NSE

25c

THE SEPTEMBER 1936

RADIO INDEX

The All-wave DX Log of the World

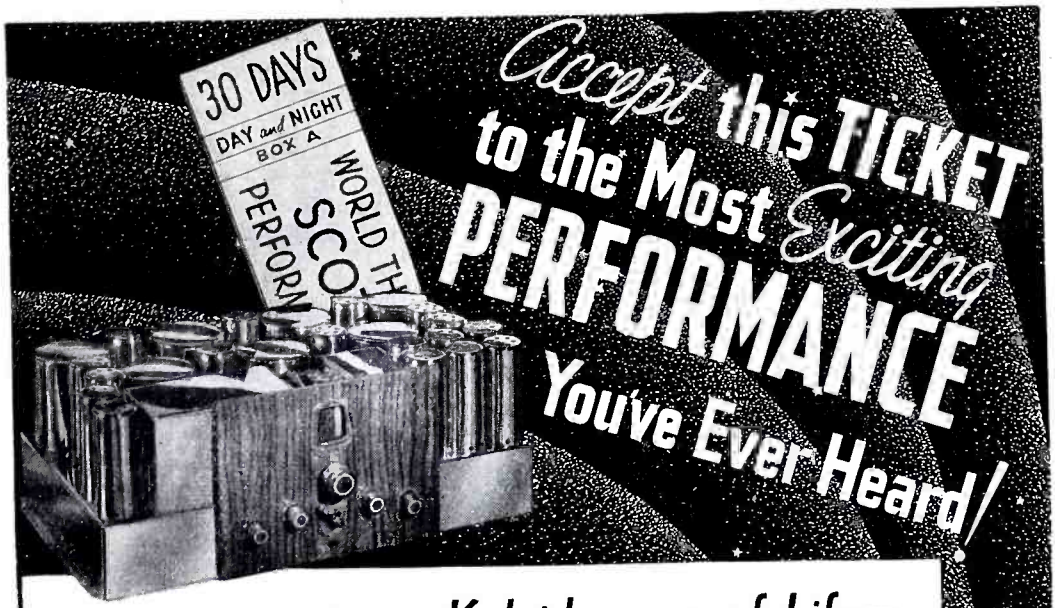
Modernizing Your Aerial

Distortion in the Speaker

The Short Wave Stations and When to Tune for Them

Complete Broadcast Station Data

No. 101



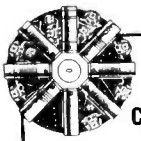
Accept this TICKET to the Most Exciting PERFORMANCE You've Ever Heard!

The Whole Colorful *Kaleidoscope of Life*— *Yours* — with a SCOTT!

IN the privacy of your own home or in the friendly atmosphere of your ham shack, you surround yourself with the things you prize. You never regret that they are the best there are. The thousands of people who have chosen the SCOTT for ownership have had this in mind.

Unexcelled Tone

World famous for its clear, life-true realism. The diamond brilliant beauty of its 30 to 16,000 cycle *high fidelity tone*, has won it an envied place in the homes of celebrated musicians, broadcasters and amateurs in more than 146 countries. The SCOTT captures the full range of overtones which enable the human ear to distinguish trumpet from trombone, cornet from clarinet, flute from voice. Exclusive SCOTT Volume Range Expander brings Program beauty which actually exceeds the accuracy of the broadcast, impossible as this appears. True separate Bass and Treble Controls —no sacrificing one end of the musical scale for the other.



EXCLUSIVE ROTARY COIL CHANGER

Secret of SCOTT superiority on all bands. Ends drawbacks of varying length gang switch lead-ins. All contacts automatically cleaned with every rotation of coil system, vital to wave change efficiency.

Compare Your DX List

Distance? — Here's a broadcast band teaser from C. H. Weyrich, Baltimore, Md.: 4BH, 4BC (600 watts each) 2BL Australia. 1YA New Zealand. KGU and KGMB (250 watts) Hawaii — all with verifications. Not only does the SCOTT get Hawaii, but Hawaii gets all the world with a SCOTT! Says Otis Hill, of Hilo, Hawaii: "Reception with the SCOTT has been most remarkable . . . I get consistently perfect reception from London, Paris, Rome, Berlin, Moscow and Holland . . . when I buy another receiver it will be a SCOTT."

Test it 30 Days

Let its magnificent precision prove itself — in your own home — then you'll know what custom-building can really mean.

Side by side comparison test invited. 30-day trial in your home in U.S.A. Send tonight for this sensational story!

35 Watts "A" Power. 2 to 16 KC Variable Selectivity. 1 Microvolt Sensitivity Dual A.V.C. 23 tubes. 19 Consoles

E. H. SCOTT RADIO LABORATORIES, Inc.
4424 Ravenswood Avenue, Chicago
630 Fifth Ave., New York
115 N. Robertson Blvd., Los Angeles

FREE-SEND TODAY FOR DETAILS

E. H. Scott Radio Laboratories, Inc. 4424 Ravenswood Ave., Dept. 15P6, Chicago, Ill.

Send "PROOF" booklet of the SCOTT Superior Tone and Distance Performance.

Name .....

Address .....

City ..... *State* .....

SEPTEMBER 1, 1936

RADIO INDEX

Reg. U. S. Patent Office

FRED CLAYTON BUTLER
Editor and Publisher

ASSOCIATE EDITORS
B. FRANCIS DASHIELL, *Technical*
PAGE TAYLOR, *Short Waves*
CARLETON LORD, *Broadcast*

THIRTEENTH YEAR

NUMBER 101

CONTENTS

	PAGE
Concerning Your Aerial, *by Carleton Lord*	3
What About My Speaker? *by B. Francis Dashiell*	9
The Cream of the Short Waves, *by Page Taylor*	12
Another New Season on the B. C. Band, *by Carleton Lord*	20
Radio Troubles and Their Remedies, *by the Technical Editor*	27
Testing the Masterpiece IV, *by R. B. Oxrieder*	32
Meeting the Artists, *with "Betty"*	34
A Station for the Nation	36
Why I Verify, *by John DeMyer*	39
What's on the Air Tonight? *The Hour-by-Hour Programs*	41
Classified Index to Favorite Artists	46
The Summer Changes in Station Data	47
Around the Clock on the Short Waves	95
Quick Index of All Station Data	96

$1.75 Per Year

25c Per Copy

See Subscription Blank on Page 96

Published Monthly Excepting July and August

THE RADEX PRESS INC.

Publication Office: - 326 Penton Bldg., Cleveland, Ohio
Editorial and Advertising Office: - - Conneaut, Ohio

Entered as second-class matter April 23, 1931, at the postoffice at Cleveland, Ohio, under the Act of March 3, 1879.

Printed in U. S. A.

Concerning Aerials

● ● ● *By* CARLETON LORD

THE aerial of today is unquestionably the most neglected piece of apparatus in the radio receiving system. Listeners, who shoot the works in buying the most expensive receiver within their means, expect to obtain maximum results from a dollar's worth of wire running to the nearest tree or telephone pole.

In the early days of broadcasting, the limited range of crystal sets forced the erection of an efficient aerial. It was by no means rare to see a forty or fifty foot mast in a backyard, with a four-wire flat-top strung to another pole on top of a house.

Today, the high sensitivity of modern receivers has made it possible to obtain adequate signal strength from a great many stations even with a poor aerial. As a result, many listeners are content to put up with such an installation, regardless of or oblivious to the many advantages which they are sacrificing.

While it is impossible to analyze the many different receiving locations throughout the country, consideration of basic theories will bring forth recommendations on aerial design which will have an important bearing, not only on signal strength, but on selectivity and extraneous noise.

Speaking Technically

Signals from a broadcasting station are radiated in the form of an electromagnetic wave. When intercepted by a wire perpendicular to its field, this wave induces a difference of potential in that wire. In this way, an aerial collects the radio waves and conveys them to the receiver.

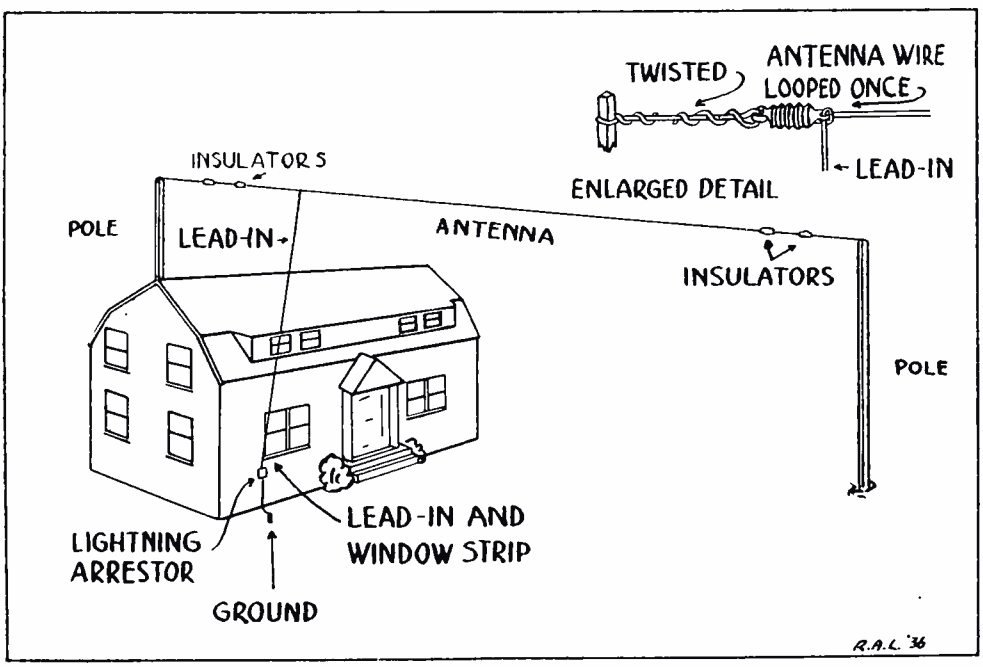


Figure 1. The ever-popular Marconi inverted-L aerial.

However, since the magnetic field of the wave is horizontal, the vertical portion of the aerial—the lead-in —serves as the principal collector.

The field strength of a transmitter at a given point is measured as so many millivolts per meter of height. This figure, when multiplied by the maximum height of the aerial, gives the induced voltage distributed along the entire aerial. Thus, a field of 2 millivolts per meter will induce a distributed voltage of 30 millivolts in an aerial 15 meters high, while but 10 millivolts will be available at the base if the height is only 5 meters.

As a measure of efficiency of an installation, the "effective height" of the aerial is used. This quantity measures the number of millivolts available at the base of the aerial for a signal with a field strength of one millivolt per meter. Thus, for a given signal, the best aerial in any location will deliver the greatest number of millivolts at its base.

Probably the most popular type of aerial is the familiar Marconi inverted-L, and for general broadcast reception it has no superior. The formula for the effective height of the average aerial of this design is expressed as:

$$H = \frac{h(2L - h)}{2L}$$

where H is the effective height;

h is the length of the vertical lead, and

L is the total length of wire.

For example, the use of this formula shows that a vertical aerial 50 feet high will have an effective height of 25 feet. By adding a 100-foot flat-top, the effective height is increased to 41.7 feet; while a value of 75 feet of effective height would be obtained if the 150 feet of wire had been erected vertically.

From this, it will be seen that the length of the flat-top plays a part entirely secondary to the height of the vertical downlead. Thus, the primary rule of aerial design is to secure the greatest possible altitude—and then use the remainder of the wire for the flat-top.

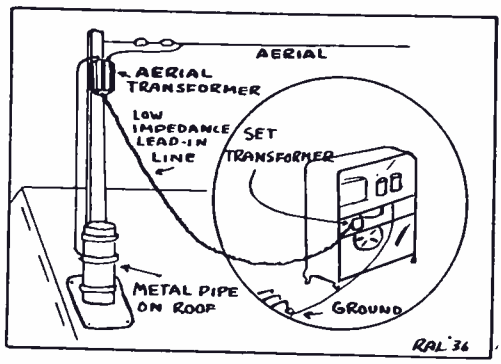


Figure 2. Showing how to convert the inverted-L into a noise-reducing aerial through the use of a low-impedance transmission line.

Fit Your Location

A survey of his own location should enable every listener to decide on an installation which will give maximum results under existing conditions. Since height is an all-important factor, the erection of rigid masts or poles (preferably of wood) should be considered; one on top of the house and the other at the back of the yard is an ideal arrangement. Trees are not recommended for aerial supports, as they will absorb radio energy and their swaying will cause fading.

In a crowded location, such as an apartment house district, where one finds no obvious support for the contemplated aerial and where other installations provide difficulties of erection, the listener must use his own ingenuity for design. As always, it is important to go as high above obstructions as possible ,and then string the flat-top as far as desired.

An excellent method of planning an aerial is to make a scale drawing of the proposed installation, showing the possible height which may be obtained at various points, and then decide on the layout which offers the most advantages. The horizontal span of an inverted-L aerial may be in the form of a single wire, a mul-

ti-wire flat-spread, or a cage. While the use of more than one wire on the span theoretically should increase the pickup of the aerial, experience has shown that the gain in efficiency is negligible.

The aerial should be made of No. 12 or 14 solid or stranded copper wire, as it has good conductivity, can be soldered, and is mechanically strong. If a flat spread or a cage is to be used, care should be taken that all joints are well soldered and then taped. A single wire span should be continuous from the far insulator, across the flat-top, through the near insulator and down to the point of entrance into the house.

Beware Interference

Because of noises radiated from the electrical wiring, it is well to have the lead-in approach the house at an angle, so that only at the point of entrance will it be closer than a foot to the wall. At this point, the wire may be looped around one terminal of a lightning arrester, and then continued into the house through a porcelain tube insulator or attached to a lead-in strip. The receiver should be located as close as possible to the point at which the lead-in enters the house.

During recent years, the importance of lightning arresters seems to have been overlooked by many listeners. However, they are an essential part of any radio installation and should be not disregarded. Besides affording definite protection to the receiver as well as to the house, they are always specified by insurance underwriters. Should a house be struck by lightning, the owner would be unable to recover for damages if the inspectors of the insurance company found the aerial unprotected by an approved arrester.

At all points of an aerial installation, good insulation is vital. At both ends of the flat-top, it is well to include two insulators. For connection between the end insulators and the supports, heavy sash cord is to be preferred over wire. If it is impossible for the lead-in to approach the point of entrance at an angle, stand-off insulators should be used to keep it clear of rain spouts, telephone or power wires, or any other such objects.

Amount of Wire

As yet, no mention has been made of the amount of wire to be used in the construction of an inverted-L aerial. For broadcast band reception with a modern receiver, the possible height of the supports and the room available for the flat-top are the only determining factors.

For general all-wave reception, a flat-top of exactly 78 feet in length is suggested. Such an antenna resonates at 50 meters and has harmonic peaks on 25 and 16.3 meters. Where space is limited, a flat-top of 41 feet is recommended, as this will resonate to 11.5 megacycles, an important short wave band. As many all-wave receivers are least sensitive on the shorter wave-bands, the compensating action of such an antenna tends to improve reception on the higher frequencies. Where space is available, a 114-foot flat-top provides a very fine over-all response on a great number of short wave bands.

An inverted-L aerial installed with these points in mind will give excellent reception in a section reasonably free of man-made interference.

Unfortunately for urban listeners, the noise level is usually quite high. For local and semi-distant reception, the noise may not be bothersome; but as soon as the sensitivity of the receiver has been increased sufficiently to bring in real DX, the noise is found to have increased proportionately.

As long as manufacturers continue to produce electrical devices which radiate interference, the listener must attempt the suppression of the noise with his aerial installation.

It has been established that most

of these noise radiations are to be found close to the ground and do not travel very far. Thus, if the flat-top of the aerial is raised to a point where it is above the noise and if the lead-in can be made immune to the field of noise through which it must pass, the pick-up of interference by the antenna system would be reduced considerably.

The only other way for the noise to reach the receiver is through the power line itself and a suitable line filter, placed between the set plug and the power outlet, will correct this condition.

Minimizing Noise

For general broadcast reception in a noisy section, a modification of the inverted-L aerial is suggested. It is an established fact that a high-impedence line, such as the lead-in, is very sensitive to noise radiations; conversely, a low-impedence line is little affected by these waves of interference. Thus, if the aerial has been placed above the general noise level and a low-impedence line is used for the lead-in, a minimum of interference will reach the set.

To realize such a condition, the flat-top wire is terminated at the top of the mast and connected to the primary of a step-down transformer, the windings of which match the impedence of the aerial. The secondary of the transformer is connected to the twisted leads of the low-impedence transmission line. At the receiver, another transformer is used to restore the high impedence of the aerial. And that is one way to reduce noise.

It will be noticed, however, that the low-impedence transmission line is insensitive to noise. It follows that it will not pick up very much signal; and what signal and noise it does pick up will be cancelled out at the transposed junctions of the twisted lead. Therefore, remembering the early remarks about the effective height of the aerial and the importance of a high, vertical lead-in, it must be realized that an installation of this type, depending as it must upon the flat-top for signal pick-up, cannot be as efficient as the ordinary inverted-L aerial.

Consequently, the listener is obliged to determine, possibly by actual experiment, which type is best suited for his location. The presence of a certain degree of noise on a very weak signal may be very annoying, but what advantage is to be had if the low-impedence line removes the signal as well as the noise?

For All-Wave Sets

For all-wave reception, possibly the best antenna is the type known as the "double-doublet." This development was intended to overcome the limitations of the ordinary doublet and to approach an ideal system for short waves as well as the broadcast band.

As the name implies, this system actually includes two doublets, one of which tends to match the antenna towards the lower-frequency end of the short-wave band (49 meters) and the other tends to tune the system towards the high-frequency end of the band (16 meters). This antenna comes ready to erect, with all wires cut to exact lengths for maximum efficiency. A special transmission cable is provided in 110-foot lengths and one or more of these must always be used. A receiver coupling unit serves

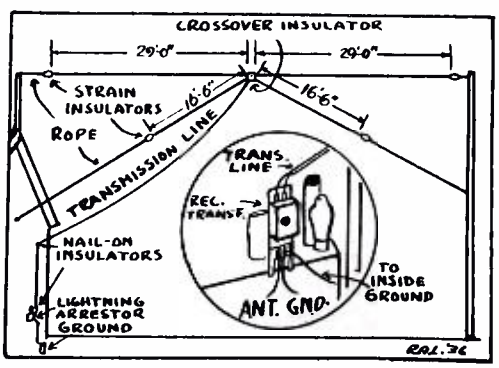


Figure 3. The "Double-Doublet" is recommended for all-wave reception.

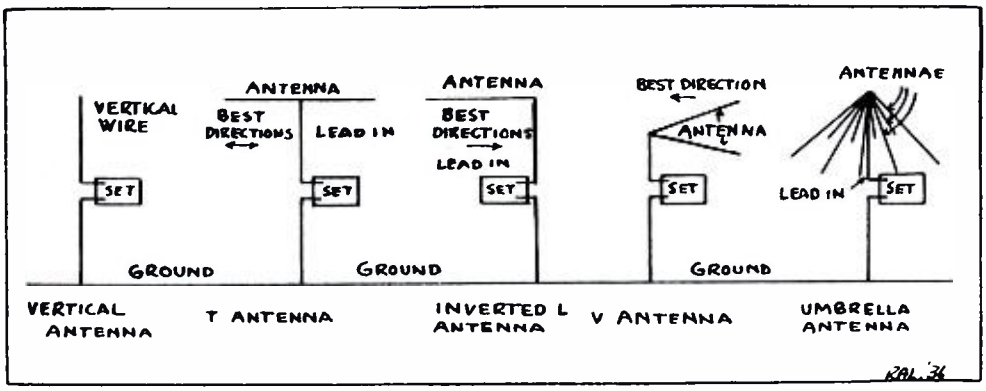


Figure 1. Basic types of antenna design.

five purposes: (1) couples the low-impedence transmission line to the receiver; (2) balances out the capacity of the transmission line to the ground; (3) cancels local interference picked up by the transmission line; (4) permits a ground connection to reduce receiver hum and instability; and (5) provides a switch for choosing between maximum efficiency on short waves or broadcast band.

As in the case of all other type of noise-reducing equipment, the double-doublet is effective only when it has been erected as high as possible.

Here again, however, the inability of the downlead to pick up signals should impair pick-up on the broadcast band. And once more a listener may be obliged to try out a number of installations before arriving at one which is most efficient at his location. It may even be necessary to have two or more antenna installations to meet all of his requirements.

Other Forms

There are many other types of aerials which offer real and imagined advantages. While the inverted-L receives signals approaching on a line from the direction of the lead-in, the vertical and umbrella types receive equally well from all directions. The V antenna is essentially directional as is the T type. In the erection of all of these styles, the basic theories set forth earlier in this article must be heeded for best results.

One type which cannot be recommended under any circumstances is the indoor aerial, whether it be in the form of a wire running around a picture molding, a tape under a rug or so-called "aerial eliminator." While the losses of an efficient outdoor aerial may be in the order of 20 or 30 ohms, those of the indoor type may be as high as several hundred. At best, indoor aerials are merely good noise collectors and, regardless of the claims of manufacturers or even listeners, a good outdoor antenna is essential to the proper operation of a radio set. Of almost equal importance with the aerial in a radio receiving installation is the ground. The ground lead from the receiver completes the fundamental radio circuit and a good connection is an absolute essential to efficient operation.

The Ground

Much has been written about "trick" home-made grounds which are supposed to improve reception, but most authorities agree that the old-fashioned water pipe is the best of them all. Metal rods, old boilers, radiators and other favorite devices can only give a relatively few feet of ac-

tual ground contact. Water pipes, like Fuller Brush men, cover the entire city or town. Water-pipe grounds are recommended by fire underwriters, hydro-electric technicians and radio experts.

Under no circumstances should a gas pipe be used.

One possible improvement to a water pipe ground may be effected by running a wire around the water meter. In some cases, the washers in the joints between the pipe and the meter may affect the connection and the wire assures a good connection. Ordinary ground clamps may be attached to the pipe on each side of the meter and the wire then connected to the clamps.

In rural sections where water pipes are not available, ground may be obtained by a driven rod or pipe, some metal object immersed in a well or stream, or a counterpoise ground. The latter system is particularly effective where it is difficult to obtain a ground of good conductivity (as where the soil is dry and rocky and the ground water is at a considerable depth). This consists of another wire or system of wires supported a foot or two above the ground and insulated from it. The counterpoise should run parallel to the aerial and preferably under it. It merely acts as one plate of a condenser, with the aerial as the other plate. As it has good conductivity, it works better than a high-resistance ground, even though its surface area is much smaller.

As a final word, it must be remembered that no receiver is better than the antenna it uses. No matter how much a listener pays for his receiver, whether it be $25 or $250, the results with the receiver will be no better than its antenna will permit. A good antenna is equivalent in performance to an additional stage of tuned radio frequency amplification.

MISCELLANY

The Universal DX Club announces a contest, open only to members of the club. Briefly, the rules of the contest are: (1) The contest opens Sept. 1, 1936, and closes June 15, 1937. (2) A total of 50 stations will be assigned to be verified; five stations will be listed in the first bulletin and five additional stations in each subsequent bulletin. (3) The stations may be verified at any time during the contest. (4) Credit will be awarded at the rate of one point per mile between the DXer and the station. The member having the greatest number of points at the close of the contest will be awarded a Silver Trophy, fittingly inscribed, for permanent possession.

* * *

Roy Wildermuth, Jr., 223 Woodland Ave., Columbus, Ohio, announces a new Cuban station. The name of the broadcaster is "COCQ, de la RCA-Victor," and it is situated in Havana. "It comes in on about 9755 kcs.," he says. "The station announcement is preceded by two gongs, the first higher than the second. After the announcement a fire siren is sounded. It is heard in the evenings between 7:30 and 8 pm, EST, and is very loud and clear."

* * *

Among the 600 odd stations in the United States, more than a dozen are managed by ladies. Many stations have women as sales executives and program directors. Some of the better-known stations owned or managed by women are WJAY at Cleveland; WNEW, Newark; KOH, Reno; KGBU, Ketchikan; and KMO, Tacoma.

* * *

Major Bowes and his Amateurs are scheduled to leave the NBC on Sept. 13, and four days later, on the 17th, this program will be heard over a nationwide CBS Network under the sponsorship of the Chrysler Corporation of Detroit.

WHAT ABOUT My SPEAKER?

● ● ● *By* B. FRANCIS DASHIELL

WHILE several types of loud speakers are in general use in radio receivers, the one that concerns most set owners is the standard dynamic assembly. It is found in practically all sets that are operated by alternating current. Trouble does not occur in loud speakers as commonly as the disorders that arise in other parts of the receiver; but speakers do require certain adjustments, replacement of parts, and at least an annual examination as to their fitness.

So, if your receiver has been exhibiting symptoms of speaker trouble, and even if it seems perfect, there is no time like this summer season to overhaul and readjust its parts. Perhaps a little study of the speaker and how its parts function will enable most of us to understand the importance of this sound reproducing unit. Certainly, we can not devote too much care and attention to this almost human part so it will continue to give true fidelity of tone.

Field-Coil Hum

The dynamic speaker has two coil windings. One coil is rather large because it must furnish the electromagnetic field which creates the powerful speaker magnet. This field coil carries the strong direct current that is provided by the filter and powerpack system of the receiver. The direct current is first carefully filtered to remove all traces of hum, as otherwise this electrical hum would be transferred to the iron core of the speaker as a magnetic hum.

If a poor quality of rectification is provided in the power or eliminator section by defective filter condensers or too small choke coils, speaker hum will persist. Then, too, hum may be caused by induction between the speaker cords and an adjacent a-c power line. Sometimes a slight increase in the capacity of the filter condensers, or an addition to the filter chokes, will stop such hum. The field coil and iron core of the speaker must, of course, be carefully secured and made very rigid, or a vibrational hum might result.

Field-Coil Choke

Now when this properly filtered and silent direct current passes through the field coil, it sets up a steady but silent magnetic field in the iron mass of the speaker magnet. This is necessary so that the speaker can work. Smaller speakers, using permanent steel magnets, and called magnetic speakers, are suitable for battery sets; but a very powerful magnet, such as can be produced only by a strong current of electricity, is required for all large a-c receivers.

Very frequently this field coil is arranged in the circuit so that it acts as a choke coil or part of the filter system. If a speaker of this type is removed from the circuit, its field coil must be replaced with a choke coil of the same size and inductance, or otherwise the filter and rectifier system will fail to function. In any case, however, the field coil of a speaker must not be removed from the circuit when the set is operating, for its resistance provides a definite portion of the entire load on the powerpack system and its elimination causes the current to become dangerously excessive in the rest of the circuit. This is why set-owners are cautioned by the manufacturers never to remove a speaker plug when a set is turned on.

The Speaker "Pot"

The speaker magnet is shaped like a small-mouthed iron pot. It also has an inner pole that projects upward in the center which is surrounded with the field coil winding. This inner pole forms one magnetic pole of the magnet, while the outer, or surrounding, rim of the "pot" becomes the opposite pole. Between the central pole piece and its surrounding or encircling pole, there is a space called the air gap. This air gap varies in distance across, but in the most efficient speakers the distance is exceedingly small. Of course, not all speakers are designed in this exact manner, for there are many variations from the standard practice of assembly. The principal remains the same in nearly every speaker.

The field coil, which energizes the speaker magnet so it will exert a powerful pull across the air gap, is not the only coil in the speaker. There is another and smaller winding, called the voice coil. This coil is attached to the speaker cone, and is suspended so that it centers exactly within the air gap. However, the clearance between the central magnetic pole and the inner surface of the voice coil must be the same as the clearance between the outer surface of the voice coil and the inner rim of the surrounding pole of the magnet. This matter of perfect balance is highly important.

The Voice Coil

The dynamic speaker, therefore, utilizes two different coils which are not connected electrically. Each coil must be a continuous electrical circuit, for the tiniest break in the many turns of fine wire renders the speaker silent. Testing either coil with a small battery and sensitive meter or head telephone will quickly indicate which coil may be at fault. Replacement with a new coil of similar dimensions and resistance is the only remedy, and any attempt at rewinding the wire usually meets with failure.

The voice coil will not operate when the field coil is dead, and the speaker will not reproduce sound if the voice coil is broken. But the field coil will work even if the voice coil is defective. The voice coil may be disconnected from the output transformer circuit without affecting the set or disturbing the field coil. The latter coil is more apt to burn out and become dead than the voice coil, but it is not impossible for the latter also to become inoperative.

How It Works

The voice coil receives its current from the secondary winding on the output transformer. The primary winding of this transformer is operated by the current from the plates of one or two power tubes, singly or in push-pull. It is well known that the induced current in the secondary of the transformer is an alternating current which varies constantly in frequency and intensity. So, this output, which is fed into the voice coil, keeps a continuously changing magnetic field surrounding the windings of the voice coil.

Now, this pulsating magnetic field, placed as it is within the influence of the steady pull or field between the two poles of the magnet, causes the voice coil to be subject to tiny variations of position, as it is attracted or repelled by the field magnet. The voice coil, which is not rigidly supported, vibrates at all speeds or audio frequencies within the range of the human ear. And these vibrations are identical with the vibrations imparted to the diaphragm of the microphone located in the broadcasting studio.

The Cone

Also, within the speaker, is a part which is usually called the cone. It really is a diaphragm — like the

Two pieces of iron pipe and a whiskey funnel may not mean much to many persons, but Bob Burns, leading citizen of Van Buren, Ark., put them together to make his famous bazooka. He is now recognized as a virtuoso on this instrument, as well as being one of the most popular comedians of the day. Listen to him on the Kraft Music Hall on Thursdays at 9 p.m., EST, on the Red Net.

one in a telephone receiver. The flat cone is constructed of stiff, moisture-proof material, such as parchment. And the voice coil is attached to the apex or center of the cone. The motion of the voice coil is imparted to the cone as a vibration, and in turn is communicated to the air as a sound wave.

The cone vibrates at different speeds at various points on its surface; the highest frequencies occur at its center, and the lowest or the deep bass notes being reproduced near or at the edge. If for any reason the cone should become warped, pressed upon at some spot, or torn or displaced, the tone immediately will be affected. When a cone is found to be distorted or marred in any way the best thing to do is to replace it with a new one.

Defective Cones

Sometimes a layer of dust on the cone will cause a deadening effect, or a change in tone; dust must be carefully brushed off at intervals. Then, too, the rim of the cone fits loosely against a soft, felt lining on the baffle board, and this arrangement should be looked over as the felt should prevent the flow of projected air back around the edge of the cone so as to make better low-note reproduction possible.

Chattering or metallic sounds are observed on loud and high notes, and it will be well to examine the centering of the voice coil or armature within the field magnet. It may be necessary to loosen the set screws and carefully re-center the voice coil. A strip of thin paper wrapped tightly around the voice coil so it can be firmly placed within the "pot" opening of the field coil, will permit of its easy centering. The paper then is pulled out after the screws have been tightened.

Speaker Distortion

Distortion, of course, is not always the fault of a speaker. Frequently there is trouble in the audio system, such as unequal plate current in the two half-sections of the primary of the push-pull transformer and associated tubes. Or there may be tube and biasing resistor and condenser defects. A misshapened cone causes distortion, and any tear should be repaired. Better still, however, the cone should be replaced — the cost is slight. Check carefully to see that the voice coil is properly centered in the field "pot" opening; look over the negative biasing of the secondary coil feeding directly into the voice coil.

A weak speaker usually means that either of its two coils are not receiving a proper supply of energy. Check the field coil for conductivity or a short circuit as well as the voltage being supplied it from the power unit. Check the output transformer, primary and secondary, for conductivity, and see whether it is being supplied with the proper "B" voltage. The cone and its voice coil should be free to move and not "frozen" in any way.

Deep and booming tones in a speaker may be due to resonance

(Continued on page 56)

The CREAM *of the* SHORT WAVES

● ● ● *By* PAGE TAYLOR

MOST of our readers know that the Federal Communications Commission conducted an informal hearing last June to discuss changes to be made on the short and ultra-short wavelengths. A resume of the most important changes in these services made since June will be of interest.

Stations formerly known as broadcast pickup stations are to be known as "relay broadcast stations." The "apex" stations will be known as "high-frequency broadcasting stations."

Experimental relay stations (shortwave broadcasters) are now "international broadcast stations." These senders are required to provide direct international broadcasting services instead of merely a relay as formerly. Regular programs can be rebroadcast on the shortwaves but no remuneration can be received for the s.w. broadcasts and a premium above regular advertising rates cannot be charged if a sponsored program is radiated over a s.w. auxiliary. Separate call letters and licenses will be issued for each frequency; the minimum power for these stations will be 5 kw., and call letters must be announced separately over each station.

In compliance with the new regulation requiring high power, the WCAU Broadcasting Co., 1622 Chestnut St., Philadelphia, Pa., advises us that their shortwave station **W3XAU** on 6060 and 9590 kcs. has been temporarily closed down so the power can be raised from 750 watts to 10 kilowatts.

The experimental broadcast stations on 1530, 1550 and 1570 kcs. are now known as special broadcast stations. The entire band from 1500 to 1600 kcs. has been opened up for broadcasting but it is not contemplated at present that any further licenses in this band will be issued.

The frequency bands from 2000-2100 and 2750 to 2850 kcs. have been dropped from the television service. Experience has shown that satisfactory pictures cannot be transmitted successfully within these narrow bands. Television stations will all be on the ultra high-frequencies, between 42000 and 110,000 kcs.

The 24-Hour Clock

An explanation of our method of indicating time is here included for the information of new readers. We show time by the 24-hour clock, and unless otherwise stated, time is Eastern Standard. Midnight is indicated by 0000 or 2400, and the morning hours are written as usual, except the colon is omitted, 0940 and 1130 being 9:40 and 11:30 a.m. respectively. Noon is 1200. Afternoon hours do not commence to count again at 1 p. m., but continue up to 2400 for midnight. Thus 1 p.m. is 1300, 2 p.m. is 1400, etc. Any number greater than 1200 is p.m. and any number less than 1200 is a.m.

There are a few standard radio abbreviations that should be familiar to all readers. Perhaps the most common is "meg." which stands for megacycles. A megacycle is 1000 kilocycles. The abbreviation for kilocycles is kcs. A kilowatt, 1000 watts, is shown by **kw.**

When writing to radio stations for verifications, listeners are always requested to send **International Reply Coupons** (with very few exceptions). IRC can be purchased at any Post Office for 9c each, and can be exchanged in any country which is a member of the Universal Postal Union for Postage Stamps equal to the first-class letter rate to this country.

For some unknown reason Reply Coupons are not acceptable in Mangua, Nicaragua, as the operators of stations **YN10P, YNLF** and perhaps other stations there will not verify reception unless reporters send three cents in unused United States stamps.

Try for CFCX

A special program will be broadcast on September 20 from 0200-0300 EST from **CFCX,** 6005 kcs., Montreal, P. Q. This station was formerly called VE9DR. The special broadcast will be dedicated to the Newark News Radio Club, according to information from Morton Meehan, Elizabeth, N. J., but all shortwave tuners are requested to listen in and report.

Shortwave broadcasts from the Soviet Union are now radiated on three frequencies, according to a new schedule received from Radio Center, Moscow. On 19.89 meters or 15.090 megs. is **RKI,** 20 kilowatts. **RNE** is used on 25 meters or 12 megs, and a new, powerful station, **RAS,** works on 9510 kcs.

English broadcasts are heard on the following schedule: Daily, 1900 EST, **RAS;** Monday, Wednesday, Friday and Sunday, 1800 EST, **RNE.** Wednesday and Sunday at 0800, EST on **RNE.** Sundays only at 1200 and 1530, EST, over **RKI.**

The Daventry Schedules

The schedule of the British stations at Daventry in effect at presstime follows:

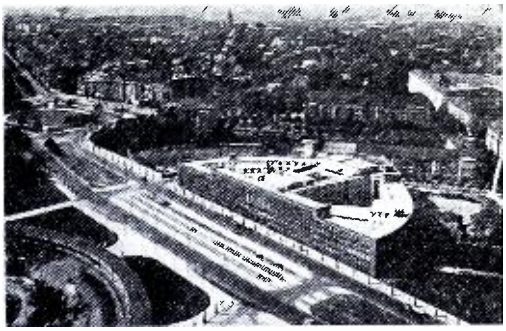
Trans. I. From 0015 to 0215, EST, on **GSB,** 9510 kcs. and **GSD,** 11750 kcs.

Trans. II. From 0700 to 0845, **GSG,** 17790 and **GSH,** 21470.

Trans. III. 0900 to 1200 on **GSF,** 15140, GSG and GSH.

Trans. IV. From 1215 to 1745 over three of the following stations: **GSB,** 9510, **GSD,** 11750, **GSF, GSH** or **GSO,** 15180 kcs.

Trans. V. From 1800 to 2000 on **GSC,** 9580, **GSF,** 15140 and **GSP,** 15310.



The radio ears of the world were in tune with the German Broadcasting Company during the Olympic Games. Here is the Broadcasting House in Berlin, center of the German Broadcasting activity. The little building to the extreme right, indicated by the arrow, houses the German shortwave center.

Trans. VI. From 2100 to 2300 over GSC and GSF.

Slight changes sometimes occur in the times or frequencies used and interested listeners should always listen for the program announcements on Saturday nights for the following week.

In order that listeners throughout the whole world may be assured good reception of the broadcasts from the Olympic Games at Berlin, the German shortwave station considerably increased its power. Reception of the German stations has always been most remarkable, especially in view of the fact the comparatively low power of 7 or 8 kilowatts was used. Beginning the first of August, however, the transmissions from Zeesen were made with a power of 40 kilowatts.

The Zeesen Schedules

The German schedule in effect at the present time is given here:

DJA, 9560 kcs., 0005-0515; 1650-2245, EST.

DJB, 15200 kcs., 0005-0515; 0555-1100; 1650-2245.

DJD, 11770 kcs., 1135-1630; 1650-2245.

DJE, 17760 kcs., 0005-0515 daily; 0555-1100, irregularly during the Olympic Games.

DJL, 15110 kcs., 1135-1630.

DJN, 9540 kcs., 0005-0515; 1650-2245.

DJQ, 15280 kcs., 0555-1100; 1650-2245.

DJR, 15340 kcs., 0555-1100.

The **Norwegian** shortwave station at **Jeloy** was built originally merely to extend the broadcasting facilities within the country, but it has been decided to broadcast experimental programs in an attempt to reach countries outside of Europe. Regular broadcasts started this month, September, according to information from the U. S. Consul General at Oslo, programs being radiated from 1800 to 2300, EST, on 9530 megs. Announcements are made in Norwegian and English. This station was formerly known as LKJ1 but we are not sure if these call letters are used now. The address is Director General, Administration des Telegraphes du Royoume de Novege, Oslo. This is one of the few shortwave stations in the world which permits paid advertising, income from which is used to finance the broadcasts.

10-meter Reception

Reception of the ultra high frequency stations is becoming more common. Beverly Wilder, Jr., Instructor in Geology at Antioch College, Yellow Springs, Ohio, has heard and verified a station **Q8C7** at San Pedro, Calif. on 31 megs. His verification is most interesting, reading, "Since temporary installation of this equipment we have been conducting extensive tests. The purpose of this station is to work two-way communication with our Los Angeles office, but we have been of the opinion that our signals were coming down east of the river (Mississippi) and your letter confirms this opinion. The equipment is manufactured by the General Electric Co. for the United States Coast Guard. The maximum power output is 15 watts. We are working on exactly 31 megacycles. The antenna consists of a copper wire ¼ inch thick and fifteen feet one and a half inches long. This station is located on the waterfront at San Pedro, Calif."

J. Herbert Hyde, Box 82, Elmwood, Conn., has a number of recent verifications with information which may be useful to other listeners. **HC2JSB**, "Ecuador Radio," works, according to their card, on 1070 kcs. and 7854 kcs, with 500 watts power on the s.w. This station, operated by Juan S. Behr, claims to be the oldest station in Ecuador. **HCK**, "Radiodifusora del Estado," Quito, Ecuador, transmits on 5885 kcs. with 250 watts, according to the card.

Anthony C. Tarr, 909 W. Lee St., Seattle, Wash., has been corresponding with the operator of station KAED at Angoon, Alaska, and from him obtained an up-to-date list of the Alaskan telephone stations. "You might be interested in the fact that Angoon has a population of 23 people, 11 whites and 12 Indians," informs Mr. Tarr. "I learned from the radio operator that the town has three churches, Methodist, Catholic and Greek Orthodox, and the entire town goes to all three. The town band, he says, plays on the slightest provocation, and inasmuch as each instrument is slightly off key, the results are most amusing." We wish KAED could broadcast a concert by this band sometime.

South American Data

"**HI3U**, La Voz del Comercio, Santiago de los Caballeros, D. R., is now working on 6014 kcs," according to R. B. Oxrieder, 122 E. Hamilton Ave., State College, Pa. "**HI3U** was on 6380, and I believe it has a power output of 25 watts. The Dominicans certainly shift around a lot; **HI3C** at La Romana, formerly on 6900, is now working on 6098 kcs. This station, La Voz de la Marina, also uses 25 watts, and because it is now so close to W9XF-W3XAL it is heard only very poorly."

"The Voz de Barranquilla," **HJ1ABB**, is reported testing on the

new frequency of about 9560 kcs. in the evenings and mornings.

A letter from the Sres. Nebot y Castro, Maracaibo, Venezuela, informs us that they have bought radio station **YV5RMO** from Sr. Vegas, and changed the name from "Ecos del Caribe" to "Ecos del Zulia." The frequency remains the same, 5.850 megs.

Asiatic News

KZRM, the largest of the Philippine broadcasting stations, is being relayed on shortwaves quite regularly over point-to-point station **KAZ**, 9.99 megs., Manila, according to some reports, while others mention **KTR** on 10910 kcs. as the station which has the rebroadcast. As the purpose of these tests is to determine a good frequency for regular shortwave broadcasting from the Philippines, it is likely that both of these stations are used. These s.w. stations are operated by the Radio Corp. of the Philippines, Plaza Moraga, Manila.

