJK	Dairen, Manch.	652	KGEZ	Kalispell, Mont.	1310
EAJ39	Badalona, Sp.	1492	KABC	San Antonio, Texas	1420	KGFF	Shawnee, Okla.	1420
EAJ40	Pontevedra, Sp.	1500	KALE	Portland, Ore.	1300	KGFG	Oklahoma City, Okla.	1370
EAJ41	La Corogna, Sp.	1492	KARK	Little Rock, Ark.	890	KGFI	Corpus Christi, Texas	1500
EAJ42	Lleida, Sp.	1492	KASA	Elk City, Okla.	1210	KGFJ	Los Angeles, Calif.	1500
EAJ43	Santa Cruz de Tnrf., Sp.	1492	KBPS	Portland, Ore.	1420	KGFK	Moorhead, Minn.	1200
EAJ44	Albaceta, Sp.	1492	KBTM	Jonesboro, Ark.	1200	KGFL	Roswell, N. M.	1370
EAJ45	Senia, Sp.	1500	KCMC	Texarkana, Ark.	1420	KGFV	Kearney, Neb.	1310
EAJ46	Ceuta, Sp.	1492	KCRC	Enid, Okla.	1370	KGFY	Pierre, S. D.	830
EAJ47	Valladolid, Sp.	1492	KCRJ	Jerome, Ariz.	1310	KGGC	San Francisco, Calif.	1420
EAJ48	Pontevedra, Sp.	1492	KDB	Santa Barbara, Calif.	1500	KGGF	Coffeyville, Kans.	1010
EAJ49	Toledo, Sp.	1500	KDFN	Casper, Wyo.	1440	KGGM	Albuquerque, N. M.	1230
EAJ50	Las Palmas, Sp.	1500	KDKA	Pittsburgh, Pa.	980	KGHF	Pueblo, Colo.	1320
EAJ51	Manresa, Sp.	1492	KDLR	Devils Lake, N. D.	1210	KGHI	Little Rock, Ark.	1200
EAJ52	Badajoz, Sp.	1492	KDYL	Salt Lake City, Utah	1290	KGHL	Billings, Mont.	950
FFZ	Shanghai, Chn.	1400	KECA	Los Angeles, Calif.	1430	KGIR	Butte, Mont.	1200
FQN	St. Pierre, Miq.	574	KELW	Burbank, Calif.	780	KGIW	Alamasa, Colo.	1340
F8CG	Paris, F.	810	KERN	Bakersfield, Calif.	1370	KGIX	Las Vegas, Nev.	1420
F31GD	Saigon, Indo.	840	KEX	Portland, Ore.	1180	KGKB	Tyler, Texas	1500
HAC	Budapest, Hun.	548	KFAB	Lincoln, Neb.	770	KGKL	San Angelo, Texas	1370
HAE	Nyiregyhaza, Hun.	1122	KFAC	Los Angeles, Calif.	1300	KGKO	Wichita Falls, Texas	670
HAE2	Magyarovar, Hun.	1438	KFBB	Great Falls, Mont.	1280	KGKY	Scottsbluff, Neb.	1500
HAE3	Miskolc, Hun.	1438	KFBI	Abilene, Kans.	1050	KGMB	Honolulu, T. H.	1320
HAE4	Pecs, Hun.	1438	KFBK	Sacramento, Calif.	1310	KGNF	North Platte, Neb.	1430



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KGNO	Dodge City, Kans.	1340	KSTP	St. Paul, Minn.	1460	LV1	San Juan, Arg.	620
KGQ	San Francisco, Calif.	790	KSUN	Lowell, Ariz.	1200	LV2	Cordoba, Arg.	920
KGRS	Amarillo, Texas	1410	KTAB	San Francisco, Calif.	560	LV5	San Juan, Arg.	1120
KGU	Honolulu, T. H.	750	KTAR	Phoenix, Ariz.	820	LV7	Tucuman, Arg.	820
KGVO	Missoula, Mont.	1200	KTAT	Fort Worth, Texas	1240	LV10	Salta, Arg.	900
KGW	Portland, Ore.	620	KTBS	Shreveport, La.	1450	MOHB	Buenos Aires, Arg.	674
KGY	Olympia, Wash.	1210	KTFI	Twin Falls, Idaho	1240	MRD	Harbin, Mnch.	1175
KHJ	Los Angeles, Calif.	900	KTHS	Hot Springs, Ark.	1050	MTBY	Toulouse, Fr.	897
KHQ	Spokane, Wash.	590	KTM	Los Angeles, Calif.	780	MTFY	Harbin, Mnch.	674
KICA	Clovis, N. M.	1370	KTRB	Modesto, Calif.	740	MYCY	Skinkyo, Mnch.	570
KICK	Carter Lake, Iowa	1420	KTRH	Houston, Texas	630	NAA	Arlington, Va.	690
KID	Idaho Falls, Idaho	1320	KTSA	San Antonio, Texas	1290	OAX	Lima, Peru	750
KIDO	Boise, Idaho	1350	KTSM	El Paso, Texas	1310	OFA	Helsinki, Fin.	895
KIDW	Lamar, Colo.	1420	KTUL	Tulsa, Okla.	1400	OFB	Jacobstad, Fin.	1500
KIEM	Eureka, Calif.	1210	KTW	Seattle, Wash.	1220	OFD	Pori, Fin.	749
KIEV	Glendale, Calif.	850	KUJ	Walla Walla, Wash.	1370	OFG	Tampere, Fin.	1450
KIFH	Juneau, Alaska	1310	KUMA	Yuma, Ariz.	1420	OFH	Abo, Fin.	527
KIFS	Fort Klamath, Ore.	1518	KUOA	Fayetteville, Ark.	1250	OFI	Vipuri, Fin.	527
KIT	Yakima, Wash.	1310	KUSD	Vermillion, S. D.	890	OFR	Tampere, Fin.	1420
KJBS	San Francisco, Calif.	1070	KVI	Tacoma, Wash.	570	OKB	Brno, Cz.	922
KJR	Seattle, Wash.	970	KVL	Seattle, Wash.	1370	OK K	Kosice, Cz.	1113
KLCN	Blytheville, Ark.	1290	KVOA	Tucson, Ariz.	1250	OKP	Praha, Cz.	538
KLO	Ogden, Utah	1400	KVOO	Tulsa, Okla.	1140	OKR	Bratislava, Cz.	1094
KLPM	Minot, N. D.	1240	KVOR	Colorado Springs, Colo.	1270	ON4CE	Chatelineau, Blg.	1402
KLRA	Little Rock, Ark.	1390	KVOS	Bellingham, Wash.	1200	ON4CE	Verviers, Blg.	1500
KLS	Oakland, Calif.	1440	KWCR	Cedar Rapids, Iowa	1430	ON4EB	Antwerp, Blg.	1492
KLUF	Galveston, Texas	1370	KWEA	Shreveport, La.	1210	ON4EX	Ottomont, Blg.	1285
KLX	Oakland, Calif.	880	KWFF	Hilo, Hawaii	1210	ON4FG	Dampremy, Blg.	1285
KLZ	Denver, Colo.	560	KWG	Stockton, Calif.	1200	ON4FO	Brussels, Blg.	1285
KMA	Shenandoah, Iowa	930	KWJJ	Portland, Ore.	1040	ON4GT	Brussels, Blg.	1285
KMAC	San Antonio, Texas	1370	KWK	St. Louis, Mo.	1350	ON4RC	Brussels, Blg.	1285
KMBC	Kansas City, Mo.	850	KWKC	Kansas City, Mo.	1370	ON4RG	Ghent, Blg.	1285
KMED	Medford, Ore.	1310	KWKC	Shreveport, La.	850	ON4RW	Liege, Blg.	1500
KMJJ	Fresno, Calif.	580	KWLC	Decorah, Iowa	1270	PFBI	Hilversum, Hol.	895
KMLB	Monroe, La.	1200	KWSC	Pullman, Wash.	1228	PH9	Amsterdam, Hol.	1013
KMMJ	Clay Center, Neb.	740	KWTO	Springfield, Mo.	580	PP	Paris, Fr.	959
KMO	Tacoma, Wash.	1330	KWWG	Brownsville, Texas	1260	PRAW	Campinas, Brz.	1170
KMOX	St. Louis, Mo.	1090	KWYO	Sheridan, Wyo.	1370	PR2	Rio de Janeiro, Brz.	750
KMPK	Beverly Hills, Calif.	710	KXA	Seattle, Wash.	760	PR3	Rio de Janeiro, Brz.	850
KMTR	Hollywood, Calif.	670	KXL	Portland, Ore.	1420	PR4	Bahia, Brz.	1000
KNOW	Austin, Texas	1500	KXO	El Centro, Calif.	1500	PR5	Sao Paulo, Brz.	1295
KNX	Hollywood, Calif.	1050	KXRO	Aberdeen, Wash.	1310	PR6	Sao Paulo, Brz.	815
KOA	Denver, Colo.	830	KXYZ	Houston, Texas	1230	PR7	Ribeirao Preto, Brz.	1153
KOAC	Corvallis, Ore.	550	KYA	San Francisco, Calif.	1020	PR8	Recife, Brz.	750
KOB	Albuquerque, N. M.	1180	KYW	Chicago, Ill.	1020	PR9	Rio de Janeiro, Brz.	1080
KOH	Reno, Nev.	1380	KZRM	Manila, P. I.	618.5	PRB2	Curitiba, Brz.	892
KOIL	Council Bluffs, Iowa	1260	LKA	Aalesund, Nor.	850	PRB3	Juiz de Fora, Brz.	857
KOIN	Portland, Ore.	940	LKB	Bergen, Nor.	850	PRB4	Santos, Brz.	1000
KOL	Seattle, Wash.	1270	LKD	Bodo, Nor.	1276	PRB5	Sao Paulo, Brz.	1110
KOMA	Oklahoma City, Okla.	1480	LKF	Fredrikstad, Nor.	828	PRB7	Rio de Janeiro, Brz.	800
KOMO	Seattle, Wash.	920	LKH	Hamar, Nor.	519	PRB8	Mogy das Cruzes, Brz.	1000
KONO	San Antonio, Texas	1370	LKK	Kristianssand, Nor.	1274	PRB9	Sao Paulo, Brz.	1017
KOOS	Marshallfield, Ore.	1370	LKM	Tromsøe, Nor.	1357	PRC3	Pelotas, Brz.	920
KORE	Eugene, Ore.	1420	LKN	Notodden, Nor.	1348	PRC4	Amparo, Brz.	1304
KOTN	Pine Bluff, Ark.	1500	LKP	Porsgrund, Nor.	850	PRC5	Belem, Brz.	1360
KOY	Phoenix, Ariz.	1390	LKR	Rjukan, Nor.	1348	PRC6	Rio de Janeiro, Brz.	965
KPCB	Seattle, Wash.	650	LKS	Stavanger, Nor.	976	PRC7	Bello Horizonte, Brz.	1090
KPJM	Prescott, Ariz.	1500	LR2	Buenos Aires, Arg.	1210	PRD2	Sao Paulo, Brz.	935
KPO	San Francisco, Calif.	680	LR3	Buenos Aires, Arg.	950	PRG2	Porto Alegre, Brz.	1090
KPOF	Denver, Colo.	880	LR4	Buenos Aires, Arg.	830	PRP10	Porto, Prp.	1249
KPPC	Pasadena, Calif.	1210	LR5	Buenos Aires, Arg.	870	RDV	San Salvador, E. S.	680
KPQ	Wenatchee, Wash.	1500	LR6	Buenos Aires, Arg.	1150	RW9	Kiev, UR	722
KPRC	Houston, Texas	920	LR8	Buenos Aires, Arg.	1030	RV10	Minsk, UR	722
KQV	Pittsburgh, Pa.	1380	LR9	Buenos Aires, Arg.	790	RW13	Odesa, UR	968
KQW	San Jose, Calif.	1010	LR10	Buenos Aires, Arg.	1190	RW17	Kazan, UR	644
KRE	Berkeley, Calif.	1370	LS2	Buenos Aires, Arg.	630	RW20	Khar'kov, UR	1185
KREG	Santa Ana, Calif.	1500	LS3	Buenos Aires, Arg.	670	RW22	Ufa, UR	617
KRGV	Hartlingen, Texas	1260	LS4	Buenos Aires, Arg.	1110	RW23	Groznyi, UR	678
KRKD	Los Angeles, Calif.	1120	LS5	Buenos Aires, Arg.	1350	RW24	Smolensk, UR	531
KRLD	Dallas, Texas	1040	LS6	Buenos Aires, Arg.	1230	RW26	Stalino, UR	776
KRMD	Shreveport, La.	1310	LS8	Buenos Aires, Arg.	1270	RW27	Makhatch-Kala, UR	689
KROW	Oakland, Calif.	930	LS9	Buenos Aires, Arg.	590	RW28	Vladivostok, UR	635
KRSC	Seattle, Wash.	1120	LS10	Buenos Aires, Arg.	780	RW28	Vladivostok, UR	725
KSAC	Manhattan, Kans.	580	LT1	Rosario, Arg.	1080	RW30	Dnepropetrovsk, UR	913
KSBJ	Sioux City, Iowa	1330	LT3	Rosario, Arg.	780	RW31	Ivanvoo-Voznesensk, UR	625
KSD	St. Louis, Mo.	550	LT5	Resistencia, Arg.	1160	RW33	Krasnodar, UR	1050
KSEI	Pocatello, Idaho	890	LT8	Rosario, Arg.	840	RW35	Astrakhan, UR	589
KSL	Salt Lake City, Utah	1130	LT9	Santa Fe, Arg.	1060	RW36	Arkhanelsk, UR	770
KSO	Des Moines, Iowa	1320	LU2	Bahia Blanca, Arg.	800	RW37	Moskva, UR	792.5
KSOO	Sioux Falls, S. D.	1110	LU7	Bahia Blanca, Arg.	1280			