Mr. A. I. Breen, Secretary of the N. Z. DX Association, sends lots of information on stations in his part of the world.

The Radio Club Oceanien, Papeete, Tahiti, in a letter to the N. Z. DX Radio Assn., states that they are the operators of shortwave station **FO8AA**, "Radio Oceanie." This station transmits on 7.1 megs. with a power of 25 watts, but this will be increased very soon. The schedule is Tuesdays and Fridays from 11 p. m. until midnight, EST. They will verify.

The new Western Australia station **VK6ME** will work on 9590 kcs. with 300-400 watts in the aerial. The transmitter is well under construction and should be working this winter.

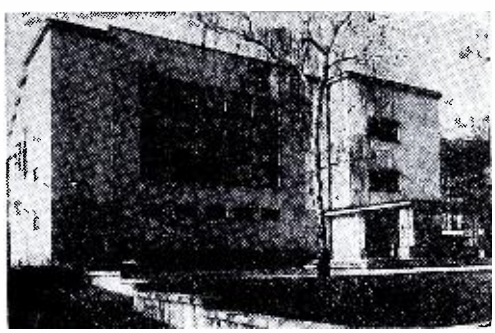
The Chinese station which was heard a few times in the 31-meter band is officially operating on 9460 kcs., according to information received by Secy. Breen. This station was formerly XGON on 930, but its call letters are now **XGOX.** From 0630 to 0930, EST, is the time to try for them.

The Radio Engineer attached to the Post and Telegraph Dept., Bangkok, Siam, writing to "Tune In," gives the call letters of the new station at Sala Daeng as **HS8PJ**, and the wavelength as 27.38 meters (10950 kcs.). This 10 kw. station is on the air every Monday from 0800 to 1000, EST and is heard well in some parts of the USA.

Mr. Breen reports that a station **VJI** is received at R7 signal strength in Dunedin (N. Z.). VJI, Cloncurry, Qsld., Australia, is testing and asking for reports on 8630 kcs. near 0400, EST, Fridays. Address the Aerial Medical Service at Cloncurry if you are lucky enough to receive this low-powered station.

New Europeans

Some bits of gossip picked here and there; none of this data is confirmed. **"Radio Stockholm,"** Sweden, reported on Saturday mornings on 7.1 megs. A station in **Spanish Morocco** is reported on 6.1 megs. **TFJ**, 12.235 megs., Reykjavik, Iceland, has resumed broadcasting on Sundays, 1440-1530, EST. A new shortwave station is reported under construction in **Kaunas, Lithuania.**



The new modernistic-style building housing the broadcasting facilities of the Frankfurt-am-Main station in Germany. This 25 kilowatt station works on 1195 kcs. and is frequently heard by DXers.

Because of its extensive colonial possessions, the Netherlands is interested in developing s.w. broadcasting along the same lines as the Empire Service from Great Britain. The PHOHI now has four frequencies at its disposal, **PHI** on 11725 and 17775, and **PCJ** on 9590 and 15220. Broadcasting from these stations has usually been of a more or less experimental nature.

In March of this year **Radio Beograd II** was put in operation. This Belgrade station, owned by the Post and Telegraph Department of the Yugoslav Government, works on 6100 kcs. with a power at present from 250 to 400 watts. The hours of operation are from 2 to 8:30 am. and from 11:30 to 4:30 pm., EST. Due to the fact announcements are made in seven languages, French, Italian, German, Hungarian, Greek, Albanian and Serbian, this station has already proved popular in the Balkan Countries, which heretofore have had no radio station serving them in their own language. The range of this station will be considerably increased this fall when the power is raised to 2.5 kw.

"The 20-meter Thrill Band is recommended to those who want to hear more foreign countries and to those who just try to log the greatest number of stations possible," points out Ray English, 360 Lafayette Ave., Passaic, N. J. "One big point in favor of this band is that one generally does not have to listen from 30 to 60 minutes for a station announcement; the amateurs give their calls frequently. Foreign amateurs are located at either the high or the low side of the American phone band, and to bring them in one should have a good set, good headphones and a good doublet aerial." Mr. English submitted a list of the 70 amateur stations he has logged outside of North America, but these cannot be included here. The Radio Amateur Call Book Magazine lists all the amateur stations in the world and is recommended to anyone interested in the "hams." We cannot list even the better known stations because their very irregular operating habits make it almost impossible for anyone to tune for a particular station and get it.

Sedley Brown and Allie Lowe Miles, representing a clearing house for domestic relations problems, conduct the program "Husbands and Wives" heard on the Blue Network on Sundays at 6:30 p.m., EST. In this novel program, representative questions sent in by listeners are selected, and then men and women who have successfully solved similar problems are brought to the microphone.

One of the most active DXers, on both the s.w. and the BCB, has announced that his DXing activities are over. Eric Butcher, formerly of Cokeville, Wyo., writing from New Orleans, says he is quitting the game because of poor co-operation on the part of stations. This seems strange in view of the fact he has 60 foreign countries verified; we think the sea has called Erie again and we hope he will send us some first-hand information when he gets down to Australia.

Some assorted information comes from Merton T. Meade, 819 Wyandotte, Kansas City, Mo. In condensed form, the information follows: **HJ4ABE** has moved to 6095; **HJ1ABB** has moved to 6128 kcs. **YNLF**, Managua, Nicaragua, is testing on 9670 kcs.; **HI8Q**, Trujillo, D.

R., was heard on 6240 kcs. Mr. Meade wishes to exchange SWL cards.

Canadian Police

"I have a 1936 Philco and have logged over three hundred stations already," writes Ed Sharpe, 86 Hunter St., W. Hamilton, Ont. "I have heard Hilversum, **PCJ**, on their Wednesday night broadcasts on 9590 kcs. with very good volume and clarity. It is one of the best Europeans at this time. The correct call letters of the Toronto police station are **CYQ**, and the Hamilton police have a new Marconi station operating on 1710 kcs. with the call letters **CZ6F. CYQ** is on 2318 kcs."

"I recently built a two-tube converter which tunes approximately from 16 to 49 meters," reports Warren Winkley, Hughson, Calif. "On this little set I have picked up a number of s.w. stations, among them **XEXA**, 6.182 megs, daily from 1800-2130, PST. **KKH**, Hawaii, Mondays on 7520 kcs. from 2000 to 2145, PST. **DJN**, Zeesen, Germany, 9540 kcs. daily from 1700 to 1930. **HJ1ABP**, Barranquilla, Colombia, 9600 kcs. from 1600-2000 daily. **LRX**, Buenos Aires, announced its frequency as 9660 kcs. The Japanese programs are heard at present on **JVH**, 14600 kcs. from 2030-2200 with very good volume. In fact, all the stations so far mentioned have been heard at least R6."

"I have been more than satisfied with the performance of my Stewart-Warner radio which I bought in 1933," submits Mrs. Alice Wilbur, 203 Mulberry St., Newark, N. J. "I have heard all continents except Asia, and considering my locality which is surrouned by electrical and railroad lines I think I have done quite well. Among the better catches in my log are HAT4, PCJ, HVJ, seven English stations, seven Germans, two Russians, eleven in the city of Trujillo, D. R., and many others."

Correspondents Wanted

Wallace Howe, 3 Headley Terrace, Irvington, N. J. Uses a 7-tube Grunow and although he would like to hear from anyone, is especially anxious to write to Grunow users. Has heard all continents but likes the hams particularly.

Edward Hughes, 1212 Castlewood Ave., Louisville, Ky. Is 15 years old and wishes to exchange photographs as well as correspondence. Amateur reception is his chief interest and he does his listening on a Stewart-Warner converter.

Roland Doyle, 24 Baden Powell St., Rockhampton, Australia, wants to exchange cards with American fans. He has been DXing about two years, has 540 cards in his collection, and the card he sent us to look at is a beauty, worth having. This one is also a ham listener.

Robert Armstrong, Route 13, Dayton, Ohio, says he will answer all letters he receives. He does not confine his tuning to the amateurs but tries all the bands; confesses he likes the 20-meter hams though.

"Someone may be interested in knowing how long it takes a verification to come from the Fiji Islands," suggests Carl Scherz, Box 856, San Angelo, Texas. "I heard **VPD**, 13075 kcs., on April 4, wrote to them the same day, and received my QSL card on June 15. This station is weak and hard to get here. It is heard beaween 12:30 in the morning, EST, and 1:30."

Czechoslovakia on the Air

Just as we go to press two listeners write about their reception of the new shortwave station located at Podebrady, *Praha, Czechoslovakia.* W. H. Chorley, 42 Langside St., Winnipeg, Man., says, "You may be interested to hear that at 1620 CST I picked up Prague. The announcer gave his frequency as 19.698 meters, saying that later on he was moving up to 25.51 meters. I was listening to

Berlin and London at the time, and on returning to Prague heard the announcer say that he was moving to the 6 megacycle band."

The other reporter, John F. Holub, 1419 So. Clarence Ave., Berwyn, Ill., learned a few more details. "I heard *Radio Podebrady* testing from 11 p. m. until midnight," he pens. "They announced they had been broadcasting from 20 hours British Summer Time Friday to 8 hours Saturday (2 p. m. to 2 a. m. EST?). They changed every hour and every half hour to a new frequency, in the following order: 15230 kcs., 11 to 11:30 p. m.; 11760 kcs. from 11:30 to midnight; 6115 from midnight until 12:30 a. m. etc. On 19 and 25 meters (15 and 11 megs.) signals were very good and the Czechoslovakian music delightful. I couldn't hear them on 49 meters (6115 kcs.). I have mailed a report and hope to be able to confirm the frequencies and other data."

T14NRH

From Sr. Amando Cespedes Marin comes a letter announcing the return of his well-known s.w. station to the ranks of regular broadcasters. "Now **NRH** is back on the air, on 9670 kcs., between Havana CMQ and Daventry GSC," Sr. Cespedes writes in his distinctive style. "She is crystal controlled now and the schedule is 8 to 9 pm CST and 10:30 to 11 pm CST. The very first one to report my first testing was Mr. Capt. Horace Hall. I did not advise anyone officially about my coming to the air, because I wanted radioways to be our own testification, and thus I have received bunches of mail from USA and West Indies, and they all state NRH is as clear as a big station and all inquire about its power. They all copy all I have to say. How good of them, because they cheer fraternity and no advertisements at all. More over, I talk my own English and feel my own ways. Please advise all friends that NRH is back to stay, for I work no more the TIRCC which actually is a great failure. I ended my year contract there and decided to renew NRH activities."

Old timers will remember that NRH, Heredia, C. R., was one of the pioneer shortwave stations of the world, and with the very small power of 7.5 watts was heard around the world. His present frequency and operating schedule are very nearly identical with his original set-up. After achieving world renown as the successful operator of the smallest radio station, Sr. Cespedes, hoping to widen his audience still more, increased his power. Subsequently he was called to Nicaragua to install and operate several stations there, and for the past year he has worked and managed TIRCC at San Jose, Costa Rica. Now he is back in his own city, with his old friends and among his bamboo trees and coffee plants, trying to recreate "the world's most friendly station."

Radio Saigon?

"I believe **Radio Saigon** is finally back on the air on 11.75 megacycles," supposes Roy Myers, 4506 St. Elmo Drive, Los Angeles, Calif. "It has become quite a joke among local DXers, every time they hear an unknown station, to say that perhaps it is Saigon, but I think this time it really is. There is another unknown on 6.85 megs which is heard quite regularly at 0500, PST, with a lady broadcasting news items in English about the Orient.

"On the shortwaves, over 150 verifications have been received, with four of them from Africa. I still have five more reports out to Africa with only one overdue, ZTJ. I think that is pretty good, to have nine Africans on the west coast. Listeners who want to hear real DX should tune in the 14 meg. Amateur band; near 1800, PST, I have heard XU3FK at Chefoo China, VS7RA in Ceylon, VS6AQ in Hong Kong, and three Javanese."

Among *the* Alaskans

READERS may wish to have some up-to-date information concerning many of the Alaskan 'phone stations," surmises Ashley Walcott, 76 San Rafael Way, San Francisco, Calif. "The information I am submitting comes from operators of the respective stations. First, **KAED,** Angoon, is a 40 watt Territorial station on 2616 and 3092.5 kcs. On 2616 it can work any other station, but the operator has a regular schedule only with **KAEP,** Tenakee, at midnight, EST, probably daily. **KAEP** is a new Territorial station on both 2616 and 3092.5 kcs., working Angoon and Juneau. Coming back to **KAED,** it works on 3092.5 exclusively with WXA, Juneau, at 12:45 am EST.

"**KGM,** Ketchikan, answered a September report in January, giving his schedule with his ships as noon, 1600 and 2300, EST. It is not known if these schedules still are kept.

"At Cape Pole, **KIJB,** 2994 kcs., with ten watts, works with KDK at Wrangell. It is heard occasionally at 0130 EST.

"**KIJR,** Port San Juan, is a 50 watt Northern Radio Co. station, and works two other salmon canneries, one at Todd, Chichagof Isl., and the other at Uganik Bay, Kadiak Isl., and also the Signal Corps station at Anchorage, WXE. Port San Juan is located about 5 miles across the bay from Latouche in Prince William Sound, on Evans Island.

"**KIJW,** Shearwater Bay, Kadiak Island, works with **KIJX** on 2912 kcs. at 1330, 1900 and 0015, EST. According to a map he sent, Shearwater Bay is at the extreme end of Killuda Bay. Mr. R. C. DeLong is the operator.

"**KIJX,** in the town of Kadiak, repeats the schedules given by KIJW, and adds two with KIJP, Uganik at 1315 and 0000. EST. Both KIJW and KIJX are 50 watt stations, working on 2913 kcs. most of the time, but with an alternate frequency of 2632 kcs.

"There are three new Territorial stations in the Aleutian Islands: **KAEW,** Umnak Island; **KAJJ,** Atka Island, and **KAJU,** Attu, Isl. All are licensed for 5207.5 kcs. and for 2616, according to WXE. These stations work WXY at Nome; I am not sure of the schedules but I have heard one at 5:30 am, EST.

"**WXY,** Nome, is heard on 2604 working the Aleutian Islands."

It was reported in the press recently that Andre Kostelanetz and Lily Pons will be married, perhaps the first of next year. Kostelanetz conducts his dance orchestra on the CBS on Wednesdays at 8 p.m., EST. and on Fridays at 9 p.m.

The Red River Broadcasting Co. has a construction permit to move its station KGFK, 1500 kcs., from Moorhead to Duluth, Minn. When the station is set up in its new location the call letters will be changed to KDAL.

Another New Season *on the* B. C. BAND

● ● ● *By* CARLETON LORD

WITH the approach of September, a new DX season looms upon the horizon. After a few months of respite from the regular early-morning sessions at the dials, it is with a decided sense of anticipation that listeners look forward to the coming months and wonder what is in store for them.

A year ago, we ventured to predict a poor season for DX on the broadcast band. This was based on the established fact that the much-publicized sun-spot cycle had passed its 1933 minimum and was on a decided uptrend towards the maximum in 1939.

Listeners will now agree that the 1935-36 season was, to say the least, disappointing. Static was abnormally high most of the time. Signals appeared to be blanketed early in their journeys through space and seldom were satisfactorily received at a distance.

From all indications, the approaching new season will probably be a repetition of last year. We hoped that we were wrong when we made our prediction twelve months ago; we hope that events will prove that we are in error now.

Making Ready

However, while there is little that listeners can do to change nature's strange command of the phenomena of radio, there is a great deal that can be done to make the most of such reception as we have.

Some fortunate DXers will be trying their hands at tuning new 1937 receivers. Those who will be starting another session with their older models would do well to check over their installation carefully.

Two causes of weak signals are dirty condenser plates and tube sockets. A soft pipe cleaner drawn between the plates several times will clean up the condensers. Tubes should be pulled and their prongs polished. Jacks and phone plugs should be cleaned and polished. A small piece of emery cloth, rolled about the size of a match, will do wonders in cleaning up socket contacts. Many other attentions will come to mind after the check-up has been commenced.

The tubes themselves should be checked and replacements made of any which test the least bit weak. While most listeners don't think of tubes until their receivers start to act up, a bad one can mean the difference between hearing a good catch at comfortable volume and absolute silence. Just as a bad spark plug is supposed to waste one gallon of gasoline in ten, a weak tube can waste ten out of ten Aussies or Europeans.

Of primary importance is the aerial and ground. If a sky-wire has been up more than a year, it should be checked carefully. Listeners should make certain that all connections are well-soldered and that bare wire has no chance of grounding anywhere. A tree or a vine may have grown during the summer to the extent that it will touch the wire.

Better still, while the weather continues warm, why not put up a new aerial?

Checking Results

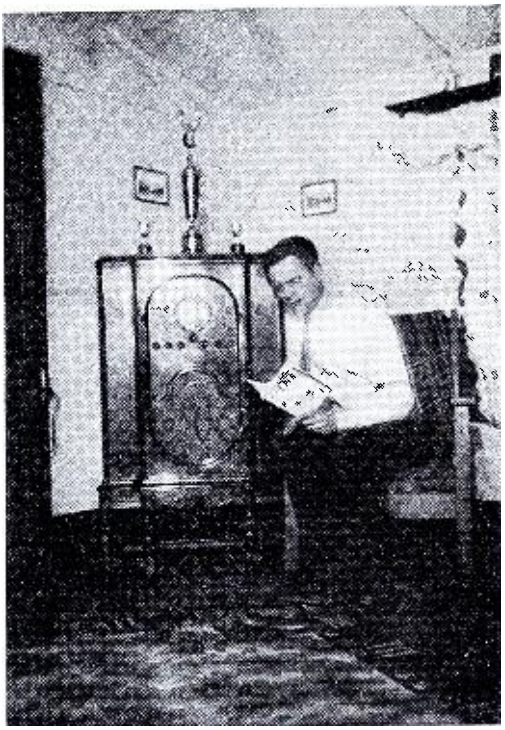
As in most hobbies, DXing offers its devotees some manner of compensation for their efforts. Some listeners point with pride to a growing

list of prize verifications, others count valued friendships as their reward. By whatever scale the returns are measured, the summer months offer DXers a grand opportunity to check on their results and count the profits against the losses.

"Checking through my back copies of RADEX a few days ago, I came upon a letter of mine which appeared in the September, 1935 issue," relates Evan S. Morrow, 2161 Ashland Ave., Detroit, Mich. "This reminded me that I have been DXing for about a year. When I last reported, I had heard 113 stations and had verified none. Now, I have heard 470 and verified 22. My best catch during the year was the 100-watter, KPQ, Wenatchee, Wash. The nicest veri came from WTFI, which was heard during the Mystery DX Contest. WEOA, Evansville, Ind., advises that it will verify for return postage. A few issues ago, someone reported that WMBC was one of three out of 35 stations reported to on a frequency check which had not verified within three months. They verified a report for me four days after it had been sent."

"Using a 6-tube Philco Model 89L, I have just completed my first season as a DXer," admits Robert Patterson, 2119 Kenwood Blvd., Roanoke, Va. "Veries have been received from Radio Normandie, LR1, LR4, LR5, CFCT and CKOV. I am still waiting for LS2 to come through. Next season, I have high hopes to verify every continent on the BCB. Why not make it a rule that all reports should include the make and model of the receiver used by the DXer? If a good catch is reported for a small set, I am very much interested; but I won't lose much sleep trying to duplicate the reception of a 23-tuber. Incidentally, what make of set does Charles Hesterman use?"

According to our last report, the "Saskatoon Skeeter" uses a 12-tube



Charles Hesterman, "The Saskatoon Skeeter" with his 12-tube Canadian Westinghouse super.

Canadian Westinghouse super. A picture of Mr. Hesterman and his receiver is included in this issue.

Cubans Do Verify!

Warren E. Winkley, the Ahwahnee, Cal., DX addict, offers concrete evidence that all is not what we might think down Cuba way. "New veries have rolled in from CKFC, KRNR and CMQ," he writes. "The verie from CMQ is the fourth from them. Considering the average idea about the Cubans, that is a bit unusual. Since my last report, I have been fortunate enough to log as new stations KRNR, KELD, CFRN, KSLM and KASA. That brings my log to exactly 690, which pleases me somewhat as I am 'handicapped' with an eight year old receiver, incessant static and a location remote from most of the stations."

"In a period of approximately 13

months," summarizes Julian Schaefer, 2036 West 83rd St., Cleveland, Ohio, "I have heard 750 stations, of which 593 are verified. During the past seven months, I have used a Midwest 16, on which all of my best 25 catches have been logged: KVL, KIT, KXRO, KFIO, KRNR, KAST, KORE, KIEM, KFXM, KXO, KERN, KDON, KRE, KGFJ, KWG, KUMA, KSUN, KGAR, KGEZ, KFXD, CFCT and CKOV. All are verified. Critics said we had a poor season last year, so I should do a lot better this winter."

"By logging 20 new stations to bring my log up to 436," advises Vernon R. Grassie, P. O. Box 213, Duncan, B. C., "I wound up a very fair DX season. Latest veries are KALB, 3YA, 4YA, WGCM, KUMA, KGCU, WAAW, KSLM, KGY, KSAC and KPAC. New catches include KAST, KFIO, WWSW, WCAT, WTAL, KLUF, KRLH, WCAD, KNET, WHBC, WCAP, KROC, WMFF, WGCM, 3GI, 2NC, 2UW and 2AY. 2AY, the 100-watter, was quite a surprise, believe me! I copied a report on them and hope I get a verie." We do, too, Vernon!

"After two years of DXing," greets Harry V. Adams, Bay View, Digby Co., N. S., "my log shows a total of 575 stations, of which 124 are verified. Trans-Atlantics logged this past season were Radio Normandie, Bordeaux, Rennes, Cologne and Poste Parisien. Of the South Americans, I heard LR1, LR4 and LS2. Best veries in North America were CFJC, KFIO, KORE, CJOC, KIRO and KICA. I am using two receivers alternately for DX work — a three tube Westinghouse 53 and a four tube Grimes super."

"At the end of my third season of DX on the broadcast band, I have logged 582 stations," reports Clifford Van Tassell, 138 Washington Ave., Pleasantville, N. Y. "Some of the better catches include Radio Normandie and LR1, while others heard well but not reported were LR3, LR5, LS2, CX26, Poste Parisien, Bordeaux Lafayette and West Regional at Cardiff. A report is out to LR4 and YV1RC has been verified. Of the Aussies, 4QG and 3LO were weak but positively identified. It has been my experience that TA's are best heard the latter part of December and through January. I tune for them between 2:00 and 3:30 A.M., but fellows on the coast prefer the late afternoon and early evening."

"I have been DXing since September, 1935 with a six tube Philco Model 620," offers Jack Horner, N. Market St., Elizabethtown, Pa. "My aerial is a Philco all-wave, running NE by SW. In this season, I have logged 429 stations, with 112 of these verified. My best catches are LS2, LR4, LR5, TGW, KGIW, KFVD, KROW, KIRO, KFAC and KGFF."

Verifications Again

As might be expected, the question of verifications continues to pop up unexpectedly. In the Midsummer issue of RADEX, Howard L. Spies asked the question, Why Verify? He gave his reasons for believing that the collection of verifications was an unnecessary part of DXing. In another section of this issue, John DeMyer, who might be classed as an expert, takes up the torch for the verifying brethren.

As far as we can determine, a DXer's policy in regard to veries is pretty much a matter of personal preference. Some listeners obtain a great deal of satisfaction merely by hearing a station, and no end of verifications, confirming what they have known all along, can increase their pleasure in a good catch. To these DXers, the process of tuning a new and distant station appears to be their primary source of enjoyment.

Then, too, the process of procuring verifications is often a rather expens-

ive measure. Cards, letters, stamps and repay coupons can run up a tidy bill during the course of a season, and not every listener is in a position to shoulder such a burden. If a verification means nothing to him, he would be foolish to go after them.

Reports from readers seem to indicate, however, that a large majority of listeners want to confirm every station heard. While some DXers will limit their verifying efforts to foreign catches and real DX, most of them agree that the, "You heard us!" message on a verie is quite worth while.

While few of us are inclined to doubt a report of a station heard, a verification does lend a convincing stand to any report. To have heard a station at a distance with sufficient clarity to make a verifiable report is often a fine achievement, and a confirmation may be classed as a welcome reward for time and effort.

Counting Veries

Whenever the subject of verifications is brought up, there is usually raised the question of how to count them when we have them. The matter has been discussed pro and con, time and again, and we shall probably never arrive at a system which will meet the approval of all listeners.

As Paul Sampson, 1820 College Ave., Regina, Sask., points out, "Counting stations is purely a personal matter. The reason I count by calls is that there is less chance of including a station twice when it should be counted but once. As far as I can see, there is only a slight chance of error in this method. After all, logging is a matter of individual honesty."

"If every DXer had a chance to air his pet system of counting verifications," remarks Charles E. Roach, 816 North 7th St., Camden, N. J., "there would be as many systems as there are DXers. To my mind, a verification is proof of reception of a station, pure and simple, but only proof to you, personally. From the signatures on the verifications I have received, it is understood that most of them are taken care of by office clerks and slip-ups are bound to happen. But as long as you honestly reported your station, you are entitled to your verification and you may count it as you will."

Much as we dislike to admit it, it is impossible to get around the fact that there are a few listeners who have no scruples when it comes to going after a verification. How

"Don't stay up all night DXing," says R. T Coales, 54 Chelsea Road, Southsea, England. "Do your SW listening in comfort." The cup was first awarded in the British IDA SW contest and was won by Mr. Coales.

they can obtain any personal satisfaction for a verie obtained in an underhanded manner is difficult to appreciate, but they continue to apply for their cards and letters and we suppose they have some use for them. Perhaps they enjoy the knowledge that they have been able to put something across on a station.

"I am acquainted with managers and engineers of many stations," supplies Robert D. Wade, 3704 Tyler, Amarillo, Texas. "Not so long ago, a 1000-watt station in Texas failed to go on for its FCC check because of unforeseen transmitter difficulty. Believe it or not, they received nearly

50 reports requesting a QSL card for that broadcast. The chief engineer and managing director of this station are intelligent men, they enjoy a good report and, to my knowledge, they will go out of their way to assist an honest DXer. I talked with the engineer after these reports came in and his attitude was expressed in five words: 'That ends the verification business.' He later qualified that statement with, 'Well, if I get a report that checks the log, I'll verify; but I still think it's a waste of money.' With such monkey-business going on, how can we expect to have him think otherwise?"

Postage or No

During the past year, many listeners have complained that they sent a three-cent stamp with their report and received just a card of verification. If the station chooses to keep two of the three cents to cover some of the cost of verification, we feel that they are entirely within their rights. It is no small task to sort out letters, check reports with log and write replies. When a station has counted the cost of that labor and added on the expense of a letterhead, we doubt if their margin of two cents leaves them any profit.

Edward R. Peterson, R. D. 2, Box 176, Ventura, Cal., expresses his views: "One night last winter, I heard the Honolulu stations, KGU and KGMB. I wrote these stations, enclosing three cents in coin. KGU sent me a penny postcard, while KGMB never replied. I feel that if a station calls for reports, they should pay the postage on veries; if a listener hears the station and wants a reply, he shall pay the postage."

"Isn't it only civil to enclose a stamp when asking a favor of someone?" queries Mrs. A. C. Johnson, Henry, S. D. "Then, why is it any different when writing for a verification? I should think that anyone who writes in for a confirmation would be more than glad to send along a stamp. The stations give their time and it certainly costs them something. The stamp covers the postage only. Why not blacklist all who refuse to enclose stamps."

We tried a variation of the blacklist idea when we printed the names of the postcard reporters on the WCSH transmission during the Mystery DX Contest last winter. Just what effect that had is hard to say. We did receive an apology from one of the listeners. He pleaded ignorance of the rules of decent DXing, saying that he had printed a batch of report cards and couldn't afford to throw them away.

Contest Winners Report

"I can't thank you enough for the splendid Scott receiver which I was fortunate enough to win," acknowledges S. R. Lewis, R. D. 3, Box 660, Toledo, Ohio. "It certainly is a wonderful set and I am more than pleased with its performance. While I haven't had much opportunity to give it the works on the broadcast band, it sure is the berries on short waves. Selectivity, sensitivity and tone are perfect!"

"I received my Hallicrafters receiver O.K.," advises Cleland Herman, 602 S. Cedar St., Owosso, Mich., "and I am getting much enjoyment out of it. I am 18 years old and started DXing in 1932. My first verification was from XED, Reynosa. I now have about 700 veries from all parts of the world."

"Thanks very much for the prize," pens Bill Vornkahl, Westport, Conn. "I sure consider myself both lucky and unlucky. I missed WNEW on one of their transmissions as well as WNBX, two of the easiest-to-get stations for me. I sure did want that Hallicrafters, you know how it is. The old Majestic sure does need tubes, the old ones being three years

A "Miss Radio" is chosen every year, but the radio ladies are becoming so attractive that this year it was necessary to choose three Miss Radios. Helen Marshall, a taffy blonde weighing 113 pounds, was chosen as a beauty of the "outdoor girl" type. Harriet Hilliard and Dorothy Lamour are co-holders of the title.

old. If you have another contest next year, just reserve the first prize for me. If I can get third prize with old tubes, you can judge for yourself what I will do with new ones."

"I want to thank RADEX for the subscription which I won in the contest," notes William Tawzer, Jr., Glenshaw, Pa. "The first issue arrived the other day and it certainly beats buying it at the newsstand."

"Many thanks for the prize," briefs Harry M. Gordon, 317 East 10th St., Erie, Pa. "It was a grand contest and I know that the Candler Code Course will add to my enjoyment of radio."

Another Contest?

Readers seem to be unanimous in the opinion that the contest should be repeated this season. While it is admitted that our setup was not perfect last year, we have received many suggestions and believe that a possible repetition of the event will interest a greater number of listeners.

It has been suggested that the contest be conducted for three hours a night, one or two nights a week, for two or three weeks. While this would undoubtedly be a bit easier on the listeners, we cannot help but feel that it would offer too much opportunity for contestants to compare notes. We dislike to admit such a possibility, but the last contest offered ample proof that we must guard against any such opportunity. Of course, it would be possible to send in reports for each week's reception immediately, but that would complicate the work of the judges too much to be practical.

Therefore, believing that a prize worth having is worth trying for, we are going to repeat the three successive day idea and have tentatively set the date as the week-end of February 20-22. This would mean Saturday and Sunday mornings, with the addition of a holiday on Monday. We believe that this will permit the greatest number of contestants to take part. Accordingly, DX clubs are requested to refrain from scheduling any special programs on those mornings. In the event that any stations volunteer a dedication, perhaps the clubs concerned could suggest another date.

At present, we are inclined to favor the hours of 2:00 to 6:00 A.M., EST, as we had last time. However, the problems confronting the Pacific Coast listeners will be remembered and we feel that they will have an equal opportunity with the Eastern listeners. If necessary, we will publish a list of Western stations which will *not* take part. This may be necessary since so many stations on the West Coast will still be transmitting regular programs during the first hour or two of the contest.

Also, to take away the advantage which the Central states may have

in position, we plan to give a bonus of five points for each station more than 2000 miles distant. In this way, listeners living East of the 85th parallel and West of the 110th, will make up in points what their locations may lose in stations.

Every letter received so far has been of the opinion that a small fee to cover costs of printing standardized report cards and summary sheets will be justified. We are planning, therefore, to make up a package which will include about 100 report cards, a summary sheet and a complete list of the rules. The cost has not been determined definitely, but will probably be about twenty-five or thirty cents.

We hope to have an even more attractive list of prizes this year and believe that every DXer will find it worth while to enter. An innovation will be in the form of place prizes, which will go to listeners who place 25th, 50th, 75th, 100th, etc. In this way, a listener will not have to rank among the top winners to be assured of a worthwhile award.

It has been suggested that an informal competition be staged among the radio clubs to see which organization can bring forth as contestants the greatest percentage of its members. If the clubs are willing to cooperate in this manner, we will try to arrange a prize for the winning club.

Comments and suggestions on this tentative plan for the contest are requested and it is hoped that all readers will let us have their ideas.

From Esteban Parra, manager of the new Mexican station XEP at Juarez, Chih., comes an announcement of a forthcoming test program: "Since we are a new station on the air," he writes, "you probably do not know much about us. We started on May 10th of this year and, so far, have had very good results on our test programs.

"Knowing that you are always interested in securing DX programs for the members of different DX Clubs, we wish to advise that we will put on a DX program between 3:00 and 5:00 AM, EST, on Saturday morning, September 12th. Being a new station, we are naturally anxious to receive as many letters as possible and, to insure this, we promise to answer each and every letter received. Those that check with our programs will be verified. Those that only report our programs and do not send a detailed log, will receive only an acknowledgement." Station XEP operates on 1160 kcys. with 500 watts power.

From G. E. Bott, 507 Southampton St. E. Hastings, N. Z., comes word of two new goals for DXers. Station ZJV at Suva, Fiji, is now operating on 880 kcys with 400 watts power, while FJP, Naumea, New Caledonia, is using 500 watts on 600 kcys. FJP, according to a verie sent to Mr. Bott, operates between 0730 and 0900 GMT, which would be 2:30 to 4:00 AM, EST.

Attention is called to the regular DX club broadcasts from KGGC, San Francisco, 1420 kcs. which are now on the air at a new time, 12:45 to 1:00 AM, EST.

One reader who will have an opportunity to hear many new stations this summer is Dr. M. Dean Miller, 73 E. Exchange St., Akron, Ohio. He writes: "Am leaving shortly for a vacation which will take in the Gulf Coast, the Southwest, the Pacific Coast from San Diego to Seattle, and then through the National Parks. Will have a radio in the power car and in the trailer. Ought to be able to log plenty of new stations with this layout, but doubt if it would be fair to count them." Perhaps Doctor Miller will favor us with a report on the type of reception he experiences during this long journey.

It has always been a question in

(*Continued on page* 58)

Radio Troubles *and* REMEDIES

● ● ● *By the* TECHNICAL EDITOR

MY RADIO is an Emerson, model 105. It has three connections on the back, one for the ground and two for a doublet. When I have the two wires of the doublet connected on these many of the foreign stations do not come in at all. But when I connect only one wire of the doublet I have twice as many stations. It seems to me that I ought to have stronger signals when both doublet wires are connected than when only one wire is attached.

Look and see whether one of the doublet terminals on your radio set is grounded to the ground terminal by a small piece of wire. If so, this wire must be either removed or cut before the doublet type of antenna can be used. It may be that you are partially grounding your antenna when you connect both ends of your doublet leadin to the two contacts on the receiver. When you connect one side of the doublet, which is somewhat like a single-wire antenna at that time, you most likely attach it to the single antenna post and it works fairly well in this position.

If the doublet terminal, mentioned above, is not grounded, then we suggest that a careful examination of the antenna coil which is attached to the doublet terminals, be made for grounding or poor contact. On the other hand, is your doublet perfect? Are you using a set transformer or simply a doublet with twisted leadin? This latter does not always work so well with some types of receivers, and it may be that a set transformer will be necessary.

Antenna Troubles

I wish to erect a new antenna to use with my new all-wave set that covers five wave bands, including all the short waves. I am particularly inclined to the RCA World Wide antenna, but my roof is of such a size that the antenna cannot be erected as recommended. My roof is only 36 feet long, and the new antenna has a total length of about 45 feet. Can I run the short portion and part of the long portion flat on the roof and drop the remaining part of the long portion down on an angle from the end of the roof?

The manufacturers of noise-reducing antennas have provided certain arrangements of assembly which must be followed in order that good results will be obtained. We do not feel that the scheme you suggest will be so very satisfactory, yet it can be attempted with fairly good results. There are a number of antennas now being offered by manufacturers, all of which vary somewhat in their es-

Harriet Hilliard, Robert L. Ripley and Ozzie Nelson are all enjoying vacations now but will soon be back on the airways. Ripley is flying around the world, crossing the Atlantic on the "Hindenburg" and the Pacific by Clipper Ship. Here Harriet is telling him that once she hit a note THAT high, "Believe it or not."

sentials. Perhaps one of these will fit in with your situation.

If you have no need to eliminate man-made static from nearby electrical sources, the doublet type of antenna is not so necessary on the short waves. Most any type of straight, or "L" type, antenna will do. The seemingly peculiar lengths of antenna tops that so many are using are the result of computations which give to the antenna itself the greatest resonance on the different shortwave bands and the harmonics of other bands. There is no such thing as the ideal length of antenna to fit all wave bands. So if you make some slight alterations it may be that you will experience no great disadvantage. The principal thing is to reduce man-made static.

Head-Phone Adapter

How can I use the Perfect head-phone adapter with my new 18-tube Midwest receiver which has two sets of power tubes? I imagine I will have to place several adapters under the power tubes.

This magazine has prepared an instructive leaflet, which you no doubt have seen mentioned in our pages, dealing with the use and connection of the Perfect phone adapter. Write for a copy, and if there is any additional information you may require, we shall be glad to point out anything which you may not understand.

Scott Speakers

Can you advise me as to whether the single 12-inch auditorium speaker furnished with the Scott receiver will be sufficient to bring out all the tone, or will it be best for me to get the high-frequency speakers also to use in conjunction with the big speaker?

The single speaker is all that is needed for any receiver. But, if you are very particular about reproduction and distribution of the highest notes, the additional smaller speakers are of very great value. The combination of different-sized speakers gives the listener a greater fidelity of tone reproduction, but many people are perfectly satisfied with the tone quality from a good single-cone speaker.

The additional, smaller speakers reproduce the highest notes, and because they are set at an angle away from the large speaker, the high notes are thrown out to each side of the cabinet so as to get a better distribution throughout the room. We think that the single speaker will give you most of the tone to a satisfactory degree, but, of course, the additional high-frequency speakers will give you all the tone that it is possible to obtain from present-day radio receivers.

Kolster K-20

I recently obtained a Kolster K-20 set that was built in 1928 but has been used very little. The set is quite sensitive, for when locals are off it picks up foreign broadcast band stations, but it is not very selective. Do you think that shielding and tuning the t-r-f circuits would help? When I use a wave trap it makes the set more selective but cuts down sensitivity so much that I cannot get anything but the local stations.

This receiver is a tuned-radio-frequency circuit using three type 26 tubes in the three radio-frequency stages. There is a vario-coupler device that tunes the antenna input. It is not very selective, but cannot be used with a wave trap to any advantage. It is a circuit that cannot be helped in this design. A set having four tuned stages should be highly selective, and perhaps this first antenna tuning stage has something wrong with it. Check it over for proper action. You might try replacing it with a simple antenna tuning coil — primary of 18 turns and secondary of about 70 turns, or make it an exact duplicate of the r-f coils that follow in the circuit.

Fibber McGee and his better half, Molly, heard over the Blue Network Mondays at 7 p.m., EST, find their half hour program of comedy and music steadily increasing in popularity as it enters its second year. The roles were created by Jim and Marion Jordan. This team was on the air more than a decade before the big chance came that landed them on the present series.

This circuit does not make provision for careful tuning or aligning. It might be well to purchase four small trimmer condensers and place one across each of the tuning condensers. With the trimmers you can adjust each tuned circuit so that all condensers on the tuning rotor will tune each r-f coil to maximum resonance.

Check over each of the grid leaks and grid condensers placed in the grid circuit of each of the three type 26 tubes as well as the type 27 detector tube. Perhaps replacement of these units will increase the selectivity. How are the type 26 tubes? These tubes can be replaced with type 24s if provision can be made to supply the high voltage needed for the filaments, and circuit changes are made to take care of the cathode and the plate voltages.

Perhaps shielding of the three r-f coils will help, but the manufacturers would have done this if they thought it necessary. However, shielding does not cost much, and, in fact, you can replace the present r-f coils with new ones already encased in shielding can. They may be purchased from most any mail-order radio supply concern. Do not attempt to shield the tuning condensers, as you will alter the tuning and established capacities of the condensers.

Noisy Location

My home lies between an electric line and a railroad. There also are telephone and telegraph lines within 25 *feet of the house. My antenna is* 40 *feet in length and is* 40 *feet from the railroad but not exactly parallel to it. I have much difficulty in tuning, and get lots of noise mostly in the evening. Then we hear the telegraph clicking most of the time. I have a Stewart-Warner, and hope you can make some suggestion that will help me.*

About the only solution is that you try a noise-reducing antenna, such as the Lynch, RCA, Silver, etc. But this will not help you any unless you can place the antenna top far enough away so that it will be outside of the electric fields of the lighting and telegraph lines.

We suggest that, since the house lies between the sources of interference, you erect the antenna at right angles to the railroad and its parallel wires. Place the antenna proper as high as you possibly can. The leadin can be very long, if need be. You have our sympathy, for certainly you are in a bad "spot", and we trust you can be spared at least some of this annoying interference.

Philco 511

I have a Philco model 511 *and have been having difficulty in balancing and neutralizing this set. There is a trimmer condenser connected across the first antenna coil and its tuning con-*

denser. This seems to be the only trimmer available for aligning this set. When I balance this condenser at full capacity it creates an awful fluttering sound, and changes the tunable area of the dial. Can you give me some definite advice?

The circuit used in this radio embraces three stages of tuned radio-frequency amplification. Balancing of these circuits is not easy to achieve. We suggest that the services of a skilled service man be procured for the operation of neutralizing and aligning. The average radio owner cannot perform this job because of the peculiarity of the set and its lack of manually adjusted units.

Any failure or changes in the tiny condensers shunted across the tuning condensers of the last two type 26 tubes will upset the capacity and balancing of the circuit. If you wish further advice about this circuit and its parts, and really mean to do the work yourself, write to the Service Division of the Philco Corporation, Allegheny Avenue and "A" Street, Philadelphia, Pa., mentioning RADEX, and give your query in brief, to the point statements. We feel that they will gladly advise you about this older model of theirs.

Loop Antenna

I am using a model 60-M 5-tube Philco and would like to use a loop directional antenna in conjunction with the regular antenna in order to overcome the interference from other radio stations. Is that possible, and if so would you tell me what type of loop aerial is best? My present antenna is a 60-foot wire running NW-SE, with the leadin at the NW end.

You cannot use a loop antenna in conjunction with a regular antenna. If a loop is used, the other antenna must be disconnected entirely from the receiver. The interference you mention is probably what is called heterodyne interference, and is caused by two stations operating on nearly the same frequency and being received by a set that is not sharply selective. A loop antenna, if used with a good heterodyne receiver, should help separate these interfering stations if they are located in sections of the country that are not in the same straight line with the radio receiver.

Make a loop antenna on a square frame about 6 feet to each side. Wind on about five turns of No. 20 insulated wire, and attach the two free ends to the ground and antenna terminals of the receiver, with a ground wire connected as usual. A large variable condenser connected across the ends of the loop antenna might also help in the tuning.

The loop or frame is hung upright, suspended from one corner and is rotated through the different points of the compass. It will receive best when its plane lies parallel to a straight line connecting the receiver with the broadcasting station.

Gutter Antenna

In connecting an east-west antenna in the hopes of bringing in the small west coast stations I discovered that the metal gutter around my roof made an excellent aerial. I had supposed it was grounded, but apparently I am wrong. Is it true that this gutter can act as an aerial, or is it a freak condition? If it performs as well in most other cases, the stunt might be a help to DXers who do not have space to put up a regular antenna.

Of course, any piece of metal, anywhere in the world, if it is separated from actual electrical contact with the earth, will act as a radio antenna. This metal does not have to be shaped in the form of a piece of wire. Wire is light and convenient, but does not have to be used. Metal rods, pipes, tapes and beams work just as well. Such is the case with your rainspout gutter around the roof. In your case the gutter is not grounded, but is evidently separated

from the metal down spout. However, in spite of the technical fact that any piece of metal is a radio antenna, we still like a good, well-insulated wire aerial.

Loose Connection

In my new Philco 116X almost everytime someone slams a door nearby or jars the set slightly, there is a loud crackling sound. This persists for some time, and hitting the cabinet once or twice is sufficient to stop it. The noise is just as bad when no ground or aerial is connected. Can you tell me what this might be and if other owners of this set are experiencing the same trouble?

This trouble is not the fault of the set in general, for it is obvious that a loose connection or bad tube is the cause. It may be a little difficult to locate, but we suggest that the chassis of the receiver be removed from the cabinet and placed where it can be examined while still connected to the speaker so it can be operated. Do not attempt to turn on the set with the speaker plug removed.

Tap each of the tubes, and if the noise is observed when some particular tube is tapped, replacing that tube should stop the annoyance. If the tubes fail to give a clue to the trouble, then a further and more complicated search must be made.

It is necessary to check all parts that are in electrical contact in order to make sure that the contact is perfect. Tap all soldered joints with a small wooden stick, and touch all wires that lead from coils and transformers. An imperfectly grounded wire and metal shield, if loose, will give rise to noises whenever the receiver is jarred. A tube might be in poor contact with its socket, and the contact springs may need a bit more tension.

If you will go over all parts of the circuit it will not be long before a loose or broken wire or contact will be discovered. Remember, too, that intermittent grounding of the antenna, or bad connections in the ground or antenna leads, will cause this noise.

Abox Eliminator

I have an Abox "A" eliminator, but its small, central electrode is worn away. I have tried fastening this small bit of metal to a wire and dropping it into the solution, but it failed to work. Also, what solution is used and where can I now obtain the chemical and electrode to repair this eliminator?

This eliminator is also similar to the Balkite unit, and replacement parts for one will work in the other. The Balkite model, which is similar to yours, is type A-6. Some units use different electrolytes, but a saturated solution of ordinary borax is the most commonly prescribed material. The electrodes of many battery eliminators are lead and aluminum. An examination of the worn-out parts should show if they are

Arthur Pryor, America's foremost bandmaster, has returned to the air for his first series in several years. This veteran is currently featured in the Cavalcade of America in Music on the nationwide Columbia network from 7:30 to 8 p.m., EST, on Wednesdays.

made of these two metals. In some Abox and Balkite units a small pencil of tantalum is used as the central electrode, and it may be that this is what you need.

You might experience some difficulty in procuring the metal electrode, but the Federated Purchaser Co., 25 Park Place, New York City, N. Y., which has handled these repair parts, might have material still in stock.

Aligning Set

I have a Victor model 32 which I wish to align. Is it proper to have the antenna on when doing this work; also the volume control on full? Is the plate of the 45 tube gone when the output meter does not respond?

You will find the alignment of this set rather difficult. It also requires neutralizing. There are four small neutralizing condensers, and it may be that you have mistaken them for trimmer condensers to be used for aligning. Neutralizing the set and aligning the tuning are two different operations, both of which are difficult. We suggest that you place this work in the hands of a competent service man who has all the necessary tools and meters.

The antenna must be on when the set is being aligned, as signals are tuned in at three points, the upper end of the dial, the lower end and the middle. Adjustments of the trimmer condensers or the slotted end plates of the tuning condensers, are made on each different signal. The volume control is turned low so that the difference between maximum signal intensity and usual signal volume can be detected by the ear if a meter is not used.

When an output meter, placed in the plate circuit of the 45 tube, does not respond it indicates a dead tube, a broken circuit or failure in some way for the plate voltage to reach the plate of the power tube.

The McMurdo Silver MASTERPIECE IV

● ● ● *By* R. B. OXRIEDER

TO SUM up in a few words my reasons for liking the Masterpiece IV is a bit difficult, but can best be done by saying that I prefer a set on which I can tell to what station I am tuned by means of the dial setting instead of having to wait for the announcement every time.

Of course I demand tone, sensitivity, selectivity and all the other things that go to make up a good radio, but nearly any good modern set has excellent tone quality and most of them have good sensitivity. However, when it comes to selectivity and the ability to re-log stations by correct setting of the dial, these are features which can be judged quite conclusively by comparative tests.

On the lower frequencies of the broadcast band the dial spacings are sufficiently large that the operator can tell to what frequency he is tuned. However, when he gets down on the shortwave bands it is an entirely different matter.

On most receivers which I have tuned or examined the band from 6000 to 6140 kcs occupies a space anywhere from 3/32nds to ⅛th of an inch. It is evident then, even if shortwave stations were all separated by 10 kcs., there would be in this space, 15 channels. and imagine the difficulty of splitting ⅛th of an inch into 15 parts by eye reading accurately. As a matter of fact there are more than 15 channels in this band; I have logged 30 channels and I can re-tune any of the 30 channels by careful adjustment of the dial.

In order to explain how this is done it might be well to describe the dial. The face of the dial is a large circle, with a large hand pivoted at

its center, one end of which is used to read on each half of the dial. The five tuning bands each occupy 180 degrees of the 360 degree circumference. In addition there is one scale which is numbered throughout the entire 360 degrees and is calibrated simply from 0 to 200. There is a smaller hand which passes over this 0-200 scale. While the large hand moves once across the dial (180 degrees), the small hand goes completely around the dial eight times (8 times 360 degrees) with the result that it spreads ⅛th of an inch on the main dial to about 2 inches on the 200-division dial. With this second hand it is possible to re-log accurately time after time, so that if you have a station at a setting of 49½ one day, and with the big hand in the same section of the main dial, you come back to 49½ the next day, you will get the same station again if it is still on the air. I have found that I can read within one or 2 kcs. on the 6 megacycle band.

Without the bandspread, imagine trying for HJ4ABE on 6092 with some 30 stations operating within ⅛th of an inch of him! The bandspread is also useful in telling you when you have a new station, for when you get a station on a dial reading you haven't had before, it must be either a new station or a new frequency for an old one.

The selectivity of this set is so good that with reasonably equal signal strength signals 2 kcs. apart are easily separated: for example, HJ3ABX and W2XE on 6122 and 6120 respectively have been heard; likewise with HJ3ABH and COCO on 6012 and 6010. With COCD on 6130, VE9HX on 6134, HJ3ABP on 6136 and W8XK on 6140, all playing at the same time, each station has been logged in turn and copied complete. On the broadcast band in a side-by-side test with another set, the Masterpiece brought in a 250-watt Cuban between two 50,000 watt stations on 810 and 820 when the $180 production set would not even separate the two 50,000 watt stations on the same antenna.

Each of the controls on the Masterpiece (volume, tone, sensitivity) has graduations so that exact conditions may be duplicated later if desired. For purposes of signal comparison this is invaluable.

My average log during the past DX season was from 160 to 200 shortwave stations a month. Many of course were repeats, but each month there were a lot of new ones. This number does not include amateurs, police stations or the like; it was mostly s.w. broadcasters plus commercial phones such as OCI, KKQ, RIO, and experimental stations like DZA, DZE, etc. On the broadcast band at least one station was logged on each channel, in addition to several split frequency channels. Amateurs and police calls have been too numerous to count, or at least I didn't bother to count them as I am more interested in the broadcasters. However, I have been around the world with the amateurs and they are there for anyone who wishes to hear them.

Some of this may sound as though I am bragging of my personal accomplishments, but this is not so; I neither designed nor built the set. I just tune it. And anyone else with similar equipment can do the same.

The Masterpiece IV is a precision instrument that will perform any reasonable requirement asked of it, from listening to a high quality local program for entertainment, to reaching out to the far corners of the earth for new stations.

* * *

The new station in Middleboro, Ky., on 1210 kcs. is still under construction, but already it has had two call signs. It was first given the letters WLIN, but within a week or so this was changed to WLMU. It is owned by the Lincoln Memorial University.

Meeting *the* ARTISTS

● ● ● *With* BETTY

IF Gus Haenschen had done as his parents wished he would now be a mechanical engineer instead of one of the most popular maestros on the air. This NBC conductor had all the advantages of a musical education, commencing when he was seven, but by the time he earned his B. Sc. in Mechanical Engineering at Washington University he had decided to forget monkey-wrenches and devote all his time to his music.

His first dance band was organized while he was still an undergraduate, and it had so many assignments that he soon found he was conducting an orchestra booking service. In his spare time he mastered the cello, double bass and cornet, and wrote the music for three college shows.

During the Great War Haenschen served in the navy, spending five months overseas and earning the rank of ensign. After the war he was entrusted with the task of organizing the recording division of the Brunswick-Balke-Callender Co., and when Brunswick started on the air it was only natural that he should organize and direct the orchestra for the Brunswick Hour of Music. He has been on the air ever since, celebrating this year his 14th anniversary in radio.

He is tall, blonde, curly-haired and affable. His studio habits are quiet; he sits on a high kitchen stool while he serenely directs his men, never using a baton. His athletic endeavors are confined to swimming. For relaxation he plows or does the chores at his farm near Norwalk, Conn., or dabbles in photography.

Gus H. is responsible for the success of numerous stars, one of the most notable of whom is Frank Munn. He met Frank Munn when the singer made several recordings for him. When the director went into radio work he took the popular tenor with him and they have been together ever since.

Peter Van Steeden

Peter Van Steeden's radio career began more than 12 years ago when he and his band appeared for an audition at station WEAF in New York City. Everything went wrong at the try-out; music fell on the floor, the cornet player missed a cue and then the second violinist followed suit. Although the audition lasted only 20 minutes, it seemed like hours to the boys. After such a poor start it is not difficult to imagine their surprise when, a week later, the studio called them to report for a station assignment.

Van Steeden made his first appearance as a musician at a recital staged by his music teacher. Peter, then 8 years old, played a piece called "Cherries Are Ripe," and he says that they went sour. As he grew older he played in several amateur events, just for the fun of it and it wasn't until he won a silver loving cup at a contest in the Bronx in 1923 that he began to think seriously of music.

His debut was made at the Peek Inn on Broadway, then followed a series of radio programs over the NBC during which he conducted for such artists as Fred Allen, Jack Pearl, Ray Perkins and now with Stoopnagle and Budd.

Sidelights: He was born April 3, 1904. Weighs 160 pounds and is 5 feet 10 inches tall. Has written several popular songs, the best of them being "Home." His parents wanted him to be an engineer, like Haenschen, but Peter says if that ever happens it will be in the form of

musical engineering.

Peter is married, has three youngsters, and his ambition is to take them all on a trip around the world some day. He is modest, ambitious but conservative, and looks like a typical young business man. He used to be superstitious and carried a silver dollar all the time as a good luck charm. When his luck changed he threw the dollar away, and doing that brought his good luck back again. (Some people think they are lucky just to have a dollar).

Tune for Van Steeden's music on the NBC-Red Network at 8 p. m., EST Wednesdays—"Town Hall Tonight" with Stoopnagle and Budd.

* * * * * *

Fame, once acquired, is hard to keep. Some of the most deserving never achieve it. And some people have it tossed in their laps. Van Steeden's audition was a failure but he won success nevertheless. A certain feminine star, not quite as famous now as she was a few years ago, got her start by fainting as she approached the microphone; the person in charge felt she fainted so beautifully she must be able to sing. A story was recently told of another director, who, making the rounds of the night clubs, noticed a shapely dancer.

"Can you sing?" he asked her.

"No."

"Can you read music? Do you play any instruments?"

"No. I just know I like to dance."

"Did you ever lead an orchestra or a band?"

"Heavens No!"

"Fine. I am going to headline you as conductor of a girl's orchestra."

This girl is leading her own band now, a great success.

Of No Importance

Gracie was busy watering the geraniums she had planted in an old CBS microphone when Betty called on her. It was known that George and Gracie have been selling their scripts to the French Broadcasting Co. to be aired from Paris in French; we wondered what Gracie thought about it.

Before the interview started Miss Allen picked up a basket and began to knit.

"Knit one," she recited, "purl one, knit two . . . ."

"Miss Allen, I came to ask some questions . . . ."

"Who," giggled Gracie, "me?"

"Would it be correct to say,then, Miss Grace . . ."

"Yes, that's correct but it isn't very important. We can't go to France so France comes to us—or doesn't it, Georgie-Porgie?"

We tried again. "Miss Allen, how does it feel to know that fifty million Frenchmen are chuckling over your rib-tickling remarks and enjoying the exasperated replies of your Georgie? Doesn't it thrill you to know that you are the rage in Paree?"

"My nefew had a rage once. Knit one, purl one."

(Curtain)

Gracie's quips have become the rage of Paris and it is common now to hear friends in cafes greet each other with the French equivalent of "I think you're pretty, too," and "I bet you say that to all the girls."

In one of her saner moments Gracie composed a Mother Juice rhyme in honor of their French listeners.

"We would like to go to Paris,
But since America can't spare us,
We'll stay right here in the U.S.A.
And sing about tomato juice each
Wednesday."

Popeye Returns

Popeye, the Sailorman, along with Olive Oyl, Wimpy and Matey returned from Africa and were greeted by their old friends Victor Erwin, leader of Cartoonland Band, and Kelvin Keech. They are now heard on the CBS on Mondays, Wednesdays and Fridays from 6:15 to 6:30 p.m., EST.

Floyd Thomas Buckley has the

(*Continued on page* 56)

A Station *For The* Nation

SINCE the beginning of broadcasting, radio engineers have been confronted with the problem of providing maximum coverage for any transmitting plant. It was never enough that a station should serve the territory of the town or city in which it was located; it must reach out and be heard by listeners at distant points.

Old-time DXers will recall the effective service area offered by a station in the early days. The first 500 and 1000 watt transmitters did well to put a night-time signal a few hundred miles under good conditions, while a report from a listener a thousand miles away was received with open arms.

With increases in station power and rapid advances in receiver design, trans-continental reception became an established fact under good conditions. The international tests in 1927 proved that it was even possible to span the ocean.

And so stations added kilowatts and manufacturers added tubes, and today we may circle the globe from our homes.

The Chief Transmitter Engineer of stations WLW, WSAI and W8XAL, Mr. Whitehouse, is here shown at the operator's control console of the 500,000 watt transmitter. This panel provides complete control and supervision for all the transmitters, starting, stopping and adjusting them, as well as control over the sub-station.

But with all this potential long-distance reception, what do we have? The DXers are obliged to sit up all night to hear Europe or Australia, and even then they are dependent upon certain seasons of the year and favorable conditions. Trans-continental reception is possible only at certain hours of the day, and here again the seasons and conditions are important factors. And the average listener, hungry for his daily diet of Amos 'n' Andy or Jack Benny, gets his programs from a station within fifty or seventy-five miles.

The Ideal Service

The station engineers themselves have defined the type of reception for which they are striving. Each transmitter is supposed to have a primary, effective service area. Within this area, the signals of that station should be received loud and clear, day or night, winter or summer. At no times should there be fading or distortion, and even the most severe summer static should not render reception impossible.

Obviously, the extent of a station's service area is largely dependent upon the design and power of the station. But even with our giant 50-kilowatt installations, they seldom provide real service beyond a radius of a hundred miles.

It is admitted that the United States offers a definite obstacle to Utopian reception solely because of its size. Our present system of scattering hundreds of small stations throughout the country does afford some sort of reception to almost every listener, but are we getting efficient coverage within reasons of economy?

Most listeners know that European stations are divided into two general classes for national coverage — those employing medium and long wave transmissions. This long wave idea is new to Americans, and so why not look into it further?

Using the Long Waves

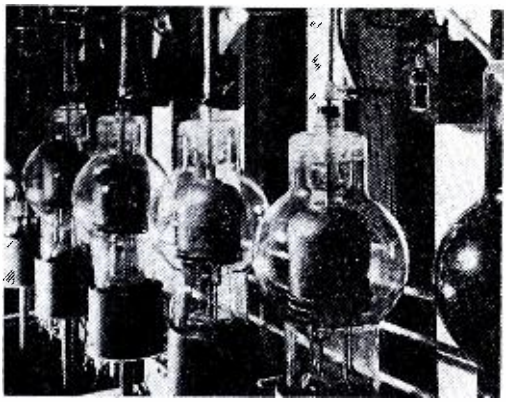
A study of letters in European journals seems to indicate that listeners seem to prefer programs from long wave stations, day and night. When the British Broadcasting Corporation built its superpower Droitwich station, they elected to broadcast on low frequencies.

Recently, a survey by BBC engineers of broadcasting conditions in Australia and New Zealand resulted in the report that "national coverage" could be achieved only by means of long wave broadcasting.

In some respects, Australia and America offer engineers similar problems in coverage. In both countries, listeners in sparsely-settled sections are dependent upon remote stations for their programs. Therefore, might not long-wave broadcasting be a solution to many of our own problems?

A survey made several years ago seemed to show that it would. In the first place, it was estimated that daytime distances would be increased for far better coverage and that night-time reception would be cleared up over long distances by the reduction of fading and distortion.

The question of fading, always a prime obstacle for medium-wave reception, was all in favor of the lower frequencies. For a given section of flat country, signals transmitted on 200 meters would begin to fade at a distance of about 50 miles. Transmissions on 300 meters would fade at 80 miles; on 400 meters, at 120 miles; on 500 meters, 160 miles. At the same location and radiated with equal power, signals on 1200 meters would not fade within a radius of 480 miles from the transmitter, while



The mercury vapor rectifier tubes shown here were especially designed for the 500 kw WLW transmitter. They are the only tubes of their kind in existence, and are rated at 450 amperes. Six of these tubes are used in the rectifier of the station.

1500-meter transmissions would increase the "fade-free" radius to 620 miles.

Cost of Coverage

Further, it was brought out that first-class coverage of the United States would require eighty stations of 50-KW power, costing more than $24,000,000 to build. The same coverage could be obtained by but seven long-wave stations, using 1000-KW and costing but $4,000,000 to build.

Thus, it would seem that perhaps long-wave transmissions might provide true "stations for the nation" with economy and efficiency.

The nearest approach we have had so far to a nation's station is the giant WLW, the Crosley 500-kilowatter at Cincinnati. By their very slogan one might believe that they intended to cover at least the greater portion of the Eastern and Central states with a clear, undistorted signal.

Possibly a comparison of their present coverage and service on the higher medium-wave band with what might be expected on long waves would throw a better light on the subject.

It was, therefore, a bit surprising to learn that, with the exception of the so-called "Canadian Protest"

and its resulting requirement in their radiation pattern control, the WLW 500-KW transmitter has met every expectation and the engineers are very enthusiastic about the results. The use of this power increased their signal over their service area about 3.25 times by actual measurement. It increased their service radius out to most defining values of service by 2½ to 3 times, which resulted in an increase in service area of 69 times.

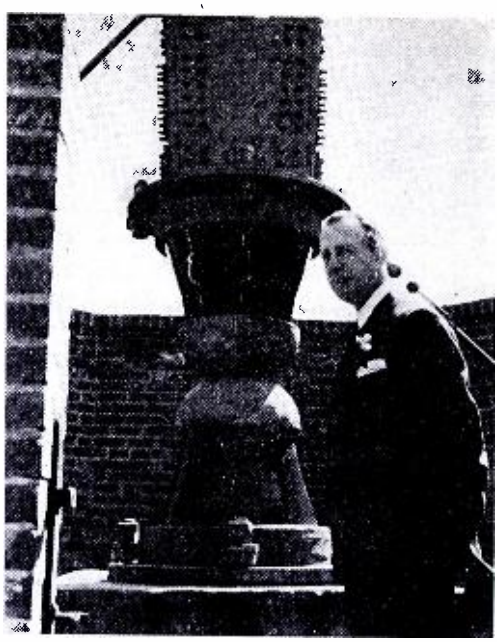
As far as its commercial value is concerned, many WLW clients have conducted independent surveys and investigations, and have found that the use of this power has surpassed any commercial expectations from their point of view.

The Fading Problem

In regard to fading, J. A. Chambers formerly Technical Supervisor of WLW-WSAI, pointed out: "The particular antenna which we originally used was designed to give the best balance of ground wave service and sky wave service. If all our energy was put into a ground wave signal, this would eventually become a sky wave signal, or become worthless because of the curvature of the earth. Fading is, in most cases, a matter of interference between the ground wave and sky wave signals.

"It follows, therefore, that there must be some particular distance at which the ground wave signal disappears and the sky wave signal becomes the service signal. At this point, there must be an appreciable amount of fading. In the case of WLW, we tried to make the ground wave signal fall off as rapidly as possible, before the sky wave became effective. Thus, it also follows that there is a band of low signal strength at this distance."

The particular distance at which these bands occur depends on the height of the ionosphere. Under most night-time conditions and particularly in the winter, the bands for WLW occurs at between 162 and 200 miles.



Mr. Powel Crosley, Jr., standing at the base of the 831-ft. vertical antenna tower of WLW at Cincinnati. A load of more than 900,000 pounds rests on the seemingly fragile porcelain insulator base. The two porcelain pieces are cup-like in shape with walls less than two inches thick. This antenna rises 250 feet higher than the Washington Monument.

With the original installation, WLW engineers were able to reach an adjustment whereby this was not very serious at this distance and optimum results were obtained in all other localities. However, the Canadian government protested that the station was putting too much signal into the Toronto area. As a result, they were required to develop and install their so-called "suppressor type" antenna.

In general, the only effect this antenna had on their United States service area was to aggrevate fading in the territory around Cleveland and Erie. In spite of this, however, WLW engineers are very much pleased with the results that are being obtained with the transmitter.

The Crosley Radio Corporation has,

on various occasions, considered and discussed the advisability of attempting to improve their service to the American people by the operation of some high power station on the longer wave lengths.

Long Waves Not Available

According to Mr. Chambers, the first and most important reason why neither WLW or any other station tried long waves was simply the fact that the government prescribed the frequencies between 550 and 1500 kcys as the bands on which broadcast stations should operate. The longer wavelengths had already been assigned to other services — largely Army, Navy, shipping and airway services.

"The original development of broadcasting in Continental Europe," continued Mr. Chambers, "was on the longer wavelengths, and it is quite satisfactory for the type of service they are attempting. Since most stations and receivers operate on the lower frequencies, it is only natural that their service should continue in that fashion.

"These longer wavelengths, when compared with the medium waves, have some advantages, but also some disadvantages.

"In the first place, although the ground wave attenuation is much lower at the longer wavelengths, an efficient antenna system is a great deal more expensive. It is also very difficult to build an antenna for some of the longer wavelengths which will achieve the benefits of the longer wavelengths without aggravating fading in some locations.

"Static and other man-made interference are generally worse on the longer wavelengths and, in many cases, this may counteract the reduced attenuation. This is particularly true when it is desirable to cover considerable territory, as in the United States."

Thus, it seems likely that broadcasting in this country will continue very much as it has in the past. Perhaps the answer for proper national coverage lies in increased power. Certainly the WLW engineers have made good on their claims and expectations.

The Federal Communications Commission has scheduled hearings for early this fall, when applications of a number of stations to increase power to 500 KW will be considered. The results shown by the WLW trailblazing will surely play an important part in these hearings and we may soon find more of these "Stations for the Nation" in various parts of the country.

Why I Verify

● ● ● *By* John DeMyer*

WHEN obtaining verifications, it is not my purpose to prove to some "doubting Thomas" that I actually heard a certain station. While most of the DX fraternity consider the possession of a definite confirmation of reception to be conclusive proof that the station was heard, there may be some rare exceptions. At any rate, if proof was necessary, we must agree that a verification is all we would have to show for it.

Verifications may be considered merely as interesting souvenirs of intangible value. I experience the same thrill in obtaining a rare verification that a philatelist does in adding new and rare stamps to his collection. DXers who have a large collection of verifications will agree that each of these cards and letters is an individual work of art, and that they combine to form a beautiful collection. Some prefer to decorate the walls with their veries; personally, I file mine away in a neat arrangement in letter files.

The first step in obtaining verifications is actually to hear the station

and to make a comprehensive log of reception. We consider that all honest DXers do this. Unfortunately, we possibly have a few fakers obtaining "confirmations" through any fraudulent method possible. Quite obviously, such a "verification" would lose its value in an authentic souvenir collection. That "DXer" would be cheating only himself. For this reason, we would consider practically all verification collectors as honest DXers.

In the Midsummer RADEX, Howard L. Spies writes an article titled: "Why Verify?" His statements lead one to believe that a sufficient log of reception would be: "I heard your program. Please send me your verification." I say that's preposterous.

I would not attempt to prove him 100% wrong, but would rate it at about 99.44%. Any verification collector would testify that 99 out of every 100 reports of that nature would end up in the waste basket.

He stated that stations are now highly commercialized and, to maintain public good-will, make it a policy of "good business" to issue verifications on incomplete reports. That wouldn't be good business, for certainly WJBK gained no public goodwill by issuing a "verification" in response to a request to get off the air.

Attitude of 2KY

Most stations do have a policy of public good-will and for that purpose maintain a clerical staff to handle mail from listeners. I correspond with an employe of 2KY, Sydney, Australia. Her position with this station is to handle verification requests from overseas, and she tells me that she personally checks each report with the station log and, if merited, issues the confirmation. That would indicate stretching the point of public goodwill quite a bit. Obviously, 2KY would not be interested in advertising Australia farm produce to American listeners.

The Gospel Singer, Edward MacHugh, has one of the largest followings in radio, attracting thousands of letters each week with his friendly, natural voice and extensive repertoire of hymns. Mr. MacHugh has just begun a new series, heard daily from Monday through Friday at 10:45 a.m., EST, over the NBC-Blue chain.

Of course, the station engineers of 2KY are pleased to know that their transmissions are heard in America. We send them a comprehensive log of reception, with helpful technical data on the quality of reception, and in return we receive a station verification. Of course, we should include return postage with our report.

The Hong Kong station, ZBW, was said to have issued a "verification" in response to a request to dedicate a special program to a DX club. That would indeed be careless.

I well remember my first experience in logging ZBW. That particular morning, the program was Oriental in nature and, of course, I could not identify any of the musical selections heard. I did hear one definite announcement in English. With that, and a detailed descriptive log of the

(Continued on page 58)

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-6:15 p.m., E-5:15, C-4:15, M-3:15
C — Bobby Benson—Sunny Jim
WAAB WABC WCAU WDRC WEAN WFBL WGR WHEC WOKO

ED-6:45 p.m., E-5:45, C-4:45, M-3:45
C — Renfrew of the Mounted
KFAB KFH KLRA KMBC KMOX KOMA KRLD KRNT KSCJ KTUL KWKH WABC WADC WBBM WBNS WCCO WDRC WFBM WGR WHEC WHK WIBX WICC WISN WJR WJSV WKBN WMAS WMBG WNAC WNBH WOC WREC WSMK WSPD WWVA

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

ED-7:00 p.m., E-6:00, C-5:00, M-4:00
R — Amos 'n' Andy
KYW WBEN WCAE WCSH WEAF WEEI WFBR WGY WJAR WLW WRC WTAG WTIC

ED-7:15 p.m., E-6:15, C-5:15, M-4:15
R — Uncle Ezra's Radio Station
KPRC KTBS KTHS KVOO KYW WBAP WBEN WCAE WCKY WCSH WDAF WEAF WEEI WFBR WGY WHIO WIRE WJAR WKY WMAQ WOAI WOOD WOW WRC WTAG WTAM WTIC

ED-7:30 p.m., E-6:30, C-5:30, M-4:30
C — Charioteers and Judy Starr
KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KMJ KMOX KOIN KOL KSL KVI KWG WABC WBBM WCAO WCAU WCCO WEAN WFBL WFBM WGR WHK WJAS WJR WJSV WKRC WNAC WOKO

B — Lum and Abner
WBZ WBZA WENR WJZ WLW WMC WSM WSYR

ED-7:45 p.m., E-6:45, C-5:45, M-4:45
C — Boake Carter
KMBC KMOX KOMA KRLD WABC WBBM WBT WCAO WCAU WCCO WDRC WEAN WFBL WGR WHAS WHK WJAS WJR WJSV WKRC WNAC

ED-8:00 p.m., E-7:00, C-6:00, M-5:00
C — Horace Heidt and Orchestra
KDB KERN KFAB KFBK KFH KFPY KFRC KGB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KRLD KRNT KSL KTRH KTSA KTUL KVI KWG WABC WBBM WBRC WBT WCAO WCAU WCCO WDRC WFBL WFBM WGR WGST WHAS WHK WJAS WJR WJSV WKRC WLAC WMBR WNAC WNAX WOKO WREC WWL

R — Fibber McGee and Molly
KSD KYW WBEN WCAE WCKY WCSH WDAF WEAF WEEI WFBR WGY WHO WIRE WJAR WMAQ WOOD WOW WRC WTAG WTAM WTIC WWJ

ED-8:30 p.m., E-7:30, C-6:30, M-5:30
C — Pick and Pat
KFAB KMBC WABC WADC WBBM WBT WCAO WCAU WDRC WEAN WFBL WGR WGST WHEC WHK WHP WICC WJAS WJR WJSV WKRC WLBZ WMAS WNAC WOKO WORC WSPD

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

B — Melodiana; Abe Lyman
KDKA KOIL KSO KWK WBAL WBZ WBZA WCKY WFIL WGAR WHAM WJZ WLS WMAL WMT WREN WSYR WXYZ

ED-9:00 p.m., E-8:00, C-7:00, M-6:00
C — Lux Radio Theatre
CFRB CKAC KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KRNT KSL KTRH KTSA KTUL KVI KWG WABC WADC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDRC WEAN WFBL WFBM WGST WHAS WHEC WHK WICC WISN WJAS WJR WJSV WKBW WKRC WLAC WNAC WNAX WOKO WORC WQAM WREC WWL

R — A. & P. Gypsies
KSD KYW WBEN WCAE WCSH WDAF WEAF WEEI WGY WHO WHIO WIRE WJAR WMAQ WOW WRC WSAI WTAG WTAM WTIC WWJ

B — Sinclair Greater Minstrels
KDKA KDYL KFYR KOA KOIL KPRC KSO KSTP KTBS KTHS KVOO KWK WBAL WBZ WBZA WDAY WEBC WFAA WFLA WGAR WHAM WIBA WIOD WIS WJAX WJDX WJZ WKY WLS WLW WMAL WMC WMT WOAI WPTF WREN WRVA WSB WSM WSMB WSOC WSUN WSYR WTAR WTMJ WWNC WXYZ

ED-9:30 p.m., E-8:30, C-7:30, M-6:30
R — Richard Himber and Orchestra
KFYR KPRC KSD KSTP KTBS KVOO KYW WBEN WCAE WCSH WDAF WDAY WEAF WEBC WFAA WFBR WGY WHO WIBA WJAR WKY WLW WMAQ WOAI WOW WRC WTAG WTAM WTIC WTMJ WWJ

ED-10:00 p.m., E-9:00, C-8:00, M-7:00
R — Contented Program
CFCF CRCT KDYL KFI KGW KHQ KOA KOMO KPO KPRC KSD KYW WBEN WCAE WCSH WDAF WEAF WEEI WFBR WFLA WGY WHO WIOD WIS WJAR WJAX WKY WMAQ WMC WOAI WOW WPTF WRC WRVA WSB WSM WTAG WTAM WTAR WTIC WWJ WWNC

C — Wayne King and Orchestra
KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KRNT KSL KVI KWG WAAB WABC

MONDAY (*Continued*)

WADC WBBM WBNS WBT WCAO WCAU WCCO WDRC WEAN WFBL WFBM WHAS WHK WIBW WJAS WJR WJSV WKBW WKRC WOKO WSPD WWL

ED-10:30 p.m., E-9:30, C-8:30, M-7:30
C — The March of Time
KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KRLD KRNT KSL KVI KWG WADC WBBM WBT WCAO WCAU WCCO WDAE WDBO WDRC WEAN WFBL WFBM WGST WHAS WHEC WHK WJAS WJR WJSV WKBW WKRC WNAC WOKO WQAM WSPD WWL

ED-11:00 p.m., E-10:00,C-9:00,M-8:00
C — Dance Orchestra
CFRB CKAC WAAB WABC WADC WCAO WCAU WDRC WFBL WFEA WHEC WHK WIBX WJAS WKBN WKBW WLBZ WMAS WOKO WORC WPG WSBT WSPD

R — Amos 'n' Andy
KDYL KFI KGW KHQ KOA KOMO KPO KPRC KSD WBAP WDAF WHO WKY WLW WMC WOAI WOW WSB WSM WSMB WTAM WWJ

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

ED-11:30 p.m., E-10:30,C-9:30,M-8:30
C — Dance Orchestra
CFRB CKAC KLRA WAAB WABC WADC WALA WBNS WBRC WBT WCAO WCAU WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WIBX WICC WJAS WJR WJSV WKBN WKBW WKRC WLAC WLBZ WMAS WMBG WMBR WNOX WOKO WORC WQAM WREC WSBT WSJS WSMK WSPD WTOC

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

R — Voice of Firestone
KDYL KFI KFSD KGHL KGIR KGU KGW KHQ KOA KOMO KPO KTAR

TUESDAY

ED-6:00 p.m., E-5:00, C-4:00, M-3:00
C — Patti Chapin; Songs
CFRB KERN KFBK KFH KFPY KFRC KGB KGKO KHJ KLZ KMBC KNOW KOH KOL KOMA KRLD KRNT KSCJ KTRH KVI KVOR KWG WAAB WABC WACO WALA WBIG WBNS WBRC WCAO WDAE WDBJ WDBO WDNC WDOD WESG WFBL WFBM WGST WHAS WHK WHP WIBX WJAS WJSV WKBW WKRC WLAC WLBZ WMBD WMBR WNOX WOC WOKO WORC WQAM WREC WSBT WSJS WSMK WSPD WTOC

ED-6:15 p.m., E-5:15, C-4:15, M-3:15
C — News of Youth
WABC WADC WBNS WCAO WCAU WDRC WEAN WFBL WHK WIBX WICC WJR WKBN WLBZ WNAC WOKO WORC WWVA

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

C — Renfrew, See Monday

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

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

C — Krueger Musical Toast
WABC WBIG WBT WDBJ WDNC WDRC WEAN WFEA WGST WICC WLBZ WMAS WMBG WMBR WNAC WORC

ED-7:15 p.m., E-6:15, C-5:15, M-4:15
R — The Lamplighter
KDYL KFI KFYR KGW KHQ KOA KOMO KPO KSD KSTP KYW WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFBR WGY WHO WIBA WJAR WLW WMAQ WOW WRC WTAG WTAM WTIC

ED-7:30 p.m., E-6:30, C-5:30, M-4:30
C — Kate Smith's Band
KFAB KMBC KMOX KRLD KRNT KTRH WABC WADC WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WDAE WDRC WEAN WFBL WFBM WGR WGST WHAS WHK WJAS WJR WJSV WKBN WKRC WLBZ WMAS WMBG WMBR WNAC WOKO WORC WWL WWVA

B — Lum and Abner, See Monday

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

ED-8:00 p.m., E-7:00, C-6:00, M-5:00
C — Hammerstein Music Hall
KFAB KMOX KRNT WABC WADC WBBM WBNS WCAO WCAU WDRC WEAN WFBL WFBM WGR WHAS WHK WJAS WJR WJSV WKRC WMAS WNAC WOKO WSPD

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

ED-8:30 p.m., E-7:30, C-6:30, M-5:30
C — Russ Morgan; Ken Murray
CFRB CRCM KFAB KFH KLRA KMBC KMOX KOMA KRLD KRNT KSL KTRH KTSA KTUL WABC WADC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDRC WEAN WFBL WFBM WGR WGST WHAS WHEC WHK WICC WISN WJAS WJR WJSV WKRC WLAC WMAS WMBD WMBG WNAC WNAX WOKO WORC WQAM WREC WWL

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

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

ED-9:00 p.m., E-8:00, C-7:00, M-6:00
C — Tommy Dorsey and Orchestra
CFRB CKAC KFAB KFH KGKO KLRA KMBC KMOX KOMA KRLD KRNT KSCJ KTRH KTSA KTUL KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WICC WISN WJAS WJR WJSV WKBH WKBN WKBW WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WMMN WNAC WNAX WNBF WNOX WOC WOKO WORC WOWO WPG WQAM WREC WSBT WSFA WSJS WSPD WTOC WWL

R — Vox Pop; Sidewalk Interviews
KSD KYW WBEN WCAE WCKY WCSH WDAF WEAF WEEI WFBR WGY WHO WHIO WIRE WJAR WMAQ WOW WRC WTAG WTAM WTIC WWJ

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

ED-9:30 p.m., E-8:30, C-7:30, M-6:30
C — Camel Caravan
KDB KERN KFAB KFBK KFH KFPY KFRC KGB KGKO KHJ KLRA KLZ KMBC KMJ KMOX KOH KOIN KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WICC WJAS WJR WJSV WKBN WKBW WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WNAC WNAX WNOX WOKO WORC WOWO WPG WQAM WREC WSBT WSFA WSJS WSPD WTOC WWL

ED-10:30 p.m., E-9:30, C-8:30, M-7:30
C — March of Time, See Monday

ED-11:00 p.m., E-10:00,C-9:00,M-8:00
C — Dance Orchestra
CKAC WAAB WABC WADC WCAO WCAU WDRC WFBL WFEA WHEC WHK WIBX WJAS WJSV WKBW WLBZ WMAS WOKO WORC WSBT WSPD

R — Amos 'n' Andy, See Monday

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

ED-11:30 p.m., E-10:30,C-9:30,M-8:30
C — Dance Orchestra
CFRB CKAC KLRA KSCJ WAAB

TUESDAY (*Continued*)

WABC WADC WALA WBBM WBNS WBRC WBT WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WIBX WICC WISN WJAS WJR WJSV WKBW WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WNAC WNAX WNOX WOC WOKO WORC WQAM WREC WSBT WSJS WSMK WSPD WTOC

C — "Laugh with Ken Murray"
KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMJ KOH KOIN KOL KSL KVI KVOR KWG

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

WEDNESDAY

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

ED-6:45 p.m., E-5:45, C-4:45, M-3:45
C — Renfrew of Mounted, See Mon.