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RW38	Alexandrovsk, USSR.	580	WABC	New York, N. Y.	860	WDGY	Minneapolis, Minn.	1180
RW39	Moskva Stalina, USSR.	832	WABI	Bangor, Maine	1200	WDNC	Durham, N. C.	1500
RW40	Gomel, USSR.	959	WACO	Waco, Texas	1420	WDOD	Chattanooga, Tenn.	1280
RW41	Sykytykar, USSR.	563	WADC	Akron, Ohio	1320	WDRC	Hartford, Conn.	1330
RW42	Gorki, USSR.	598	WAGM	Presque Isle, Mo.	1420	WDSU	New Orleans, La.	1250
RW46	Karaganda, USSR.	653	WAIU	Columbus, Ohio	640	WDZ	Tuscola, Ill.	1070
RW48	Karaganda, USSR.	688.5	WALA	Mobile, Ala.	1410	WEAF	New York, N. Y.	860
RW48	Tomsk, USSR.	554	WALR	Zanesville, Ohio	1210	WEAN	Providence, R. I.	780
RW51	Natchik, USSR.	748.1	WAMC	Anniston, Ala.	1420	WEBC	Superior, Wis.	1290
RW52	Simferopol, USSR.	859	WAML	Laurel, Miss.	1310	WEBC	Harrisburg, Ill.	1210
RW55	Engels, USSR.	959	WAPI	Birmingham, Ala.	1140	WEBR	Buffalo, N. Y.	1310
RW56	Penza, USSR.	640	WARD	Brooklyn, N. Y.	1400	WEDC	Chicago, Ill.	1210
RW57	Tiraspol, USSR.	1068	WASH	Grand Rapids, Mich.	1270	WEED	Greenville, N. C.	1420
RW64	Vladikavkaz, USSR.	752	WATR	Waterbury, Conn.	1190	WEEL	Boston, Mass.	590
RW68	Tchellabinsk, USSR.	824	WAVE	Louisville, Ky.	940	WEUU	Reading, Pa.	830
RW69	Ijevsk, USSR.	825	WAWZ	Zarephath, N. J.	1350	WEHC	Charlottesville, Va.	1350
RW70	Leningrad, USSR.	1040	WAZL	Hazleton, Pa.	1420	WEHS	Cicero, Ill.	1420
RW74	Tcheboksary, USSR.	680	WBAA	West Lafayette, Ind.	1400	WELL	Battle Creek, Mich.	1420
RW75	Vinnitza, USSR.	1095	WBAL	Baltimore, Md.	1080	WENC	Albany, Ga.	1420
SBA	Stockholm, Swe.	704	WBAP	Fort Worth, Texas	800	WENR	Chicago, Ill.	870
SBB	Goteborg, Swe.	941	WBAX	Wilkes-Barre, Pa.	1210	WESG	Elmira, N. Y.	680
SBC	Malmö, Swe.	1312	WBBC	Brooklyn, N. Y.	1400	WEVD	New York, N. Y.	1300
SBD	Sundsvall, Swe.	601	WBBL	Richmond, Va.	1210	WEW	St. Louis, Mo.	760
SBH	Horby, Swe.	1131	WBBM	Chicago, Ill.	770	WEXL	Royal Oak, Mich.	1310
SBI	Norrköping, Swe.	1312	WBBR	Brooklyn, N. Y.	1300	WFAA	Dallas, Texas	800
SBJ	Trollhatta, Swe.	1312	WBBZ	Ponca City, Okla.	1200	WFAB	New York, N. Y.	1300
SBK	Karlstad, Swe.	1312	WBCC	Bay City, Mich.	1410	WFAM	South Bend, Ind.	1200
SCA	Boras, Swe.	1450	WBEN	Buffalo, N. Y.	900	WFAS	White Plains, N. Y.	1210
SCB	Eskilstuna, Swe.	1240	WBEO	Marquette, Mich.	1310	WFBC	Greenville, S. C.	1200
SCC	Falun, Swe.	1086	WBHS	Huntsville, Ala.	1200	WFBE	Cincinnati, Ohio	1200
SCD	Gävle, Swe.	1483	WBIG	Greensboro, N. C.	1440	WFBQ	Altoona, Pa.	1310
SCF	Hattnestad, Swe.	1391	WBNO	New Orleans, La.	1200	WFLB	Syracuse, N. Y.	1360
SCG	Helsingborg, Swe.	1375	WBNS	Columbus, Ohio	1430	WFLM	Indianapolis, Ind.	1230
SCQ	Jenköping, Swe.	1384	WRNX	New York, N. Y.	1350	WFRB	Baltimore, Md.	1270
SCI	Kalmar, Swe.	1515	WBOQ	New York, N. Y.	860	WFDF	Flint, Mich.	1310
SCJ	Karlskrona, Swe.	1456	WBOW	Terre Haute, Ind.	1310	WFDA	Manchester, N. H.	1430
SCL	Kiruna, Swe.	1530	WBRC	Birmingham, Ala.	930	WFI	Philadelphia, Pa.	560
SCM	Kristianhamn, Swe.	1258	WBRE	Wilkes-Barre, Pa.	1310	WFLA	Clearwater, Fla.	620
SCN	Malmberget, Swe.	1500	WBSO	Babson Park, Mass.	920	WGAL	Lancaster, Pa.	1500
SCP	Saffle, Swe.	704	WBT	Charlotte, N. C.	1080	WGAR	Cleveland, Ohio	1450
SCR	Uddevalle, Swe.	1240	WBTM	Danville, Va.	1370	WGBB	Freeport, N. Y.	1210
SCS	Umea, Swe.	1393	WBZ	Boston, Mass.	990	WGBF	Evansville, Ind.	630
SCT	Upsala, Swe.	1393	WBZA	Springfield, Mass.	980	WGCI	Soranton, Pa.	880
SCU	Varberg, Swe.	1493	WCAC	Starrs, Conn.	600	WGBM	Mississippi City, Miss.	1210
SCV	Orrebro, Swe.	1240	WCAD	Canton, N. Y.	1220	WGCP	Newark, N. J.	1250
SCW	Ornskoldsvik, Swe.	1258	WCAE	Pittsburgh, Pa.	1220	WGES	Chicago, Ill.	1360
SPTT	Trasburg, F.	1411	WCAL	Northfield, Minn.	1250	WGH	Newport News, Va.	1310
TGW	Guatemala, Gna.	859	WCAM	Camden, N. J.	1280	WGL	Fort Wayne, Ind.	1370
TGX	Guatemala City	1130	WCAP	Baltimore, Md.	600	WGLC	Hudson Falls, N. Y.	1370
TIGR	San Jose, C. R.	1380	WCAP	Asbury Park, N. J.	1280	WGN	Chicago, Ill.	720
TIEA	San Jose, C. R.	912	WCAT	Rapid City, S. D.	1200	WGNR	Chester, N. Y.	1210
TIEP	San Jose, C. R.	833	WCAU	Philadelphia, Pa.	1170	WGRY	Buffalo, N. Y.	550
TIFB	San Jose, C. R.	1450	WCAZ	Burlington, Vt.	1200	WGST	Atlanta, Ga.	890
TIFS	Cartago, C. R.	714	WCAZ	Carthage, Ill.	1070	WGY	Schenectady, N. Y.	790
TIGA	Cartago, C. R.	1441	WCBA	Allentown, Pa.	1440	WHA	Madison, Wis.	940
TIGP	San Jose, C. R.	1014	WCBD	Zion, Ill.	1080	WHAD	Milwaukee, Wis.	1120
TIRCA	San Jose, C. R.	800	WCBM	Baltimore, Md.	1370	WHAM	Rochester, N. Y.	1150
TISO	San Jose, C. R.	1100	WCBS	Springfield, Ill.	1210	WHAS	Louisville, Ky.	820
TITV	San Jose, C. R.	550	WCFO	Minneapolis, Minn.	810	WHAT	Philadelphia, Pa.	1310
TIVL	San Jose, C. R.	989	WCFL	Chicago, Ill.	970	WHAZ	Troy, N. Y.	1300
TIXA	San Jose, C. R.	869	WCHS	Charleston, W. Va.	590	WHB	Kansas City, Mo.	860
TUA	Tunis, Tun.	614	WCKY	Covington, Ky.	1490	WHBC	Canton, Ohio	1200
VAS	Glace Bay, N. S.	1278	WCLO	Janesville, Wis.	1200	WHBD	Mount Orab, Ohio	1370
VESEK	Montmagny, Que.	685	WCLS	Joliet, Ill.	1310	WHBL	Rock Island, Ill.	1210
VOAC	St. John's, N. F.	1195	WCNW	Brooklyn, N. Y.	1500	WHBF	Sheboygan, Wis.	1410
VOAS	St. John's, N. F.	1300	WCOC	Pensacola, Fla.	1340	WHBG	Memphis, Tenn.	1370
VOGY	St. John's, N. F.	940	WCOC	Meridian, Miss.	880	WHBU	Anderson, Ind.	1210
VOKV	St. John's, N. F.	1050	WCOR	Chicago, Ill.	1210	WHBY	Green Bay, Wis.	1200
VONF	St. John's, N. F.	1085	WCSC	Charleston, S. C.	1380	WHDF	Calumet, Mich.	1370
VOWR	St. John's, N. F.	1195	WCSS	Portland, Me.	940	WHDH	Boston, Mass.	830
VQ7LO	Nairobi, Ken.	700	WDAA	Tampa, Fla.	1220	WHDL	Tupper Lake, N. Y.	1420
VUB	Bombay, In.	750	WDAA	Kansas City, Mo.	610	WHED	Portsmouth, N. H.	740
VUC	Calcutta, In.	840	WDAG	Amarillo, Texas	1410	WHEC	Rochester, N. Y.	1430
VUL	Lahore, In.	810	WDAA	El Paso, Texas	1310	WHFF	Kosciusko, Miss.	1500
VUM	Madras, In.	1200	WDAS	Philadelphia, Pa.	1370	WHET	Dothan, Ala.	1370
WAAB	Boston, Mass.	770	WDAY	Fargo, N. D.	940	WHFC	Cicero, Ill.	1420
WAAF	Chicago, Ill.	1410	WDBJ	Roanoke, Va.	930	WHIS	Bluefield, W. Va.	1410
WAAT	Chicago, Ill.	920	WDBO	Orlando, Fla.	680	WHK	Cleveland, Ohio	1380
WAAW	Jersey City, N. J.	940	WDEL	Wilmington, Del.	1120	WHN	New York, N. Y.	1010
	Omaha, Neb.	860	WDEV	Waterbury, Vt.	650	WHO	Des Moines, Iowa	1000