B — Lowell Thomas, See Monday

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

B — Easy Aces, See Tuesday

ED-7:15 p.m., E-6:15, C-5:15, M-4:15
R — Uncle Ezra, See Monday

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

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

ED-8:00 p.m., E-7:00, C-6:00, M-5:00
C — Cavalcade of America
KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KRLD KRNT KSL KVI KWG WABC WBBM WBNS WCAO WCAU WCCO WDRC WEAN WFBL WFBM WGR WHAS WHEC WHK WJAS WJR WJSV WKRC WLAC WMBG WNAC WOKO WTOC WWL

B — Follies de Paree
KDKA KOIL KSO KWK WBAL WBZ WBZA WCKY WFIL WGAR WHAM WHIO WIRE WJZ WLS WMAL WMT WREN WSYR WXYZ

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

ED-8:30 p.m., E-7:30, C-6:30, M-5:30
C — Burns and Allen
CKAC KFAB KFH KLRA KMBC KMOX KOMA KRLD KRNT KSCJ KTRH KTSA KTUL KWKH WABC WADC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEAN WFBL WFBM WFEA WGR WGST WHAS WHEC WHK WHP WIBW WIBX WICC WJAS WJR WJSV WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WNAC WNAX WNOX WOKO WORC WPG WQAM WREC WSPD WWL

R — Wayne King, See Tuesday

B — Lavender and Old Lace
KDKA KOIL KSO KWK WBAL WBZ WBZA WFIL WGAR WHAM WJZ WLS WMAL WMT WREN WSAI WSYR WXYZ

ED-9:00 p.m., E-8:00, C-7:00, M-6:00
C — Chesterfield Program
KDB KERN KFAB KFBK KFH KFPY KFRC KGB KGKO KGMB KHJ KLRA KLZ KMBC KMJ KMOX KOH KOIN KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WCOA WDAE WDGB WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WICC WISN WJAS WJR WJSV WKBH WKBW WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WNAC WNAX WNBF WNOX WOC WOKO WORC WOWO WPG WQAM WREC WSFA WSJS WSPD WTOC WWL

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

ED-9:30 p.m., E-8:30, C-7:30, M-6:30
C — Come On, Let's Sing
KDB KERN KFAB KFBK KFH KFPY KFRC KGB KGMB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KRNT KSL KTRH KTSA KTUL KVI KWG KWKH WABC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEAN WFBL WFBM WGST WHAS WHEC WHK WICC WISN WJAS WJR WJSV WKBW WKRC WLAC WLBZ WMBG WMBR WNAC WOKO WORC WOWO WQAM WREC WTOC WWL

ED-10:00 p.m., E-9:00, C-8:00, M-7:00
C — Crime Crusade; Phil Lord
KDB KERN KFAB KFBK KFH KFPY KFRC KGB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KRNT KSL KTRH KTSA KTUL KVI KWG KWKH WABC WACO WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEAN WFBL WFBM WGST WHAS WHEC WHK WICC WISN WJAS WJR WJSV WKBW WKRC WLAC WLBZ WMBG WMBR WNAC WOKO WORC WOWO WQAM WREC WTOC WWL

Red and Blue: Your Hit Parade
KDKA KDYL KECA KEX KFI KFSD KFYR KGA KGHL KGIR KGO KGU KGW KHQ KJR KLO KOA KOIL KOMO KPO KPRC KSD KSO KSTP KTAR KTBS KTHS KVOO KWK KYW WAVE WBAL WBEN WBZ WBZA WCAE WCKY WCSH WDAF WDAY WEAF WEBC WEEI WENR WFAA WFBR WFIL WGAR WGY WHAM WHO WHIO WIBA WIOD WIRE WIS WJAR WJAX WJDX WJZ WKY WLW WMAL WMAQ WMC WMT WOAI WOW WPTF WRC WREN WRVA WSB WSM WSMB WSOC WSUN WSYR WTAG WTAM WTAR WTIC WTMJ WWJ WWNC WXYZ

ED-10:30 p.m., E-9:30, C-8:30, M-7:30
C — March of Time, See Monday

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

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

ED-11:30 p.m., E-10:30,C-9:30,M-8:30
C — Dance Orchestra
CKAC KLRA WAAB WABC WADO WALA WBRC WBT WCAO WCAU WDAE WDBJ WDBO WDNC WDOI WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WICC WJAS WJR WJSV WKBW WKRC WLAC WLBZ WMBG WMBR WNOX WOKO WORC WQAM WREC WSPD WTOC

C — Burns and Allen
KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMJ KOIN KOL KSL KVI KVOR KWG

ED-12:00p.m.,E-11:00,C-10:00,M-9:00
R — Town Hall Tonight
KDYL KFI KGW KHQ KOA KOMO KPO

THURSDAY

ED-6:15 p.m., E-5:15, C-4:15, M-3:15
C — News of Youth, See Tuesday

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

ED-7:00 p.m., E-6:00, C-5:00, M-4:00
C — The Atlantic Family
WABC WADC WBIG WBNS WBT WCAO WCAU WDAE WDBJ WDBO WDRC WEAN WESG WFBL WGR WGST WHEC WHK WHP WIBX WICC WJAS WKBN WMAS WMBG WMBR WNAC WNBF WOKO WORC WQAM WSJS WTOC WWVA
R — Amos 'n' Andy, See Monday
B — Easy Aces, See Tuesday

ED-7:15 p.m., E-6:15, C-5:15, M-4:15
R — Lamplighter, See Tuesday

ED-7:30 p.m., E-6:30, C-5:30, M-4:30
C — Kate Smith, See Tuesday
B — Lum and Abner, See Monday

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

ED-8:00 p.m., E-7:00, C-6:00, M-5:00
R — Rudy Vallee's Variety Hour
CFCF CRCT KDYL KFI KFYR KGW KHQ KOA KOMO KPO KSD KSTP KTAR KYW WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFBR WGY WHO WJAR WLW WMAQ WOW WRC WTAM WTIC WTMJ WWJ

ED-9:00 p.m., E-8:00, C-7:00, M-6:00
C — Major Bowes' Amateurs to start on Sept. 17. List of stations not now available.

R — Maxwell House Show Boat
KDYL KFI KFSD KFYR KGHL

THURSDAY (*Continued*)

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

B — Death Valley Days
KDKA KOIL KSO KWK WBAL WBZ WBZA WFIL WGAR WHAM WJZ WLS WLW WMAL WMT WREN WSYR WXYZ

ED-10:00 p.m., E-9:00, C-8:00, M-7:00
R — Bing Crosby; Jimmy Dorsey
CFCF CRCT KDYL KFI KFYR KGW KHQ KOA KOMO KPO KPRC KSD KSTP KTAR KTBS KTHS KVOO KYW WAVE WBAP WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFBR WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKY WLW WMAQ WMC WOAI WOW WPTF WRC WRVA WSB WSM WSMB WSOC WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

ED-10:30 p.m., E-9:30, C-8:30, M-7:30
C — March of Time, See Monday

ED-11:00 p.m., E-10:00,C-9:00,M-8:00
C — Dance Orchestra
WAAB WABC WADC WCAO WCAU WFBL WHK WIBX WJSV WKBN WKBW WLBZ WMAS WOKO WORC WPG WSBT WSPD

R — Amos 'n' Andy, See Monday

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

ED-11:30 p.m., E-10:30,C-9:30,M-8:30
C — Dance Orchestra
CFRB CKAC KLRA WAAB WABC WADC WALA WBNS WBRC WBT WCAO WCAU WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WIBX WICC WJAS WJR WJSV WKBN WKBW WKRC WLAC WLBZ WMAS WMBG WMBR WNOX WOKO WORC WQAM WREC WSBT WSJS WSMK WSPD WTOC

FRIDAY

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

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

B — Lowell Thomas, See Monday

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

ED-7:15 p.m., E-6:15, C-5:15, M-4:15
R — Uncle Ezra, See Monday

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

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

ED-8:00 p.m., E-7:00, C-6:00, M-5:00
C — Flying Red Horse Tavern
KFAB KFH KMBC KMOX KRNT WABC WADC WBBM WBNS WCAO WCAU WCCO WDRC WEAN WFBL WFBM WGR WHAS WHEC WHK WIBW WICC WJAS WJR WJSV WKRC WLBZ WMAS WMBD WNAC WOC WOKO WORC WSPD

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

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

ED-8:30 p.m., E-7:30, C-6:30, M-5:30
C — Broadway Varieties
KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KOMA KRNT KSL KVI KWG WABC WADC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDRC WEAN WFBL WFBM WGR WGST WHAS WHK WJAS WJR WJSV WKRC WMAS WMBG WNAC WOKO WSPD WWL

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

ED-9:00 p.m., E-8:00, C-7:00, M-6:00
C — Hollywood Hotel
CFRB CKAC KDB KERN KFAB KFBK KFH KFPY KFRC KGB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG KWKH WABC WADC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WICC WJAS WJR WJSV WKBW WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WNAC WNAX WNOX WOKO WORC WPG WQAM WREC WSPD WWL

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

B — B. A. Rolfe; Richard Bonelli
KDKA KDYL KFYR KOA KOIL KPRC KSO KSTP KTBS KWK WAPI WAVE WBAL WBZ WBZA WDAY WEBC WFAA WFIL WFLA WGAR WHAM WIBA WIOD WIS WJAX WJDX WJZ WKY WLS WLW WMAL WMC WMT WOAI WOOD WPTF WREN WRVA WSB WSM WSMB WSOC WSUN WSYR WTAR WTMJ WWNC WXYZ

ED-9:30 p.m., E-8:30, C-7:30, M-6:30
R — True Story Court
KSD KYW WBEN WCAE WCSH WEAF WEEI WFBR WGY WHO WHIO WJAR WMAQ WOW WRC WTAG WTAM WTIC WWJ

B — Clara, Lu 'n' Em
KDKA KDYL KECA KEX KFI KFSD KFYR KGA KGHL KGIR KGO KGW KHQ KJR KOA KOIL KOMO KPO KPRC KSO KSTP KTAR KTBS KWK WAPI WAVE WBAL WBZ WBZA WDAY WEBC WENR WFAA WFBR WFIL WFLA WGAR WHAM WHIO WIBA WIOD WIRE WIS WJAX WJDX WJZ WKY WLW WMAL WMC WMT WOOD WPTF WREN WRVA WSB WSM WSMB WSOC WSUN WSYR WTAR WTMJ WWNC WXYZ

ED-10:00 p.m., E-9:00, C-8:00, M-7:00
C — Andre Kostelanetz
KDB KERN KFAB KFBK KFH KFPY KFRC KGB KGKO KGMB KHJ KLRA KLZ KMBC KMJ KMOX KOH KOIN KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WCOA WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WICC WISN WJAS WJR WJSV WKBW WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WNAC WNAX WNBF WNOX WOC WOKO WORC WOWO WPG WQAM WREC WSFA WSJS WSMK WSPD WTOC WWL

R — Marion Talley and Orchestra
KDYL KFI KFYR KGW KHQ KOA KOMO KPO KSD KSTP KYW WBEN WCAE WCKY WCSH WDAF WDAY WEAF WEBC WEEI WFBR WGY WHIO WIBA WIRE WJAR WMAQ WOW WRC WTAG WTAM WTIC WTMJ WWJ

ED-10:30 p.m., E-9:30, C-8:30, M-7:30
C — March of Time, See Monday

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

ED-11:15 p.m., E-10:15,C-9:15,M-8:15
C — Dance Orchestra
CFRB CKAC KLRA KSCJ WAAB WABC WADC WALA WBNS WBRC WBT WCAO WCAU WDAE WDBJ WDBO WDNC WDOD WDRC WFBL WFEA WGST WHEC WHK WIBX WISN WJAS WJR WKBW WLAC WLBZ WMAS WMBD WMBG WMBR WNAX WNOX WOC WOKO WORC WPG WQAM WREC WSBT WSJS WSMK WSPD WTOC

C — Renfrew of Mounted, See Mon.

ED-12:00p.m.,E-11:00,C-10:00,M-9:00
B — B. A. Rolfe; Richard Bonelli
KDYL KFI KFSD KGHL KGIR KGW KHQ KOA KOMO KPO KTAR

SATURDAY

ED-6:15 p.m., E-5:15, C-4:15, M-3:15
C — News of Youth, See Tuesday

ED-6:45 p.m., E-5:45, C-4:45, M-3:45
C — Al Roth and Orchestra
CKAC KERN KFBK KFH KFPY KFRC KGB KGKO KMBC KMOX KOH KOL KOMA KRNT KTRH KVOR KWG WAAB WADC WALA WCAO WDAE WDBO WDNC WESG WFEA WGST WHAS WHEC WHP WIBX WJAS WJSV WKBW WLAC WLBZ WMBD WMBG WMBR WOC WOKO WORC WQAM WREC WSJS WSMK WSPD WTOC

SATURDAY (*Continued*)

ED-7:00 p.m., E-6:00, C-5:00, M-4:00
C — Patti Chapin, Songs
CKAC KERN KFH KFPY KFRC KGB KGKO KHJ KLZ KMBC KMOX KOL KOMA KRLD KRNT KSCJ KTRH KVI KVOR KWG WABC WACO WALA WBBM WBIG WBT WCAO WCCO WDAE WDBO WDRC WEAN WESG WFBL WFEA WGR WGST WHAS WHK WHP WIBW WIBX WICC WJAS WKRC WLAC WLBZ WMBG WMBR WNAC WNOX WOC WOKO WORC WQAM WREC WSJS WSMK WSPD WTOC

ED-8:00 p.m., E-7:00, C-6:00, M-5:00
C — Saturday Swing Session
CFRB CKAC KFAB KFH KFRC KLRA KMBC KMOX KOMA KRNT KTRH KTSA KTUL KWKH WABC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEAN WFBL WFBM WGR WGST WHAS WHEC WHK WHP WICC WISN WJAS WJR WJSV WKRC WLAC WLBZ WMBG WMBR WNAC WOKO WORC WQAM WREC WTOC WWL

ED-8:30 p.m., E-7:30, C-6:30, M-5:30
C — Columbia Workshop; Drama
CFRB CKAC KFAB KFH KFRC KLRA KMBC KMOX KOMA KRNT KTRH KTSA KTUL KWKH WABC WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEAN WFBL WFBM WGR WGST WHAS WHEC WHK WHP WICC WISN WJAS WJR WJSV WKRC WLAC WLBZ WMBG WMBR WNAC WOKO WORC WQAM WREC WTOC WWL

ED-9:30 p.m., E-8:30, C-7:30, M-6:30
R — Shell Chateau
KDYL KFI KFSD KFYR KGHL KGIR KGW KHQ KOA KOMO KPO KSD KSTP KTAR KYW WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFBR WGY WIBA WJAR WLW WMAQ WOW WRC WTAG WTAM WTIC WTMJ WWJ

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

ED-10:00 p.m., E-9:00, C-8:00, M-7:00
C — Your Hit Parade
KERN KFAB KFBK KFH KFPY KFRC KGB KGKO KGMB KHJ KLRA KLZ KMBC KMJ KMOX KOH KOIN KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WCOA WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WICC WISN WJAS WJR WJSV WKBW WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WNAC WNAX WNOX WOC WOKO WORC WPG WQAM WREC WSBT WSFA WSJS WSPD WTOC WWL WWVA

ED-10:30 p.m., E-9:30, C-8:30, M-7:30
R — George Olsen; Ethel Shutta
KDYL KFI KFYR KGW KHQ KOA KOMO KPO KSD KSTP KYW WAVE WBEN WCAE WCKY WCSH WDAF WDAY WEAF WMBC WEEI WFBR WGY WHIO WIBA WIRE WJAR WJDX WMAQ WMC WOW WRC WSB WSMB WTAG WTAM WTIC WTMJ WWJ

ED-11:00 p.m., E-10:00, C-9:00, M-8:00
C — Dance Orchestra
CFRB CKAC KFH KGKO KLRA KLZ KMBC KMOX KOMA KRLD KSCJ KSL KTRH KTSA KVOR KWKH WABC WACO WADC WALA WBBM WBNS WBRC WBT WACO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WFBL WFBM WFEA WGST WHAS WHEC WHK WIBW WIBX WICC WISN WJAS WJR WJSV WKBW WKRC WLAC WLBZ WMAS WMBD WMBG WMBR WNAX WNOX WOC WOKO WORC WQAM WREC WSHT WSJS WSMK WSPD WTOC
B — National Barn Dance
KDYL KFI KFSD KFYR KGHL KGIR KGU KGW KHQ KOA KOMO KPO KSTP KTAR WDAY WEBC WIBA WLW WTMJ

ED-11:30 p.m., E-10:30, C-9:30, M-8:30
C — Dance Orchestra
CFRB CKAC KFH KGKO KLRA KLZ KMBC KMOX KOMA KSL KTRH KTSA KVOR KWKH WABC WACO WADC WALA WBNS WBRC WBT WCAO WCAU WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WIBW WIBX WICC WJAS WJR WKBW WKRC WLAC WLBZ WMAS WMBG WMBR WNOX WOKO WORC WQAM WREC WSBT WSJS WSMK WSPD WTOC

SUNDAY

ED-11:30 a.m., E-10:30, C-9:30, M-8:30
C — Salt Lake Tabernacle Choir
KFH KGKO KLRA KLZ KMBC KOMA KRLD KSCJ KSL KTRH KTSA KWKH WACO WADC WALA WBIG WBNS WBRC WBT WCCO WDBO WDNC WDOD WDRC WFBL WFBM WFEA WGST WHAS WIBW WIBX WISN WJAS WJR WJSV WKBN WKRC WLAC WLBZ WMAS WMBD WMBR WNAC WNAX WNOX WOKO WORC WQAM WREC WSBT WSMK WSPD WTOC
R — Major Bowes' Capitol Family
CFCF CRCT KDYL KFI KFYR KGW KHQ KOA KOMO KPO KPRC KSD KSTP KTBS KTHS KVOO KYW WAPI WAVE WBAP WBEN WCAE WCSC WCSH WDAF WDAY WEAF WEBC WEEI WFAA WFBC WFBR WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKY WMAQ WMC WOAI WOW WPTF WRC WRVA WSB WSM WSMB WOSC WSUN WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

ED-12:30 p.m., E-11:30, C-10:30, M-9:30
B — Radio City Music Hall
CFCF CRCT KDKA KDYL KFI KFYR KGO KGW KHQ KOIL KOMO KPRC KSO KVOO WAPI WBAL WBZ WBZA WCKY WDAY WEBC WGAR WHAM WIS WJDX WJZ WKY WMAL WOAI WREN WSMB WSYR WWNC

ED-12:45 p.m., E-11:45, C-10:45, M-9:45
C — Trans-Atlantic Broadcast
CFRB CKAC KFH KGKO KLRA KLZ KMBC KRLD KSCJ KTRH KTSA KVOR WABC WACO WADC WALA WBIG WBRC WCAO WCAU WCCO WDAE WDBJ WDBO WDRC WEAN WESG WFBL WFBM WFEA WGR WHAS WIBX WJAS WJSV WKBN WLAC WLBZ WMBD WMBR WNAC WOC WOKO WORC WPG WQAM WREC WSJS WSMK WSPD WTOC WWL

ED-1:00p.m., E-12:00, C-11:00, M-10:00
C — Church of the Air
KFBK KFH KFPY KFRC KGB KHJ KMOX KOH KOL KOMA KRLD KRNT KSCJ KSL KTRH KTSA KVI KVOR KWG WABC WALA WBNS WBT WCAO WCCO WDAE WDBJ WDBO WDRC WESG WFBL WFBM WGR WHAS WHP WIBX WJAS WJSV WKBN WKRC WLAC WLBZ WMBR WNBF WOC WOKO WORC WPG WQAM WREC WSBT WSJS WSPD WTOC WWVA

ED-2:00 p.m., E-1:00, C-12:00, M-11:00
B — Magic Key of RCA
CFCF CRCT KDKA KDYL KFI KFYR KGU KGW KHQ KOA KOIL KOMO KPO KPRC KSO KSTP KTBS KTHS KVOO KWK WAPI WAVE WBAL WBZ WBZA WCKY WDAY WEBC WENR WFAA WFIL WFLA WGAR WHAM WHIO WIBA WIOD WIRE WIS WJAX WJDX WJZ WKY WMAL WMC WMT WOAI WPTF WREN WRVA WSB WSM WSMB WSOC WSYR WTAR WTMJ WWNC WXYZ

ED-3:00 p.m., E-2:00, C-1:00, M-12:00
C — Everybody's Music
CFRB CKAC KERN KFH KFPY KFRC KGB KGKO KHJ KLZ KMBC KMOX KOH KOL KOMA KRNT KSCJ KSL KTRH KTSA KVI KVOR KWG WAAB WABC WALA WBIG WBNS WBRC WBT WCAO WCCO WDAE WDBJ WDRC WEAN WESG WFBL WFBM WFEA WGST WHAS WHK WHP WIBW WIBX WICC WJAS WKBN WKBW WKRC WLAC WLBZ WMBD WMBG WMBR WNBF WNOX WOC WOKO WORC WPG WQAM WREC WSBT WSJS WSMK WSPD WTOC

ED-4:00 p.m., E-3:00, C-2:00, M-1:00
Rev. Charles E. Coughlin
KFEL KNX KSFO KSTP KVOD KWK WATR WCAO WCAU WDRC WEAN WFBL WFEA WGAR WGR WHB WHO WICC WISN WJAS WJJD WJR WLBZ WLLH WLW WMAS WNAC WNBH WOKO WOL WOR WORC WOW WRDO

ED-5:00 p.m., E-4:00, C-3:00, M-2:00
C — Ann Leaf's Musicale
CFRB CKAC KERN KFAB KFBK KFPY KFRC KGB KGKO KHJ KLZ KMBC KMOX KOH KOL KOMA KRNT KSL KTRH KTSA KVI KVOR WABC WACO WADC WALA WBIG WBNS WBRC WBT

SUNDAY (*Continued*)

WCAO WCAU WCCO WDAE WDBJ WDBO WDOD WDRC WEAN WFBL WFBM WGST WHAS WHEC WHK WHP WIBW WJAS WJR WJSV WKBW WKRC WLAC WMBD WMBG WMBR WNAC WNOX WOKO WPG WQAM WREC WSJS WSMK WSPD WTOC

ED-5:30 p.m., E-4:30, C-3:30, M-2:30
C — Tea Time Tunes
KFH KMBC KMOX KOMA KTUL WAAB WABC WBNS WCAO WCAU WDRC WEAN WFBL WFBM WGR WHAS WHEC WHK WIBX WICC WJR WJSV WMAS WOKO WORC WSPD WWL WWVA

ED-7:00 p.m., E-6:00, C-5:00, M-4:00
B — Tim Ryan; Irene Noblette
CFCF CRCT KDKA KFYR KOIL KPRC KSO KSTP KTBS KVOO KWK WAVE WBAL WBZ WBZA WDAY WEBC WENR WFAA WFIL WFLA WGAR WHAM WIBA WIOD WIS WJAX WJDX WJZ WKY WLW WMAL WMC WMT WOAI WPTF WREN WRVA WSB WSM WSMB WSOC WSYR WTAR WTMJ WWNC WXYZ

ED-7:30 p.m., E-6:30, C-5:30, M-4:30
C—Crumit; Sanderson
KLRA KLZ KRLD KTRH KTSA KTUL KWKH WABC WACO WADC WALA WBIG WBNS WBRC WBT WCAO WCAU WCOA WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGR WGST WHAS WHEC WHK WHP WIBX WICO WJAS WJR WJSV WKBN WKRO WLAC WLBZ WMAS WMBG WMBR WNAC WNOX WOKO WORC WQAM WREC WSBT WSFA WSJS WSMK WSPD WTOC WWL WWVA

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

B — Husbands and Wives
KDKA KOIL KPRC KSO KTBS KTHS KVOO KWK WAPI WAVE WBAL WBAP WBZ WBZA WCKY WFIL WGAR WHAM WHIO WIRE WJDX WJZ WKY WLS WMAL WMC WMT WOAI WREN WSB WSM WSMB WSYR WXYZ

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

ED-8:00 p.m., E-7:00, C-6:00, M-5:00
C — America Dances; Lud Gluskin
KFAB KFH KFPY KLRA KLZ KMBC KMOX KOMA KRLD KRNT KTRH KTSA KTUL KWG KWKH WABC WADC WALA WBBM WBNS WBRC WBT WCAO WCAU WCCO WDOD WDRC WEAN WFBL WFBM WGR WGST WHAS WHEC WHK WHP WICC WJAS WJR WJSV WKRC WLAC WNAC WNAX WOC WOKO WOWO WREC WSPD WWL

C—Beginning Sept. 27: Joseph Pasternak and Nelson Eddy

R — Major Bowes' Amateur Hour
CFCF CRCT KDYL KFI KFYR KGW KHQ KOA KOMO KPO KPRC KSD KSTP KTAR KVOO KYW WAVE WBEN WBZ WBZA WCAE WCSH WDAF WDAY WEAF WEBC WFAA WFBR WFLA WGY WHO WIOD WIS WJAR WJAX WJDX WKY WLW WMAQ WMC WOAI WOW WPTF WRC WRVA WSB WSM WSMB WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

ED-9:00 p.m., E-8:00, C-7:00, M-6:00
R — Manhattan Merry-Go-Round
CFCF KDYL KFI KFYR KGW KHQ KOA KOMO KPO KPRC KSD KSTP KTBS KTHS KYW WAVE WBEN WCAE WCKY WCSH WDAF WDAY WEAF WEBC WEEI WFAA WFBR WFLA WGY WHO WHIO WIBA WIOD WIRE WIS WJAR WJAX WJDX WKY WMAQ WMC WOAI WOW WPTF WRC WRVA WSB WSM WSMB WSOC WTAG WTAM WTAR WTIC WTMJ WWJ WWNC

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

ED-9:30 p.m., E-8:30, C-7:30, M-6:30
R — Album of Familiar Music
CFCF CRCT KDYL KFI KFYR KGW KHQ KOA KOMO KPO KPRC KSD KSTP KTBS KYW WAPI WAVE WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFAA WFBR WFLA WGY WHO WHIO WIBA WIOD WIS WJAR WJAX WJDX WKY WMAQ WMC WOAI WOW WPTF WRC WRVA WSAI WSB WSM WSMB WSOC WTAG WTAM WTAR WTMJ WWJ WWNC

ED-9:45 p.m., E-8:45, C-7:45, M-6:45
B-Paul Whiteman's Musical Varieties
KDKA KOIL KSO KWK WBAL WBZ WBZA WENR WFIL WGAR WHAM WJZ WMAL WMT WREN WSAI WSYR WXYZ

ED-11:00 p.m.,E-10:00,C-9:00,M-8:00
R — Sunset Dreams; Morin Sisters
KDYL KFI KFSD KGW KHQ KOA KOMO KPO KPRC KTAR KTBS KTHS WBAP WDAF WKY

ED-11:15 p.m.,E-10:15, C-9:15,M-8:15
B — Cornelia Otis Skinner
KDYL KFI KFSD KGHL KGIR KGW KHQ KOA KOMO KPO KPRC KTAR KTBS KTHS WAPI WAVE WBAP WJDX WKY WMC WOAI WSB WSM WSMB

ED-11:30 p.m., E-10:30,C-9:30,M-8:30
B — Tim Ryan; Irene Noblette
KDYL KFI KFSD KGHL KGIR KGU KGW KHQ KOA KOMO KPO KTAR

B-Paul Whiteman's Musical Varieties
KECA KEX KFSD KGA KGO KJR KPRC KTBS KTHS WAPI WAVE WBAP WJDX WKY WMC WOAI WSB WSM WSMB

CLASSIFIED INDEX TO CHAIN PROGRAMS

Time in Eastern Daylight Saving

C—Columbia; R—National (Red); B—National (Blue)

CONCERTS

Everybody's Music, 3 p.m. Sunday, C
Ford Program, 9 p.m. Fri., B
Radio City Music Hall, 12:30 p.m. Sun., B

DANCE BANDS

Victor Arden, 8:30 p.m. Fri., C
Bunny Berigan, 8 p.m. Sat., C
Ben Bernie, 9:00 p.m. Tues., B
Ray Block, 7 p.m. Tues. and Thurs., C
Jimmie Dorsey, 10 p.m. Thurs., R
Eddie Duchin, 8:30 p.m. Wed., C
Ted Flo Rito, 9:30 p.m. Fri., B
Lud Gluskin, 8 p.m. Sun., C
Benny Goodman, 9:30 p.m. Tues., C
Louis Gress, 7 p.m. Sun., C
Horace Heidt, 8 p.m. Mon., C
Richard Himber, 9:30 p.m. Mon., R
Hal Kemp, 7:30 p.m. Sun., C
Wayne King, 8:30 p.m. Tues. and Wed., R. 10 p.m. Mon., C
Andre Kostelanetz, 9 p.m. Wed., C and 10 p.m. Fri., C
Benny Krueger, 8:30 and 11:30 p.m., Mon., C
Abe Lyman, 5 p.m. Sun., C, and 8:30 p.m. Mon., B
Russ Morgan, 8:30 p.m. Tues., C
Raymond Paige, 9 p.m. Fri., C
Leo Reisman, 8 and 11:30 p.m. Tues., R
Freddie Rich, 10 p.m. Sat., C
Al Roth, 6:45 Sat., C
Jack Shilkret, 5:30 p.m. Sun., C
Nathaniel Shilkret, 9:30 p.m., Tues., C

Phil Spitalny, 6 p.m. Sun., C
Rudy Vallee, 8 p.m. Thurs., R
Peter Van Steeden, 9 p.m. Wed., R
Paul Whiteman, 9:45 and 11:30 p.m. Sun., B
Victor Young, 9:30 p.m. Sat., R

DIALOG

Amos 'n' Andy, 7 and 11 p.m. daily except Sat. and Sun., R
Fred Astaire, 9:30 p.m. Tues., R
Phil Baker, 7:30 p.m. Sun., C
Burns and Allen, 8:30 and 11:30 p.m. Wed., C
Clara, Lu 'n' Em, 9:30 p.m. Fri., B
Easy Aces, 7 p.m. Tues., Wed., Thurs., B
Frank Fay, 8:30 p.m. Fri., B
Fibber McGee and Molly, 8 p.m. Mon., R
Gum and Abner, 7:30 p.m. daily except Sat. and Sun., B
Ken Murray, 8:30 p.m. and 11:30 p.m. Tues., C
Pick and Pat, 8:30 and 11:30 p.m. Mon., C
Stoopnagle and Budd, 9 p.m. Wed., R

DRAMA

Columbia Workshop, 8:30 p.m. Sat., C
Crime Crusade, 10 p.m. Wed., C
Death Valley Days, 9 p.m. Thurs., B
Phillips Lord, 10 p.m. Wed., C
Lux Radio Theater, 9 p.m. Mon., C
News of Youth, 6:15 p.m. Tues., Thurs., Sat., C
One Man's Family, 8 p.m. Wed., R
Renfrew of the Mounted, 6:45 and 11:15 p.m. Mon. thru Fri., C
Irene Rich, 8 p.m. Fri., B
True Story Court, 9:30 p.m. Fri., R
Welcome Valley, 8:30 p.m. Tues., B

POPULAR PROGRAMS

A. & P. Gypsies, 9 p.m. Mon., R
Album of Familiar Music, 9:30 p.m. Sun., R
Atlantic Family, 7 p.m. Thurs., C
Major Bowes, 11:30 a.m. and 8 p.m. Sun., R
Broadway Varieties, 8:30 p.m. Fri., C
Camel Program, 9:30 and 11:30 p.m. Tues., Thurs., C
Cavalcade of America in Music, 8 p.m. Wed., C
Chesterfield Program, 9 p.m. Wed., C
Cities Service Concert, 8 p.m. Fri., R
Contented Program, 10 p.m. Mon., R
Come On, Let's Sing, 9:30 p.m. Wed., C
Fireside Recitals, 7:30 p.m. Sun., R
Fleischmann Variety Hour, 8 p.m. Thurs., R
Flying Red Horse Tavern, 8 p.m. Fri., C
Hammerstein's Music Hall, 8 p.m. Tues., C
Hit Parade, 10 p.m. Red and Blue Wednesday; 10 p.m. Sat., C
Hollywood Hotel, 9 p.m. Fri., C
Krueger Musical, 7 p.m. Tues., C
Magic Key of RCA, 2 p.m. Sun., B
Manhattan Merry-Go-Round, 9 p.m. Sun., R
March of Time, 10:30 p.m. Mon. thru Fri., C
Maxwell House Show Boat, 9 p.m. Thurs., R
Musical Footnotes, 1:30 p.m. Sun., C
National Barn Dance, 9:30 and 11:30 p.m. Sat., B
Shell Chateau, 9:30 p.m. Sat., R
Sinclair Minstrels, 9 p.m. Mon., B
Swing Session, 8 p.m. Sat., C
Town Hall Tonight, 9 and 12 p.m. Wed., R
Uncle Ezra, 7:15 p.m. Mon., Wed., Fri., R
Voice of Firestone, 8:30 and 11:30 p.m. Mon., R
Vox Pop, 9 p.m. Tues., R
Welcome Valley, 8:30 p.m. Tues., B

SINGERS

Fred Astaire, 9:30 p.m. Tues., R
Smith Ballew, 9:30 p.m. Sat., R
Richard Bonelli, 9 p.m. Fri., B
Patti Chapin, 7 p.m. Sat., C and 6 p.m. Tues., C
Charlotteers, 7:15 p.m. Mon., C
Bernice Claire, 5 p.m. Sun., C., and 9 p.m. Fri., R
Jerry Cooper, 7 p.m. Tues., C
Bing Crosby, 10 p.m. Thurs., R
Crumit-Sanderson, 7:30 p.m. Sun., C
Jessica Dragonette, 8 p.m. Fri., R
Phil Duey, 8 and 11:30 p.m. Tues., R
Alexander Gray, 8 p.m. Thurs., C
Frances Langford, 9 p.m. Fri., C
Elizabeth Lennox, 8:30 p.m. Fri., C
Lucy Monroe, 9:30 p.m. Sun., R
Morin Sisters, 7:45 and 11 p.m. Sun., R
Frank Munn, 9:30 p.m. Sun. and 9 p.m. Fri., R
Frank Parker, 7 p.m. Sat., C
Carmella Ponselle, 8:30 p.m. Fri., C
Dick Powell, 9 p.m. Fri., C
Homer Rodeheaver, 9:30 p.m. Wed., C
Lanny Ross, 9 p.m. Thurs., R
Oscar Shaw, 8:30 p.m. Fri., C
Sally Singer, 7 p.m. Mon., Thurs., C
Kate Smith, 7:30 Tues. and 8 p.m. Thurs., C
Oliver Smith, 5 p.m. Sun., C
Margaret Speaks, 8:30 p.m. Mon., R
Marion Talley, 10 p.m. Fri., R
Judy Starr, 7:30 p.m. Mon., C

TALKS

Boake Carter, 7:45 p.m. Mon. thru Fri., C
Rev. Charles E. Coughlin, 4 p.m. Sunday
Husbands and Wives, 7:30 p.m. Sun., B
Sidewalk Interviews, 9 p.m. Tues., R
Lowell Thomas, 6:45 p.m. Mon., thru Fri., B
Trans-Atlantic Broadcast, 12:45 p.m. Sun., C

THE MONTH'S CHANGES IN STATION DATA

NEW

640	WSPG	Portland, Me.
830	CMJX	Camaguey, Cuba
1040	KYOS	Merced, Calif.
1160	XEP	Juarez, Chih.
1200	KDNC	Lewistown, Mont.
	KVEC	San Luis Obispo, Calif.
	WOLS	Florence, S. C.
1210	KGLO	Mason City, Iowa
	KOCA	Kilgore, Texas
	WBLY	Lima, Ohio
	WLMU	Middlesboro, Ky.
1310	KROY	Sacramento, Calif.
	KRRV	Sherman, Texas
	KWAT	Watsonville, Calif.
1340	CMAB	Pinar del Rio, Cuba
1370	KBHB	Rapid City, S. Dak.
	KTEM	Temple, Texas
	WDWS	Champaign, Ill.
	WEXP	Clarksburg, W. Va.
1420	WAPO	Chattanooga, Tenn.
1500	KUTA	Salt Lake City, Utah
	.....	Valley City, N. Dak.

FREQUENCY

580	WILL	Urbana, Ill., from 890
1400	KHBC	Hilo, T. H., from 1420

POWER

630	CJRC	Winnipeg, Man., 1000 from 500
710	KIRO	Seattle, Wash., 1000 from 500
890	WBAA	W. Lafayette, Ind., 500 from 1000
	WJAR	Providence, R. I., 1000 from 500
1100	CRCV	Vancouver, B. C., 1000 from 500
1210	KPPC	Pasadena, Calif., 100 from 50
	WPAX	Thomasville, Ga., 100 from 250
1400	KHBC	Hilo, T. H., 250 from 100
1410	WHIS	Bluefield, W. Va., 500 from 250
1450	CFCT	Victoria, B. C., 50 from 75

LOCATION

920	WORL	Boston, Mass., from Needham

CALL LETTERS

640	WHKC	Columbus, Ohio, from WAIU

REINSTATED

730	XEBC	Agua Caliente, L. C.

NETWORK

1500	KNOW	Austin, Texas, new CBS

Short Wave Stations By Frequencies

Police Broadcasters are shown in italics.

Megs.	Meters		
1.596	187.84	*WPGG*	*Findlay, Ohio*
		WPGQ	*Columbus, Ohio*
		WPHC	*Massillon, Ohio*
		WPHK	*Wilmington, Ohio*
		WPHT	*Cambridge, Ohio*
		WQFT	*Portable in Ohio*
1.606	189.69	KGXW	Port Alexander, Alaska
1.610	186.22	*WQPC*	*Chicago, Ill.*
		WQPD	*DeQuoin, Ill.*
		WQPF	*Effingham, Ill.*
		WQPG	*Sterling, Ill.*
		WQPM	*Macomb, Ill.*
		WQPP	*Pontiac, Ill.*
		WQPS	*Springfield, Ill.*
1.622	184.85	KGXU	Port Armstrong, Alaska
		KIJI	Port Conclusion, Alaska
		KIJK	Washington Bay, Alaska
		KIJO	Port Herbert, Alaska
		KIJS	Newport Walter, Alaska
		KIJV	Deep Cove, Alaska
		KIOG	Red Bluff Bay, Alaska
1.634	183.48	*WPHE*	*Marion County, Ind.*
		WPHS	*Culver, Ind.*
		WPHU	*Jasper, Ind.*
		WQFE	*Seymour, Ind.*
		WQFW	*Columbia City, Ind.*
1.642	182.59	*WRDS*	*E. Lansing, Mich.*
1.658	180.83	*KNHD*	*Redwood Falls, Minn.*
		KSW	*Berkeley, Calif.*
		WPGC	*S. Schenectady, N. Y.*
1.666	179.96	*WMP*	*Framingham, Mass.*
		WPEL	*W. Bridgewater, Mass*
		WPEV	*Portable in Mass.*
		WPEW	*Northampton, Mass.*
		.....	*Nashville, Tenn.*
1.674	179.10	*KGHK*	*Palo Alto, Calif.*
		KGZT	*Santa Cruz, Calif.*
		WPSP	*Harrisburg, Pa.*
1.682	178.25	*KACC*	*Fairfield, Iowa*
		KACD	*Atlantic, Iowa*
		KGHO	*Des Moines, Iowa*
		KNFN	*Waterloo, Iowa*
		KNFO	*Storm Lake, Iowa*
1.692	177.19	*WQFT*	*Portable in Ohio*
1.698	176.57	*KNGG*	*Phoenix, Ariz.*
		WAKJ	*Duval County, Fla.*
1.706	175.74	*KGPC*	*St. Louis, Mo.*
		WKDU	*Cincinnati, Ohio*
		WPET	*Lexington, Ky.*
1.710	175.33	*CZ6F*	*Hamilton, Ont.*
1.712	175.13	*COL2*	*Havana, Cuba*
		KACU	*Gladewater, Texas*
		KGHY	*Whittier, Calif.*
		KGJX	*Pasadena, Calif.*
		KGPJ	*Beaumont, Texas*
		KGPL	*Los Angeles, Calif.*
		KGPQ	*Honolulu, T. H.*
		KGPR	*Fort Worth, Texas*
		KGZB	*Houston, Texas*
		KGZL	*Shreveport, La.*
		KGZQ	*Waco, Texas*
		KGZY	*San Bernardino, Cal.*
		KNFJ	*Pomona, Calif.*
		KNGE	*Cleburne, Texas*
		KNGL	*Galveston, Texas*
		KNHF	*Denton, Texas*
		KVP	*Dallas, Texas*
		VYR	*Montreal, P. Q.*
		WAKF	*Everett, Mass.*

Megs.	Meters		
		WPDB	*Chicago, Ill.*
		WPDC	*Chicago, Ill.*
		WPDD	*Chicago, Ill.*
		WPDU	*Pittsburgh, Pa.*
		WPED	*Arlington, Mass.*
		WPEH	*Somerville, Mass.*
		WPEI	*E. Providence, R. I.*
		WPEJ	*Brookline, Mass.*
		WPFA	*Newton, Mass.*
		WPFN	*Fairhaven, Mass.*
		WPGF	*Providence, R. I.*
		WPGV	*Boston, Mass.*
		WPHG	*Medford, Mass.*
		WQFL	*Oak Park, Ill.*
		WQFX	*Waukegan, Ill.*
2.318	129.34	*CYQ*	*Toronto, Ont.*
2.342	128.02	*CGZ*	*Vancouver, B. C.*
2.366	126.72	*WAKC*	*Freehold, N. J.*
2.382	125.87	*KGHT*	*Brownsville, Texas*
		KGIV	*Corpus Christi, Tex.*
		KNFE	*Duluth, Minn.*
		KNHB	*Green Bay, Wisc.*
		WAKE	*Oshkosh, Wisc.*
		WPDN	*Auburn, N. Y.*
		WPEA	*Syracuse, N. Y.*
		WPFM	*Birmingham, Ala.*
		WPGW	*Mobile, Ala.*
2.390	125.45	*CJW*	*St. John, N. B.*
		CJZ	*Verdun, P. Q.*
2.396	125.14	*VYW*	*Winnipeg, Man.*
2.406	124.61	*KGHZ*	*Little Rock, Ark.*
		KGPW	*Salt Lake City, Utah*
		KNHE	*Fort Smith, Ark.*
2 414	124.30	*KACE*	*Olympia, Wash.*
		KACJ	*Wenatchee, Wash.*
		KACK	*Bellingham, Wash.*
		KACN	*San Buenaventure, C.*
		KACO	*Tracy, Calif.*
		KACS	*Bakersfield, Calif.*
		KACV	*Walla Walla, Wash.*
		KGHS	*Spokane, Wash.*
		KGHW	*Centralia, Wash.*
		KGPA	*Seattle, Wash.*
		KGPF	*Santa Fe, N. Mex.*
		KGPS	*Bakersfield, Calif.*
		KGZA	*Fresno, Calif.*
		KGZM	*El Paso, Texas*
		KGZN	*Tacoma, Wash.*
		KGZO	*Santa Barbara, Calif.*
		KGZV	*Aberdeen, Wash.*
		KGZX	*Albuquerque, N. M.*
		KNFA	*Clovis, N. Mex.*
		KNFI	*Mt. Vernon, Wash.*
		KNFP	*Everett, Wash.*
		KNGU	*Yakima, Wash.*
		KNGY	*Lodi, Calif.*
		WCK	*Detroit, Mich.*
		WMO	*Highland Park, Mich.*
		WPDA	*Tulare, Calif.*
		WPDJ	*Passaic, N. J.*
		WPDX	*Detroit, Mich.*
		WPDY	*Atlanta, Ga.*
		WPFH	*Baltimore, Md.*
		WPFI	*Columbus, Ga.*
		WPGH	*Albany, N. Y.*
		WPGJ	*Utica, N. Y.*
		WPGM	*La Grange, Ga.*
		WQFB	*Macon, Ga.*
		WQFJ	*Oneonta, N. Y.*
		WQFV	*Augusta, Ga.*
		WRDR	*Grosse Pointe, Mich.*
		.....	*Herkimer, N. Y.*

Megs.	Meters		
2.416	124.09	CZG	Prince Rupert, B. C.
2.422	123.79	KACA	Atchison, Kans.
		KACI	Eureka, Calif.
		KGPE	Kansas City, Mo.
		KGPG	Vallejo, Calif.
		KGZC	Topeka, Kans.
		KNGF	Sacramento, Calif.
		KNGV	Salina, Kans.
		WMJ	Buffalo, N. Y.
		WNFP	Niagara Falls, N. Y.
		WPDR	Rochester, N. Y.
		WPDW	Washington, D. C.
		WPFU	Portland, Me.
		WPHB	Nashua, N. H.
2.430	123.38	KGPB	Minneapolis, Minn.
		KGZJ	Phoenix, Ariz.
		KNGP	Shreveport, La.
		KNHG	Prescott, Ariz.
		WAKH	Bloomfield, N. J.
		WCPD	Charleston, S. C.
		WPDI	Columbus, Ohio
		WPDM	Dayton, Ohio
		WPDS	St. Paul, Minn.
		WPEK	New Orleans, La.
		WPFD	Highland Park, Ill.
		WPFK	Hackensack, N. J.
		WPGI	Portsmouth, Ohio
		WPHO	Zanesville, Ohio
		WQFO	Lancaster, Ohio
2.442	122.77	KGHU	Austin, Texas
		KGPP	Portland, Ore.
		KGPX	Denver, Colo.
		KGZH	Klamath Falls, Ore.
		KGZR	Salem, Ore.
		KNHM	Fargo, N. Dak.
		WAKO	Ft. Lauderdale, Fla.
		WMDZ	Indianapolis, Ind.
		WPDE	Louisville, Ky.
		WPDF	Flint, Mich.
		WPDH	Richmond, Ind.
		WPDL	Lansing, Mich.
		WPEB	Grand Rapids, Mich.
		WPES	Saginaw, Mich.
		WPFC	Muskegon, Mich.
		WPFE	Reading, Pa.
		WPFG	Jacksonville, Fla.
		WPFT	Lakeland, Fla.
		WPFX	Palm Beach, Fla.
		WPFY	Yonkers, N. Y.
		WPFZ	Miami, Fla.
		WPGL	Binghamton, N. Y.
		WPGP	Muncie, Ind.
		WPHM	Orlando, Fla.
		WQFM	Wilkes-Barre, Pa.
		WQFQ	Lafayette, Ind.
2,450	122.38	KACF	Chickasha, Okla.
		KACL	Altus, Okla.
		KACP	Ponca City, Okla.
		KACR	Seminole, Okla.
		KGHN	Hutchinson, Kans.
		KGHP	Lawton, Okla.
		KGPH	Oklahoma City, Ok.
		KGPO	Tulsa, Okla.
		KGPZ	Wichita, Kans.
		KGZF	Chanute, Kans.
		KGZP	Coffeyville, Kans.
		KNGK	Duncan, Okla.
		KNGM	Rapid City, S. Dak.
		KNGT	Muskogee, Okla.
		KNHC	Ada, Okla.
		WPDK	Milwaukee, Wisc.
		WPEE	Brooklyn, N. Y.
		WPEF	Bronx, N. Y.
		WPEG	New York, N. Y.
		WPEP	Kenosha, Wisc.
		WPHF	Richmond, Va.
		WQFC	Roanoke, Va.
		WQFH	Lynchburg, Va.
		WQFI	Petersburg, Va.
		.....	Huron, S. Dak.
2.458	121.97	KACM	Big Spring, Tex.
		KGZI	Wichita Falls, Tex.
		KGZW	Lubbock, Texas
		KNFB	Idaho Falls, Idaho
		KNGW	Brownwood, Texas
		WPDG	Youngstown, Ohio
		WPDO	Akron, Ohio
		WPDV	Charlotte, N. C.
		WPFS	Asheville, N. C.
		WPGD	Rockford, Ill.
		WPHD	Steubenville, Ohio
		WQFZ	Ottawa, Ill.
		WRBH	Cleveland, Ohio
2.466	121.58	KGOZ	Cedar Rapids, Iowa
		KGPD	San Francisco, Calif.
		KGPI	Omaha, Nebr.
		KGPK	Sioux City, Iowa
		KGPM	San Jose, Calif.
		KGPN	Davenport, Iowa
		KGZG	Des Moines, Iowa
		WAKB	New London, Conn.
		WAKG	Clearwater, Fla.
		WPEC	Memphis, Tenn.
		WPEM	Woonsocket, R. I.
		WPFV	Pawtucket, R. I.
		WPFW	Bridgeport, Conn.
		WPGA	Bay City, Mich.
		WPGB	Port Huron, Mich.
		WPGK	Cranston, R. I.
		WPGX	Worcester, Mass.
		WPHA	Fitchburg, Mass.
		WPHN	Tampa, Fla.
		WPHP	Jackson, Mich.
		WQFA	New Haven, Conn.
		WQFC	Gainsville, Fla.
		WQFK	Clearwater, Fla.
2.474	121.19	KGHG	Las Vegas, Nev.
		KGHM	Reno, Nev.
		KNFH	Garden City, Kans.
		KNGH	Dodge City, Kans.
		WAKI	Sandusky, Ohio
		WPDP	Philadelphia, Pa.
		WPFO	Knoxville, Tenn.
		WPFQ	Swarthmore, Pa.
		WPFS	Asheville, N. C.
		WPGZ	Johnson City, Tenn.
		WPHY	Elizabethtown, Tenn.
		WQFY	Mansfield, Ohio
		WRDQ	Toledo, Ohio
2.482	120.80	KGZE	San Antonio, Texas
		WPGT	New Castle, Pa.
		WPHZ	Oil City, Pa.
		WQFF	Monessen, Pa.
		WQFU	Sharon, Pa.
2.490	120.41	KACQ	Kalaloch, Wash.
		KGHD	Seattle, Wash.
		KGHX	Santa Ana, Calif.
		KGZD	San Diego, Calif.
		KGZU	Lincoln, Nebr.
		KNFG	Olympia, Wash.
		KNFK	Bellingham, Wash.
		KNFM	Compton, Calif.
		KNFX	Ellenburg, Wash.
		KNGB	Yakima, Wash.
		KNGC	Vancouver, Wash.
		KNGD	Walla Walla, Wash.
		KNGJ	El Centro, Calif.
		KNGN	Norfolk, Nebr.
		KNGQ	Wenatchee, Wash.
		KNGR	Spokane, Wash.
		KNGZ	Ephrata, Wash.
		WAKA	Huntington, Ind.