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WHOM Jersey City, N. J.	1450	WMAZ Macon, Ga.	1180	WSAN Allentown, Pa.	1440
WHP Harrisburg, Pa.	1430	WMBC Detroit, Mich.	1420	WSAR Fall River, Mass.	1450
WIBA Madison, Wis.	1280	WMBD Peoria, Ill.	1440	WSAZ Huntington, W. Va.	1190
WIBG Glenside, Pa.	970	WMBG Richmond, Va.	1210	WSB Atlanta, Ga.	740
WIBM Jackson, Mich.	1370	WMBH Joplin, Mo.	1420	WSBC Chicago, Ill.	1210
WIBU Fayette, Wis.	1210	WMBI Chicago, Ill.	1080	WSBT South Bend, Ind.	1230
WIBW Topeka, Kans.	680	WMBM Auburn, N. Y.	1310	WSEN Columbus, Ohio	1210
WICC Bridgeport, Conn.	1200	WMBQ Brooklyn, N. Y.	1500	WSFA Montgomery, Ala.	1410
WIL St. Louis, Mo.	900	WMBR Jacksonville, Fla.	1370	WSFN Birmingham, Ala.	1310
WILL Urbana, Ill.	890	WMC Memphis, Tenn.	780	WSI X Springfield, Tenn.	1210
WILM Wilmington, Del.	1420	WMCA New York, N. Y.	670	WSJS Winston-Salem, N. C.	1310
WIND Gary, Ind.	580	WMCE Chelsea, Mass.	690	WSM Nashville, Tenn.	1320
WINS New York, N. Y.	1180	WMFN Fairmont, W. Va.	690	WSMB New Orleans, La.	1250
WIOD Miami, Fla.	1300	WMPC Lapeer, Mich.	1200	WSMK Dayton, Ohio	1380
WIP Philadelphia, Pa.	610	WMT Waterloo, Iowa	600	WSOC Charlotte, N. C.	1210
WIS Columbia, S. C.	1010	WMAC Boston, Mass.	1230	WSPA Spartanburg, S. C.	1420
WISN Milwaukee, Wis.	1120	WNAD Norman, Okla.	1010	WSPD Toledo, Ohio	1340
WJAC Johnston, Pa.	1310	WNAX Yankton, S. D.	570	WSUI Iowa City, Iowa	880
WJAG Norfolk, Neb.	1060	WNBF Binghamton, N. Y.	1600	WSUN St. Petersburg, Fla.	820
WJAR Providence, R. I.	890	WNBH New Bedford, Mass.	1310	WSVS Buffalo, N. Y.	1370
WJAS Pittsburgh, Pa.	1280	WNBO Silver Haven, Pa.	1400	WSYB Rutland, Vt.	1600
WJAX Jacksonville, Fla.	900	WNBR Memphis, Tenn.	1400	WSYR Syracuse, N. Y.	670
WJAY Cleveland, Ohio	610	WNBW Carbondale, Pa.	1200	WTAD Quincy, Ill.	1440
WJBC LaSalle, Ill.	1200	WNBX Springfield, Vt.	1280	WTAG Worcester, Mass.	580
WJBI Red Bank, N. J.	1210	WNBZ Saranac Lake, N. Y.	1290	WTAM Cleveland, Ohio	1070
WJBK Detroit, Mich.	1500	WNEL San Juan, P. R.	1290	WTAQ Eau Claire, Wis.	1330
WJBL Decatur, Ill.	1200	WNEW Newark, N. J.	1250	WTAR Norfolk, Va.	780
WJBO Baton Rouge, La.	1420	WNOX Knoxville, Tenn.	580	WTAW College Station, Texas	1120
WJBW New Orleans, La.	1200	WNRA Muscogee Shoals, Ala.	1420	WTAX Springfield, Ill.	1210
WJBY Gadsden, Ala.	1200	WNYC New York, N. Y.	310	WTBO Cumberland, Md.	1420
WJDX Jackson, Miss.	1210	WOAI San Antonio, Texas	1190	WTEL Philadelphia, Pa.	1310
WJFJ Hagerstown, Md.	1270	WOCL Jamestown, N. Y.	1210	WTFI Athens, Ga.	1450
WJEM Tupelo, Miss.	980	WOI Ames, Iowa	840	WTFI Hartford, Conn.	1040
WJIM Lansing, Mich.	1210	WOKO Albany, N. Y.	1430	WTJS Jackson, Tenn.	1310
WJJD Chicago, Ill.	1130	WOL Washington, D. C.	1310	WTMJ Milwaukee, Wis.	820
WJMS Ironwood, Mich.	1420	WOMT Manitowoc, Wis.	1210	WTNJ Trenton, N. J.	1280
WJR Detroit, Mich.	750	WOOD Grand Rapids, Mich.	1270	WTOC Savannah, Ga.	1280
WJSV Washington, D. C.	1480	WOPI Bristol, Tenn.	1500	WTRC Elkhart, Ind.	1310
WJTL Atlanta, Ga.	1370	WOQK Kansas City, Mo.	1300	WTFW Brooklyn, N. Y.	1400
WJWL Akron, Ohio	1210	WOR Newark, N. J.	710	WVAE Hammond, Ind.	1200
WJZ New York, N. Y.	780	WORC Worcester, Mass.	1280	WWJ Detroit, Mich.	920
WKAQ San Juan, P. R.	1340	WORS York, Pa.	1000	WWL New Orleans, La.	850
WKAR East Lansing, Mich.	1040	WOS Jefferson City, Mo.	630	WWV Asheville, N. C.	670
WKBB East Dubuque, Ill.	1500	WOSU Columbus, Ohio	570	WWRL Woodside, N. Y.	1600
WKBF Indianapolis, Ind.	1400	WOV New York, N. Y.	1130	WWSW Pittsburgh, Pa.	1600
WKBN LaCrosse, Wis.	1380	WOW Omaha, Neb.	590	WVVA Wheeling, W. Va.	1160
WKBI Cicero, Ill.	1420	WOWO Fort Wayne, Ind.	1180	WXYZ Detroit, Mich.	1240
WKBN Youngstown, Ohio	570	WPAD Paducah, Ky.	1420	XEA Guadalajara, Jal.	1200
WKBO Harrisburg, Pa.	1200	WPEN Philadelphia, Pa.	1500	XEAB Nuevo Laredo, Tams.	1210
WKBV Richmond, Ind.	1500	WPFB Hattiesburg, Miss.	1370	XEAC San Luis Potosi, S.L.P.	1295
WKBW Buffalo, N. Y.	1480	WPG Atlantic City, N. J.	1100	XEAE Tijuana, L. C.	980
WKBJ Ludington, Mich.	1500	WPHR Petersburg, Va.	1200	XEAF Nogales, Son.	1080
WKEU LaGrange, Ga.	1600	WPRO Providence, R. I.	1210	XEAI Mexico City, D. F.	1420
WKFI Greenwood, Miss.	1210	WPTT Raleigh, N. C.	680	XEAL Mexico City, D. F.	660
WKJC Lancaster, Pa.	1200	WQAM Miami, Fla.	680	XEAO Mexicali, L. C.	660
WKOK Sunbury, Pa.	1210	WQAN Scranton, Pa.	880	XEAW Reynosa, Tams.	950
WKRC Cincinnati, Ohio	650	WQBC Vicksburg, Miss.	1380	XEAX Leon, Guan.	1420
WKY Oklahoma City, Okla.	900	WQDM St. Albans, Vt.	1370	XEB Mexico City, D. F.	1010
WKZO Kalamazoo, Mich.	590	WQDX Thomasville, Ga.	1210	XEC Agua Caliente, L. C.	1280
WLAC Nashville, Tenn.	1470	WRAK Williamsport, Pa.	1370	XEC Toluca, D. F.	1200
WLAP Lexington, Ky.	1420	WRAW Reading, Pa.	1310	XECW Mexico City, D. F.	1310
WLB Minneapolis, Minn.	1250	WRAX Philadelphia, Pa.	1020	XED Guadalajara, Jal.	1160
WIBC Muncie, Ind.	1310	WRBL Columbus, Ga.	1200	XEE Durango, Dgo.	1210
WIBF Kansas City, Kans.	1420	WRBX Roanoke, Va.	1410	XEFA Mexico City, D. F.	1180
WLBL Stevens Point, Wis.	900	WRC Washington, D. C.	950	XEFB Monterrey, N. L.	1420
WLBW Erie, Pa.	1260	WRDO Augusta, Me.	1370	XEFC Merida, Yuc.	1310
WLBZ Bangor, Me.	620	WRDW Augusta, Ga.	1600	XEFE Laredo, Tams.	1370
WLEU Erie, Pa.	1420	WREC Memphis, Tenn.	600	XEFG Mexico City	1040
WLEY Lexington, Mass.	1370	WREN Lawrence, Kans.	1220	XEFI Chihuahua, Chih.	720
WLIT Philadelphia, Pa.	560	WRGA Rome, Ga.	1500	XEFJ Monterrey, N. L.	210
WLNH Laconia, N. H.	1310	WRHM Minneapolis, Minn	1250	XEFO Mexico City, D. F.	940
WLS Chicago, Ill.	870	WRJN Racine, Wis.	1370	XEFV Juarez, Chih.	1210
WLTH Brooklyn, N. Y.	1400	WROK Rockford, Ill.	1410	XEFW Tampico, Tams.	1310
WLVA Lynchburg, Va.	1370	WROL Knoxville, Tenn.	1310	XEFZ Mexico City, D. F.	1370
WLW Cincinnati, Ohio	700	WRR Dallas, Texas	1280	XEH Monterrey, N. L.	1130
WLWL New York, N. Y.	1100	WRUF Gainesville, Fla.	830	XEI Morelia, Mich.	1310
WMAJ Washington, D. C.	530	WRVA Richmond, Va.	1110	XEJ Juarez, Chih.	1020
WMAQ Chicago, Ill.	670	WSAI Cincinnati, Ohio	1330	XEK Mexico City, D. F.	1120
WMAJ Springfield, Mass.	1420	WSAJ Grove City, Pa.	1310	XEL Saltillo, Coah.	1370

INDEX BY CALL LETTERS

XEMA	Tampico, Tams.	1200	YN	Lyons, F	648	3DB	Melbourne, Ausl.	1180
XEMC	Merida, Yuc.	750	YNGRG	Granada, Venz.	870	3GL	Geelong, Ausl.	1400
XEMO	Tijuana, L. C.	860	YV1BC	Caracas, Venz.	960	3HA	Hamilton, Ausl.	1010
XEMZ	Tijuana, L. C.	1210	YV2BC	Caracas, Venz.	882	3HS	Horsham, Ausl.	1370
XEN	Mexico City, D. F.	710	YV3BC	Caracas, Venz.	1200	3KZ	Melbourne, Ausl.	1350
XENT	Nuevo Laredo, Tams.	1340	YV17BMO	Maracaibo, Venz.	1153	3LO	Melbourne, Ausl.	800
XEOK	Tijuana, B. C.	920	ZBW	Hongkong, Chn.	845	3MA	Mildura, Ausl.	900
XEOX	Satillo, Coah.	640	Z1LY	Hofen, Mnch.	900	3SH	Swan Hill, Ausl.	1080
XEP	Mexico City, D. F.	970	ZP1	Asuncion, Par.	1135	3TR	Sale, Ausl.	1280
XEPN	Piedras Negras, Coah.	590	ZP3	Asuncion, Par.	1000	3UZ	Melbourne, Ausl.	930
XEPR	Mexico City, D. F.	740	ZP4	Asuncion, Par.	1275	3WR	Wangaratta, Ausl.	1260
XES	Tampico, Tams.	970	ZP5	Asuncion, Par.	1465	3YA	Christchurch, N. Z.	720
XET	Monterrey, N. L.	690	ZTB	Bloemfontaine, S. Af.	589	3YL	Melbourne, Ausl.	1145
XETB	Torreon, Coah.	1310	ZTC	Cape Town, S. Af.	810	3YB	Christchurch, N. Z.	1200
XETH	Puebla, Pue.	1210	ZTD	Durban, S. Af.	723	3ZE	Greymouth, N. Z.	1300
XETU	Pachuca, Hdgo.	890	ZTJ	Johannesburg, S. Af.	667	3ZM	Christchurch, N. Z.	1450
XETW	Mexico City, D. F.	820	ZTP	Pretoria, S. Af.	985	3ZR	Greymouth, N. Z.	940
XETZ	Mexico City	850	1YA	Auckland, N. Z.	650	4BC	Brisbane, Ausl.	1145
XEU	Veracruz, Ver.	1290	1ZB	Auckland, N. Z.	1100	4BH	Brisbane, Ausl.	1380
XEW	Mexico City, D. F.	890	1ZH	Hamilton, N. Z.	770	4BK	Brisbane, Ausl.	1290
XEWZ	Mexico City, D. F.	1200	1ZJ	Auckland, N. Z.	1310	4GR	Toowoomba, Ausl.	1000
XEX	Mexico City, D. F.	1310	1ZM	Manurewa, N. Z.	1260	4MB	Maryborough, Ausl.	1060
XEY	Merida, Yuc.	1200	1ZR	Auckland, N. Z.	880	4MK	Mackay, Ausl.	1190
XEYZ	Mexico City, D. F.	780	1ZS	Auckland, N. Z.	1420	4QQ	Brisbane, Ausl.	760
XEZ	Merida, Yuc.	630	2AY	Albury, Ausl.	1500	4RQ	Rockhampton, Ausl.	910
XEZZ	San Luis Potosi	1370	2BL	Sydney, Ausl.	855	4RO	Rockhampton, Ausl.	1330
XFA	AguaSalientes	1310	2CA	Canberra, Ausl.	1050	4TD	Townsville, Ausl.	1170
XFB	Jalapa, Ver.	1290	2CH	Sydney, Ausl.	1210	4TO	Dunedin, N. Z.	790
XFC	AguaSalientes, Aga.	810	2CO	Corowa, Ausl.	660	4YA	Dunedin, N. Z.	1050
XFD	Orizaba, Ver.	1240	2FC	Sydney, Ausl.	665	4ZB	Dunedin, N. Z.	1260
XFG	Mexico City, D. F.	638.3	2GB	Sydney, Ausl.	950	4ZC	Cromwell, N. Z.	1220
XFO	Mexico City, D. F.	940	2GF	Grafton, Ausl.	1220	4ZF	Dunedin, N. Z.	1228
XFX	Mexico City, D. F.	610	2GN	Goulburn, Ausl.	1390	4ZL	Dunedin, N. Z.	1050
XGCU	Shanghai, Chn.	1140	2HD	Newcastle, Ausl.	1115	4ZM	Dunedin, N. Z.	1050
XGLS	Soochow, Chn.	1230	2KO	Newcastle, Ausl.	1070	4ZP	Invercargill, N. Z.	820
XGOA	Nanking, Chn.	860	2KY	Sydney, Ausl.	1320	4ZR	Baolutha, N. Z.	1340
XGOB	Lo Yang, Chn.	1090	2MO	Gunnedah, Ausl.	1348	4ZD	Dunedin, N. Z.	1470
XGOD	Hongchow, Chn	977.5	2NC	Newcastle, Ausl.	1270	5AW	Adelaide, Ausl.	1310
XGOY	Yunnan, Chn.	688	2RN	Dublin, I. F. S.	1025	5CK	Crystal Brook, Ausl.	636
XHHE	Shanghai, Chn.	940	2SM	Sydney, Ausl.	1125	5CL	Adelaide, Ausl.	730
XHHF	Shanghai, Chn.	960	2UE	Sydney, Ausl.	1155	5DN	Adelaide, Ausl.	860
XHHG	Shanghai, Chn.	1020	2UW	Sydney, Ausl.	1435	5KA	Adelaide, Ausl.	1200
XHHH	Shanghai, Chn.	1040	2WG	Wagga, Ausl.	1340	5PI	Port Pirie, Ausl.	1041
XHHI	Shanghai, Chn.	900	2WL	Wollongong, Ausl.	570	5BY	Bunbury, Ausl.	980
XHHK	Shanghai, Chn.	1425	2XN	Lismore, Ausl.	750	5CK	Cork, I. F. S.	1240
XHHM	Shanghai, Chn.	1180	2YA	Wellington, N. Z.	840	6IX	Perth, Ausl.	1480
XHHN	Shanghai, Chn.	1200	2YB	New Plymouth, N. Z.	1160	6KG	Kalgoorlie, Ausl.	1220
XHHS	Shanghai, Chn.	1100	2YC	Wellington, N. Z.	820	6ML	Perth, Ausl.	1185
XHHU	Shanghai, Chn.	1160	2ZD	Masterston, N. Z.	980	6PR	Perth, Ausl.	880
XHHV	Shanghai, Chn.	880	2ZF	Palmerston, N. N. Z.	1150	6WF	Perth, Ausl.	690
XHHX	Shanghai, Chn.	920	2ZH	Napier, N. Z.	1250	7HO	Hobart, Ausl.	890
XMHA	Shanghai, Chn.	600	2ZJ	Gisborne, N. Z.	1400	7LA	Launceston, Ausl.	1100
XNPP	Peiping, Chn.	937	2ZL	Hastings, N. Z.	900	7UV	Ulverstone, Ausl.	1460
XOPP	Peiping, Chn.	952.3	2ZM	Gisborne, N. Z.	1110	7ZK	Hobart, Ausl.	580
XOST	Tsinan, Chn.	857.1	2ZO	Palmerston, N. N. Z.	1470	10-AK	Stratford, Ont.	1200
XOTN	Tientsin, Chn.	625	2ZP	Wairoa, N. Z.	1425	10-BP	Wingham, Ont.	1200
XQHA	Shanghai, Chn.	850	2ZR	Nelson, N. Z.	1300	10-BQ	Brantford, Ont.	1200
XQHB	Shanghai, Chn.	820	3AK	Melbourne, Ausl.	970	10-BU	Canora, Sask.	1200
XQHC	Shanghai, Chn.	1270	3AR	Melbourne, Ausl.				
XQHD	Shanghai, Chn.	1360	3AW	Melbourne, Ausl.				
XQHT	Shanghai, Chn.	1460	3BA	Ballarat, Ausl.				
YLZ	Riga, Lat.	583	3BO	Bendigo, Ausl.				