Megs.	Meters		
		WAKK	*Frankfort, Ind.*
		WPDT	*Kokomo, Ind.*
		WPDZ	*Fort Wayne, Ind.*
		WPFP	*Clarksburg, W. Va.*
		WPGN	*South Bend, Ind.*
		WPGO	*Huntington, N. Y.*
		WPGS	*Mineola, N. Y.*
		WPHI	*Charleston, W. Va.*
		WPHJ	*Fairmont, W. Va.*
		WPHQ	*Parkersburg, W. Va*
		.....	*Marion, Ind.*
2.506	119.64	WOU	Marshfield, Mass.
2.512	119.36	KGM	Ketchikan, Alaska
		KLB	Port Althorp, Alaska
		KLC	Kake, Alaska
		KLE	Rose Inlet, Alaska
2.538	118.13	KDH	Port Alexander, Aaa.
		KILD	Cordova (Eyak River)Aaa.
2.566	116.84	KFF	Union Bay, Alaska
		KHV	Nakeen, Alaska
		KLA	Waterfall, Alaska
		KLD	Hidden Inlet, Aaa.
2.604	115.14	WVD	Seattle, Wash.
		WXH	Ketchikan, Alaska
2.616	114.61	KAEB	Hydaburg, Alaska
		KAED	Angoon, Alaska
		KAEF	Jack Wade, Alaska
		KION	Tin City, Alaska
2.632	113.91	KIJW	Shearwater Bay, Aaa.
		KIJX	Kadiak Island, Alaska
		KIMA	Port Hobron, Alaska
		KIOC	Port Wakefield, Alaska
		KIOD	Nellie Juan, Alaska
		KIOH	Iron Creek, Alaska
		KIOI	Akutan, Alaska
2.726	109.98	WANB	Dinsmore, Fla.
2.912	102.96	KHW	Akutan, Alaska
		KHZ	Port Hobron, Alaska
2.986	100.41	KIJP	Uganik, Alaska
		KIJR	Port San Juan, Alaska
		KIJU	Todd, Alaska
2.994	100.14	KIEJ	Poorman, Alaska
		KIIK	Circle, Alaska
		KIIL	Fort Yukon, Alaska
		KIIM	Hot Springs, Alaska
		KINN	Eagle, Alaska
		KIIO	McGrath, Alaska
		KIJB	Cape Pole, Alaska
		KILY	Excursion Inlet, Alaska
		KNBZ	Pillar Bay, Alaska
2.998	100.00	WXE	Anchorage, Alaska
3.093	96.94	KIAP	Rose Inlet, Alaska
		KIAW	Port Althorp, Alaska
		KIAY	Ketchikan, Alaska
		KIBA	Kake, Alaska
		KICI	View Cove, Alaska
3.100	96.72	KIIP	Luckyshot, Alaska
3.190	93.99	KIIJ	Tanana, Alaska
		KIIK	Circle, Alaska
3.265	91.83	KIBZ	Waterfall, Alaska
		KICE	Nakeen, Alaska
		KICG	Union Bay, Alaska
		KIDE	Hidden Inlet, Alaska
4.098	73.16	WND	Hialeah, Fla.
4.178	71.76	WOO	Ocean Gate, N. J.
4.253	70.50	WKF	Lawrenceville, N. J.
4.273	70.16	RV15	Khabarovsk, USSR.
4.512	66.44	ZFS	Nassau, Bahamas
4.600	65.18	HC2ET	Guayaquil, Ecuador
4.753	63.08	WOO	Ocean Gate, N. J.
4.755	63.05	CFU	Rossland, B. C.
4.795	62.53	VE9BK	Vancouver, B. C.
4.820	62.20	GDW	Rugby, England
4.865	61.63	VDO	Vancouver, B. C.
5.000	59.96	WWV	Beltsville, Md.
5.025	59.67	ZFA	Hamilton, Bermuda
5.520	54.32	TI5HH	San Ramon, Costa Rica
5.710	52.51	TGS	Guatemala City, Guat.
5.720	52.42	YV1ORSC	San Cristobal, Venezuela
5.730	52.32	JVV	Nazaki, Japan
5.760	52.05	HJ4ABD	Medellin, Colombia
5.780	51.87	OAX4D	Lima, Peru
5.790	51.78	JVU	Nazaki, Japan
5.800	51.69	YV2RC	Caracas, Venezuela
5.810	51.60	YV7RMO	Maracaibo, Venez.
5.820	51.52	CEC	Santiago, Chile
		TIGPH	San Jose, Costa Rica
5.830	51.43	TDD	Shinkio, Manchukuo
5.850	51.25	YV5RMO	Maracaibo, Venez.
5.865	51.12	HI1J	San Ped. de Macoris, D.R.
5.875	51.03	HRN	Tegucigalpa, Honduras
5.885	50.95	HCK	Quito, Ecuador
5.890	50.90	JIC	Taihoku, Taiwan
5.895	50.86	YV8RB	Barquisimeto, Venez.
5.915	50.69	HH2S	Port-au-Prince, Haiti
5.930	50.56	HJ4ABE	Medellin, Colombia
5.940	50.47	TG2X	Guatemala City, Guat.
5.950	50.39	HJN	Bogota, Colombia
		YNLF	Nanagua, Nicaragua
5.980	50.14	HIX	Trujillo, D. R.
		HJ2ABD	Bucaramanga, Colombia
5.985	50.10	XEVI	Mexico City, D. F.
6.000	49.97	TGWA	Guatemala City, Guat.
		XEBT	Mexico City, D. F.
6.005	49.93	CFCX	Montreal, P. Q.
		HP5K	Colon, Panama
6.006	49.92	HJ1ABJ	Santa Marta, Colombia
6.010	49.89	CJCX	Sydney, N. S.
		COCO	Havana, Cuba
		HJ1ABC	Quibdo, Colombia
6.012	49.87	HJ3ABH	Bogota, Colombia
6.014	49.85	HI3U	Santiago, D. R.
6.020	49.80	DJC	Zeesen, Germany
		XEUW	Veracruz, Ver.
6.030	49.72	HP5B	Panama City, Panama
6.040	49.64	W1XAL	Boston, Mass.
		W4XB	Miami, Fla.
		YDA	Tandjongpriok, N.E.I.
6.042	49.62	HJ1ABG	Barranquilla, Colombia
6.045	49.60	HI9B	Santiago, D. R.
6.050	49.56	GSA	Daventry, Gt. Britain
6.055	49.52	HJ3ABD	Bogota, Colombia
6.060	49.48	W3XAU	Philadelphia, Pa.
		W8XAL	Cincinnati, Ohio
6.070	49.39	CFRX	Toronto, Ont.
6.080	49.31	DJM	Zeesen, Germany
		HP5F	Colon, Panama
		W9XAA	Chicago, Ill.

Megs.	Meters		
6.085	49.27	HJ5ABD	Cali, Colombia
6.090	49.23	CRCX	Toronto, Ont.
6.098	49.17	HI3C	La Romana, D. R.
6.100	49.15	HJ4ABL	Manizales, Colombia
		W3XAL	Bound Brook, N. J.
		W9XF	Chicago, Ill.
6.110	49.07	CHNX	Halifax, N. S.
		GSL	Daventry, Gt. Britain
		HJ4ABB	Manizales, Colombia
6.115	49.03	HJ1ABE	Cartagena, Colombia
6.120	48.99	W2XE	New York, N. Y.
		XEFT	Veracruz, Ver.
		YDA5	Bandoeng, N.E.I.
6.130	48.91	COCD	Havana, Cuba
		TGXA	Guatemala City, Guat.
		XEOK	Tijuana, L. C.
6.135	48.87	HJ4ABP	Medellin, Colombia
6.140	48.83	W8XK	Pittsburgh, Pa.
6.150	48.75	CB615	Santiago, Chile
		CJRO	Winnipeg, Man.
		HI5N	Santiago, D. R.
		HJ5ABC	Cali, Colombia
6.155	48.74	COKG	Santiago, Cuba
6.165	48.63	YV3RC	Caracas, Venezuela
6.170	48.60	HJ2ABA	Tunja, Colombia
		HJ3ABF	Bogota, Colombia
6.182	48.50	XEXA	Mexico, D. F.
6.185	48.48	HI1A	Santiago, D. R.
6.230	48.13	OAX4G	Lima, Peru
6.235	48.09	HRD	La Ceiba, Honduras
6.280	47.74	CO9WR	Sancti-Spiritus, Cuba
		HIG	Trujillo, D. R.
6.300	47.59	HJ1ABH	Clenaga, Colombia
		YV12RM	Maracay, Venezuela
6.315	47.48	HIZ	Trujillo, D. R.
6.330	47.36	JZG	Nazaki, Japan
6.356	47.17	HRP1	San Pedro Sula, Hond.
6.375	47.03	YV4RC	Caracas, Venez.
6.400	46.85	YV9RC	Caracas, Venez.
6.410	46.77	TIPG	San Jose, Costa Rica
6.420	46.70	HI1S	Puerto Plata, D. R.
6.425	46.66	W2XGB	Hicksville, N. Y.
		W3XL	Bound Brook, N. J.
		W9XF	Chicago, Ill.
		W9XBS	Chicago, Ill.
6.446	46.50	HJ1ABB	Barranquilla, Colombia
6.450	46.48	HJ4ABC	Ibague, Colombia
6.480	46.27	HI4V	Trujillo, D. R.
6.500	46.13	HIL	Trujillo, D. R.
		HI4D	Trujillo, D. R.
6.520	45.98	YV6RV	Valencia, Venezuela
6.545	45.81	YV11RB	Bolivar, Venez.
6.550	45.76	TIRCC	San Jose, Costa Rica
6.620	45.29	PRADO	Rio Bamba, Ecuador
6.630	45.22	HIT	Trujillo, D. R.
6.650	45.09	HC2RL	Guayaquil, Ecuador
6.662	45.00	WXH	Ketchikan, Alaska
6.672	44.94	YVQ	Maracay, Venezuela
6.700	44.75	TIEP	San Jose, Costa Rica
6.750	44.42	JVT	Nazaki, Japan
6.755	44.38	WOA	Lawrenceville, N. J.
6.814	44.00	HIH	San Ped. de Macoris, D.R.
6.860	43.71	KEL	Bolinas, Calif.
6.905	43.42	GDS	Rugby, Gt. Britain
7.100	42.23	FO8AA	Papeete, Tahiti
7.280	41.18	HJ1ABD	Cartagena, Colombia
7.380	40.63	XECR	Mexico City, D. F.
7.520	39.87	KKH	Kahuku, T. H.
7.797	38.47	HBP	Geneva, Switzerland
7.850	38.19	HC2JSB	Guayaquil, Ecuador
7.900	37.95	VE9EW	Toronto, Ont.
7.920	37.86	GDP	Rugby, Gt. Britain
7.960	37.67	VLZ	Sydney, Australia
8.050	37.24	WXA	Juneau, Alaska
8.075	37.13	WEZ	Rocky Point, N. Y.
8.095	37.04	VLK	Sydney, Australia
8.560	35.03	WOO	Ocean Gate, N. J.
8.565	35.00	HAT3	Budapest, Hungary
8.575	34.96	TYD2	Pontoise, France
		YCP	Balikpapan, N.E.I.
8.590	34.90	YNVA	Managua, Nicaragua
8.620	34.78	WVD	Seattle, Wash.
8.665	34.60	CO9JQ	Camaguey, Cuba
8.680	34.54	GBC	Rugby, Gt. Britain
8.690	34.50	VWZ	Kirkee, India
8.750	34.26	ZBW	Hong Kong
8.900	36.50	HCJB	Quito, Ecuador
9.010	33.28	KEJ	Bolinas, Calif.
9.020	33.24	GCS	Rugby, Gt. Britain
9.045	33.15	VWY	Kirkee, India
9.125	32.86	HAT4	Budapest, Hungary
9.168	32.70	YVR	Maracay, Venezuela
9.280	32.31	GCB	Rugby, Gt. Britain
9.415	31.84	PLV	Bandoeng, N. E. I.
9.428	31.80	COCH	Havana, Cuba
9.448	31.74	WES	Rocky Point, N. Y.
9.450	31.73	TG1X	Guatemala City, Guat.
9.460	31.69	XGOX	Nanking, China
		WKJ	New Brunswick, N. J.
9.470	31.66	WET	Rocky Point, N. Y.
9.480	31.63	KES	Bolinas, Calif.
9.490	31.59	OXY	Copenhagen, Denmark
		VK3ME	Melbourne, Australia
9.500	31.56	PRF5	Rio de Janeiro, Brazil
9.510	31.53	GSB	Daventry, Gt. Britain
		HJU	Buenaventura, Colombia
9.520	31.49	XEDQ	Guadalajara, Jal.
9.530	31.46	W2XAF	Schenectady, N. Y.
9.540	31.43	DJN	Zeesen, Germany
		LKJ1	Jeloy, Norway
9.560	31.56	DJA	Zeesen, Germany
9.570	31.33	W1XK	Boston, Mass.
9.580	31.30	GSC	Daventry, Gt. Britain
		3LR	Melbourne, Australia
9.585	31.28	VK2ME	Sydney, Australia
9.590	31.26	HP5J	Panama City, Panama
		PCJ	Hilversum, Netherlands
		VK6ME	Perth, Australia
		W3XAU	Philadelphia, Pa.
9.595	31.25	HBL	Geneva, Switzerland
9.600	31.23	CB960	Santiago, Chile

SHORT WAVE STATIONS BY FREQUENCIES

Megs.	Meters		
9.610	31.19	HJ1ABP	Cartagena, Colombia
9.617	31.18	HH3W	Port-au-Prince, Haiti
9.635	31.12	I2RO	Rome, Italy
9.650	31.07	CT1AA	Lisbon, Portugal
9.660	31.03	LRX	Buenos Aires, Argentina
9.675	30.99	DZA	Zeesen, Germany
9.700	30.91	CQN	Macau
9.755	30.74	COCQ	Havana, Cuba
9.862	30.40	EAQ	Madrid, Spain
9.870	30.38	WON	Lawrenceville, N. J.
9.895	30.30	LSN	Buenos Aires, Argentina
9.950	30.13	GCU	Rugby, Gt. Britain
9.990	30.01	KAZ	Manila, P. I.
10.000	29.98	WWV	Beltsville, Md.
10.040	29.86	HII	Trujillo, D. R.
10.042	29.85	DZB	Zeesen, Germany
10.055	29.82	SUV ZFB	Cairo, Egypt Hamilton, Bermuda
10.135	29.58	OPM	Leopoldville, Bel. Congo
10.160	29.51	RIO	Baku, USSR.
10.220	29.34	PSH	Rio de Janeiro, Brazil
10.250	29.25	LSL	Buenos Aires, Argentina
10.260	29.22	PMN	Bandoeng, N. E. I.
10.285	29.15	DZC	Zeesen, Germany
10.290	29.14	HPC	Panama City, Panama
10.330	29.02	ORK	Brussels, Belgium
10.335	29.01	ZFD	St. George, Bermuda
10.610	28.25	WEA	Rocky Point, N. Y.
10.660	28.13	JVN	Nazaki, Japan
10.670	28.10	CEC	Santiago, Chile
10.740	27.92	JVM	Nazaki, Japan
10.770	27.84	GCP	Rugby, Gt. Britain
10.840	27.66	KWV	Dixon, Calif.
10.950	27.38	HS8PJ	Bangkok, Siam
11.595	25.86	VRR4	Stoney Hill, Jamaica
11.715	25.59	TPA4	Pontoise, France
11.720	25.58	CJRX	Winnipeg, Man.
11.750	25.52	GSD	Daventry, Gt. Britain
11.770	25.47	DJD	Zeesen, Germany
11.790	25.43	W1XAL	Boston, Mass.
11.795	25.42	DJO	Zeesen, Germany
11.810	25.39	I2RO	Rome, Italy
11.820	25.37	GSN	Daventry, Gt. Britain
11.830	25.34	W2XE W9XAA	Wayne, N. J. Chicago, Ill.
11.855	25.29	DJP	Zeesen, Germany
11.860	25.28	GSE	Daventry, Gt. Britain
11.870	25.25	W8XK	Pittsburgh, Pa.
11.880	25.24	TPA3	Pontoise, France
12.000	24.99	RNE	Moscow USSR.
12.225	24.53	TFJ	Reykjavik, Iceland
12.290	24.49	GBU	Rugby, Gt. Britain
12.840	23.35	WOO	Ocean Gate, N. J.
13.075	22.93	VPD	Suva, Fiji
13.380	22.41	IDU	Asmara, Eritrea
13.410	22.36	WCT	San Juan, Puerto Rico
13.585	22.05	GBB	Rugby, Gt. Britain
13.880	21.60	VJZ	Raboul, New Guinea
13.990	21.43	GBA2	Rugby, Gt. Britain
14.440	20.76	GBW	Rugby, Gt. Britain
14.590	20.55	WMN	Lawrenceville, N. J.
14.960	20.04	YSL	San Salvador, El Salv.
14.970	20.03	LZA	Sofia, Bulgaria
15.000	19.99	WWV	Beltsville, Md.
15.040	19.93	RKI	Moscow, USSR.
15.055	19.91	WNC	Hialeah, Fla.
15.120	19.83	HVJ	Vatican City
15.140	19.80	GSF	Daventry, Gt. Britain
15.180	19.75	GSO	Daventry, Gt. Britain
15.200	19.73	DJB	Zeesen, Germany
15.210	19.71	W8XK	Pittsburgh, Pa.
15.220	19.70	PCJ	Hilversum, Netherlands
15.245	19.67	TPA2	Pontoise, France
15.250	19.66	LRU	Buenos Aires, Argentina
15.260	19.65	GSI	Daventry, Gt. Britain
15.270	19.64	W2XE	New York N. Y.
15.310	19.58	GSP	Daventry, Gt. Britain
15.330	19.56	W2XAD	Schenectady, N. Y.
15.340	19.55	DJR	Berlin, Germany
15.355	19.52	KWU	Dixon, Calif.
15.360	19.52	DZG	Zeesen, Germany
15.370	19.51	HAS3	Budapest, Hungary
15.415	19.45	KWO	Dixon, Calif.
16.140	18.58	GBX	Rugby, Gt. Britain
17.080	17.55	GBC	Rugby, Gt. Britain
17.120	17.51	WOO	Ocean Gate, N. J.
17.310	17.32	W3XL	Bound Brook, N. J.
17.480	17.15	VWY2	Kirkee, India
17.760	16.88	W2XE	New York, N. Y.
17.775	16.87	PHI	Hilversum, Netherlands
17.780	16.86	W3XAL W8XK	Bound Brook, N. J. Pittsburgh, Pa.
17.790	16.85	GSG	Daventry, Gt. Britain
18.310	16.40	GAS	Rugby, Gt. Britain
18.350	16.34	WLA	Lawrenceville, N. J.
18.620	16.10	GAU	Rugby, Gt. Britain
18.670	16.06	OCI	Lima, Peru
18.830	15.92	PLE	Bandoeng, N. E. I.
19.480	15.39	GAD	Rugby, Gt. Britain
19.630	15.27	VQG	Nairobi, Kenya
19.650	15.26	LSN5	Buenos Aires, Argentina
20.380	14.71	GAA	Rugby, Gt. Britain
21.470	13.96	GSH	Daventry, Gt. Britain
21.520	13.93	W2XE	New York, N. Y.
21.530	13.93	GSJ	Daventry, Gt. Britain
21.540	13.92	W8XK	Pittsburgh, Pa.
26.100	11.49	GSK	Daventry, Gt. Britain

SHORT WAVE STATIONS BY LOCATIONS

ARGENTINA (LOA-LVZ)

Buenos Aires

LRU	15.250
LRX	9.660
LSL	10.250
LSN	9.895
LSN	14.480
LSN5	19.650

AUSTRALIA (VHA-VMZ)

Melbourne

VK3LR	9.580
VK3ME	9.490

Perth

VK6ME	9.590

Sydney

VK2ME	9.585
VLK	8.095
VLZ	7.960

BAHAMAS (ZF-)

Nassau

ZFS	4.512

BELGIAN CONGO (OP-)

Leopoldville

OPM	10.135

BELGIUM (ONA-OTZ)

Brussels

ORK	10.330

BERMUDA (ZF-)

Hamilton

ZFA	5.025
ZFB	10.055

St. George

ZFD	10.335

BRAZIL (PPA-PYZ)

Rio de Janeiro

PRF5	9.500
PSH	10.220

BULGARIA (LZA-LZZ)

Sofia

LZA	14.970

CANADA (CFA-CKZ; CYA-CZZ; VAA-VGZ; VXA-VYZ)

BRITISH COLUMBIA

Prince Rupert

CZG	2.416

Rossland

CFU	4.755

Vancouver

CGZ	2.342
VDO	4.865
VE9BK	4.795

MANITOBA

Winnipeg

CJRO	6.150
CJRX	11.720
VYW	2.396

NEW BRUNSWICK

St. John

CJW	2.390

NOVA SCOTIA

Halifax

CHNX	6.110

Sydney

CJCX	6.010

ONTARIO

Hamilton

CZ6F	1.710

Toronto

CFRX	6.070
CRCX	6.090
CYQ	2.318
VE9EW	7.900

QUEBEC

Montreal

CFCX	6.005
VYR	1.712

Verdun

CJZ	2.390

CHILE (CAA-CEZ)

Santiago

CB615	6.150
CB960	9.600
CEC	5.820
CEC	10.670

CHINA (XGA-XUZ)

Nanking

XGOX	9.460

COLOMBIA (HJA-HKZ)

Barranquilla

HJ1ABB	6.447
HJ1ABG	6.042

Bogota

HJN	5.950
HJ3ABD	6.055
HJ3ABF	6.170
HJ3ABH	6.012

Bucaramanga

HJ2ABD	5.980

Buenaventura

HJU	9.510

Cali

HJ5ABC	6.150
HJ5ABD	6.085

Cartagena

HJ1ABD	7.280
HJ1ABE	6.115
HJ1ABP	9.610

Cienaga

HJ1ABH	6.300

Ibague

HJ4ABC	6.450

Manizales

HJ4ABB	6.110
HJ4ABL	6.100

Medellin

HJ4ABD	5.760
HJ4ABE	5.930
HJ4ABP	6.135

Quibdo

HJ1ABC	6.010

Santa Marta

HJ1ABJ	6.006

Tunja

HJ2ABA	6.170

COSTA RICA (TIA-TIZ)

San Jose

TIEP	6.700
TIGPH	5.820
TIPG	6.410
TIRCC	6.550

San Ramon

TI5HH	5.520

CUBA (CLA-CMZ; COA-COZ)

Camaguey

CO9JQ	8.665

Havana

COCD	6.130
COCH	9.428
COCO	6.010
COCQ	9.755
COL2	1.712

Sancti Spiritus

CO9WR	6.280

Santiago

COKG	6.155

DENMARK (OUA-OZZ)

Copenhagen

OXY	9.490

DOMINICAN REPUBLIC (HIA-HIZ)

La Romana

HI3C	6.098

Puerto Plata

HI1S	6.420

San Pedro de Macoris

HIH	6.814
HI1J	5.865

Santiago de Los Caballeros

HI-1-A	6.185
HI3U	6.014
HI5N	6.150
HI9B	6.045

Trujillo

HIG	6.280
HII	10.040
HIL	6.500
HIT	6.630
HIX	5.980
HIZ	6.315
HI4D	6.500
HI4V	6.480

ECUADOR (HCA-HCZ)

Guayaquil

HC2ET	4.600
HC2JSB	7.850
HC2RL	6.650

Quito

HCJB	8.900
HCK	5.885

Riobamba

PRADO	6.620

EGYPT (STA-SUZ)

Cairo

SUV	10.055

EL SALVADOR

San Salvador

YSL	14.960

ERITREA

Asmara

IDU	13.380

FIJI (VPA-VSZ)

Suva

VPD	13.075

FRANCE (F; TYA-TZZ)

Pontoise

TPA2	15.245
TPA3	11.880
TPA4	11.715
TYD2	8.575

GERMANY (D)

Zeesen

DJA	9.560
DJB	15.200
DJC	6.020
DJD	11.770
DJM	6.080
DJN	9.540
DJO	11.795
DJP	11.855
DJQ	15.280
DJR	15.340
DZA	9.675
DZB	10.042
DZC	10.285
DZG	15.360

GREAT BRITAIN (G; M)

Daventry

GSA	6.050
GSB	9.510
GSC	9.580
GSD	11.750
GSE	11.860
GSF	15.140
GSG	17.790
GSH	21.470
GSI	15.260
GSJ	21.530
GSK	26.100
GSL	6.110
GSN	11.820
GSO	15.180
GSP	15.310

Rugby

GAA	20.380
GAD	19.480
GAS	18.310
GAU	18.620
GBA2	13.990
GBB	13.585
GBC	8.680
GBC	17.080
GBU	12.290
GBW	14.440
GBX	16.140
GCB	9.280
GCP	10.770
GCS	9.020
GCU	9.950
GDP	7.920
GDS	6.905
GDW	4.820

GUATEMALA (TGA-TGZ)

Guatemala City

TGS	5.710
TGWA	6.000
TGXA	6.130
TG1X	9.450
TG2X	5.940

HAITI

Port au Prince

HH2S	5.915
HH3W	9.617

HONDURAS (HRA-HRZ)

La Ceiba

HRD	6.235

San Pedro Sula

HRP1	6.356

Tegucigalpa

HRN	5.875

HONKONG (Z)

Honkong

ZBW	8.750

HUNGARY (HAA-HAZ)

Budapest

HAS3	15.370
HAT3	8.565
HAT4	9.125

ICELAND (TFA-TFZ)

Reykjavik

TFJ	12.225

INDIA (VTA-VWZ)

VWY	9.045
VWY2	17.480
VWZ	8.690

ITALY (I)

I2RO	9.635
I2RO	11.810

JAMAICA

Stoney Hill

VRR4	11.595

JAPAN (J)

Nazaki

JVM	10.740
JVN	10.660
JVT	6.750
JVU	5.790
JVV	5.730

KENYA (VQ7-)

Nairobi

VQG	19.630

MACAU

Macau

CQN	9.700

MANCHUKUO (J)

Shinkio

TDD	5.830

SHORT WAVE STATIONS BY LOCATIONS

MEXICO (XAA-XFZ)

Guadaljara
XEDQ 9.520

Mexico City
XEBT 6.000
XECR 7.380
XEVI 5.985
XEXA 6.182

Tijuana
XEOK 6.130

Veracruz
XEFT 6.120
XEUW 6.020

NETHERLANDS (PAA-PIZ)

Hilversum
PCJ 9.590
PCJ 15.220
PHI 17.775

NETHERLAND EAST INDIES (PKA-POZ; YBA-YHZ)

Balikpapan
YCP 8.575

Bandoeng
PLE 18.830
PLV 9.415
PMN 10.260
YDA5 6.120

Tandjongpriok
YDA 6.040

NEW GUINEA

Raboul
VJZ 13.880

NICARAGUA (YNA-YNZ)

Managua
YNLF 5.950
YNVA 8.590

NORWAY (LAA-LNZ)

Jeloy
LKJ1 9.540

PANAMA (HPA-HPZ)

Colon
HP5F 6.080
HP5K 6.005

Panama City
HP5B 6.030
HP5J 9.590

PERU (OAA-OCZ)

Lima
OAX4D 5.780
OAX4G 6.230
OCI 18.670

PHILIPPINE ISLANDS (K)

Manila
KAZ 9.990

PORTUGAL (CSA-CUZ)

Lisbon
CT1AA 9.650

SIAM (HSA-HSZ)

Bangkok
HS8PJ 10.950

SPAIN (EAA-EHZ)

Madrid
EAQ 9.862

SWITZERLAND (HBA-HBZ)

Geneva
HBL 9.595
HBP 7.797

TAHITI

Papeete
FO8AA 7.100

TAIWAN (J)

Taihoku
JIC 5.890

UNION OF SOCIALIST SOVIET REPUBLICS (R; U)

Baku
RIO 10.160

Khabarovsk
RV15 4.273

Moscow
RKI 15.040
RNE 12.000

UNITED STATES (K; N; W)

ALABAMA

Birmingham
WPFM 2.382

Mobile
WPGW 2.382

ALASKA

Akutan
KHW 2.912
KIOI 2.632

Anchorage
WXE 2.998

Angoon
KAED 2.616

Cape Pole
KIJB 2.994

Circle
KIIK 2.994
KIKK 3.190

Cordova
KILD 2.538

Deep Cove
KHP 1.622

Eagle
KIIN 2.994

Excursion Inlet
KILY 2.994

Fort Yukon
KIIL 2.994

Hidden Inlet
KIDE 3.265
KLD 2.566

Hot Springs
KIIM 2.994

Hydaburg
KAEB 2.616

Iron Creek
KIOH 2.632

Jack Wade
KAEF 2.616

Juneau
WXA 8.050

Kadiak Island
KIJX 2.632

Kake
KIBA 3.093
KLC 2.512

Ketchikan
KGM 2.512
KIAY 3.093
WXH 2.604
WXH 6.662

Luckyshot
KIIP 3.100

McGrath
KIIO 2.994

Nakeen
KHV 2.566
KICE 3.265

Nellie Juan
KIOD 2.632

Newport Walter
KIJS 1.622

Pillar Bay
KNBZ 2.994

Poorman
KIEJ 2.994

Port Alexander
KDH 2.538
KGXW 1.606

Port Althorp
KIAW 3.093
KLB 2.512

Port Armstrong
KGXU 1.622

Port Conclusion
KIJI 1.622

Port Herbert
KIJO 1.622

Port Hobron
KHZ 2.912
KIMA 2.632

Port San Juan
KIJR 2.986

P. Wakefield
KIOC 2.632

Red Bluff
KIOG 1.622

Rose Inlet
KIAP 3.093
KLE 2.512

Shearwater Bay
KIJW 2.632

Tanana
KIIJ 3.190

Tin City
KION 2.616

Todd
KIJU 2.986

Uganik
KIJP 2.986

Union Bay
KFF 2.566
KICG 3.265

View Cove
KICI 3.093

Washington Bay
KIJK 1.622

Waterfall
KIBZ 3.265
KLA 2.566

Wrangell
KDK 2.538

ARIZONA

Phoenix
KNGG 1.698
KGZJ 2.430

Prescott
KNHG 2.430

ARKANSAS

Fort Smith
KNHE 2.406

Little Rock
KGHZ 2.406

CALIFORNIA

Bakersfield
KACS 2.414
KGPS 2.414

Berkeley
KSW 1.658

Bolinas
KEE 7.715
KEJ 9.010
KEL 6.860
KES 9.480

Compton
KNFM 2.490

Dixon
KWN 21.060
KWO 15.415
KWU 15.355
KWV 10.840

El Centro
KNGJ 2.490

Eureka
KACI 2.422

Fresno
KGZA 2.414

Lodi
KNGY 2.414

Los Angeles
KGPL 1.712

Palo Alto
KGHK 1.674

Pasadena
KGJX 1.712

Pomona
KNFJ 1.712

Sacramento
KNGF 2.422

San Bernardino
KGZY 1.712

San Buenaventura
KACN 2.414

San Diego
KGZD 2.490

San Francisco
KGPD 2.466

San Jose
KGPM 2.466

Santa Ana
KGHX 2.490

Santa Barbara
KGZO 2.414

Santa Cruz
KGZT 1.674

Tracy
KACO 2.414

Tulare
WPDA 2.414

Vallejo
KGPG 2.422

Whittier
KGHY 1.712

COLORADO

Denver
KGPX 2.442

CONNECTICUT

Bridgeport
WPFW 2.466

New Haven
WQFA 2.466

New London
WAKB 2.466

DISTRICT OF COLUMBIA

Washington
WPDW 2.422

FLORIDA

Clearwater
WAKG 2.466
WQFK 2.466

Dinsmore
WANB 2.726

Duval County
WAKJ 1.698

Ft. Lauderdale
WAKO 2.442

Gainesville
WQFC 2.466

Hialeah
WND 4.098
WNC 15.055

Jacksonville
WPFG 2.442

Lakeland
WPFT 2.442

Miami
WPFZ 2.442
W4XB 6.040

Orlando
WPHM 2.442

Palm Beach
WPFX 2.442

Tampa
WPHN 2.466

GEORGIA

Atlanta
WPDY 2.414

Augusta
WQFV 2.414

Columbus
WPFI 2.414

La Grange
WPGM 2.414

Macon
WQFB 2.414

HAWAII

Honolulu
KGPQ 1.712

Kahuku
KKH 7.520

IDAHO

Idaho Falls
KNFB 2.458

ILLINOIS

Chicago
WPDB 1.712
WPDC 1.712
WPDD 1.712
WQPC 1.610
W9XAA 6.080
W9XAA 11.830
W9XBS 6.425
W9XF 6.100
W9XF 6.425

DeQuoin
WQPD 1.610

Effingham
WQPF 1.610

Highland Park
WPFD 2.430

Macomb
WQPM 1.610

Oak Park
WQFL 1.712

Ottawa
WQFZ 2.458

Pontiac
WQPP 1.610

Rockford
WPGD 2.458

Sterling
WQPG 1.610

Springfield
WQPS 1.610

Waukegan
WQFX 1.712

SHORT WAVE STATIONS BY LOCATIONS

INDIANA

Columbia City
WQFW 1.634

Culver
WPHS 1.634

Fort Wayne
WPDZ 2.490

Frankfort
WAKK 2.490

Huntington
WAKA 2.490

Indianapolis
WMDZ 2.442

Jasper
WPHU 1.634

Kokomo
WPDT 2.490

Lafayette
WQFQ 2.442

Marion
..... 2.490

Marion County
WPHE 1.634

Muncie
WPGP 2.442

Richmond
WPDH 2.442

Seymour
WQFE 1.634

South Bend
WPGN 2.490

IOWA

Atlantic
KACD 1.682

Cedar Rapids
KGOZ 2.466

Davenport
KGPN 2.466

Des Moines
KGHO 1.682
KGZG 2.466

Fairfield
KACC 1.682

Sioux City
KGPK 2.466

Storm Lake
KNFO 1.682

Waterloo
KNFN 1.682

KANSAS

Atchison
KACA 2.422

Chanute
KGZF 2.450

Coffeyville
KGZP 2.450

Dodge City
KNGH 2.474

Garden City
KNFH 2.474

Hutchinson
KGHN 2.450

Salina
KNGV 2.422

Topeka
KGZC 2.422

Wichita
KGPZ 2.450

KENTUCKY

Lexington
WPET 1.706

Louisville
WPDE 2.442

LOUISIANA

New Orleans
WPEK 2.430

Shreveport
KGZL 1.712
KNGP 2.430

MAINE

Portland
WPFU 2.422

MARYLAND

Baltimore
WPFH 2.414

Beltsville
WWV 5.000
WWV 10.000
WWV 15.000

MASSACHUSETTS

Arlington
WPED 1.712

Boston
WPGV 1.712
W1XAL 6.040
W1XAL 11.790

Brookline
WPEJ 1.712

Everett
WAKF 1.712

Fairhaven
WPFN 1.712

Fitchburg
WPHA 2.466

Framingham
WMP 1.666

Marshfield
WOU 2.506

Medford
WPHG 1.712

Millis
W1XK 9.570

Newton
WPFA 1.712

Northampton
WPEW 1.666

Somerville
WPEH 1.712

W. Bridgewater
WPEL 1.666

Worcester
WPGX 2.466

MICHIGAN

Bay City
WPGA 2.466

Detroit
WCK 2.414
WPDX 2.414

E. Lansing
WRDS 1.642

Flint
WPDF 2.442

Grand Rapids
WPEB 2.442

Grosse Pointe
WRDR 2.414

Highland Park
WMO 2.414

Jackson
WPHP 2.466

Lansing
WPDL 2.442

Manitou Island
WWAJ 3.410

Marquette
WWM 3.410

Muskegon
WPFC 2.442

Passage Island
WWAL 3.410

Poe Reef
WRJ 3.410

Port Huron
WPGB 2.466

Rock of Ages
WWAM 3.410

Saginaw
WPES 2.442

Sault Ste. Marie
NOR 2.670
NOR 2.698

Selfridge Field
VK1 6.425

MINNESOTA

Duluth
KNFE 2.382

Minneapolis
KGPB 2.430

Redwood Falls
KNHD 1.658

St. Paul
WPDS 2.430

MISSOURI

Kansas City
KGPE 2.422

St. Louis
KGPC 1.706

NEBRASKA

Lincoln
KGZU 2.490

Norfolk
KNGN 2.490

Omaha
KGPI 2.466

NEVADA

Las Vegas
KGHG 2.474

Reno
KGHM 2.474

NEW HAMPSHIRE

Nashua
WPHB 2.422

NEW JERSEY

Bloomfield
WAKH 2.430

Bound Brook
W3XAL 6.100
W3XAL 17.780
W3XL 6.425
W3XL 17.310

Freehold
WAKC 2.366

Hackensack
WPFK 2.430

Lawrenceville
WKF 4.253
WKF 19.220
WLA 18.350
WMN 14.590
WOA 6.755
WON 9.870

New Brunswick
WKJ 9.460

Ocean Gate
WOO 4.178
WOO 4.753
WOO 8.560
WOO 12.840
WOO 17.120

Passaic
WPDJ 2.414

Wayne
W2XE 6.120
W2XE 11.830
W2XE 15.270
W2XE 17.760
W2XE 21.520

NEW MEXICO

Albuquerque
KGZX 2.414

Clovis
KNFA 2.414

Santa Fe
KGPF 2.414

NEW YORK

Albany
WPGH 2.414

Auburn
WPDN 2.382

Binghamton
WPGL 2.442

Bronx
WPEF 2.450

Brooklyn
WPEE 2.450

Buffalo
WMJ 2.422

Herkimer
..... 2.414

Hicksville
W2XGB 6.425

Huntington
WPGO 2.490

Mineola
WPGS 2.490

New York
WPEG 2.450

Niagara Falls
WNFP 2.422

Oneonta
WQFJ 2.414

Rochester
WPDR 2.422

Rocky Point
WEA 10.610
WES 9.448
WET 9.470
WEZ 8.075

Schenectady
W2XAD 15.330
W2XAF 9.530

S. Schenectady
WPGC 1.658

Syracuse
WPEA 2.382

Utica
WPGJ 2.414

Yonkers
WPFY 2.442

NORTH CAROLINA

Asheville
WPFS 2.458
WPFS 2.474

Charlotte
WPDV 2.458

NORTH DAKOTA

Fargo
KNHM 2.442

OHIO

Akron
WPDO 2.458

Cambridge
WPHT 1.596

Cincinnati
WKDU 1.706
W8XAL 6.060

Cleveland
WRBH 2.458

Columbus
WPDI 2.430
WPGQ 1.596

Dayton
WPDM 2.430

Findlay
WPGG 1.596

Lancaster
WQFO 2.430

Mansfield
WQFY 2.474

Massillon
WPHC 1.596

Portsmouth
WPGI 2.430

Sandusky
WAKI 2.474

Steubenville
WPHD 2.458

Toledo
WRDQ 2.474

Wilmington
WPHK 1.596

Youngstown
WPDG 2.458

Zanesville
WPHO 2.430

OKLAHOMA

Ada
KNHC 2.450

Altus
KACL 2.450

Chickasha
KACF 2.450

Duncan
KNGK 2.450

Lawton
KGHP 2.450

Muskogee
KNGT 2.450

Oklahoma City
KGPH 2.450

Ponca City
KACP 2.450

Seminole
KACR 2.450

Tulsa
KGPO 2.450

OREGON

Klamath Falls
KGZH 2.442

Portland
KGPP 2.442

Salem
KGZR 2.442

PENNSYLVANIA

Harrisburg
WPSP 1.674

Monessen
WQFF 2.482

New Castle
WPGT 2.482

Oil City
WPHZ 2.482

Philadelphia
WPDP 2.474
W3XAU 6.060
W3XAU 9.590

Pittsburgh
WPDU 1.712
W8XK 6.140
W8XK 11.870
W8XK 15.210
W8XK 17.780
W8XK 21.540

Reading
WPFE 2.442

Sharon
WQFU 2.482

Swarthmore
WPFQ 2.474

Wilkes-Barre
WQFM 2.442

SHORT WAVE STATIONS BY LOCATIONS

PUERTO RICO

San Juan
WCT 13.410

RHODE ISLAND

Cranston
WPGK 2.466
E. Providence
WPEI 1.712
Pawtucket
WPFV 2.466
Providence
WPGF 1.712
Woonsocket
WPEM 2.466

SOUTH CAROLINA

Charleston
WCPD 2.430

SOUTH DAKOTA

Huron
..... 2.450
Rapid City
KNGM 2.450

TENNESSEE

Elizabethton
WPHY 2.474
Johnson City
WPGZ 2.474
Knoxville
WPFO 2.474
Memphis
WPEC 2.466
Nashville
..... 1.666

TEXAS

Austin
KGHU 2.442
Beaumont
KGPJ 1.712
Big Spring
KACM 2.458
Brownsville
KGHT 2.382
Brownwood
KNGW 2.458
Cleburne
KNGE 1.712
Corpus Christi
KGHV 2.382
Dallas
KVP 1.712
Denton
KNHF 1.712
El Paso
KGZM 2.414
Fort Worth
KGPR 1.712
Galveston
KNGL 1.712
Gladewater
KACU 1.712
Houston
KGZB 1.712
Lubbock
KGZW 2.458
San Antonio
KGZE 2.482
Waco
KGZQ 1.712
Wichita Falls
KGZI 2.458

UTAH

Salt Lake City
KGPW 2.406

VIRGINIA

Lynchburg
WQFH 2.450
Petersburg
WQFI 2.450
Richmond
WPHF 2.450
Roanoke
WQFG 2.450

WASHINGTON

Aberdeen
KGZV 2.414
Bellingham
KACK 2.414
KNFK 2.490
Centralia
KGHW 2.414
Ellenburg
KNFX 2.490
Ephrata
KNGZ 2.490
Everett
KNFP 2.414
Kalaloch
KACQ 2.490
Mt. Vernon
KNFI 2.414
Olympia
KACE 2.414
KNFG 2.490
Seattle
KGPA 2.414
WVD 2.604
WVD 8.620
Spokane
KGHS 2.414
KNGR 2.490
Tacoma
KGZN 2.414
Vancouver
KNGC 2.490
Walla Walla
KACV 2.414
KNGD 2.490
Wenatchee
KACJ 2.414
KNGQ 2.490
Yakima
KNGB 2.490
KNGU 2.414

WEST VIRGINIA

Charleston
WPHI 2.490
Clarksburg
WPFP 2.490
Fairmont
WPHJ 2.490
Parkersburg
WPHQ 2.490

WISCONSIN

Green Bay
KNHB 2.382
Kenosha
WPEP 2.450
Milwaukee
WPDK 2.450
Oshkosh
WAKE 2.382

VATICAN STATE (HVA-HVZ)

Vatican City
HVJ 15.120

VENEZUELA (YVA-YWZ)

Barquisimeto
YV8RB 5.895
Bolivar
YV11RB 6.545
Caracas
YV2RC 5.800
YV3RC 6.165
YV4RC 6.375
YV9RC 6.400
Maracaibo
YV5RMO 5.850
YV7RMO 5.810
Maracay
YVQ 6.672
YVR 9.168
YV12RM 6.300
San Cristobal
YV10RSC 5.720
Valencia
YV6RV 6.520

Meeting the Artists

(*Continued from page* 35)

title role. Buckley has been featured in nearly every form of entertainment since he started at Hammerstein's Victoria Theater at the turn of the century. He sang bass in the musical comedy "Flora Dora"; had his own drama company in Chicago; formed an independent movie production company with B. A. Rolfe, who later became a noted band leader; played mystery characters for the silent movies and appeared with Houdini. He has been in radio since 1930, playing all kinds of roles.

Olive Oyl is portrayed by Olive La Moy, a diminutive blond who makes her home in Hartford, Conn.

Victor Erwin and his arranger, Ernie Watson, create all the musical effects to describe Popeye's muscle-raising, his gurgling; the sound of a woman falling from an 83-story building and other such incidents of the dramatizations. He directed the music for "Betty Boop" pictures and "Three Little Pigs." For his radio programs, he memorizes the score and then directs from the script.

What About Speaker?

(*Continued from page* 11)

within an improperly designed cabinet. In such cases there is little that can be done to alleviate this fault. A good movement of air behind the speaker sometimes helps, and no radio cabinet should be placed close to the wall. Take care to reduce all vibrations in the sides of the cabinet and chassis by strengthening the parts or using rubber cushions wherever practicable.

CB615	6.150	GSO	15.180	KACC	1.682	KGZL	1.712	KNGF	2.422	VK3ME	9.490	WPEC	2.466
CB960	9.600	GSP	15.310	KACD	1.682	KGZM	2.414	KNGG	1.698	VK6ME	9.590	WPED	1.712
CEC	5.820	HAS3	15.370	KACE	2.414	KGZN	2.414	KNGJ	2.490	VLK	8.095	WPEE	2.450
CEC	10.670	HAT	5.400	KACF	2.450	KGZO	2.414	KNGK	2.450	VLZ	7.960	WPEF	2.450
CFCX	6.005	HAT2	7.220	KACI	2.422	KGZP	2.450	KNGL	1.712	VPD	13.075	WPEG	2.450
CFRX	6.070	HAT3	8.565	KACJ	2.414	KGZQ	1.712	KNGM	2.450	VQG	19.630	WPEH	1.712
CFU	4.755	HAT4	9.125	KACK	2.414	KGZR	2.442	KNGN	2.490	VRR4	11.595	WPEI	1.712
CGZ	2.342	HBL	9.595	KACL	2.450	KGZT	1.674	KNGP	2.430	VWY	9.045	WPEJ	1.712
CHNX	6.110	HBP	7.797	KACM	2.458	KGZU	2.490	KNGQ	2.490	VWY2	17.480	WPEK	2.430
CJCX	6.010	HCJB	8.900	KACN	2.414	KGZV	2.414	KNGR	2.490	VWZ	8.690	WPEL	1.666
CJRO	6.150	HCK	5.885	KACO	2.414	KGZW	2.458	KNGT	2.450	VYR	1.712	WPEM	2.466
CJRX	11.720	HC2ET	4.600	KACP	2.450	KGZX	2.414	KNGU	2.414	VYW	2.396	WPEP	2.450
CJW	2.390	HC2JSB	7.850	KACQ	2.490	KGZY	1.712	KNGV	2.422	WAKA	2.490	WPES	2.442
CJZ	2.390	HC2RL	6.650	KACR	2.450	KHV	2.566	KNGW	2.458	WAKB	2.466	WPET	1.706
COCD	6.130	HH2S	5.915	KACS	2.414	KHW	2.912	KNGY	2.414	WAKC	2.366	WPEV	1.666
COCH	9.428	HH3W	9.617	KACU	1.712	KHZ	2.912	KNGZ	2.490	WAKE	2.382	WPEW	1.666
COCO	6.010	HIG	6.280	KACV	2.414	KIAP	3.093	KNHB	2.382	WAKF	1.712	WPFA	1.712
COCQ	9.755	HIH	6.814	KAEB	2.616	KIAW	3.093	KNHC	2.450	WAKG	2.466	WPFC	2.442
COKG	6.155	HII	10.040	KAED	2.616	KIAY	3.093	KNHD	1.658	WAKH	2.430	WPFD	2.430
COL2	1.712	HIL	6.500	KAEF	2.616	KIBA	3.093	KNHE	2.406	WAKI	2.474	WPFE	2.442
CO9JQ	8.665	HIT	6.630	KAZ	9.990	KIBZ	3.265	KNHF	1.712	WAKJ	1.698	WPFG	2.442
CO9WR	6.280	HIX	5.980	KDH	2.538	KICE	3.265	KNHG	2.430	WAKK	2.490	WPFH	2.414
CQN	9.700	HIZ	6.315	KEJ	9.010	KICG	3.265	KNHM	2.442	WAKO	2.442	WPFI	2.414
CRCX	6.090	HI1A	6.185	KEL	6.860	KICI	3.093	KSW	1.658	WANB	2.726	WPFK	2.430
CSL	6.150	HI1J	5.865	KES	9.480	KIDE	3.265	KVP	1.712	WCK	2.414	WPFM	2.382
CT1AA	9.650	HI1S	6.420	KFF	2.566	KIEJ	2.994	KWO	15.415	WCPD	2.430	WPFN	1.712
CYQ	2.318	HI3C	6.098	KGHD	2.490	KIIJ	3.190	KWU	15.355	WCT	13.410	WPFO	2.474
CZG	2.416	HI3U	6.014	KGHG	2.474	KIIK	2.994	KWV	10.840	WEA	10.610	WPFP	2.490
CZ6F	1.710	HI4D	6.500	KGHK	1.674	KIIK	3.190	LKJ1	9.540	WES	9.448	WPFQ	2.474
DJA	9.560	HI4V	6.480	KGHM	2.474	KIIL	2.994	LQA	9.600	WET	9.470	WPFS	2.458
DJB	15.200	HI5N	6.150	KGHN	2.450	KIIM	2.994	LRU	15.250	WEZ	8.075	WPFS	2.474
DJC	6.020	HI9B	6.045	KGHO	1.682	KIIN	2.994	LRX	9.660	WKDU	1.706	WPFT	2.442
DJD	11.770	HJN	5.950	KGHP	2.450	KIIO	2.994	LSL	10.250	WKF	4.253	WPFU	2.422
DJE	17.760	HJP	7.465	KGHS	2.414	KIIP	3.100	LSN	9.895	WKJ	9.460	WPFV	2.466
DJM	6.080	HJU	9.510	KGHT	2.382	KIJB	2.994	LSN5	19.650	WLA	18.350	WPFW	2.466
DJN	9.540	HJ1ABB	6.447	KGHU	2.442	KIJI	1.622	LZA	14.970	WMDZ	2.442	WPFX	2.442
DJO	11.795	HJ1ABC	6.010	KGHV	2.382	KIJK	1.622	OAX4D	5.780	WMJ	2.422	WPFY	2.442
DJP	11.855	HJ1ABD	7.280	KGHW	2.414	KIJO	1.622	OAX4G	6.230	WMN	14.590	WPFZ	2.442
DJR	15.340	HJ1ABE	6.115	KGHX	2.490	KIJP	2.986	OCI	18.670	WMO	2.414	WPGA	2.466
DZA	9.675	HJ1ABG	6.042	KGHY	1.712	KIJR	2.986	OPM	10.135	WMP	1.666	WPGB	2.466
DZB	10.042	HJ1ABH	6.300	KGHZ	2.406	KIJS	1.622	ORK	10.330	WNC	15.055	WPGC	1.658
DZC	10.285	HJ1ABJ	6.006	KGJX	1.712	KIJU	2.986	OXY	9.490	WND	4.098	WPGD	2.458
DZE	12.130	HJ1ABP	9.610	KGM	2.512	KIJV	1.622	PCJ	9.590	WNFP	2.422	WPGF	1.712
DZG	15.360	HJ2ABA	6.170	KGOZ	2.466	KIJW	2.632	PCJ	15.220	WOA	6.755	WPGG	1.596
EAQ	9.862	HJ2ABD	5.980	KGPA	2.414	KIJX	2.632	PHI	17.775	WON	9.870	WPGH	2.414
FO8AA	7.100	HJ3ABD	6.055	KGPB	2.430	KILD	2.538	PLE	18.830	WOO	4.178	WPGI	2.430
GAA	20.380	HJ3ABF	6.170	KGPC	1.706	KILY	2.994	PLV	9.415	WOO	4.753	WPGJ	2.414
GAD	19.480	HJ3ABH	6.012	KGPD	2.466	KIMA	2.632	PMN	10.260	WOO	8.560	WPGK	2.466
GAQ	18.970	HJ4ABB	6.110	KGPE	2.422	KIOC	2.632	PRADO	6.620	WOO	12.840	WPGL	2.442
GAS	18.310	HJ4ABC	6.450	KGPF	2.414	KIOD	2.632	PRF5	9.500	WOO	17.120	WPGM	2.414
GAU	18.620	HJ4ABD	5.760	KGPG	2.422	KIOG	1.622	PSH	10.220	WOU	2.506	WPGN	2.490
GBA2	13.990	HJ4ABE	5.930	KGPH	2.450	KIOH	2.632	RIO	10.160	WPDA	2.414	WPGO	2.490
GBB	13.585	HJ4ABL	6.100	KGPI	2.466	KIOI	2.632	RKI	15.040	WPDB	1.712	WPGP	2.442
GBC	8.680	HJ4ABP	6.135	KGPJ	1.712	KION	2.616	RNE	12.000	WPDC	1.712	WPGQ	1.596
GBC	17.080	HJ5ABC	6.150	KGPK	2.466	KKH	7.520	RV15	4.273	WPDD	1.712	WPGS	2.490
GBU	12.290	HJ5ABD	6.085	KGPL	1.712	KLA	2.566	SUV	10.055	WPDE	2.442	WPGT	2.482
GBW	14.440	HKE	7.090	KGPM	2.466	KLB	2.512	TDD	5.830	WPDF	2.442	WPGV	1.712
GBX	16.140	HPC	10.290	KGPN	2.466	KLC	2.512	TFJ	12.225	WPDG	2.458	WPGW	2.382
GCB	9.280	HP5B	6.030	KGPO	2.450	KLD	2.566	TGS	5.710	WPDH	2.442	WPGX	2.466
GCP	10.770	HP5F	6.080	KGPP	2.442	KLE	2.512	TGWA	6.000	WPDI	2.430	WPGZ	2.474
GCS	9.020	HP5J	9.590	KGPQ	1.712	KNBZ	2.994	TGXA	6.130	WPDJ	2.414	WPHA	2.466
GCU	9.950	HP5K	6.005	KGPR	1.712	KNFA	2.414	TG1X	9.450	WPDK	2.450	WPHB	2.422
GDP	7.920	HRD	6.235	KGPS	2.414	KNFB	2.458	TG2X	5.940	WPDL	2.442	WPHC	1.596
GDS	6.905	HRN	5.875	KGPW	2.406	KNFE	2.382	TIEP	6.700	WPDM	2.430	WPHD	2.458
GDW	4.820	HRP1	6.356	KGPX	2.442	KNFG	2.490	TIGPH	5.820	WPDN	2.382	WPHE	1.634
GSA	6.050	HS8PJ	10.950	KGPZ	2.450	KNFH	2.474	TIPG	6.410	WPDO	2.458	WPHF	2.450
GSB	9.510	HVJ	15.120	KGXU	1.622	KNFI	2.414	TIRCC	6.550	WPDP	2.474	WPHG	1.712
GSC	9.580	IDU	13.380	KGXW	1.606	KNFJ	1.712	TI5HH	5.520	WPDR	2.422	WPHI	2.490
GSD	11.750	I2RO	9.635	KGZA	2.414	KNFK	2.490	TPA2	15.245	WPDS	2.430	WPHJ	2.490
GSE	11.860	I2RO	11.810	KGZB	1.712	KNFM	2.490	TPA3	11.880	WPDT	2.490	WPHK	1.596
GSF	15.140	JIC	5.890	KGZC	2.422	KNFN	1.682	TPA4	11.715	WPDU	1.712	WPHM	2.442
GSG	17.790	JVM	10.740	KGZD	2.490	KNFO	1.682	TYD2	8.575	WPDV	2.458	WPHN	2.466
GSH	21.470	JVN	10.660	KGZE	2.482	KNFP	2.414	VDO	4.865	WPDW	2.422	WPHO	2.430
GSI	15.260	JVT	6.750	KGZF	2.450	KNFX	2.490	VE9BK	4.795	WPDX	2.414	WPHP	2.466
GSJ	21.530	JVU	5.790	KGZG	2.466	KNGB	2.490	VE9EW	7.900	WPDY	2.414	WPHQ	2.490
GSK	26.100	JVV	5.730	KGZH	2.442	KNGC	2.490	VJZ	13.880	WPDZ	2.490	WPHS	1.634
GSL	6.110	JZG	6.330	KGZI	2.458	KNGD	2.490	VK2ME	9.585	WPEA	2.382	WPHT	1.596
GSN	11.820	KACA	2.422	KGZJ	2.430	KNGE	1.712	VK3LR	9.580	WPEB	2.442	WPHU	1.634

WPHY	2.474	WQFO	2.430	WQPS	1.610	W1XAL	11.790	W3XL	17.310	XEDQ	9.520	YV2RC	5.800
WPHZ	2.482	WQFQ	2.442	WRBH	2.458	W1XK	9.570	W4XB	6.040	XEFT	6.120	YV3RC	6.165
WPSP	1.674	WQFT	1.596	WRDQ	2.474	W2XAD	15.330	W8XAL	6.060	XEOK	6.130	YV4RC	6.375
WQFA	2.466	WQFT	1.692	WRDR	2.414	W2XAF	9.530	W8XK	6.140	XEUW	6.020	YV5RMO	5.850
WQFB	2.414	WQFV	2.414	WRDS	1.642	W2XE	6.120	W8XK	11.870	XEVI	5.985	YV6RV	6.520
WQFC	2.466	WQFW	1.634	WVD	2.604	W2XE	11.830	W8XK	15.210	XEXA	6.182	YV7RMO	5.810
WQFE	1.634	WQFX	1.712	WVD	8.620	W2XE	15.270	W8XK	17.780	XGOX	9.460	YV8RB	5.895
WQFF	2.482	WQFY	2.474	WWV	5.000	W2XE	17.760	W8XK	21.540	YCP	8.575	YV9RC	6.400
WQFG	2.450	WQFZ	2.458	WWV	10.000	W2XE	21.520	W9XAA	6.080	YDA	6.040	YV10RS	5.720
WQFH	2.450	WQPC	1.610	WWV	15.000	W2XGB	6.425	W9XAA	11.830	YDA5	6.120	YV11RB	6.545
WQFI	2.450	WQPD	1.610	WXA	8.050	W3XAL	6.100	W9XBS	6.425	YNLF	5.950	YV12RM	6.300
WQFJ	2.414	WQPF	1.610	WXE	2.998	W3XAL	17.780	W9XF	6.100	YNVA	8.590	ZBW	8.750
WQFK	2.466	WQPG	1.610	WXH	2.604	W3XAU	6.060	W9XF	6.425	YSL	14.960	ZFA	5.025
WQFL	1.712	WQPM	1.610	WXH	6.662	W3XAU	9.590	XEBT	6.000	YVQ	6.672	ZFB	10.055
WQFM	2.442	WQPP	1.610	W1XAL	6.040	W3XL	6.425	XECR	7.380	YVR	9.168	ZFD	10.335
												ZFS	4.512

The New B. C. Season

(*Continued from page* 26)

our minds as to the advisability of printing the requests of readers who desire correspondents. Too often, we hear from listeners who have taken the trouble to answer these requests and have never had the courtesy of a reply. Perhaps those who asked for letters got so many that it was impossible to answer them all. At best, that is the most lenient way of looking at the problem.

At any rate, the following readers have asked for correspondents and have promised faithfully to answer all letters:

Evan S. Morrow, 2161 Ashland Ave., Detroit, Mich.

Robert Patterson, 2119 Kenwood Blvd., Roanoke, Va., wants to hear from Philco owners.

Julian Schaefer, 2036 West 83rd St., Cleveland, Ohio, wants to hear from Canadian listeners.

Jack Horner, N. Market St., Elizabethtown, Pa.

We agree that pen pals get a great deal out of DXing and we are only too glad to provide a medium for making new friendships. However, if we receive any more complaints that letters are not answered, we will be obliged to stop the publishing of such requests.

Why I Verify

(*Continued from page* 40)

musical selections, I sent a report to the station and requested a verification. In due time, I received the station verification card, but they were very careful to stamp across the face of it in ½-inch blue letters: NOT VERIFIED. Also a message penned in red ink: "We regret cannot confirm without detail of items heard."

Later, I heard ZBW again and this time was fortunate to identify titles of four different selections. Now I have another card from the station, on the face of which is stamped in large blue letters: VERIFIED. I appreciate both of these cards and have a lot more respect for ZBW than I would have for a station like WJBK.

Another interesting angle on obtaining verifications is the friendly competitive spirit existing among individual DXers of organized clubs. Of course, each member strives to build up the best possible verified log.

Yes, I believe I shall continue my interesting hobby of collecting verifications. As I review my files, I do so with a feeling of satisfaction that I have actually heard each station represented there.

*545 *Baker St., Lansing, Mich.*

540 kcys. (555.2)

					Heard	Logged	Reported	Verified
CJRM	ak	1000	F	Moose Jaw, Sask.				

550 kcys. (545.1)

CFNB	ak	500	F (1)	Fredericton, N. B.				
KFUO	ae	500	2 (1)	St. Louis, Mo.				
KFYR	ae	1000	N (5)	Bismarck, N. D.				
KOAC	ak	1000	....	Corvallis, Ore.				
KSD	ak	1000	2R (5)	St. Louis, Mo.				
KTSA	ak	1000	C (5)	San Antonio, Tex.				
WDEV	ae	500	D	Waterbury, Vt.				
WGR	ck	1000	C	Buffalo, N. Y.				
WKRC	ak	1000	CX	Cincinnati, Ohio				
WSVA	ak	500	D	Harrisonburg, Va.				

560 kcys. (535.4)

KFDM	ak	500	(1)	Beaumont, Tex.				
KLZ	ae	1000	CX	Denver, Colo.				
KSFO	ak	1000	....	San Francisco, Cal.				
KWTO	ak	5000	D	Springfield, Mo.				
WFIL	ak	1000	B	Philadelphia, Pa.				
WIND	ak	1000	(5)	Gary, Ind.				
WIS	ae	1000	N (5)	Columbia, S. C.				
WQAM	ae	1000	C	Miami, Fla.				
XEAO	ak	250	(.15)	Mexicali, L. C.				
XEFC	ak	100	...	Merida, Yuc.				

570 kcys. (526.0)

KGKO	ak	250	C (1)	Wichita Falls, Tex.				
KMTR	ak	1000	. ..	Hollywood, Calif.				
KVI	ak	1000	C	Tacoma, Wash.				
WKBN	ae	500	1C	Youngstown, Ohio				
WMCA	ak	500	X	New York, N. Y				
WNAX	ak	1000	C (5)	Yankton, S. D.				
WOSU	ak	750	1 (1)	Columbus, Ohio				
WSYR	ak	250	BX	Syracuse, N. Y.				
WWNC	ak	1000	N	Asheville, N. C.				

580 kcys. (516.9)

CFPR	z	50	....	Prince Rupert, B.C.				
CHRC	ak	100	F	Quebec, Que.				
CJGX	ae	100	F	Yorkton, Sask.				
CKCL	ae	100	F	Toronto, Ont.				
CKUA	ak	500	....	Edmonton, Alta.				
KMJ	ak	1000	C	Fresno, Calif.				
KSAC	ak	500	2 (1)	Manhattan, Kans.				
WCHS	ak	500	(1)	Charleston, W. Va.				
WDBO	ae	1000	C	Orlando, Fla.				
WIBW	ak	1000	C2 (5)	Topeka, Kans.				
WILL	ak	1000	D	Urbana, Ill.				
WTAG	ae	500	RX	Worcester, Mass				

590 kcys. (508.2)

KHQ	ak	1000	R (2.5)	Spokane, Wash.				
WEEI	ak	1000	RX	Boston, Mass.				
WKZO	ae	1000	D	Kalamazoo, Mich.				
WOW	ae	5000	R (5)	Omaha, Nebr.				
XEPN	ak	50000	..	Piedras Negras, Coah.				

600 kcys. (499.7)

CFCF	ae	400	FN	Montreal, Que.				
CJOR	ak	500	....	Vancouver, B. C.				
CMW	ak	1400	....	Havana, Cuba				
CRCW	ak	500	F (1)	Windsor, Ont.				
FQN	z	250	609	St. Pierre, Miq.				

					Heard	Logged	Reported	Verified
KFSD	ae	1000	B	San Diego, Calif.				
WCAO	ae	500	C (1)	Baltimore, Md.				
WICC	ae	500	C (1)	Bridgeport, Conn.				
WMT	ak	1000	B (2.5)	Cedar Rapids, Ia.				
WREC	ak	1000	C (2.5)	Memphis, Tenn.				

610 kcys. (491.5)

KFRC	ck	1000	C (5)	San Francisco, Cal.				
WDAF	ak	1000	R (5)	Kansas City, Mo.				
WIP	ae	1000	X	Philadelphia, Pa.				
WJAY	ae	500	D	Cleveland, Ohio				
XEXM	z	....	....	Mexico City, D. F.				
XFX	ak	1000	....	Mexico City, D. F.				

620 kcys. (483.6)

KGW	ak	1000	R (5)	Portland, Ore.				
KTAR	ae	1000	N	Phoenix, Ariz.				
WFLA	ae	1000	Na (5)	Clearwater, Fla.				
WHJB	ak	250	D	Greensburg, Pa.				
WLBZ	ak	500	C (1)	Bangor, Maine				
WSUN	ae	1000	Na (5)	St. Petersburg, Fla.				
WTMJ	ae	1000	N (5)	Milwaukee, Wis.				

630 kcys. (475.9)

CFCO	ak	100	F	Chatham, Ont.				
CFCY	ae	1000	F	Charlottetown, P.E.I.				
CJRC	ak	1000	F	Winnipeg, Man.				
CKOV	ak	100	F	Kelowna, B. C.				
KFRU	ak	500	1 (1)	Columbia, Mo.				
KGFX	ak	200	D	Pierre, S. D.				
WGBF	ak	500	1	Evansville, Ind.				
WMAL	ak	250	B (.5)	Washington, D. C.				
WOS	ak	500	1D	Jefferson City, Mo.				
WPRO	ak	250	....	Providence, R. I.				
XEZ	z	500	....	Merida, Yuc.				

640 kcys. (468.5)

CMBC	dj	150	....	Havana, Cuba				
KFI	ah	50000	R	Los Angeles, Calif.				
WHKC	ae	500	....	Columbus, Ohio				
WOI	ae	5000	D	Ames, Iowa				
WSPG	z	500	P	Portland, Me.				
XEOX	ak	500	....	Saltillo, Coah.				

650 kcys. (461.3)

TIGPH	ak	1000	....	San Jose, C. R.				
WSM	ae	50000	N	Nashville, Tenn.				

660 kcys. (454.3)

WAAW	ak	500	D	Omaha, Neb.				
WEAF	ak	50000	R	New York, N. Y.				

670 kcys. (447.5)

WMAQ	ak	50000	N	Chicago, Ill.				

680 kcys. (440.9)

CMCG	ak	150	....	Havana, Cuba				
KFEQ	ak	2500	D	St. Joseph, Mo.				
KPO	ak	50000	R	San Francisco, Cal.				
RDN	z	500	....	San Salvador, E. S.				
VAS	akn	2000	685	Glace Bay, N. S.				
VOWR	ck	500	681	St. John's, Nfld.				
WPTF	ae	5000	DnN	Raleigh, N. C.				

					Heard	Logged	Reported	Verified
690 kcys. (434.5)								
CFRB	ak	10000	C	Toronto, Ont.				
CJCJ	aj	100	F	Calgary, Alta.				
NAA	akn	1000	....	Arlington, Va.				
XET	ak	500	....	Monterrey, N. L.				
700 kcys. (428.3)								
WLW	ak	500000	N	Cincinnati, Ohio				
710 kcys. (422.3)								
KIRO	ae	1000	....	Seattle, Wash.				
KMPC	ak	500	....	Beverly Hills, Cal.				
WOR	ak	50000	....	Newark, N. J.				
XEN	ak	1000	....	Mexico City, D. F.				
720 kcys. (416.4)								
WGN	ak	50000	....	Chicago, Ill.				
730 kcys. (410.7)								
CFPL	ak	100	F	London, Ont.				
CJCA	ah	1000	F	Edmonton, Alta.				
CKAC	ck	5000	C	Montreal, Que.				
CKPR	ak	100	F	Fort William, Ont.				
CMK	ae	3000	....	Havana, Cuba				
XEBC	z	5000	....	Agua Caliente, L.C.				
740 kcys. (405.2)								
KMMJ	ae	1000	D	Clay Center, Neb.				
KTRB	ak	250	D	Modesto, Calif.				
WHEB	ak	250	D	Portsmouth, N. H.				
WSB	ah	50000	N	Atlanta, Ga.				
750 kcys. (399.8)								
CMCW	dk	150	....	Havana, Cuba				
KGU	aj	2500	N	Honolulu, T. H.				
WJR	ak	50000	C	Detroit, Mich.				
XEAM	z	7.5	....	Matamoros, Tams.				
760 kcys. (394.5)								
CMHX	ak	200	....	Cienfuegos, Cuba				
KXA	ae	250	(.5)	Seattle, Wash.				
WBAL	ae	2500	BSy	Baltimore, Md.				
WEW	ae	1000	D	St. Louis, Mo.				
WJZ	ak	50000	BSy	New York, N. Y.				
XEOK	ak	250	....	Tijuana, L. C.				
770 kcys. (389.4)								
CMBS	ak	150	....	Havana, Cuba				
KFAB	ae	10000	CSy	Lincoln, Neb.				
WBBM	ae	50000	CSy	Chicago, Ill.				
780 kcys. (384.4)								
CHWK	dk	100	F	Chilliwack, B. C.				
CKSO	ak	1000	F	Sudbury, Ont.				
CMJK	ak	250	....	Camaguey, Cuba				
KEHE	ak	500	(1) X	Los Angeles, Calif.				
KFDY	ae	1000	D	Brookings, S. D.				
KFQD	ck	250	....	Anchorage, Alaska				
KGHL	ak	1000	N (2.5)	Billings, Mont.				
WEAN	ae	500	CX	Providence, R. I.				

					Heard	Logged	Reported	Verified
WMC	ak	1000	N (5.)	Memphis, Tenn.				
WTAR	ae	500	NX (1)	Norfolk, Va.				
XEYZ	z	10000	....	Mexico City, D. F.				
790 kcys. (379.5)								
CMGH	z	250	....	Matanzas, Cuba				
KGO	ak	7500	B	San Francisco, Cal.				
WGY	ak	50000	R	Schenectady, N. Y.				
800 kcys. (374.8)								
HIX	ak	700	....	Trujillo, D. R.				
TIX	ak	....	....	San Jose, C. R.				
WBAP	ak	50000	Na	Fort Worth, Tex.				
WFAA	ak	50000	Na	Dallas, Tex.				
WTBO	ak	250	D	Cumberland, Md.				
810 kcys. (370.2)								
CMCF	ak	600	....	Havana, Cuba				
WCCO	ae	50000	C	Minneapolis, Minn.				
WNYC	ak	1000	D	New York, N. Y.				
XFC	z	350	....	Aguascalientes, Ags.				
820 kcys. (365.6)								
CMHW	ak	100	....	Cienfuegos, Cuba				
WHAS	aj	50000	C	Louisville, Ky.				
XEMZ	z	....	....	Coronado Isle, L. C.				
830 kcys. (361.2)								
CMJX	z	....	....	Camaguey, Cuba				
KOA	ak	50000	N	Denver, Colo.				
WEEU	ak	1000	D	Reading, Pa.				
WHDH	ae	1000	Dn	Boston, Mass.				
WRUF	ae	5000	Dn	Gainesville, Fla.				
840 kcys. (356.9)								
CFQC	ak	1000	F	Saskatoon, Sask.				
CRCT	ak	5000	FN	Toronto, Ont.				
VOGY	ak	400	....	St. John's, Nfld.				
XERA	ck	250000	....	Villa Acuna, Coah.				
850 kcys. (352.7)								
CMBN	z	150	....	Havana, Cuba				
KIEV	ak	250	D	Glendale, Calif.				
TIEP	z	500	....	San Jose, C. R.				
WESG	ak	1000	C	Elmira, N. Y.				
WKAR	ae	1000	D	East Lansing, Mich.				
WWL	ae	10000	C	New Orleans, La.				
860 kcys. (348.6)								
WABC	ak	50000	C	New York, N. Y.				
WHB	ak	1000	D	Kansas City, Mo.				
XEMO	ak	5000	....	Tijuana, L. C.				
870 kcys. (344.6)								
WENR	ak	50000	Na	Chicago, Ill.				
WLS	ae	50000	Na	Chicago, Ill.				
880 kcys. (340.7)								
CFJC	ak	100	F	Kamloops, B. C.				
CMQ	ak	500	....	Havana, Cuba				
CRCO	ak	1000	F	Ottawa, Ont.				

					Heard	Logged	Reported	Verified
KFKA	ak	500	2 (1)	Greeley, Colo.				
KLX	ae	1000	....	Oakland, Calif.				
KPOF	ae	500	2	Denver, Colo.				
WCOC	ae	500	(1)	Meridian, Miss.				
WGBI	ae	500	1	Scranton, Pa.				
WPHR	ak	500	D	Petersburg, Va.				
WQAN	ae	250	1	Scranton, Pa.				
WSUI	ae	500	(1)	Iowa City, Iowa				

890 kcys. (336.9)

KARK	ak	250	(.5)X	Little Rock. Ark.				
KFNF	ak	500	2 (1)	Shenandoah, Iowa				
KFPY	ak	1000	C (5)	Spokane, Wash.				
KUSD	ae	500	2	Vermillion, S. D.				
WBAA	ak	500	(1)	W. Lafayette, Ind.				
WGST	ak	1000	C	Atlanta, Ga.				
WJAR	ae	1000	R	Providence, R. I.				
WMMN	ak	250	C (.5)	Fairmont, W. Va.				
XEW	ak	50000	....	Mexico City, D. F.				

900 kcys. (333.1)

KGBU	ak	500	X	Ketchikan, Alaska				
KHJ	ae	1000	C (5)	Los Angeles, Calif.				
KSEI	ck	250	(.5)	Pocatello, Idaho				
WBEN	ak	1000	R (5)	Buffalo, N. Y.				
WELI	z	500	D	New Haven, Conn.				
WFMD	ah	500	D	Frederick, Md.				
WJAX	aeh	1000	N (5)	Jacksonville, Fla.				
WKY	ae	1000	N	Oklahoma City. Okla.				
WLBL	ak	2500	D	Stevens Point. Wis.				
WTAD	ak	500	D	Quincy, Ill.				

910 kcys. (329.6)

CJAT	ak	1000	F	Trail, B. C.				
CKY	ak	15000	F	Winnipeg, Man.				
CRCM	ak	5000	F	Montreal, Que.				
XENT	ak	150000	...	Nuevo Laredo, Tams.				

920 kcys. (325.9)

CMX	ae	1000	....	Havana, Cuba				
HHK	ae	1000	...	Port-au-Prince, Haiti				
KFEL	ak	500	a	Denver, Colo.				
KOMO	ak	1000	R (5)	Seattle, Wash.				
KPRC	ak	1000	N (5)	Houston, Texas				
KVOD	ak	500	a	Denver, Colo.				
WAAF	ak	1000	D	Chicago, Ill.				
WORL	ae	500	D	Boston, Mass.				
WPEN	ak	250	(.5) 1	Philadelphia, Pa.				
WRAX	ak	250	1 (.5)	Philadelphia, Pa.				
WSPA	ae	1000	D	Spartanburg, S. C.				
WWJ	ak	1000	R (5)	Detroit, Mich.				
XEAA	ak	200	....	Mexicali, L. C.				

930 kcys. (322.4)

CFAC	ak	100	F	Calgary, Alta.				
CFCH	ak	100	F	North Bay, Ont.				
CFLC	ae	100	....	Prescott, Ont.				
CHNS	ae	1000	F	Halifax, N. S.				
CKPC	ae	100	F	Brantford, Ont.				
KMA	ak	1000	(2.5)	Shenandoah, Iowa				
KROW	ak	1000	....	Oakland, Calif.				
TIRH	z	50	....	San Jose, C. R.				
WBRC	ak	1000	C	Birmingham, Ala.				
WDBJ	ae	1000	C (5)	Roanoke, Va.				
XEBH	z	500	....	Hermosillo, Sonora				

940 kcys. (319.0)

					Heard	Logged	Reported	Verified
KOIN	ak	1000	C (5)	Portland, Ore.				
VOAS	ak	100	....	St. John's, Nfld.				
WAAT	ae	500	D	Jersey City, N. J.				
WAVE	bk	1000	N	Louisville, Ky.				
WCSH	ae	1000	R (2.5)	Portland, Maine				
WDAY	ae	1000	N (5)	Fargo, N. D.				
WHA	ak	2500	DX	Madison, Wis.				
XEFO	ak	5000	(XFO)	Mexico City, D. F.				

950 kcys. (315.6)

CJOC	ak	100	F	Lethbridge, Alta.				
CMCD	ak	250	....	Havana, Cuba				
CRCS	ak	100	F	Chicoutimi, Que.				
KFWB	ak	1000	(5)	Hollywood, Calif.				
KHSL	ak	250	D	Chico, Calif.				
KMBC	ae	1000	C (5)	Kansas City, Mo.				
WRC	ak	500	R (1)	Washington, D. C.				
YNVA	z	30	....	Managua, Nic.				

960 kcys. (312.3)

CHNC	ak	1000	F	New Carlisle, Que.				
XEAW	ck	50000	....	Reynosa, Tams.				

970 kcys. (309.1)

CMBY	z	150	....	Havana, Cuba				
KJR	ak	5000	B	Seattle, Wash.				
WCFL	ae	5000	B	Chicago, Ill.				
WIBG	ak	100	D	Glenside, Pa.				

980 kcys. (306.0)

KDKA	ae	50000	B	Pittsburgh, Pa.				
XEF	z	100	....	Juarez, Chih.				

990 kcys. (302.8)

WBZ	ak	50000	BSy	Boston, Mass.				
WBZA	ak	1000	BSy	Springfield, Mass.				
XEAF	ak	500	....	Nogales, Sonora				
XEK	ak	100	....	Mexico City, D. F.				
XES	dk	250	....	Tampico, Tams.				