Jack Benny's easy manner on the air conveys no hint to listeners of the mental distress he suffers just before a broadcast. The NBC comedian goes in for floor-pacing and finger-nail biting a few minutes before time to go on the air. But once the microphone is his, all trace of nervousness vanishes.

George M. Cohan, who at 56 is scoring the greatest triumphs of his triumphant career, has produced forty plays of his own, collaborated on as many more and has written two hundred songs. His tremendous success as a Gulf Headliner on NBC is but another evidence of his amazing adaptability.

# AROUND *the* CLOCK on *the* SHORT WAVES

## MIDNIGHT TO NOON (EST)

GMT	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00
AST	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00
EST	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
CST	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00
MST	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00
PST	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
	DJB W1XAZ W3XAL W3XAU W4XB W8XK W9XF	DJB VK2ME W1XAZ W9XF	DJB VK2ME	RV15 VQ7LO	PK1WK RV15	HVJ J1AA RNE RV15 VK2ME VK3ME PK1WK VQ7LO	GSF GSG HSJ RV15 VK2ME VK3ME W1XAZ ZGE ZHI	GSF GSG PHI Rabat RV15 VK2ME W1XAZ ZGE	DJA DJB GSE GSF GSG PHI Pont. Rabat VE9GW VK2ME W1XAZ W3XAL	DJA DJB GSE GSF PHI Pont. VE9GW VK2ME W1XAZ W3XAL	CT1AA CP5 DJA DJB GSE GSF Pont. VE9GW W1XAL W1XAZ W8XK W3XAL	GSB GSE VE9GW W1XAL W2XE W3XL W3XL W8XK W9XAA

## NOON TO MIDNIGHT (EST)

GMT	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	1:00	2:00	3:00	4:00
AST	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00
EST	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
CST	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00
MST	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00
PST	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
	GSB GSE I2RO Pont. VE9GW W1XAL W2XE W3XAL W3XAU W3XL W8XK W8XK W9XAA	GSD GSF I2RO Pont. VE9GW W1XAZ W3XAL W3XAU W3XL W8XK W9XAA	GSD GSF I2RO OXY Rabat VE9GW W1XAZ W3XAU W3XL W8XK W9XF	GSB GSD I2RO OXY Pont. Rabat RV59 VE9GW W2XAD W2XE W3XAU W3XL W8XK W9XF W8XK	CT1AA GSB GSD I2RO OXY Pont. Rabat RV59 VE9GW W2XAD W2XE W3XAU W3XL W8XK W9XF YV3BC	CT1AA DJA EAQ GSB GSD HBL HBP HC2RL HIZ I2RO OXY Pont. RV59 VE9GW VE9HX W1XAL W3XAL W3XAU W2XE W3XAL W8XK W8XK XETE YV1BC YV3BC	COC CP5 CT1AA LJA GSC GSD HC2RL HJ1ABB HJ4ABE HBL HBP HC2RL HJ1ABB OXY Pont. W1XAL VE9HX W2XAF W3XAL W3XAL W2XE XETE YV1BC YV3BC	COC CP5 DJA GSC GSD HC2RL HJ1ABB HJ4ABE LSX VE9CS VE9HX W1XAL W2XAF W3XAL W3XAU W8XK XETE YV1BC YV3BC	DJC DJD G6RX HCJB HIX HJ1ABB 4ABE VE9CS VE9HX W1XAL W2XAF W3XAL W3XAU W8XK XETE YV1BC YV3BC	CP5 DJC DJD HCJB HC2RL PRADO VE9DN VE9GW VE9HX W1XAL W2XAF W3XAL W3XAU W8XK XETE YV1BC YV3BC	CP5 DJC DJD HC2RL PRADO VE9DN VE9GW VE9HX W1XAL W2XAF W3XAL W3XAU W8XK XETE YV1BC YV3BC	CP5 VE9DN W1XAZ W3XAL W3XAU W8XK W9XF XETE

# One Hundred Best S. W. Stations by Calls

Stations marked with an asterisk (\*) will not verify. Frequencies are given in megacycles. Times are given in Eastern Standard.