1000 kcys. (299.8)

CMBZ	ak	150	....	Havana, Cuba				
KFVD	ak	250	Dn	Los Angeles, Calif.				
TIGH	z	500	....	San Jose, C. R.				
WHO	ak	50000	R	Des Moines, Iowa				
XEBK	z	100	....	Nuevo Laredo, Tams.				
XEY	z	10	....	Merida, Yuc.				

1010 kcys. (296.9)

CHML	ak	100	F	Hamilton, Ont.				
CHWC	ak	500	3F	Regina, Sask.				
CKCD	ak	100	....	Vancouver, B. C.				
CKCK	ak	500	3F	Regina, Sask.				
CKCO	ak	100	F	Ottawa, Ont.				
CKIC	ak	50	....	Wolfville, N. S.				
CKWX	ak	100	F	Vancouver, B. C.				
CMJA	ak	50	....	Camaguey, Cuba				
KGGF	ak	1000	2	Coffeyville, Kans.				
KQW	ak	1000	....	San Jose, Calif.				
TIGA	z	30	1014	Cartago, C. R.				
WHN	ae	1000	(5)	New York, N. Y.				
WNAD	ae	1000	2	Norman, Okla.				
WNOX	ak	1000	C (2)	Knoxville, Tenn.				
XEU	ak	250	....	Veracruz, Ver.				

1020 kcys. (293.9)

					Heard	Logged	Reported	Verified
KYW	ak	10000	R	Philadelphia, Pa				
WDZ	ak	250	D	Tuscola Ill				
XEJ	ak	1000		Juarez, Chih				

1030 kcys. (291.1)

CFCN	ak	10000		Calgary, Alta				
CKLW	ag	5000		Windsor, Ont				
CMCY	ak	1000		Havana, Cuba				
XEB	ak	10000		Mexico City, D F				

1040 kcys. (288.3)

KRLD	ae	10000	C	Dallas, Texas				
KWJJ	ak	500		Portland, Ore				
KYOS	z	250	DP	Merced, Calif				
WTIC	ah	50000	R	Hartford, Conn.				

1050 kcys. (285.5)

CMKD	ak	250		Santiago, Cuba				
CRCK	ak	1000	F	Quebec, Que.				
KFBI	ak	5000	Dn	Abilene, Kans.				
KNX	ak	50000		Hollywood, Calif				
TIFA	z	75		San Jose, C. R.				

1060 kcys. (282.8)

KTHS	ae	10000	N	Hot Springs, Ark.				
VOAC	z	40	1065	St. John's, Nfld.				
WBAL	ak	10000	B	Baltimore, Md.				
WJAG	ak	1000	D	Norfolk, Neb.				
XFA	ak	500		Guadalajara, Jal.				

1070 kcys. (280.2)

CMBX	ak	500		Havana, Cuba				
CMHA	z	50		Sagua la Grande, C.				
KJBS	ak	500	Dn	San Francisco, Cal				
WCAZ	ak	100	D	Carthage, Ill.				
WTAM	ak	50000	R	Cleveland, Ohio				

1080 kcys. (277.6)

WBT	ak	50000	C	Charlotte, N. C.				
WCBD	ak	5000	1Dn	Waukegan, Ill.				
WMBI	ak	5000	1Dn	Chicago, Ill.				

1090 kcys. (275.1)

KMOX	ak	50000	C	St. Louis, Mo.				
XEAQ	ak	1000		Rosarito, L. C.				

1100 kcys. (272.6)

CRCV	ak	1000	F	Vancouver, B. C.				
KGDM	ak	1000	D	Stockton, Calif.				
KWKH	ae	10000	C	Shreveport, La.				
WLWL	ae	5000	1	New York, N. Y.				
WPG	ak	5000	1C	Atlantic City, N. J.				
XEL	z	250		Mexico City, D. F.				

1110 kcys. (270.1)

CMCJ	ak	500		Havana, Cuba				
KSOO	ak	2500	Dn	Sioux Falls, S. D.				
WRVA	ae	5000	N	Richmond, Va.				
XELO	z	10000		Piedras Negras, Co.				

1120 kcys. (267.7)

					Heard	Logged	Reported	Verified
CHLP	ak	100	F	Montreal, Que.				
CHSJ	ae	500	F (1)	St. John, N. B.				
CKOC	ae	500	F (1)	Hamilton, Ont.				
CKX	ak	100	F	Brandon, Man.				
CMGF	dk	150	....	Matanzas, Cuba				
CMKM	ak	50	....	Manzanillo, Cuba				
KFIO	ae	100	D	Spokane, Wash.				
KFSG	ag	500	a (2.5)	Los Angeles, Calif.				
KRKD	aj	500	a (2.5)	Los Angeles, Calif.				
KRSC	ak	100	DX	Seattle, Wash.				
WCOP	ak	500	D	Boston, Mass.				
WDEL	ak	250	(.5)	Wilmington, Del.				
WISN	ak	250	(1)	Milwaukee, Wis.				
WTAW	ae	500	....	College Station, Tex.				

1130 kcys. (265.3)

CMJI	ak	50	....	Ciego de Avila, Cuba				
KSL	ae	50000	C	Salt Lake City, Utah				
WJJD	ak	20000	Dn	Chicago, Ill.				
WOV	ag	1000	D	New York, N. Y.				

1140 kcys. (263.0)

CMBG	z	200	....	Havana, Cuba				
KVOO	ak	25000	1N	Tulsa, Okla.				
WAPI	ae	5000	1N	Birmingham, Ala.				
WSPR	z	500	....	Springfield, Mass.				

1150 kcys. (260.7)

CMJF	z	200	....	Camaguey, Cuba				
WHAM	ae	50000	B	Rochester, N. Y.				
XED	ak	2500	1155	Guadalajara, Jal.				
XEFL	ak	250	....	Tijuana, L. C.				
XEH	ak	250	....	Monterrey, N. L.				
XEWZ	ak	100	....	Mexico City, D. F.				

1160 kcys. (258.5)

CMHJ	z	100	....	Cienfuegos, Cuba				
WOWO	ae	10000	1C	Fort Wayne, Ind.				
WWVA	ak	5000	1C	Wheeling, W. Va.				
XEAS	z	100	....	Saltillo, Coah.				
XEC	z	30	....	Tijuana, L. C.				
XEP	ak	500	....	Juarez, Chih.				
XESL	z	....	....	Tijuana, L. C.				

1170 kcys. (256.3)

CMBD	z	150	....	Havana, Cuba				
WCAU	ae	50000	C	Philadelphia, Pa.				

1180 kcys. (254.1)

CMJO	ak	50	....	Ciego de Avila, Cuba				
KEX	ak	5000	2B	Portland, Ore.				
KOB	ak	10000	2	Albuquerque, N.M.				
VE9EK	ak	10	1185	Montmagny, Que.				
WDGY	ak	1000	Dn (5)	Minneapolis, Minn				
WINS	ak	1000	....	New York, N. Y.				
WMAZ	ak	1000	....	Macon, Ga.				
XEFA	z	500	....	Mexico City, D. F.				

1190 kcys. (252.0)

HIJ	z	15	1195	Trujillo, D. R.				
VONF	ak	500	1195	St. John's, Nfld.				
WATR	ak	100	D	Waterbury, Conn.				

					Heard	Logged	Reported	Verified
WOAI	ak	50000	N	San Antonio, Tex.				
WSAZ	ak	1000	....	Huntington, W. Va.				

1200 kcys. (249.9)

CHAB	ak	100	F	Moose Jaw, Sask.				
CKNX	ak	50	....	Wingham, Ont.				
CKTB	ae	100	F	St. Catherines, Ont.				
CMCO	ak	150	....	Havana, Cuba				
KADA	ak	100	D	Ada, Okla.				
KBTM	ak	100	D	Jonesboro, Ark.				
KDNC	z	100	P	Lewistown, Mont.				
KFJB	ak	100	(.25)	Marshalltown, Iowa				
KFXD	ae	100	(.25)	Nampa, Idaho				
KFXJ	ak	100	(.25)	Grand Junc., Colo.				
KGDE	ak	100	(.25)	Fergus Falls, Minn.				
KGEK	ak	100	....	Sterling, Colo.				
KGFJ	ae	100	....	Los Angeles, Calif.				
KGHI	ak	100	(.25)	Little Rock, Ark.				
KMLB	ak	100	....	Monroe, La.				
KSUN	ak	100	....	Lowell, Ariz.				
KVCV	z	100	P	Redding, Calif.				
KVEC	z	250	DP	San Luis Obispo, Cal.				
KVOS	dk	100	....	Bellingham, Wash.				
KWG	ak	100	C	Stockton, Calif.				
WABI	ak	100	....	Bangor, Maine				
WAIM	ak	100	XZ	Anderson, S. C.				
WAYX	z	100	P	Waycross, Ga.				
WBBZ	ak	100	....	Ponca City, Okla.				
WBNO	ak	100	1	New Orleans, La.				
WCAT	ak	100	D	Rapid City, S. D.				
WCAX	ak	100	....	Burlington, Vt.				
WCLO	ak	100	X	Janesville, Wis.				
WCPO	ak	100	(.25)	Cincinnati, Ohio				
WEST	ae	100	3 (.25)	Easton, Pa.				
WFAM	ak	100	8	South Bend, Ind.				
WHBC	ak	100	(.25)	Canton, Ohio				
WHBY	ak	100	(.25)	Green Bay, Wis.				
WIBX	aej	100	(.3)C	Utica, N. Y.				
WIL	ak	100	(.25)	St. Louis, Mo.				
WJBC	ak	100	6(.25)	Bloomington, Ill.				
WJBL	ak	100	6	Decatur, Ill.				
WJBW	ak	100	1	New Orleans, La.				
WJNO	z	100	P	W. Palm Beach, Fla.				
WJRD	z	100	DP	Tuscaloosa, Ala.				
WKBO	ak	100	3 (.25)	Harrisburg, Pa.				
WLVA	ak	100	(.25)	Lynchburg, Va.				
WMFR	ae	100	D	High Point, N. C.				
WMPC	ak	100	(.25)	Lapeer, Mich.				
WNRI	ak	100	(.25)	Newport, R. I.				
WOLS	z	100	DP	Florence, S. C.				
WRBL	ak	100	....	Columbus, Ga.				
WTHT	z	100	DP	Hartford, Conn.				
WWAE	ae	100	8	Hammond, Ind.				

1210 kcys. (247.8)

CJCS	z	50	....	Stratford, Ont.				
CJCU	z	50	....	Aklavik, N. W. T.				
CKBI	ak	100	F	Prince Albert, Sask.				
CKCH	ak	100	F	Hull, Que.				
CKMC	ak	50	....	Cobalt, Ont.				
CMHI	ak	150	....	Santa Clara, Cuba				
KANS	z	100	P	Wichita, Kans.				
KASA	ck	100	....	Elk City, Okla.				
KDLR	ak	100	....	Devils Lake, N. D.				
KDON	z	100	....	Del Monte, Calif.				
KFJI	ak	100	....	Klamath Falls, Ore.				
KFOR	ae	100	(.25) C	Lincoln, Neb.				
KFPW	ak	100	....	Fort Smith, Ark.				
KFVS	ak	100	6(.25)	Cape Girardeau, Mo.				
KFXM	ak	100	9	San Bernardino, Calif.				
KGLO	z	100	P	Mason City, Iowa				
KGY	ak	100	....	Olympia, Wash.				

					Heard	Logged	Reported	Verified
KIUL	ak	100	....	Garden City, Kans.				
KOCA	z	100	P	Kilgore, Texas				
KPPC	ak	100	9	Pasadena, Calif.				
KVSO	ak	100	....	Ardmore, Okla.				
KWTN	ak	100	....	Watertown, S. D.				
TGW	ak	10000	....	Guatemala City				
WALR	ak	100	....	Zanesville, Ohio				
WABX	ae	100	....	Wilkes Barre, Pa.				
WBBL	ak	100	S	Richmond, Va.				
WBLY	z	100	DP	Lima, Ohio				
WBRB	ak	100	3	Red Bank, N. J.				
WCOL	ak	100	....	Columbus, Ohio				
WCRW	ae	100	4	Chicago, Ill.				
WEBQ	ae	100	6(.25)	Harrisburg, Ill.				
WEDC	ae	100	4	Chicago, Ill.				
WFAS	ak	100	3	White Plains, N. Y.				
WFOY	z	100	P	St. Augustine, Fla.				
WGBB	ae	100	3	Freeport, N. Y.				
WGCM	ae	100	(.25)	Gulfport, Miss.				
WGNY	ak	100	3	Chester, N. Y.				
WHBF	ak	100	(.25)	Rock Island, Ill.				
WHBU	ak	100	(.25)	Anderson, Ind.				
WIBU	ak	100	(.25)	Poynette, Wis.				
WJBY	ak	100	....	Gadsden, Ala.				
WJEJ	ae	100	D	Hagerstown, Md.				
WJIM	z	100	(.25)	Lansing, Mich.				
WJW	ae	100	(.25)	Akron, Ohio				
WKOK	ak	100	....	Sunbury, Pa.				
WLMU	z	100	P	Middlesboro, Ky.				
WMBG	ak	100	C(.25)	Richmond, Va.				
WMFG	z	100	....	Hibbing, Minn.				
WMFN	ak	100	Y	Clarksdale, Miss.				
WOCL	ak	50	....	Jamestown, N. Y.				
WOMT	ak	100	....	Manitowoc, Wis.				
WPAX	ak	100	D	Thomasville, Ga.				
WSAY	z	100	DP	Rochester, N. Y.				
WSBC	ae	100	4	Chicago, Ill.				
WSIX	ak	100	Y	Springfield, Tenn.				
WSOC	ak	100	N(.25)	Charlotte, N. C.				
WTAX	ak	100	....	Springfield, Ill.				
XEAT	z	50	....	Hidalgo, Chih.				
XEE	z	50	....	Durango, Dgo.				
XEFV	ak	100	....	Juarez, Chih.				
XETH	ak	100	....	Puebla, Pue.				

1220 kcys. (245.8)

CMJE	z	50	....	Camaguey, Cuba
KFKU	ae	1000	a (5)	Lawrence, Kans.
KTW	ak	1000	S2	Seattle, Wash.
KWSC	ae	1000	2 (2)	Pullman, Wash.
TIVCA	ak	....	1225	San Jose, C. R.
WCAD	ak	500	D	Canton, N. Y.
WCAE	ak	1000	R(5)	Pittsburgh, Pa.
WDAE	ae	1000	C (2.5)	Tampa, Fla.
WREN	ak	1000	Ba(5)	Lawrence, Kas.
XETF	ak	12	....	Veracruz, Ver.

1230 kcys. (243.8)

CMCB	ak	150	....	Havana, Cuba
KGBX	ak	500	....	Springfield, Mo.
KGGM	ak	250	(.5)	Albuquerque, N. M.
KYA	ak	1000	N	San Francisco, Calif.
WFBM	ae	1000	C(5)	Indianapolis, Ind.
WNAC	ak	1000	C(2.5)	Boston, Mass.
XEFJ	ak	100	....	Monterrey, N. L.
YNOP	z	100	....	Managua, Nic.

1240 kcys. (241.8)

CJCB	ak	1000	F	Sydney, N. S.
CMHB	z	50	....	Sancti Spiritus, Cuba
KGCU	ak	250	1	Mandan, N. D.

					Heard	Logged	Reported	Verified
KLPM	ak	250	1	Minot, N. D.				
KTAT	ak	1000	....	Fort Worth, Texas				
KTFI	ae	1000	....	Twin Falls, Idaho				
WKAQ	ae	1000	....	San Juan, P. R.				
WXYZ	ak	1000	B	Detroit, Mich.				
XEAC	z	250	....	Tijuana, L. C.				
XEAI	z	100	....	Mexico City, D. F.				
XEKL	z	500	....	Leon, Guan.				
XELA	z	50	....	Saltillo, Coah.				
XEME	z	15	....	Merida, Yuc.				

1250 kcys. (239.9)

CMKC	ak	150	....	Santiago, Cuba				
KFOX	ae	1000	....	Long Beach, Calif.				
WCAL	ah	1000	2(2.5)	Northfield, Minn.				
WDSU	ak	1000	....	New Orleans, La.				
WHBI	ak	1000	1(2.5)	Newark, N. J.				
WLB	ak	1000	2	Minneapolis, Minn.				
WNEW	ae	1000	1(2.5)	Newark, N. J.				
WTCN	ak	1000	2 (5)	Minneapolis, Minn.				

1260 kcys. (238.0)

CFRN	ak	100	F	Edmonton, Alta.				
KGVO	ak	1000	....	Missoula, Mont.				
KOIL	ak	1000	B(2.5)	Council Bluffs, Ia.				
KPAC	ak	500	D	Port Arthur, Texas				
KRGV	ak	500	....	Weslaco, Texas				
KUOA	ak	1000	DXY	Fayetteville, Ark.				
KVOA	ak	500	....	Tucson, Ariz.				
WHIO	ae	1000	R	Dayton, Ohio				
WNBX	ak	1000	....	Springfield, Vt.				
WTOC	ae	1000	C	Savannah, Ga.				

1270 kcys. (236.1)

CMHD	dk	250	....	Caibarien, Cuba				
KGCA	ak	100	2D	Decorah, Iowa				
KOL	ae	1000	C(2.5)	Seattle, Wash.				
KVOR	ae	1000	C	Colorado Sp'gs, Colo.				
KWLC	ak	100	2D	Decorah, Iowa				
WASH	ak	500	aN	Grand Rapids, Mich.				
WFBR	ae	500	RX	Baltimore, Md.				
WJDX	ae	1000	N(2.5)	Jackson, Miss.				
WOOD	ak	500	aN	Grand Rapids, Mich.				
XEG	z	200	....	Ensenada, L. C.				
XFB	ak	250	....	Jalapa, Ver.				
YNLF	z	20	1275	Managua, Nic.				

1280 kcys. (234.2)

KFBB	ae	1000	(2.5)	Great Falls, Mont.				
WCAM	ae	500	1	Camden, N. J.				
WCAP	ae	500	1	Asbury Park, N. J.				
WDOD	ak	1000	C(5)	Chattanooga, Tenn.				
WIBA	ae	1000	N(5)	Madison, Wis.				
WORC	ak	500	C	Worcester, Mass.				
WRR	ak	500	....	Dallas, Texas				
WTNJ	ak	500	1	Trenton, N. J.				
XEMX	z	12	....	Mexico City, D. F.				

1290 kcys. (232.4)

KDYL	ak	1000	NX	Salt Lake City, Utah				
KLCN	ak	100	D	Blytheville, Ark.				
KTRH	ak	1000	C(5)	Houston, Texas				
WEBC	ae	1000	M(5)	Superior, Wis.				
WJAS	ak	1000	C(5)	Pittsburgh, Pa.				
WNBZ	z	100	D	Saranac Lake, N. Y.				
WNEL	ak	1000	(2.5)	San Juan, P. R.				

1300 kcys. (230.6)

					Heard	Logged	Reported	Verified
KALE	ak	500	3C	Portland, Ore.				
KFAC	ak	1000	....	Los Angeles, Calif.				
KFH	ak	1000	C	Wichita, Kans.				
KFJR	ag	500	3	Portland, Ore.				
WBBR	ae	1000	1	Brooklyn, N. Y.				
WEVD	ak	1000	1	New York, N. Y.				
WFAB	ae	1000	1	New York, N. Y.				
WFBC	ak	1000	(5)N	Greenville, S. C.				
WHAZ	ae	500	1	Troy, N. Y.				
WHBL	ae	500	....	Sheboygan, Wis.				
WIOD	ak	1000	N	Miami, Fla.				

1310 kcys. (228.9)

					Heard	Logged	Reported	Verified
CHCK	ak	50	...	Charlottetown, P.E.I.				
CJKL	ak	1000	F	Kirkland Lake, Ont.				
CJLS	ak	100	....	Yarmouth, N. S.				
CKCV	ak	100	F	Quebec, Que.				
KCRJ	ak	100	D	Jerome, Ariz.				
KFPL	dk	100	(.25)	Dublin, Texas				
KFXR	ak	100	(.25)	Oklahoma City, Okla.				
KFYO	dk	100	(.25)	Lubbock, Texas				
KGCX	ak	100	(.25)XZ	Wolf Pt., Mont.				
KGEZ	aj	100	....	Kallspell, Mont.				
KGFW	ak	100	....	Kearney, Neb.				
KINY	ak	100	....	Juneau, Alaska				
KIT	ak	100	(.25)	Yakima, Wash.				
KIUJ	ak	100	....	Santa Fe, N. Mex.				
KMED	ck	100	(.25)	Medford, Ore.				
KPDN	z	100	DP	Pampa, Texas				
KRMD	ak	100	....	Shreveport, La.				
KROC	z	100	....	Rochester, Minn.				
KROY	z	100	DP	Sacramento, Calif.				
KRRV	z	100	DP	Sherman, Texas				
KTSM	ak	100	....	El Paso, Texas				
KVOL	ak	100	....	Lafayette, La.				
KWAT	z	250	DP	Watsonville, Calif.				
KXRO	ak	100	....	Aberdeen, Wash.				
WAML	ak	100	....	Laurel, Miss.				
WBEO	ae	100	....	Marquette, Mich.				
WBOW	ak	100	(.25)	Terre Haute, Ind.				
WBRE	ak	100	....	Wilkes Barre, Pa.				
WCLS	ak	100	....	Joliet, Ill.				
WCMI	z	100	....	Ashland, Ky.				
WDAH	ak	100	S	El Paso, Texas				
WEBR	aeh	100	B(.25)	Buffalo, N. Y.				
WEMP	z	100	D	Milwaukee, Wis.				
WEXL	ak	50	....	Royal Oak, Mich.				
WFBG	ae	100	3	Altoona, Pa.				
WFDF	mk	100	....	Flint, Mich.				
WGH	aj	100	(.25)	Newport News, Va.				
WHAT	ak	100	4	Philadelphia, Pa.				
WJAC	ae	100	3	Johnstown, Pa.				
WLAK	z	100	....	Lakeland, Fla.				
WLBC	ak	100	6(.25)	Muncie, Ind.				
WLNH	ak	100	....	Laconia, N. H.				
WMBO	ak	100	....	Auburn, N. Y.				
WMFF	ak	250	D	Plattsburg, N. Y.				
WNBH	ak	100	(.25)	New Bedford, Mass.				
WOL	ak	100	....	Washington, D. C.				
WRAW	ak	100	....	Reading, Pa.				
WROL	ak	100	(.25)	Knoxville, Tenn.				
WSAJ	ae	100	....	Grove City, Pa.				
WSGN	ak	100	(.25)	Birmingham, Ala.				
WSJS	ak	100	C	Winston-Salem, N.C.				
WTAL	ak	100	....	Tallahassee, Fla.				
WTEL	ce	100	4	Philadelphia, Pa.				
WTJS	ak	100	(.25)	Jackson, Tenn.				
WTRC	ak	100	6(.25)	Elkhart, Ind.				
XEAG	z	10	....	Cordoba, Ver.				
XECW	z	10	....	Mexico City, D. F.				
XEFW	ak	250	....	Tampico, Tams.				
XETB	ak	125	....	Torreon, Coah.				

					Heard	Logged	Reported	Verified
XEX	ak	125	....	Monterrey, N. L.				
XFA	z	5	...	Aguascalientes, Ags.				

1320 kcys. (227.1)

CMOX	ak	200	....	Havana, Cuba				
KGHF	ak	500	....	Pueblo, Colo.				
KGMB	ak	1000	C	Honolulu, T. H.				
KID	ae	500	(1)	Idaho Falls, Idaho				
KRNT	ak	500	C(1)	Des Moines, Iowa				
WADC	ae	1000	C(2.5)	Akron, Ohio				
WORK	ak	1000	....	York, Pa.				
WSMB	ak	500	N(1)	New Orleans, La.				

1330 kcys. (225.4)

CMHK	z	250	....	Cruces, Cuba				
KGB	ag	1000	C(2.5)	San Diego, Calif.				
KMO	ak	250	....	Tacoma, Wash.				
KSCJ	aj	1000	C(2.5)	Sioux City, Iowa				
WDRC	ae	1000	C(5)	Hartford, Conn.				
WSAI	ak	1000	R(2.5)	Cincinnati, Ohio				
WTAQ	ae	1000	....	Green Bay, Wis.				

1340 kcys. (223.7)

CMAB	z	....	....	Pinar del Rio, Cuba				
CMJL	z	75	....	Camaguey, Cuba				
HRN	z	50	....	Tegucigalpa, Hond.				
KGDY	ak	250	D	Huron, S. D.				
KGIR	ak	1000	N(2.5)	Butte, Mont.				
KGNO	ak	250	....	Dodge City, Kans.				
WCOA	ak	500	C	Pensacola, Fla.				
WFEA	ae	500	C(1)	Manchester, N. H.				
WSPD	ae	1000	C(5)	Toledo, Ohio				
XEFE	z	250	....	Nuevo Laredo, Tams.				
XFD	z	350	....	Jalapa, Ver.				

1350 kcys. (222.1)

CMCA	z	250	....	Havana, Cuba				
KIDO	ak	1000	(.25)	Boise, Idaho				
KWK	ak	1000	B(5)	St. Louis, Mo.				
WAWZ	ae	500	1(1)	Zarephath, N. J.				
WBNX	ae	250	1X	New York, N. Y.				

1360 kcys. (220.4)

CMJH	dk	50	....	Ciego de Avila, Cuba				
KCRC	ak	250	....	Enid, Okla.				
KGER	ak	1000	....	Long Beach, Calif.				
WCSC	ak	500	(1)N	Charleston, S. C.				
WFBL	ak	1000	C(5)	Syracuse, N. Y.				
WGES	ae	500	1	Chicago, Ill.				
WQBC	ak	1000	D	Vicksburg, Miss.				
WSBT	ak	500	1	South Bend, Ind.				

1370 kcys. (218.8)

CKCW	ak	100	F	Moncton, N. B.				
CMGE	ak	150	....	Cardenas, Cuba				
HIZ	z	10	....	Trujillo, D. R.				
KAST	ak	100	D	Astoria, Ore.				
KBHB	z	100	P	Rapid City, S. Dak.				
KCMO	ak	100	....	Kansas City, Mo.				
KELD	z	100	....	El Dorado, Ark.				
KERN	ak	100	....	Bakersfield, Calif.				
KFGQ	ak	100	....	Boone, Iowa				
KFJM	ak	100	(.25)	Grand Forks, N. D.				
KFJZ	ae	100	X	Fort Worth, Texas				
KFRO	ak	100	D	Longview, Texas				
KGAR	ae	100	(.25)	Tucson, Ariz.				

					Heard	Logged	Reported	Verified
KGFG	bk	100	....	Oklahoma City, Okla				
KGFL	ak	100	4	Roswell, N. M.				
KGKL	ak	100	(.25)	San Angelo, Texas				
KICA	ak	100	4	Clovis, N. M.				
KIUP	ak	100	....	Durango, Colo.				
KLUF	z	100	(.25)	Galveston, Texas				
KMAC	ak	100	5	San Antonio, Tex.				
KONO	ak	100	5	San Antonio, Tex.				
KRE	ak	100	(.25)	Berkeley, Calif.				
KRKO	ak	50	1	Everett, Wash.				
KSLM	ak	100	....	Salem, Ore.				
KTEM	z	100	DP	Temple, Texas				
KUJ	ak	100	....	Walla Walla, Wash.				
KVI	ak	100	1	Seattle, Wash.				
KWYO	ak	100	X	Sheridan, Wyo.				
WABY	aj	100	....	Albany, N. Y.				
WAGF	ak	250	D	Dothan, Ala.				
WATL	ak	100	....	Atlanta, Ga.				
WBNY	z	100	2(.25)	Buffalo, N. Y.				
WBTM	ak	100	(.25)	Danville, Va.				
WCBM	ae	100	(.25)	Baltimore, Md.				
WDAS	ae	100	(.25)	Philadelphia, Pa.				
WDWS	z	100	DP	Champaign, Ill.				
WEOA	z	100	....	Evansville, Ind.				
WEXP	z	100	DP	Clarksburg, W. Va.				
WGL	ae	100	C	Fort Wayne, Ind.				
WGRC	z	250	DP	New Albany, Ind.				
WHBQ	ak	100	....	Memphis, Tenn.				
WHDF	ak	100	(.25)	Calumet, Mich.				
WHLB	z	100	P	Virginia, Minn.				
WIBM	ak	100	(.25)	Jackson, Mich.				
WLLH	ak	100	(.25)	Lowell, Mass.				
WMBR	ak	100	C(.25)	Jacksonville, Fla.				
WMFD	ak	100	D	Wilmington, N. C.				
WMFO	ak	100	D	Decatur, Ala.				
WMIN	z	100	P	St. Paul, Minn.				
WOC	ak	100	C(.25)	Davenport, Iowa				
WPAY	ak	100	....	Portsmouth, Ohio				
WPFB	ak	100	....	Hattiesburg, Miss.				
WQDM	ae	100	....	St. Albans, Vt.				
WRAK	ak	100	(.25)	Williamsport, Pa.				
WRDO	ae	100	....	Augusta, Maine				
WRJN	ak	100	(.25)	Racine, Wis.				
WSVS	ak	50	D2	Buffalo, N. Y.				
XEFZ	ak	100	....	Mexico City, D. F.				
XEI	ak	125	....	Morelia, Mich.				
XEZZ	z	100	...	San Luis Potosi, SLP.				

1380 kcys. (217.3)

CMCR	z	150	....	Havana, Cuba
KOH	ak	500	C	Reno, Nev.
KQV	ae	500	....	Pittsburgh, Pa.
WALA	af	500	C(1)	Mobile, Ala.
WKBH	ae	1000	....	LaCrosse, Wis.
WNBC	mk	250	D	New Britain, Conn.
WSMK	ak	200	C	Dayton, Ohio

1390 kcys. (215.7)

CMJC	z	150	....	Camaguey, Cuba
HIH	ak	15	1395	San Ped. de Macoris
KLRA	ae	1000	C(2.5)	Little Rock, Ark.
KOOS	ae	250	D	Marshfield, Ore.
KOY	ae	500	(1)	Phoenix, Ariz.
WHK	ae	1000	C(2.5)	Cleveland, Ohio

1400 kcys. (214.2)

CMGC	z	100	....	Matanzas, Cuba
CMKR	z	100	....	Santiago, Cuba
KHBC	z	250	....	Hilo, T. H.
KLO	ak	500	N	Ogden, Utah
KTUL	ak	500	C(1)	Tulsa, Okla.

					Heard	Logged	Reported	Verified
TGX	ak	250	...	Guatemala City, Gt.				
WARD	ak	500	2	Brooklyn, N. Y.				
WBBC	ae	500	2(1)	Brooklyn, N. Y.				
WEGL	z	500	P	Brooklyn, N. Y.				
WIRE	ak	500	R(1)	Indianapolis, Ind.				
WLTH	ak	500	2	Brooklyn, N. Y.				
WVFW	ak	500	2	Brooklyn, N. Y.				

1410 kcys. (212.6)

CKFC	ak	50	5	Vancouver, B. C.				
CKMO	ag	100	5F	Vancouver, B. C.				
KGNC	ae	1000	(2.5)	Amarillo, Texas				
WAAB	ak	500	C	Boston, Mass.				
WBCM	ae	500	....	Bay City, Mich.				
WHIS	ak	500	(1)	Bluefield, W. Va.				
WROK	ak	500	....	Rockford, Ill.				
WSFA	ak	500	C(1)	Montgomery, Ala.				

1420 kcys. (211.1)

CKGB	ak	100	F	Timmins, Ont.				
CMCQ	z	250	....	Havana, Cuba				
KABC	ak	100	(.25)	San Antonio, Texas				
KABR	ak	100	....	Aberdeen, S. Dak.				
KALB	z	100	D	Alexandria, La.				
KBPS	aj	100	4	Portland, Ore.				
KCMC	ak	100	....	Texarkana, Ark.				
KEUB	z	100	P	Price, Utah				
KFIZ	ak	100	....	Fond du Lac, Wis.				
KGFF	ak	100	(.25)	Shawnee, Okla.				
KGGC	ak	100	....	San Francisco, Cal.				
KGIW	ak	100	1	Alamosa, Colo.				
KIDW	ak	100	1	Lamar, Colo.				
KIUN	ak	100	....	Pecos, Texas				
KNET	z	100	D	Palestine, Texas				
KORE	ae	100	..	Eugene, Ore.				
KRBC	z	100	P	Abilene, Tex.				
KRLC	ak	100	..	Lewiston, Idaho				
KRLH	z	100	D	Midland, Tex.				
KUMA	ak	100	....	Yuma, Ariz.				
KWBG	ak	100	....	Hutchinson, Kans.				
KXL	ak	100	4(.25)	Portland, Ore.				
WACO	ak	100	C	Waco, Texas				
WAGM	ae	100	....	Presque Isle, Maine				
WAPO	z	100	DP	Chattanooga, Tenn.				
WAZL	ak	100	2	Hazleton, Pa.				
WCBS	ak	100	....	Springfield, Ill.				
WCHV	ak	100	3(.25)	Charlottesville, Va.				
WEED	ak	100	3 X	Rocky Mount, N. C.				
WEHS	ak	100	a	Cicero, Ill.				
WELL	ak	100	....	Battle Creek, Mich.				
WGPC	ak	100	....	Albany, Ga.				
WHDL	ak	100	D	Olean, N. Y.				
WHFC	ae	100	a	Cicero, Ill.				
WILM	aj	100	2	Wilmington, Del.				
WJBO	ak	100	....	Baton Rouge, La.				
WJBR	z	100	P	Gastonia, N. C				
WJMS	ak	100	....	Ironwood, Mich.				
WKBI	ak	100	a	Cicero, Ill.				
WLAP	ak	100	(.25)	Lexington, Ky.				
WLBF	ak	100	....	Kansas City, Kan.				
WLEU	ak	100	(.25)	Erie, Pa.				
WMAS	ak	100	C(.25)	Springfield, Mass.				
WMBC	ae	100	(.25)	Detroit, Mich.				
WMBH	ak	100	(.25)	Joplin, Mo.				
WMFJ	ak	100	....	Daytona Beach, Fla.				
WMSD	ak	100	....	Sheffield, Ala.				
WPAD	ak	100	(.25)	Paducah, Ky.				
WPAR	ak	100	....	Parkersburg. W. Va.				
WPRP	z	100	P(.25)	Ponce, P. R.				
XEAZ	z	7	....	Guanajuato, Gto				
XEFB	ak	100	....	Monterrey, N. L.				

1430 kcys. (209.7)

					Heard	Logged	Reported	Verified
CMJP	ak	75	....	Camaguey, Cuba				
KECA	ah	1000	(5) B	Los Angeles, Calif.				
KGNF	ak	1000	D	North Platte, Neb.				
KSO	ak	500	B (1)	Des Moines, Iowa				
WBNS	ae	500	C (1)	Columbus, Ohio				
WHEC	ae	500	C (1)	Rochester, N. Y.				
WHP	ak	500	C (1)	Harrisburg, Pa.				
WNBR	ae	500	(1)	Memphis, Tenn.				
WOKO	aj	500	C (1)	Albany, N. Y.				

1440 kcys. (208.2)

CMOA	z	150	....	Havana, Cuba
HP50	z	25	....	Colon, Panama
KDFN	ak	500	....	Casper, Wyo.
KLS	ag	250	D	Oakland, Calif.
KXYZ	ak	1000	....	Houston, Texas
TIFS	z	7.5	(1441)	Cartago, C. R.
WBIG	ae	500	C (1)	Greensboro, N. C.
WCBA	aj	500	a	Allentown, Pa.
WMBD	ak	500	C (1)	Peoria, Ill.
WSAN	aj	500	a	Allentown, Pa.
XEFI	ae	250	....	Chihuahua, Chih.

1450 kcys. (206.8)

CFCT	ae	50	....	Victoria, B. C.
CHGS	ae	50	F	Summerside, P.E.I.
KIEM	ak	500	....	Eureka, Calif.
KTBS	ak	1000	N	Shreveport, La.
WGAR	ak	500	B (1)	Cleveland, Ohio
WHOM	ae	250	....	Jersey City, N. J.
WSAR	ae	1000	....	Fall River, Mass.
WTFI	ak	500	Y	Athens, Ga.

1460 kcys. (205.4)

CMCU	z	150	....	Havana, Cuba
CMKF	z	50	....	Holguin, Cuba
KSTP	ak	25000	N	St. Paul, Minn.
WJSV	ak	10000	C	Washington, D. C

1470 kcys. (204.0)

CMOK	z	150	....	Havana, Cuba
KGA	ak	5000	B	Spokane, Wash.
WLAC	ak	5000	C	Nashville, Tenn.

1480 kcys. (202.6)

KOMA	ak	5000	C	Oklahoma City, Okla.
WKBW	ck	5000	C	Buffalo, N. Y.

1490 kcys. (201.2)

KFBK	ak	5000	C	Sacramento, Calif.
WCKY	ae	5000	B	Covington, Ky.

1500 kcys. (199.9)

CJIC	ak	100	...	Sault Ste. Marie, Ont.
CMCX	z	150	....	Havana, Cuba
KBIX	z	100	....	Muskogee, Okla.
KBST	z	100	P	Big Spring, Tex.
KDB	ak	100	C	Santa Barbara, Cal.
KGFI	ak	100	(.25)	Corpus Christi, Tex.
KGFK	ak	100	Y	Moorhead, Minn.
KGKB	ak	100	....	Tyler, Texas
KGKY	ak	100	(.25)	Scottsbluff, Neb.

					Heard	Logged	Reported	Verified
KNEL	ak	100	D	Brady, Texas				
KNOW	ak	100	C	Austin, Texas				
KOTN	ak	100	D	Pine Bluff, Ark.				
KPLC	ak	100	....	Lake Charles, La.				
KPLT	z	100	DP	Paris, Texas				
KPQ	ak	100	(.25)	Wenatchee, Wash.				
KRNR	z	100	D	Roseburg, Ore.				
KTEP	z	100	P	El Paso, Texas				
KUTA	z	100	P	Salt Lake City, Utah				
KVOE	ak	100	....	Santa Ana, Calif.				
KXO	ae	100	....	El Centro, Calif.				
WCNW	ak	100	1 (.25)	Brooklyn, N. Y.				
WDNC	ae	100	C	Durham, N. C.				
WGAL	ae	100	(.25)	Lancaster, Pa.				
WHBB	z	100	D	Selma, Ala.				
WHEF	ak	100	(.25)	Kosciusko, Miss.				
WJBK	ae	100	(.25)	Detroit, Mich.				
WKBB	ak	100	(.25)	E. Dubuque, Ill.				
WKBV	ak	100	....	Richmond, Ind.				
WKBZ	ak	100	(.25)	Muskegon, Mich.				
WKEU	ak	100	D	Griffin, Ga.				
WMBQ	ae	100	1	Brooklyn, N. Y.				
WMEX	ak	100	(.25)	Boston, Mass.				
WNBF	ae	100	C	Binghamton, N. Y.				
WNLC	z	100	DP	New London, Conn.				
WOPI	ae	100	....	Bristol, Tenn.				
WRDW	ak	100	....	Augusta, Ga.				
WRGA	ak	100	(.25)	Rome, Ga.				
WSYB	ak	100	....	Rutland, Vt.				
WTMV	ak	100	....	East St. Louis, Ill.				
WWRL	ak	100	1 (.25)	Woodside, N. Y.				
WWSW	ae	100	(.25)	Pittsburgh, Pa.				
.....	z	100	P	Valley City, N. Dak.				

1510 kcys. (198.6)

CFRC	ak	100	F	Kingston, Ont.
CKCR	ak	100	....	Waterloo, Ont.

1530 kcys. (196.0)

W1XBS	z	1000	....	Waterbury, Conn.
W9XBY	ak	1000	....	Kansas City, Mo.

1550 kcys. (193.4)

W2XR	z	1000	....	Long Isl. City, N.Y.
W6XAI	ak	1000	....	Bakersfield, Calif.

KEY TO SYMBOLS

As shown in the Index by Frequencies and Dial Numbers

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

Second Column Symbols

- a Verifies reception for return postage.
- b Verifies only occasionally.
- c Does not verify.
- d Verification 10c: letter 25c.
- e Sends Ekko stamp for 10c.
- f Sends Ekko stamp for 5c.
- g Sends Ekko stamp for postage.
- h Sends own station stamp for 10c.
- i Sends own station stamp for 5c.
- j Sends own station stamp for postage.
- k Has no stamps.
- m Verifies for 5c.
- n Weather or time only
- z No information available

Fourth Column Symbols

- B National "Blue" network.
- C Columbia network.
- D Day time only.
- Dn Day time with occasional evening hours.
- F Canadian Radio Brdcstg. Commission.
- N National "Red" and "Blue" networks
- P Has construction permit only
- R National 'Red' network
- S Sunday only.
- Sy Synchronized.
- X Has permit to increase power.
- Y Has permit to change location.
- Z Has permit to change frequency.
- a-b-c. Small letters show stations using same transmitter.
- 1-2-3. Figures denote stations sharing time.
- .... No information.