- \*British Ships, 13,220, 8,831, 4,174  
 \*CEC, Chile, 19,678, 15,855  
 CNR, Morocco, 12,820  
 COC, Cuba, 5,996. 4-6 p.m.  
 CPB, Bolivia, 15,300. 9-11 a.m.  
 CP5, Bolivia, 6,081. 6:30 to 7:30 or 8 p.m., daily, exc. Sun.; 9-11:30 p.m. daily  
 CT1AA, Portugal, 9,592. Tues. and Fri., 4:30-7 p.m.  
 CT3AQ, Madeira, Tues., Thurs., 5-6:30 p.m.; Sun. 10:30 a.m.-noon  
 DAF, Germany, 12,394  
 DFB, Germany, 17,512  
 DIQ, Germany, 10,285  
 DJA, Germany, 9,552. 8-11 a.m.; 5-7:30 p.m.  
 DJB, Germany, 15,190. 8-11 a.m.; 12:35-2 a.m.  
 DJC, Germany, 6,017. 12:50-4:30 p.m.; 8-11 p.m.  
 DJD, Germany, 11,755. 12:50-4:30 p.m.; 8-11 p.m.  
 DJL, Germany, 15,110  
 EAQ, Spain, 9,862. 5:30-7 p.m.  
 EHY, Spain, 10,164  
 FTK, France, 15,863  
 FTM, France, 19,282  
 FZS, Indo-China, 11,983  
 \*German Ships, 13,135, 10,163, 8,328, 4,174  
 GAS, England, 18,304  
 GBB, England, 13,500  
 GBS, England, 12,148  
 GBW, England, 14,450  
 GSA, England, 6,050  
 GSB, England, 9,510. 11 a.m. to 12:45 p.m.; 3-5:30 p.m.  
 GSC, England, 9,585. 6-8 p.m.  
 GSD, England, 11,750. 1-5:30 p.m.; 6-8 p.m.  
 GSE, England, 11,965. 8:45 a.m. to 12:45 p.m.  
 GSF, England, 15,140. 6-8:30 a.m.; 8:45-11 a.m.; 1-3 p.m.  
 GSG, England, 17,770. 6-9:30 a.m.  
 GERX, England, 4,972. Testing nights 4:30-8:10 p.m.  
 HBL, Switzerland, 9,580. Sat., 5:30 to 6:15 p.m.  
 HBP, Switzerland, 7,872. Sat., 5:30 to 6:15 p.m.  
 HC2RI, Ecuador, 6,559. Tues., 9:14 to 11:14 p.m.; Sun., 5:45 to 7:45 p.m.  
 HCJB, Ecuador, 3,998. 8:14 to 10:14 daily, exc. Mon.  
 HCK, Ecuador, 5,694. 8 to 11 p.m.  
 HIX, Santo Domingo, 5,948. Tues. and Fri., 8 to 10 p.m.; Sun., 7:40 a.m.  
 HIZ, Santo Domingo, 6,379. 5-6 p.m.  
 HI-1-A, Santo Domingo, 6,272. 8-8:30 a.m.; 12:30-1:30 p.m.; 8-9 p.m.  
 \*HJB, Colombia, 14,930  
 \*HJY, Colombia, 18,444  
 HJ1AB, Colombia, 6,447. 7:30-10 p.m.  
 HJ3AB, Colombia, 7,402. 9-11:15 p.m., daily  
 HJ4AB, Colombia, 7,139. Sat., 11 p.m. to Mid.; Sun., 3-5 p.m.; Wed., 8-10 p.m.  
 HJ4ABE, Colombia, 5,900. 7-11 p.m.  
 HJ5AB, Colombia, 6,378  
 HJ5ABF, Colombia, 8,271  
 HKN, Colombia, 7,138. 8-10 p.m., daily  
 \*HPP, Panama, 14,545  
 HSP, Siam, 17,719  
 HVJ, Vatican City, 15,120. 5 to 5:15 a.m.  
 IAC, Italy, 12,785  
 I2RO, Italy, 11,800. 11:30 a.m.-12:30 p.m.; 1:15-6 p.m.  
 J1AA, Japan, 9,862. 5 to 8 a.m.  
 KAY, Philippines, 14,980  
 KAZ, Philippines, 9,990  
 \*KKP, Hawaii, 16,024  
 LSN, Argentina, 9,895  
 LSX, Argentina, 10,345  
 LSY, Argentina, 18,116  
 \*OCI, Peru, 18,670  
 OXY, Denmark, 9,520. 2 to 6:30 p.m.  
 PHI, Holland 11,725. 7:30 to 10 a.m., except Tues. and Wed.  
 PK1WK, Java, 6,116. 4:15-6 a.m.  
 PLE, Java, 18,820  
 PLV, Java, 9,410  
 Pontoise, France, 15,234. 8-11 a.m.  
 11,898. 11:15 a.m. to 2:15 p.m.; 3 to 8 p.m.  
 11,711. 3 to 9 p.m.; 10 p.m. to mid.  
 \*PPU, Brazil, 19,270  
 PRADO, Ecuador, 6,618. Thursday, 9-11 p.m.  
 \*PSF, Brazil, 14,682  
 Rabat, Morocco, 12,820. Sun., 7:30 to 9 a.m.  
 8,213. Sun., 2:30 to 5 p.m.  
 Radio-Tananarive, Madagascar, 6,00. 2:30-4 a.m.; Sun., 3-3:45 a.m., daily exc. Sun and Mon.  
 RNE, USSR., 11,923. Testing irregularly  
 RV15, Siberia, 4,273. 3-9 a.m., daily  
 RV59, USSR., 5,996. 3-6 p.m., daily  
 TGA, Guatemala, 14,545  
 TIN-TU, Costa Rica, 14,545  
 VE9BJ, Canada, 6,090. Irreg.  
 VE9CA, Canada, 6,030  
 VE9CS, Canada, 6,074. 8-10 p.m.  
 VE9DN, Canada, 6,005. Testing irreg.  
 VE9GW, Canada, 6,092. 3 p.m.-midnight  
 VE9HX, Canada, 6,110. 5-11 p.m., daily  
 VK2ME, Australia, 10,520.  
 9,585. Sun., 1 to 3 a.m.; 5 to 11 a.m.  
 VK3LR, Australia, 9,580. Daily, exc. Sun., 3-5:30 a.m.  
 VK3ME, Australia, 9,503. Wed., 5-6:30 a.m.; Sat., 5-7 a.m.  
 VWZ, India, 17,533  
 \*WNC, U. S. A., 15,055  
 W1XAL, U. S. A., 15,242. Sunday, 10 a.m.-1 p.m.  
 11,780. Sat., 5:30-11 p.m.; Sun., 6:30-8:30 p.m.  
 W1XAZ, USA, 9,570  
 W2XAD, USA, 15,320. Sun., Mon., Wed., Fri., 4-5 p.m.  
 W2XAF, USA, 9,530. 7:45 to 11 p.m.  
 W2XE, U. S. A., 15,258. 11 a.m. to 1 p.m.  
 11,823. 3 to 5 p.m.  
 6,116. 6 to 11 p.m.  
 W3XAL, U. S. A., 17,772. 9 a.m.-3 p.m., except Sat.  
 6,096. 3 p.m., to midnight, Saturday  
 W3XAU, U. S. A., 9,585. Noon to 6 p.m.  
 6,067. 8 p.m. to 1 a.m.  
 W3XL, U. S. A., 6,421. Irregular  
 W4XB, U. S. A., 6,040. 4 p.m. to 1 a.m.  
 W8XAL, U. S. A., 6,060. Relay WLW irreg.  
 W8XK, U. S. A., 21,451. 7 a.m. to 2 p.m.  
 15,204. 10 a.m. to 4:15 p.m.  
 11,870. 4:30-10 p.m.  
 6,140. 4:30 p.m. to 12:30 a.m.  
 W9XAA, U. S. A., 6,076. 3 to 6 p.m.  
 W9XF, U. S. A., 6,425  
 W9XF, U. S. A., 6,100. Silent Sat.; Sun., 1-2:30 p.m.; 4:30-7 p.m.; 9 p.m. to 2 a.m.; other days, 4:30-8 p.m.; 9:30 p.m. to 2 a.m.  
 XAM, Mexico, 11,187  
 XETE, Mexico, 9,600. 2:30-5 p.m.; 6:30 p.m. to midnight  
 \*YNA, Nicaragua, 14,480. Phones Hialeah  
 \*YVQ, Venezuela, 13,337. Phones Hialeah  
 \*YVR, Venezuela, 18,296 and 9,168  
 YV1BC, Venezuela, 6,112. 5:15 to 10 p.m.  
 YV3BC, Venezuela, 9,510. 9:30 to 10 p.m.  
 6,150. 10:30 a.m. to 1 p.m. and 4:30-9:30 p.m.; Sun. 8:30 a.m. to noon and 3-6:30 p.m.  
 \*ZFA, Bermuda, 5,045  
 \*ZFB, Bermuda, 10,060  
 ZFS, Bahamas, 4,513  
 ZGE, Malaya, 5,996. Tues., Fri., 6:30-8:30 a.m. and Sun. 7-9 a.m.

# TWO HUNDRED DEPENDABLE S. W. STATIONS

Frequencies are shown in megacycles and wavelengths in meters. Key to symbols in parentheses: Capital letters indicate type of service, as follows:

- A—Point-to-Point, Condition A, inverted modulation
- B—Point-to-Point, Condition B, intelligible speech
- E—Experimental
- R—Relay (broadcasting)
- SS—Ship to shore, or, shore to ship
- Small letters concern verifications as follows:
- a—Verifies for return postage
- b—Verifies only occasionally
- c—Does not verify
- x—Address given alphabetically in address list
- y—Address not given
- z—No information available

123—figures indicate key numbers in address list

Mega.	Meters	Location	8.218	36.36	Rabat, Morocco (R-ax)
4.107	73.00	HGJB, Quito, Ecuador (R-ax)	8.464	35.42	DAF, Norden, Germany (SS-a-15)
4.273	70.65	RV15, Khabarovsk, USSR (R-cy)	8.760	34.34	PNI, Macassar, Celebes (B-22P)
4.320	69.40	GORX, Rugby, England (E-ax)	9.014	32.26	GCS, Rugby, England (A-a-16)
4.348	68.96	CGA9, Drummondville, P. Q. (B-c-6)	9.104	32.93	LST, Olivos, Argentina (B-b-1)
4.465	67.14	CPA2, Drummondville, P. Q. (B-b-6)	9.120	32.87	CP5, La Paz, Bolivia (R-ax)
4.753	63.08	WOO, Ocean Gate, N. J. (SS-cy)	9.580	31.29	VK3LR, Melbourne, Australia (R-ax)
4.755	63.05	CFU, Rossland, B. C. (B-z)	9.585	31.28	GSC, Daventry, England (R-a-17)
4.785	66.66	CZA, Drummondville, P. Q. (SS-c-6)			VK2ME, Sydney, Aust. (R-a-3)
4.872	60.30	GORX, Rugby, England (E-ax)	9.590	31.26	W3XAU, Newtown Sp., Pa. (R-ax)
5.045	59.42	ZFA, St. George, Bermuda (A-cy)	9.592	31.25	CT1AA, Lisbon, Portugal (R-ax)
5.660	51.21	CFU, Rossland, B. C. (B-z)	9.595	31.30	HLB, Prangins, Switz. (R-a-30)
5.825	51.47	HJA2, Bogota, Colombia (B-cy)	9.600	31.23	XETB, Mexico City, D. F. (R-bx)
5.900	50.82	CMB1, Havana, Cuba (B-a-31)	9.609	31.20	DGU, Nauen, Germany (B-a-13)
5.900	50.82	HJ4ABE, Medellin, Colombia (R-ax)	9.670	31.00	T14NRH, Heredia, C. R. (R-ax)
5.948	50.40	HIX, Santo Domingo, D. R. (R-ax)	9.702	30.90	GCA, Rugby, England (A-a-16)
5.996	50.00	RV59, Moscow, USSR (R-ax)	9.750	30.75	VK2ME, Sydney, Aust. (B-a-3)
		Tananarive, Madagascar (R-ax)	9.798	30.60	GCW, Rugby, England (A-a-16)
		YV2BC, Caracas, Venez. (R-z)	9.823	30.52	IRM, Rome, Italy (B-a-20)
6.000	49.97	VE9DN, Drummondville, P. Q. (R-a-6)	9.830	30.50	LSI, Buenos Aires, Arg. (B-b-1)
6.017	49.83	DJC, Zeesen, Germany (R-a14)	9.862	30.40	EAG, Aranjuez, Spain (R-a-29)
6.040	49.64	W4XB, Miami, Fla. (R-cy)			J1AA, Kemikawa-cho, Japan (R-bx)
6.045	49.60	HJ3AB1, Bogota, Colombia (R-ax)	9.895	30.30	LSN, Buenos Aires, Arg. (A-b-1)
6.050	49.56	GSA, Daventry, Eng. (R-a-17)	9.942	30.15	GCU, Rugby, England (A-a-16)
6.060	49.48	W3XAU, Newtown Sp., Pa. (R-ax)	10.014	29.84	SUV, Abu Zabal, Egypt (B-a-10)
		W3XAL, Mason, Ohio (R-ax)	10.060	29.80	ZFB, St. George, Bermuda (A-cy)
		OXY, Skamlebaek, Denmark (R-ax)	10.163	29.50	German Ships
6.069	49.40	VE9CS, Vancouver, B. C. (R-bx)	10.164	29.79	EHY, Madrid, Spain (B-a-28)
6.070	49.39	YV5BMO, Maracaibo, Venez. (R-z)	10.212	29.35	PSH, Rio de Janeiro, Braz. (B-b-5)
6.080	49.21	CP5, La Paz, Bolivia (R-ax)	10.250	29.25	PMN, Bandoeng, Java (B-a-22)
6.081	49.30	W9XA, Chicago, Ill. (R-ax)	10.285	29.15	DIQ, Zeesen, Germany (E-a-13)
6.085	49.19	VE9CW, Bowmanville, Ont. (R-ax)	10.290	29.14	HPA, Panama City, Pan. (B-cy)
6.100	49.15	W3XAL, Mason, Ohio (R-ax)	10.296	29.12	LSL, Hurlingham, Arg. (B-b-1)
		W9XF, Chicago, Ill. (R-ax)	10.335	29.01	ZFD, St. George, Bermuda (A-cy)
		VE9HF, Halifax, N. S. (R-ax)	10.350	28.98	LSX, Monte Grande, Arg. (B-cy)
6.110	49.07	VE9HF, Halifax, N. S. (R-ax)	10.410	28.80	LSX, Monte Grande, Arg. (R-b-2)
6.112	49.10	YV1BC, Caracas, Venez. (R-ax)	10.520	28.50	YBG, Medan, Sumatra (B-ay)
6.116	49.02	HJ1ABD, Cartagena, Col. (R-z)	10.520	28.25	VK2ME, Sydney, Aust. (B-a-3)
		PK1WK, Bandoeng, Java (R-ax)			EDN, Madrid, Spain (B-a-28)
		W2XE, Wayne, N. J. (R-ax)	10.850	27.63	EDX, Madrid, Spain (B-a-28)
6.120	48.99	W8XE, Wayne, N. J. (R-ax)	10.990	27.28	DFL, Nauen, Germany (B-a-13)
6.140	48.83	W8XK, Saxonburg, Pa. (R-ax)	11.187	26.80	ZLF, Wellington, N. Z. (A-ax)
6.150	48.78	YV3BC, Caracas, Venez. (R-ax)	11.680	25.67	XAM, Merida, Yuc. (B-ax)
6.150	48.75	CJRO, Winnipeg, Man. (R-z-33)	11.680	25.67	YVQ, Maracaibo, Venez. (B-cy)
6.378	47.00	HJ5ABB, Cali, Colombia (R-by)	11.711	25.60	Pontoise, France (B-ax)
6.379	47.50	HIZ, Santo Domingo, D. R. (R-ax)	11.725	25.57	CJ1XX, Winnipeg, Man. (R-z-33)
6.425	46.66	W3XL, Bound Brook, N. J. (ER-a-37)	11.725	25.57	PHI, Huizen, Holland (R-ax)
6.447	46.60	HJ1ABB, Barranquilla, Col. (R-ax)	11.750	25.51	GSD, Daventry, England (R-a-17)
6.618	45.31	PRAD0, Riobamba, Ecuador (R-ax)	11.760	25.50	XDM-XDS, Chamufepce, D. F. (B-cy)
6.648	45.10	IAC, Coltano, Italy (SS-a19)	11.780	25.45	W1XAL, Boston, Mass. (R-ax)
6.659	45.02	HC2RL, Guayaquil, Ecuador (R-ax)	11.800	25.40	I2RO, Rome, Italy (R-by)
6.672	44.94	YVQ, Maracaibo, Venez. (B-cy)	11.830	25.34	W2XE, Wayne, N. J. (R-ax)
6.675	44.91	DGK, Nauen, Germany (B-a13)	11.865	25.27	GSE, Daventry, Eng. (R-a-17)
6.900	43.45	GDS, Rugby, England (A-a16)	11.870	25.25	W8XK, Saxonburg, Pa. (R-ax)
6.966	43.04	EDO, Madrid, Spain (B-a28)	11.898	25.20	Pontoise, France (R-ax)
6.990	42.89	LCL, Jeloy, Norway (R-ax)	11.923	25.16	RNE, Moscow, USSR. (E-ax)
7.138	42.00	HJ4ABB, Manizales, Col. (R-ax)	11.935	25.12	FTA, St. Asaise, France (B-a-11)
		HKN, Medellin, Colombia (R-by)	11.983	25.02	FZS, Saigon, Indo-China (B-a-12)
7.220	43.86	HA72, Budapest, Hungary (R-az)	12.148	24.68	GBS, Rugby, England (A-a-16)
7.402	40.50	HJ3ABB, Bogota, Col. (R-by)	12.241	24.41	GBU, Rugby, England (A-a-16)
		HJ3ABD, Bogota, Col. (R-z)	12.394	24.10	DAF, Norden, Germany (SS-a-15)
7.501	39.97	RKI, Moscow, USSR (R-cz)	12.780	23.46	GBC, Rugby, England (SS-a-16)
7.621	39.34	RIM, Irkutsk, USSR (R-bz)	12.785	23.45	IAC, Coltano, Italy (SS-a-19)
7.785	39.01	TIR, Cartago, Costa Rica (B-b-9)	12.820	23.38	CNR, Rabat, Morocco (B-ax)
7.797	38.47	HBP, Prangins, Switz. (R-b-30)			Rabat, Morocco (R-ax)
7.980	37.57	H5J, Bangkok, Siam (B-a-27)	12.830	23.36	HJ43, Barranquilla, Col. (B-cz)
8.180	36.65	PSK, Rio de Janeiro, Braz. (A-b-4)	13.135	23.00	German Ships
		PSK, Rio de Janeiro, Braz. (R-a-38)	13.220	22.68	British Ships
			13.337	22.48	YVQ, Maracaibo, Venez. (B-cy)
			13.500	22.09	GBB, Rugby, England (A-a-16)
			13.671	21.93	HAS, Budapest, Hungary (R-az)
			14.450	20.75	GBW, Rugby, England (A-a-16)
			14.480	20.70	YNA, Managua, Nicaragua (B-cy)
			14.545	20.69	HPF, Panama City, Pan. (B-cy)
					TGF, Guatemala City, Guat. (B-by)
			14.682	20.42	TIN-TIU, Cartago, C. R. (B-b-9)
			14.930	20.08	PSF, Rio de Janeiro, Braz. (A-b-4)
			14.969	20.03	HJB, Bogota, Colombia (B-cy)
					EDQ, Madrid, Spain (B-a-28)

15.110	19.84	DJJ, Zeesen, Germany (R-a-14)	19.506	15.37	IRW, Rome, Italy (B-2-20)
15.120	19.83	HVJ, Vatican City (R-ax)	19.519	15.36	EDX, Madrid, Spain (B-a-28)
15.140	19.81	GSF, Daventry, Eng. (R-a-17)	19.678	15.24	CEC, La Granja, Chile (B-cy)
15.190	19.73	DJB, Zeesen, Germany (R-a-14)	19.684	15.23	EAC, Aranjuez, Spain (B-c-29)
15.210	19.71	W8XX, Saxonburg, Pa. (R-ax)	20.368	14.72	GAA, Rugby, Eng. (A-a-16)
15.234	19.68	Pontoise, France (R-ax)	21.020	14.27	LSN, Hurlingham, Arg. (A-b-1)
15.242	19.67	W1XAL, Boston, Mass. (R-ax)	21.540	13.92	W8XX, Saxonburg, Pa. (R-ax)
15.280	19.62	W2XE, Wayne, N. J. (R-ax)			
15.300	19.70	CP5, La Paz, Bolivia (R-ax)			
15.340	19.55	W2XAD, Schenectady, N. Y. (R-ax)			
15.350	19.53	CT1AA, Lisbon, Portugal (R-ax)			
15.454	19.40	Pontoise, France (R-ax)			
15.863	18.90	FTK, St. Assise, France (B-a-11)			
17.287	17.34	Italian Ships			
17.300	17.33	W3XL, Boundbrook, N. J. (E-a-37)			
17.512	17.12	DFB, Nauen, Germany (B-a-13)			
17.533	17.10	VWZ, Kirkee, India (B-z)			
17.580	17.05	British Ships			
17.719	16.92	HSP, Bangkok, Siam (B-a-27)			
17.760	16.88	DJE, Zeesen, Germany (E-a-14)			
17.770	16.87	IAC, Coltano, Italy (SS-b-19)			
17.775	16.87	PHI, Huizen, Holland (R-ax)			
17.780	16.86	W3XAL, Boundbrook, N. J. (R-a-37)			
17.790	16.85	GSF, Daventry, Eng. (R-a-17)			
18.116	16.55	LSY, Buenos Aires, Arg. (E-b-2)			
18.170	16.50	PMC, Bandoeng, Java (B-a-22)			
18.237	16.44	FTE, St. Assise, France (B-a-11)			
18.296	16.39	YVR, Maracaay, Venez. (B-cy)			
18.304	16.38	GAS, Rugby, Eng. (A-a-16)			
18.400	16.29	PCK, Kootwijk, Holland (B-cy)			
18.444	16.25	HJY, Bogota, Colombia (B-cy)			
18.611	16.11	GAU, Rugby, Eng. (A-a-16)			
18.670	16.06	OCI, Valverde, Peru (B-cy)			
18.820	15.93	PLE, Bandoeng, Java (E-a-22)			
18.856	15.90	ZSS, Klipheubel, South Afr. (A-z)			
18.963	15.81	GAG, Rugby, England (A-a-16)			
19.121	15.68	LSM, Hurlingham, Arg. (B-b-1)			
19.240	15.58	DFA, Nauen, Germany (B-a-13)			
19.270	15.57	PPU, Rio de Janeiro, Braz. (B-a-5)			

For a complete list of the short wave stations of the world, consult the Summer Edition of the *DX Log of the World* now on sale at all newsstands.

\* \* \*

Eddie Cantor, whose contract with Chase & Sanborn still has eight months to run, has already been signed by Lehn & Fink Company for a new series of Sunday night shows for Pebeco toothpaste, beginning in 1935. As it is expected that Chase & Sanborn will stay on one NBC network from 8:00 to 9:00 p. m. EST, and Lehn & Fink want this same hour, it is probable that the new program will go to CBS but time contracts have not been signed as yet.

\* \* \*

A special program for DX fans throughout the world will be broadcast over WABC from 1:00 to 1:30 a. m. EDST Saturday morning, May 26. The program has been arranged in cooperation with the International DXers Alliance and will be dedicated to that organization's world-wide membership.

Charlie Barnet and his orchestra will perform for the DXers from their bandstand in Park Central Hotel, New York. Barnet is probably the youngest prominent band leader in the country, being just twenty.

## SHORT WAVE RELAY BROADCASTING STATIONS OF NORTH AMERICA

Arranged Alphabetically by the call letters of the Broadcasting Stations which they relay. The frequencies preceded by an asterisk are not in operation at the present time.

<b>CFBO, St. John, N. B.</b>					
<b>VE9BJ, St. John, N. B.</b>					
6,090 kcs., 49.23 meters					
<b>CFCF, Montreal, P. Q.</b>					
<b>VE9DN, Drummondville, P. Q.</b>					
*15,130 kcs., 19.82 meters					
*11,780 kcs., 25.45 meters					
* 9,555 kcs., 31.38 meters					
6,005 kcs., 49.93 meters					
<b>CFCN, Calgary, Alta.</b>					
<b>VE9CA, Calgary, Alta.</b>					
*11,860 kcs., 25.28 meters					
* 6,030 kcs., 49.72 meters					
<b>CFCY, Charlottetown, P. E. I.</b>					
<b>VE9EH, Charlottetown, P. E. I.</b>					
* 6,080 kcs., 49.31 meters					
<b>CHNS, Halifax, N. S.</b>					
<b>VE9HX, Halifax, N. S.</b>					
*11,835 kcs., 25.33 meters					
6,110 kcs., 49.07 meters					
<b>CKCL, Toronto, Ont.</b>					
<b>VE9AO, Toronto, Ont.</b>					
<b>CKFC, Vancouver, B. C.</b>					
<b>VE9CS, Vancouver, B. C.</b>					
6,070 kcs., 49.39 meters					
<b>CKIC, Wolfville, N. S.</b>					
<b>VE9CX, Wolfville, N. S.</b>					
* 6,015 kcs., 49.85 meters					
<b>CRCT, Toronto, Ont.</b>					
<b>VE9GW, Bowmanville, Ont.</b>					
*24,380 kcs., 12.30 meters					
*11,810 kcs., 25.39 meters					
6,095 kcs., 49.19 meters					
<b>KDKA, Pittsburgh, Pa.</b>					
<b>W8XK, Saxonburg, Pa.</b>					
21,540 kcs., 13.92 meters					
*17,780 kcs., 16.86 meters					
15,210 kcs., 19.71 meters					
11,870 kcs., 25.25 meters					
* 9,570 kcs., 31.33 meters					
6,140 kcs., 48.83 meters					
<b>WABC, New York, N. Y.</b>					
<b>W2XE, Wayne, N. J.</b>					
15,280 kcs., 19.62 meters					
11,840 kcs., 25.32 meters					
6,120 kcs., 48.99 meters					
<b>WBZ, Boston, Mass.</b>					
<b>WBZA, Springfield, Mass.</b>					
<b>W1XAZ, Millis, Mass.</b>					
9,570 kcs., 31.33 meters					
<b>WCAU, Philadelphia, Pa.</b>					
<b>W3XAU, Newton Square, Pa.</b>					
9,590 kcs., 31.26 meters					
6,060 kcs., 49.48 meters					
<b>WCFL, Chicago, Ill.</b>					
<b>W8XAA, Chicago, Ill.</b>					
*17,780 kcs., 16.86 meters					
*11,840 kcs., 25.32 meters					
6,080 kcs., 49.31 meters					
<b>WEEI, Boston, Mass.</b>					
<b>W1XAL, Boston, Mass.</b>					
15,242 kcs., 19.67 meters					
11,780 kcs., 25.45 meters					
<b>WENR, Chicago, Ill.</b>					
<b>W9XF, Downer's Grove, Ill.</b>					
6,100 kcs., 49.15 meters					
<b>WGY, Schenectady, N. Y.</b>					
<b>W2XAD, Schenectady, N. Y.</b>					
15,340 kcs., 19.55 meters					
<b>WGY, Schenectady, N. Y.</b>					
<b>W2XAF, Schenectady, N. Y.</b>					
9,530 kcs., 31.46 meters					
<b>WIOD, Miami, Fla.</b>					
<b>W4XB, Collins Isl., Miami, Fla.</b>					
* 6,036 kcs., 49.67 meters					
<b>WJZ, New York, N. Y.</b>					
<b>W3XAL, Boundbrook, N. J.</b>					
17,772 kcs., 16.87 meters					
6,100 kcs., 49.15 meters					
<b>WJZ, New York, N. Y.</b>					
<b>W3XAL, Boundbrook, N. J.</b>					
6,425 kcs., 46.66 meters					
<b>WLW, Cincinnati, Ohio.</b>					
<b>W8XAL, Mason, Ohio.</b>					
6,060 kcs., 49.48 meters					



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Warren E. Winkley, Hughson, California.

**STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY ACT OF CONGRESS OF AUGUST 24, 1912**

Of Radio Index, published monthly except July and August, at Cleveland, Ohio, for April, 1, 1934.  
 State of Ohio  
 County of Cuyahoga <sup>38</sup>.

Before me, a notary public in and for the State and county aforesaid, personally appeared Fred C. Butler, who, having been duly sworn according to law, deposes and says that he is the Editor and Publisher of the Radio Index, and that the following is to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Fred C. Butler, Hanna Bldg., Cleveland, O.  
 Editor, Fred C. Butler, Hanna Bldg., Cleveland, O.  
 Managing Editor, none.  
 Business Manager, none.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

The Radex Press, Inc., Hanna Bldg., Cleveland, O.  
 Fred C. Butler, Hanna Bldg., Cleveland, O.

3. That the known bondholders, mortgages and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any inter-

est direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is. (This information is required from daily publications only.)

FRED C. BUTLER.

Sworn to and subscribed before me this 3rd day of May, 1934.

(Seal)

EDITH C. PHALEN,  
 Notary Public.

My commission expires May 11, 1935.

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Note: The May-June-July issue of the DX Log of the World contains several hundred short wave stations by frequencies and by call letters.

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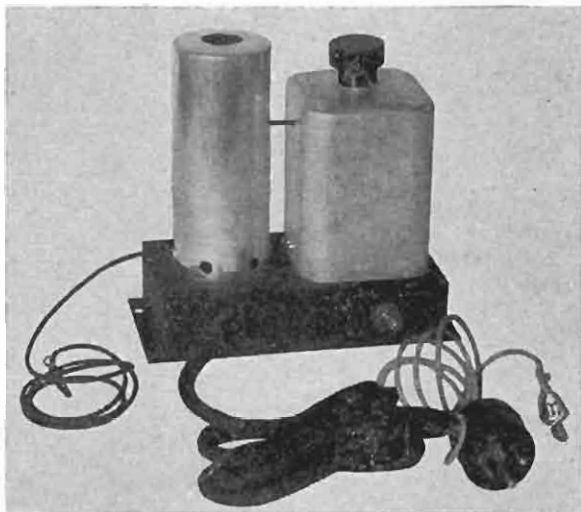
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MODEL A HAS SWITCH ON FINDER AS SHOWN.

MODEL B HAS SWITCH ON END OF FIVE-FOOT CABLE

*In ordering give make and model of receiver (superheterodynes only). If possible give the intermediate frequency of your set, the type of power tube and the type of the last i. f. tube (preceding the second detector).*

## RADIO PARTS CO.

1401 Prospect Ave.

CLEVELAND, OHIO

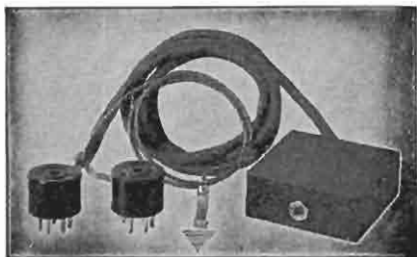
# For Summer Reception

## USE HEAD PHONES

Loud Speaker volume brings out the static. Use phones and keep the signals above the noise level.

### THE PERFECT PHONE ADAPTER

may be used on any receiver without any change in the wiring or in the load or balance of the set. Not necessary to remove and put back tubes. Socket adapters go under the power tubes; the little clip goes to the ground and the Adapter is installed. Pushing in the phone-plug automatically switches the signals from speaker to phones. Pulling it out returns the set to loud speaker operation. The jack-box may be placed in back of set or screwed underneath out of sight and yet convenient for instant use.



#### PRICES

Perfect Phone Adapter, postpaid.....	\$ 3.95
Adapter with Phones and Plug.....	5.95
Adapter with 2000-ohm Phones and Plug.....	6.70
Adapter with Plug and 24000-ohm featherweight phones (made especially for sensitive work).....	12.50

*With a few circuits, it is necessary to use a small B battery in the ground lead to provide grid bias. There is no drain on the battery and it should last indefinitely.*

We now have a model of the Adapter for midget sets which uses the volume of all the tubes. PROVIDED the midget set uses a power tube with five, six or seven prongs. It is not suitable for power tubes with four prongs.

*When ordering, give make and model of your receiver and number and type of power tubes. It will help us if you can send diagram of your set.*

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