NORTH AMERICAN B. C. STATIONS BY LOCATIONS

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

ALABAMA

Birmingham			
WAPI	1140	5000	N
WBRC	930	1000	C
WSGN	1310	100	
Decatur			
WMFO	1370	100	
Dothan			
WAGF	1370	250	
Gadsden			
WJBY	1210	100	
Mobile			
WALA	1380	500	C
Montgomery			
WSFA	1410	500	C
Selma			
WHBB	1500	100	
Sheffield			
WMSD	1420	100	
Tuscaloosa			
WJRD	1200	100	

ALASKA

Anchorage			
KFQD	780	250	
Juneau			
KINY	1310	100	
Ketchikan			
KGBU	900	500	

ARIZONA

Jerome			
KCRJ	1310	100	
Lowell			
KSUN	1200	100	
Phoenix			
KOY	1390	500	
KTAR	620	1000	N
Tucson			
KGAR	1370	100	
KVOA	1260	500	
Yuma			
KUMA	1420	100	

ARKANSAS

Blytheville			
KLCN	1290	100	
El Dorado			
KELD	1370	100	
Fayetteville			
KUOA	1260	1000	
Fort Smith			
KFPW	1210	100	
Hot Springs			
KTHS	1060	10000	N
Jonesboro			
KBTM	1200	100	
Little Rock			
KARK	890	250	
KGHI	1200	100	
KLRA	1390	1000	C
Pine Bluff			
KOTN	1500	100	
Texarkana			
KCMC	1420	100	

CALIFORNIA

Bakersfield			
KERN	1370	100	C
W6XAI	1550	1000	
Berkeley			
KRE	1370	100	
Beverly Hills			
KMPC	710	500	
Chico			
KHSL	950	250	
Del Monte			
KDON	1210	100	
El Centro			
KXO	1500	100	
Eureka			
KIEM	1450	500	
Fresno			
KMJ	580	1000	C
Glendale			
KIEV	850	250	
Hollywood			
KFWB	950	1000	
KMTR	570	1000	
KNX	1050	50000	
Long Beach			
KFOX	1250	1000	
KGER	1360	1000	
Los Angeles			
KECA	1430	1000	B
KEHE	780	500	
KFAC	1300	1000	
KFI	640	50000	R
KFSG	1120	500	
KFVD	1000	250	
KGFJ	1200	100	
KHJ	900	1000	C
KRKD	1120	500	
Merced			
KYOS	1040	250	
Modesto			
KTRB	740	250	
Oakland			
KLS	1440	250	
KLX	880	1000	
KROW	930	1000	
Pasadena			
KPPC	1210	100	
Redding			
KVCV	1200	100	
Sacramento			
KFBK	1490	5000	C
KROY	1310	100	
San Bernardino			
KFXM	1210	1000	
San Diego			
KFSD	600	1000	B
KGB	1330	1000	C
San Francisco			
KFRC	610	1000	C
KGGC	1420	100	
KGO	790	7500	B
KJBS	1070	500	
KPO	680	50000	R
KSFO	560	1000	
KYA	1230	1000	N
San Jose			
KQW	1010	1000	
San Luis Obispo			
KVEC	1200	250	
Santa Ana			
KVOE	1500	100	
Santa Barbara			
KDB	1500	100	C
Stockton			
KGDM	1100	1000	
KWG	1200	100	C
Watsonville			
KWAT	1310	250	

COLORADO

Alamosa			
KGIW	1420	100	
Colorado Springs			
KVOR	1270	1000	C
Denver			
KFEL	920	500	
KLZ	560	1000	C
KOA	830	50000	N
KPOF	880	500	
KVOD	920	500	
Durango			
KIUP	1370	100	
Grand Junction			
KFXJ	1200	100	
Greeley			
KFKA	880	500	
Lamar			
KIDW	1420	100	
Pueblo			
KGHF	1320	500	
Sterling			
KGEK	1200	100	

CONNECTICUT

Bridgeport			
WICC	600	500	C
Hartford			
WDRC	1330	1000	C
WTIC	1040	50000	R
WTHT	1200	100	
New Britain			
WNBC	1380	250	
New Haven			
WELI	900	500	
New London			
WNLC	1500	100	
Waterbury			
WATR	1190	100	
W1XBS	1530	1000	

DELAWARE

Wilmington			
WDEL	1120	250	
WILM	1420	100	

DISTRICT OF COLUMBIA

Washington			
WJSV	1460	10000	C
WMAL	630	250	B
WOL	1310	100	
WRC	950	500	R

FLORIDA

Clearwater			
WFLA	620	1000	N
Daytona Beach			
WMFJ	1420	100	
Gainesville			
WRUF	830	5000	
Jacksonville			
WJAX	900	1000	N
WMBR	1370	100	C
Lakeland			
WLAK	1310	100	
Miami			
WIOD	1300	1000	N
WQAM	560	1000	C
Orlando			
WDBO	580	1000	C
Pensacola			
WCOA	1340	500	C
St. Augistine			
WFOY	1210	100	
St. Petersburg			
WSUN	620	1000	N
Tallahassee			
WTAL	1310	100	
Tampa			
WDAE	1220	1000	C
West Palm Beach			
WJNO	1200	100	

GEORGIA

Albany			
WGPC	1420	100	
Athens			
WTFI	1450	500	
Atlanta			
WATL	1370	100	
WGST	890	1000	C
WSB	740	50000	N
Augusta			
WRDW	1500	100	
Columbus			
WRBL	1200	100	
Griffin			
WKEU	1500	100	
Macon			
WMAZ	1180	1000	
Rome			
WRGA	1500	100	
Savannah			
WTOC	1260	1000	C
Thomasville			
WPAX	1210	100	
Waycross			
WAYX	1200	100	

HAWAII

Hilo			
KHBC	1400	250	
Honolulu			
KGMB	1320	1000	C
KGU	750	2500	N

IDAHO

Boise			
KIDO	1350	1000	
Idaho Falls			
KID	1320	500	
Lewiston			
KRLC	1420	100	
Nampa			
KFXD	1200	100	
Pocatello			
KSEI	900	250	
Twin Falls			
KTFI	1240	1000	

ILLINOIS

Bloomington			
WJBC	1200	100	
Carthage			
WCAZ	1070	100	
Champaign			
WDWS	1370	100	
Chicago			
WAAF	920	1000	
WBBM	770	50000	C
WCFL	970	5000	B
WCRW	1210	100	
WEDC	1210	100	
WENR	870	50000	N
WGES	1360	500	
WGN	720	50000	
WJJD	1130	20000	
WLS	870	50000	N
WMAQ	670	50000	N
WMBI	1080	5000	
WSBC	1210	100	
Cicero			
WEHS	1420	100	
WHFC	1420	100	
WKBI	1420	100	
Decatur			
WJBL	1200	100	
East Dubuque			
WKBB	1500	100	
East St. Louis			
WTMV	1500	100	
Harrisburg			
WEBQ	1210	100	
Joliet			
WCLS	1310	100	
Peoria			
WMBD	1440	500	C
Quincy			
WTAD	900	500	
Rockford			
WROK	1410	500	
Rock Island			
WHBF	1210	100	
Springfield			
WCBS	1420	100	
WTAX	1210	100	
Tuscola			
WDZ	1020	250	
Urbana			
WILL	580	1000	
Waukegan			
WCBD	1080	5000	

INDIANA

Anderson			
WHBU	1210	100	
Elkhart			
WTRC	1310	100	
Evansville			
WEOA	1370	100	
WGBF	630	500	
Fort Wayne			
WGL	1370	100	C
WOWO	1160	10000	C
Gary			
WIND	560	1000	
Hammond			
WWAE	1200	100	
Indianapolis			
WFBM	1230	1000	C
WIRE	1400	500	R
Muncie			
WLBC	1310	100	
New Albany			
WGRC	1370	250	
Richmond			
WKBV	1500	100	
South Bend			
WFAM	1200	100	
WSBT	1360	500	C
Terre Haute			
WBOW	1310	100	
West Lafayette			
WBAA	890	500	

IOWA

Ames			
WOI	640	5000	
Boone			
KFGQ	1370	100	
Cedar Rapids			
WMT	600	1000	B
Council Bluffs			
KOIL	1260	1000	B
Davenport			
WOC	1370	100	C
Decorah			
KGCA	1270	100	
KWLC	1270	100	
Des Moines			
KRNT	1320	500	C
KSO	1430	500	B
WHO	1000	50000	R
Iowa City			
WSUI	880	500	
Marshalltown			
KFJB	1200	100	
Mason City			
KGLO	1210	100	
Shenandoah			
KFNF	890	500	
KMA	930	1000	
Sioux City			
KSCJ	1330	1000	C

KANSAS

Abilene			
KFBI	1050	5000	
Coffeyville			
KGGF	1010	1000	
Dodge City			
KGNO	1340	250	
Garden City			
KIUL	1210	100	
Hutchinson			
KWBG	1420	100	
Kansas City			
WLBF	1420	100	
Lawrence			
KFKU	1220	1000	
WREN	1220	1000	B
Manhattan			
KSAC	580	500	
Topeka			
WIBW	580	1000	C
Wichita			
KANS	1210	100	
KFH	1300	1000	C

KENTUCKY

Ashland			
WCMI	1310	100	
Covington			
WCKY	1490	5000	B
Lexington			
WLAP	1420	100	
Louisville			
WAVE	940	1000	N
WHAS	820	50000	C
Middlesboro			
WLMU	1210	100	
Paducah			
WPAD	1420	100	

LOUISIANA

Alexandria			
KALB	1420	100	
Baton Rouge			
WJBO	1420	100	
Lafayette			
KVOL	1310	100	
Lake Charles			
KPLC	1500	100	
Monroe			
KMLB	1200	100	
New Orleans			
WBNO	1200	100	
WDSU	1250	1000	
WJBW	1200	100	
WSMB	1320	500	N
WWL	850	10000	C
Shreveport			
KRMD	1310	100	
KTBS	1450	1000	N
KWKH	1100	1000	C

MAINE

Augusta			
WRDO	1370	100	
Bangor			
WABI	1200	100	
WLBZ	620	500	C
Portland			
WCSH	940	1000	R
WSPG	640	500	
Presque Isle			
WAGM	1420	100	

MARYLAND

Baltimore			
WBAL	760	2500	B
WBAL	1060	10000	B
WCAO	600	500	C
WCBM	1370	100	
WFBR	1270	500	R
Cumberland			
WTBO	800	250	
Frederick			
WFMD	900	500	
Hagerstown			
WJEJ	1210	100	

MASSACHUSETTS

Boston			
WAAB	1410	500	B
WBZ	990	50000	C
WCOP	1120	500	
WEEI	590	1000	R
WHDH	830	1000	
WMEX	1500	100	
WNAC	1230	1000	C
WORL	920	500	
Fall River			
WSAR	1450	1000	
Lowell			
WLLH	1370	100	
New Bedford			
WNBH	1310	100	
Springfield			
WBZA	990	1000	B
WMAS	1420	100	C
WSPR	1140	500	
Worcester			
WORC	1280	500	C
WTAG	580	500	R

MICHIGAN

Battle Creek			
WELL	1420	100	
Bay City			
WBCM	1410	500	
Calumet			
WHDF	1370	100	
Detroit			
WJBK	1500	100	
WJR	750	50000	C
WMBC	1420	100	
WWJ	920	1000	R
WXYZ	1240	1000	B
East Lansing			
WKAR	850	1000	
Flint			
WFDF	1310	100	
Grand Rapids			
WASH	1270	500	N
WOOD	1270	500	N
Ironwood			
WJMS	1420	100	
Jackson			
WIBM	1370	100	
Kalamazoo			
WKZO	590	1000	
Lansing			
WJIM	1210	100	
Lapeer			
WMPC	1200	100	
Marquette			
WBEO	1310	100	
Muskegon			
WKBZ	1500	100	
Royal Oak			
WEXL	1310	50	

MINNESOTA

Duluth			
KDAL	....	....	
Fergus Falls			
KGDE	1200	100	
Hibbing			
WMFG	1210	100	
Minneapolis			
WCCO	810	50000	C
WDGY	1180	1000	
WLB	1250	1000	
WTCN	1250	1000	
Moorhead			
KGFK	1500	100	
Northfield			
WCAL	1250	1000	
Rochester			
KROC	1310	100	
St. Paul			
KSTP	1460	25000	N
WMIN	1370	100	
Virginia			
WHLB	1370	100	

MISSISSIPPI

Clarksdale			
WMFN	1210	100	
Gulfport			
WGCM	1210	100	
Hattiesburg			
WPFB	1370	100	
Jackson			
WJDX	1270	1000	N
Kosciusko			
WHEF	1500	100	
Laurel			
WAML	1310	100	
Meridian			
WCOC	880	500	
Vicksburg			
WQBC	1360	1000	

MISSOURI

Cape Girardeau			
KFVS	1210	100	
Columbia			
KFRU	630	500	
Jefferson City			
WOS	630	500	
Joplin			
WMBH	1420	100	
Kansas City			
KCMO	1370	100	
KMBC	950	1000	C
WDAF	610	1000	R
WHB	860	1000	
W9XBY	1530	1000	
St. Joseph			
KFEQ	680	2500	
St. Louis			
KFUO	550	500	
KMOX	1090	50000	C
KSD	550	1000	R
KWK	1350	1000	B
WEW	760	1000	
WIL	1200	100	
Springfield			
KGBX	1230	500	
KWTO	560	5000	

MONTANA

Billings			
KGHL	780	1000	N
Butte			
KGIR	1340	1000	N
Great Falls			
KFBB	1280	1000	
Kalispell			
KGEZ	1310	100	
Lewistown			
KDNC	1200	100	
Missoula			
KGVO	1260	1000	
Wolf Point			
KGCX	1310	100	

NEBRASKA

Clay Center			
KMMJ	740	1000	
Kearney			
KGFW	1310	100	
Lincoln			
KFAB	770	10000	C
KFOR	1210	100	C
Norfolk			
WJAG	1060	1000	
North Platte			
KGNF	1430	1000	
Omaha			
WAAW	660	500	
WOW	590	5000	R
Scottsbluff			
KGKY	1500	100	

NEVADA

Reno			
KOH	1380	500	C

NEW HAMPSHIRE

Laconia			
WLNH	1310	100	
Manchester			
WFEA	1340	500	C
Portsmouth			
WHEB	740	250	

NEW JERSEY

Asbury Park			
WCAP	1280	500	
Atlantic City			
WPG	1100	5000	C
Camden			
WCAM	1280	500	
Jersey City			
WAAT	940	500	
WHOM	1450	250	
Newark			
WHBI	1250	1000	
WNEW	1250	1000	
WOR	710	50000	
Red Bank			
WBRB	1210	100	
Trenton			
WTNJ	1280	500	
Zarephath			
WAWZ	1350	500	

NEW MEXICO

Albuquerque			
KGGM	1230	250	
KOB	1180	10000	
Clovis			
KICA	1370	100	
Roswell			
KGFL	1370	100	
Santa Fe			
KIUJ	1310	100	

NEW YORK

Albany			
WABY	1370	100	
WOKO	1430	500	C
Auburn			
WMBO	1310	100	
Binghamton			
WNBF	1500	100	C
Brooklyn			
WARD	1400	500	
WBBC	1400	500	
WBBR	1300	1000	
WCNW	1500	100	
WEGL	1400	500	
WLTH	1400	500	
WMBQ	1500	100	
WVFW	1400	500	
Buffalo			
WBEN	900	1000	R
WBNY	1370	100	
WEBR	1310	100	B
WGR	550	1000	C
WKBW	1480	5000	C
WSVS	1370	50	
Canton			
WCAD	1220	500	
Chester			
WGNY	1210	100	
Elmira			
WESG	850	1000	C
Freeport			
WGBB	1210	100	
Jamestown			
WOCL	1210	50	
Long Island City			
W2XR	1550	1000	
New York			
WABC	860	50000	C
WBNX	1350	250	
WBOQ	860	50000	
WEAF	660	50000	R
WEVD	1300	1000	
WFAB	1300	1000	
WHN	1010	1000	
WINS	1180	1000	
WJZ	760	50000	B
WLWL	1100	5000	
WMCA	570	500	
WNYC	810	1000	
WOV	1130	1000	
Olean			
WHDL	1420	100	
Plattsburg			
WMFF	1310	250	
Rochester			
WHAM	1150	50000	B
WHEC	1430	500	C
WSAY	1210	100	
Saranac Lake			
WNBZ	1290	100	
Schenectady			
WGY	790	50000	R
Syracuse			
WFBL	1360	1000	C
WSYR	570	250	B
Troy			
WHAZ	1300	500	
Utica			
WIBX	1200	100	C
White Plains			
WFAS	1210	100	
Woodside			
WWRL	1500	100	

NORTH CAROLINA

Asheville			
WWNC	570	1000	N
Charlotte			
WBT	1080	50000	C
WSOC	1210	100	N
Durham			
WDNC	1500	100	C
Gastonia			
WJBR	1420	100	
Greensboro			
WBIG	1440	500	C
High Point			
WMFR	1200	100	
Raleigh			
WPTF	680	5000	N
Rocky Mount			
WEED	1420	100	
Wilmington			
WMFD	1370	100	
Winston-Salem			
WSJS	1310	100	C

NORTH DAKOTA

Bismarck			
KFYR	550	1000	N
Devils Lake			
KDLR	1210	100	
Fargo			
WDAY	940	1000	N
Grand Forks			
KFJM	1370	100	
Mandan			
KGCU	1240	250	
Minot			
KLPM	1240	250	
Valley City			
.....	1500	100	

OHIO

Akron			
WADC	1320	1000	C
WJW	1210	100	
Canton			
WHBC	1200	100	
Cincinnati			
WCPO	1200	100	
WKRC	550	1000	C
WLW	700	500000	N
WSAI	1330	1000	R
Cleveland			
WGAR	1450	500	B
WHK	1390	1000	C
WJAY	610	500	
WTAM	1070	50000	R
Columbus			
WBNS	1430	500	C
WCOL	1210	100	
WHKC	640	500	
WOSU	570	750	
Dayton			
WHIO	1260	1000	R
WSMK	1380	200	C
Lima			
WBLY	1210	100	
Portsmouth			
WPAY	1370	100	
Toledo			
WSPD	1340	1000	C
Youngstown			
WKBN	570	500	C
Zanesville			
WALR	1210	100	

OKLAHOMA

Ada			
KADA	1210	100	
Ardmore			
KVSO	1200	100	
Elk City			
KASA	1210	100	

Enid
KCRC 1360 250

Muskogee
KBIX 1500 100

Norman
WNAD 1010 1000

Oklahoma
KFXR 1310 100
KGFG 1370 100
KOMA 1480 5000 C
WKY 900 1000 N

Ponca City
WBBZ 1200 100

Shawnee
KGFF 1420 100

Tulsa
KTUL 1400 500 C
KVOO 1140 25000 N

OREGON

Astoria
KAST 1370 100

Corvallis
KOAC 550 1000

Eugene
KORE 1420 100

Klamath Falls
KFJI 1210 100

Marshfield
KOOS 1390 250

Medford
KMED 1310 100

Portland
KALE 1300 500 C
KBPS 1420 100
KEX 1180 5000 N
KFJR 1300 500
KGW 620 1000 R
KOIN 940 1000 C
KWJJ 1040 500
KXL 1420 100

Roseburg
KRNR 1500 100

Salem
KSLM 1370 100

PENNSYLVANIA

Allentown
WCBA 1440 500
WSAN 1440 500

Altoona
WFBG 1310 100

Easton
WEST 1200 100

Erie
WLEU 1420 100

Glenside
WIBG 970 100

Greensburg
WHJB 620 250

Grove City
WSAJ 1310 100

Harrisburg
WHP 1430 500 C
WKBO 1200 100

Hazleton
WAZL 1420 100

Johnstown
WJAC 1310 100

Lancaster
WGAL 1500 100

Philadelphia
KYW 1020 10000 R
WCAU 1170 50000 C
WDAS 1370 100
WFIL 560 1000 B
WHAT 1310 100
WIP 610 1000
WPEN 920 250
WRAX 920 250
WTEL 1310 100

Pittsburgh
KDKA 980 50000 B
KQV 1380 500
WCAE 1220 1000 R
WJAS 1290 1000 C
WWSW 1500 100

Reading
WEEU 830 1000
WRAW 1310 100

Scranton
WGBI 880 500
WQAN 880 250

Sunbury
WKOK 1210 100

Wilkes-Barre
WBAX 1210 100
WBRE 1310 100

Williamsport
WRAK 1370 100

York
WORK 1320 1000

PUERTO RICO

Ponce
WPRP 1420 100

San Juan
WKAQ 1240 1000
WNEL 1290 1000

RHODE ISLAND

Newport
WNRI 1200 100

Providence
WEAN 780 500 C
WJAR 890 1000 R
WPRO 630 250

SOUTH CAROLINA

Anderson
WAIM 1200 100

Charleston
WCSC 1360 500 N

Columbia
WIS 560 1000 N

Florence
WOLS 1200 100

Greenville
WFBC 1300 1000 N

Spartanburg
WSPA 920 1000

SOUTH DAKOTA

Aberdeen
KABR 1420 100

Brookings
KFDY 780 1000

Huron
KGDY 1340 250

Pierre
KGFX 630 200

Rapid City
KBHB 1370 100
WCAT 1200 100

Sioux Falls
KSOO 1110 2500

Vermillion
KUSD 890 500

Watertown
KWTN 1210 100

Yankton
WNAX 570 1000 C

TENNESSEE

Bristol
WOPI 1500 100

Chattanooga
WAPO 1420 100
WDOD 1280 1000 C

Jackson
WTJS 1310 100

Knoxville
WNOX 1010 1000 C
WROL 1310 100

Memphis
WHBQ 1370 100
WMC 780 1000 N
WNBR 1430 500
WREC 600 1000 C

Nashville
WLAC 1470 5000 C
WSM 650 50000 N

Springfield
WSIX 1210 100

TEXAS

Abilene
KRBC 1420 100

Amarillo
KGNC 1410 1000

Austin
KNOW 1500 100 C

Beaumont
KFDM 560 500

Big Spring
KBST 1500 100

Brady
KNEL 1500 100

College Station
WTAW 1120 500

Corpus Christi
KGFI 1500 100

Dallas
KRLD 1040 10000 C
WFAA 800 50000 N
WRR 1280 500

Dublin
KFPL 1310 100

El Paso
KTEP 1500 100
KTSM 1310 100
WDAH 1310 100

Fort Worth
KFJZ 1370 100
KTAT 1240 1000
WBAP 800 50000 N

Galveston
KLUF 1370 100

Houston
KPRC 920 1000 N
KTRH 1290 1000 C
KXYZ 1440 1000

Kilgore
KOCA 1210 100

Longview
KFRO 1370 100

Lubbock
KFYO 1310 100

Midland
KRLH 1420 100

Palestine
KNET 1420 100

Pampa
KPDN 1310 100

Paris
KPLT 1500 100

Pecos
KIUN 1420 100

Port Arthur
KPAC 1260 500

San Angelo
KGKL 1370 100

San Antonio
KABC 1420 100
KMAC 1370 100
KONO 1370 100
KTSA 550 1000 C
WOAI 1190 50000 N

Sherman
KRRV 1310 100

Temple
KTEM 1370 100

Tyler
KGKB 1500 100

Waco
WACO 1420 100 C

Weslaco
KRGV 1260 500

Wichita Falls
KGKO 570 250 C

UTAH

Ogden
KLO 1400 500 N

Price
KEUB 1420 100

Salt Lake City
KDYL 1290 1000 N
KSL 1130 50000 C
KUTA 1500 100

VERMONT

Burlington
WCAX 1200 100

Rutland
WSYB 1500 100

St. Albans
WQDM 1370 100

Springfield
WNBX 1260 1000

Waterbury
WDEV 550 500

VIRGINIA

Arlington
NAA 690 1000

Charlottesville
WCHV 1420 100

Danville			
WBTM	1370	100	
Harrisonburg			
WSVA	550	500	
Lynchburg			
WLVA	1200	100	
Newport News			
WGH	1310	100	
Norfolk			
WTAR	780	500	N
Petersburg			
WPHR	880	500	
Richmond			
WBBL	1210	100	
WMBG	1210	100	C
WRVA	1110	5000	N
Roanoke			
WDBJ	930	1000	C

WASHINGTON

Aberdeen			
KXRO	1310	100	
Bellingham			
KVOS	1200	100	
Everett			
KRKO	1370	50	
Olympia			
KGY	1210	100	
Pullman			
KWSC	1220	1000	
Seattle			
KIRO	710	1000	
KJR	970	5000	B
KOL	1270	1000	C
KOMO	920	1000	R
KRSC	1120	100	
KTW	1220	1000	
KVL	1370	100	
KXA	760	250	
Spokane			
KFIO	1120	100	
KFPY	890	1000	C
KGA	1470	5000	B
KHQ	590	1000	R
Tacoma			
KMO	1330	250	
KVI	570	1000	C
Walla Walla			
KUJ	1370	100	
Wenatchee			
KPQ	1500	100	
Yakima			
KIT	1310	100	

WEST VIRGINIA

Bluefield			
WHIS	1410	500	
Charleston			
WCHS	580	500	
Clarksburg			
WEXP	1370	100	
Fairmont			
WMMN	890	250	C
Huntington			
WSAZ	1190	1000	
Parkersburg			
WPAR	1420	100	
Wheeling			
WWVA	1160	5000	C

WISCONSIN

Fond du Lac			
KFIZ	1420	100	
Green Bay			
WHBY	1200	100	
WTAQ	1330	1000	
Janesville			
WCLO	1200	100	
LaCrosse			
WKBH	1380	1000	
Madison			
WHA	940	2500	
WIBA	1280	1000	N
Manitowoc			
WOMT	1210	100	
Milwaukee			
WEMP	1310	100	
WISN	1120	250	C
WTMJ	620	1000	N
Poynette			
WIBU	1210	100	
Racine			
WRJN	1370	100	
Sheboygan			
WHBL	1300	500	
Stevens Point			
WLBL	900	2500	
Superior			
WEBC	1290	1000	N

WYOMING

Casper			
KDFN	1440	500	
Sheridan			
KWYO	1370	100	

CANADA

ALBERTA

Calgary			
CFAC	930	100	F
CFCN	1030	10000	
CJCJ	690	100	F
Edmonton			
CFRN	1260	100	F
CJCA	730	1000	F
CKUA	580	500	
Lethridge			
CJOC	950	100	F

BRITISH COLUMBIA

Chilliwack			
CHWK	780	100	F
Kamloops			
CFJC	880	100	F
Kelowna			
CKOV	630	100	F
Prince Rupert			
CFPR	580	50	
Trail			
CJAT	910	1000	F
Vancouver			
CJOR	600	500	
CKCD	1010	100	
CKFC	1410	50	
CKMO	1410	100	F
CKWX	1010	100	F
CRCV	1100	1000	F
Victoria			
CFCT	1450	50	

MANITOBA

Brandon			
CKX	1120	100	F
Winnipeg			
CJRC	630	1000	F
CKY	910	15000	F

NEW BRUNSWICK

Fredericton			
CFNB	550	500	F
Moncton			
CKCW	1370	100	F
St. John			
CHSJ	1120	500	F

N. W. TERRITORY

Aklavik			
CJCU	1210	50	

NOVA SCOTIA

Glace Bay			
VAS	685	2000	
Halifax			
CHNS	930	1000	F
Sydney			
CJCB	1240	1000	F
Wolfville			
CKIC	1010	50	
Yarmouth			
CJLS	1310	100	

ONTARIO

Brantford			
CKPC	930	100	F
Chatham			
CFCO	630	100	F
Cobalt			
CKMC	1210	50	
Fort William			
CKPR	730	100	F
Hamilton			
CHML	1010	100	F
CKOC	1120	500	F
Kingston			
CFRC	1510	100	F
Kirkland Lake			
CJKL	1310	100	F
London			
CFPL	730	100	F
North Bay			
CFCH	930	100	F
Ottawa			
CKCO	1010	100	F
CRCO	880	1000	F
Prescott			
CFLC	930	100	
St. Catherines			
CKTB	1200	100	F
Sault Ste. Marie			
CJIC	1500	100	
Stratford			
CJCS	1210	50	
Sudbury			
CKSO	780	1000	F
Timmins			
CKGB	1420	100	F
Toronto			
CFRB	690	10000	C
CKCL	580	100	F
CRCT	840	5000	N
Waterloo			
CKCR	1510	100	
Windsor			
CKLW	1030	5000	
CRCW	600	500	F
Wingham			
CKNX	1200	50	

PRINCE EDWARD ISLAND

Charlottetown			
CFCY	630	1000	F
CHCK	1310	50	
Summerside			
CHGS	1450	50	F

QUEBEC

Chicoutimi			
CRCS	950	100	F
Hull			
CKCH	1210	100	F
Montmagny			
VE9EK	1185	10	
Montreal			
CFCF	600	400	N
CHLP	1120	100	F
CKAC	730	5000	C
CRCM	910	5000	F
New Carlisle			
CHNC	960	1000	F
Quebec			
CHRC	580	100	F
CKCV	1310	100	F
CRCK	1050	1000	F

SASKATCHEWAN

Moose Jaw			
CHAB	1200	100	F
CJRM	540	1000	F
Prince Albert			
CKBI	1210	100	F
Regina			
CHWC	1010	500	F
CKCK	1010	500	F
Saskatoon			
CFQC	840	1000	F
Yorkton			
CJGX	580	100	F

NEWFOUNDLAND

St. John's			
VOAC	1065	40	
VOAS	940	100	
VOGY	840	400	
VONF	1195	500	
VOWR	681	500	

MIQUELON

St. Pierre			
FQN	609	250	

CENTRAL AMERICA

COSTA RICA

Cartago		
TIFS	1441	7.5
TIGA	1014	30
San Jose		
TIEP	850	500
TIFA	1050	75
TIGH	1000	500
TIGPH	650	1000
TIRH	930	50
TIVCA	1225	....
TIX	800	....

GUATEMALA

Guatemala City		
TGW	1210	10000
TGX	1400	250

HONDURAS

Tegucigalpa		
HRN	1340	100

NICARAGUA

Managua		
YNLF	1275	20
YNOP	1230	100
YNVA	950	30

PANAMA

Colon		
HP50	1440	25

EL SALVADOR

San Salvador		
RDN	680	500

MEXICO

AGUASCALIENTES

Aguascalientes		
XFA	1310	5
XFC	810	350

CHIHUAHUA

Chihuahua		
XEFI	1440	250
Hidalgo		
XEAT	1210	50
Juarez		
XEFV	1210	100
XEF	980	100
XEJ	1020	1000
XEP	1160	500

COAHUILA

Piedras Negras		
XELO	1110	10000
XEPN	590	50000
Saltillo		
XEAS	1160	100
XELA	1240	50
XEOX	640	500
Torreon		
XETB	1310	125
Villa Acuna		
XERA	840	250000

D. F.

Mexico City		
XEAI	1240	100
XEB	1030	10000
XECW	1310	10
XEFA	1180	500
XEFO	940	5000
XEFZ	1370	100
XEK	990	100
XEL	1100	250
XEMX	1280	12
XEN	710	1000
XEW	890	50000
XEWZ	1150	100
XEXM	610	....
XEYZ	780	10000
XFX	610	1000

DURANGO

Durango		
XEE	1210	50

GUANAJUATO

Guanajuato		
XEAZ	1420	7
Leon		
XEKL	1240	500

JALISCO

Guadalajara		
XEA	1060	500
XED	1155	2500

LOWER CALIFORNIA

Agua Caliente		
XEBC	730	5000
Coronado Island		
XEMZ	820	....
Ensenada		
XEG	1270	200
Mexicali		
XEAA	920	200
XEAO	560	250
Rosarito		
XEAQ	1090	1000
Tijuana		
XEAC	1240	250
XEC	1160	30
XEFL	1150	250
XEMO	860	5000
XEOK	760	250
XESL	1160	....

MICHOACAN

Morelia		
XEI	1370	125

NUEVO LEON

Monterrey		
XEFB	1420	100
XEFJ	1230	100
XEH	1150	250
XET	690	500
XEX	1310	125

PUEBLA

Puebla		
XETH	1210	100

SAN LUIS POTOSI

San Luis Potosi		
XEZZ	1370	100

SONORA

Hermosillo		
XEBH	930	500
Nogales		
XEAF	990	500

TAMAULIPAS

Matamoros		
XEAM	750	7.5
Nuevo Laredo		
XEBK	1000	100
XEFE	1340	250
XENT	910	150000
Reynosa		
XEAW	960	50000
Tampico		
XEFW	1310	250
XES	990	250

VERACRUZ

Cordoba		
XEAG	1310	10
Jalapa		
XFB	1270	250
XFD	1340	350
Veracruz		
XETF	1220	12
XEU	1010	250

YUCATAN

Merida		
XEFC	560	100
XEME	1240	15
XEY	1000	10
XEZ	630	500

WEST INDIES

CUBA

Caibarien		
CMHD	1270	250
Camaguey		
CMJA	1010	50
CMJC	1390	150
CMJE	1220	50
CMJF	1150	200
CMJK	780	250
CMJL	1340	100
CMJP	1430	75
CMJX	830	....
Cardenas		
CMGE	1370	150
Ciego de Avila		
CMJH	1360	100
CMJI	1130	50
CMJO	1180	50
Cienfuegos		
CMHJ	1160	100
CMHW	820	100
CMHX	760	200
Cruces		
CMHK	1330	250
Havana		
CMBC	640	150
CMBD	1170	150
CMBG	1140	200
CMBN	850	150
CMBS	770	150
CMBX	1070	500
CMBY	970	150
CMBZ	1000	150
CMCA	1350	250
CMCB	1230	150
CMCD	950	250
CMCF	810	600
CMCG	680	150
CMCJ	1110	500
CMCO	1200	150
CMCQ	1420	250
CMCR	1380	150
CMCU	1460	150
CMCW	750	150
CMCX	1500	150
CMCY	1030	1000
CMK	730	3000
CMOA	1440	150
CMOK	1470	150
CMOX	1320	200
CMQ	880	500
CMW	600	1400
CMX	920	1000
Holguin		
CMKF	1460	250
Manzanillo		
CMKM	1120	50
Matanzas		
CMGC	1400	100
CMGF	1120	150
CMGH	790	250
Pinar del Rio		
CMAB	1340	....
Sagua la Grande		
CMHA	1070	50
Sancti Spiritus		
CMHB	1240	50
Santa Clara		
CMHI	1210	150
Santiago		
CMKC	1250	150
CMKD	1050	250
CMKR	1400	100
CMKX	1190	75

DOMINICAN REPUBLIC

San Pedro de Macoris		
HIH	1395	15
Trujillo		
HIJ	1195	15
HIX	800	700
HIZ	1370	10

HAITI

Port-au-Prince		
HHK	920	1000

CFAC 930 100
Calgary, Alta.
CFCF 600 400
Montreal, Que.
CFCH 930 100
North Bay, Ont.
CFCN 1030 10000
Calgary, Alta.
CFCO 630 100
Chatham, Ont.
CFCT 1450 50
Victoria, B. C.
CFCY 630 1000
Charlottetown, P.E.I.
CFJC 880 100
Kamloops, B. C.
CFLC 930 100
Prescott, Ont.
CFNB 550 500
Fredericton, N. B.
CFPL 730 100
London, Ont.
CFPR 580 50
Prince Rupert, B. C.
CFQC 840 1000
Saskatoon Sask.
CFRB 690 10000
Toronto, Ont
CFRC 1510 100
Kingston, Ont
CFRN 1260 100
Edmonton, Alta.
CHAB 1200 100
Moose Jaw, Sask.
CHCK 1310 50
Charlottetown, P. E. I.
CHGS 1450 50
Summerside, P. E. I.
CHLP 1120 100
Montreal, Que.
CHML 1010 100
Hamilton, Ont.
CHNC 960 1000
New Carlisle, Que.
CHNS 930 1000
Halifax, N. S.
CHRC 580 100
Quebec, Que.
CHSJ 1120 500
St. John, N. B.
CHWC 1010 500
Regina, Sask.
CHWK 780 100
Chilliwack, B. C.
CJAT 910 1000
Trail, B. C.
CJCA 730 1000
Edmonton, Alta
CJCB 1240 1000
Sydney, N. S.
CJCJ 690 100
Calgary, Alta.
CJCS 1210 50
Stratford, Ont.
CJCU 1210 50
Aklavik, N. W. T.
CJGX 580 100
Yorkton, Sask.

CJIC 1500 100
S. Ste. Marie, Ont.
CJKL 1310 100
Kirkland Lake, Ont.
CJLS 1310 100
Yarmouth, N. S.
CJOC 950 100
Lethbridge, Alta.
CJOR 600 500
Vancouver, B. C.
CJRC 630 1000
Winnipeg, Man.
CJRM 540 1000
Moose Jaw, Sask.
CKAC 730 5000
Montreal, Que.
CKBI 1210 100
Prince Albert, Sask.
CKCD 1010 100
Vancouver, B. C.
CKCH 1210 100
Hull, Que.
CKCK 1010 500
Regina, Sask.
CKCL 580 100
Toronto, Ont.
CKCO 1010 100
Ottawa, Ont.
CKCR 1510 100
Waterloo, Ont.
CKCV 1310 100
Quebec, Que.
CKCW 1370 100
Moncton, N. B.
CKFC 1410 50
Vancouver, B. C.
CKGB 1420 100
Timmins, Ont.
CKIC 1010 50
Wolfville, N. S.
CKLW 1030 5000
Windsor, Ont.
CKMC 1210 50
Cobalt, Ont.
CKMO 1410 100
Vancouver, B. C.
CKNX 1200 50
Wingham, Ont.
CKOC 1120 500
Hamilton, Ont.
CKOV 630 100
Kelowna, B. C.
CKPC 930 100
Brantford, Ont.
CKPR 730 100
Fort William, Ont.
CKSO 780 1000
Sudbury, Ont.
CKTB 1200 100
St. Catherines, Ont.
CKUA 580 500
Edmonton, Alta.
CKWX 1010 100
Vancouver, B. C.
CKX 1120 100
Brandon, Man.
CKY 910 15000
Winnipeg, Man.

CMAB 1340 ....
Pinar del Rio, Cuba
CMBC 640 150
Havana, Cuba
CMBD 1170 150
Havana, Cuba
CMBG 1140 200
Havana, Cuba
CMBN 850 150
Havana, Cuba
CMBS 770 150
Havana, Cuba
CMBX 1070 500
Havana, Cuba
CMBY 970 150
Havana, Cuba
CMBZ 1000 150
Havana, Cuba
CMCA 1350 250
Havana, Cuba
CMCB 1230 150
Havana, Cuba
CMCD 950 250
Havana, Cuba
CMCF 810 600
Havana, Cuba
CMCG 680 150
Havana, Cuba
CMCJ 1110 500
Havana, Cuba
CMCO 1200 150
Havana, Cuba.
CMCQ 1420 250
Havana, Cuba
CMCR 1380 150
Havana, Cuba
CMCU 1460 150
Havana, Cuba
CMCW 750 150
Havana, Cuba
CMCX 1500 150
Havana, Cuba
CMCY 1030 1000
Havana, Cuba
CMGC 1400 100
Matanzas, Cuba
CMGE 1370 150
Cardenas, Cuba
CMGF 1120 150
Matanzas, Cuba
CMGH 790 250
Matanzas, Cuba
CMHA 1070 50
Sagua la Grande, Cu.
CMHB 1240 50
Sancti Spiritus, Cuba
CMHD 1270 250
Calbarien, Cuba
CMHI 1210 150
Santa Clara, Cuba
CMHJ 1160 100
Cienfuegos, Cuba
CMHK 1330 250
Cruces, Cuba
CMHW 820 100
Cienfuegos, Cuba
CMHX 760 200
Cienfuegos, Cuba

CMJA 1010 50
Camaguey, Cuba
CMJC 1390 150
Camaguey, Cuba
CMJE 1220 50
Camaguey, Cuba
CMJF 1150 200
Camaguey, Cuba
CMJH 1360 100
Ciego de Avila, Cuba
CMJI 1130
Ciego de Avila, Cuba
CMJK 780 250
Camaguey, Cuba
CMJL 1340 100
Camaguey, Cuba
CMJO 1180 50
Ciego de Avila, Cuba
CMJP 1430 75
Camaguey, Cuba
CMJX 830 ....
Camaguey, Cuba
CMK 730 3000
Havana, Cuba
CMKC 1250 150
Santiago, Cuba
CMKD 1050 250
Santiago, Cuba
CMKF 1460 250
Holguin, Cuba
CMKM 1120 50
Manzanillo, Cuba
CMKR 1400 100
Santiago, Cuba
CMKX 1190 75
Santiago, Cuba
CMOA 1440 150
Havana, Cuba
CMOK 1470 150
Havana, Cuba
CMOX 1320 200
Havana, Cuba
CMQ 880 500
Havana, Cuba
CMW 600 1400
Havana, Cuba
CMX 920 1000
Havana, Cuba
CRCK 1050 1000
Quebec, Que.
CRCM 910 5000
Montreal, Que.
CRCO 880 1000
Ottawa, Ont.
CRCS 950 100
Chicoutimi, Que.
CRCT 840 5000
Toronto, Ont.
CRCV 1100 1000
Vancouver, B. C.
CRCW 600 500
Windsor, Ont.
FQN 609 250
St. Pierre, Miq.
HHK 920 1000
Port-au-Prince, Haiti
HIH 1395 15
San Pedro de M., D. R.

HIJ 1195 15
Trujillo, D. R.
HIX 800 700
Trujillo, D. R
HIZ 1370 10
Trujillo, D. R.
HP50 1440 25
Colon, Panama
HRN 1340 100
Tegucigalpa, Hond.
KABC 1420 100
San Antonio, Texas
KABR 1420 100
Aberdeen, S. Dak.
KADA 1200 100
Ada, Okla.
KALB 1420 100
Alexandria, La.
KALE 1300 500
Portland, Ore.
KANS 1210 100
Wichita, Kans.
KARK 890 250
Little Rock, Ark.
KASA 1210 100
Elk City, Okla.
KAST 1370 100
Astoria, Ore.
KBHB 1370 100
Rapid City, S. Dak.
KBIX 1500 100
Muskogee, Okla.
KBPS 1420 100
Portland, Ore.
KBST 1500 100
Big Spring, Texas
KBTM 1200 100
Jonesboro, Ark.
KCMC 1420 100
Texarkana, Ark.
KCMO 1370 100
Kansas City, Mo.
KCRC 1360 250
Enid, Okla.
KCRJ 1310 100
Jerome, Ariz.
KDB 1500 100
Santa Barbara, Calif.
KDFN 1440 500
Casper, Wyo.
KDKA 980 50000
Pittsburgh, Pa.
KDLR 1210 100
Devils Lake, N. D.
KDNC 1200 100
Lewistown, Mont.
KDON 1210 100
Del Monte, Calif.
KDYL 1290 1000
Salt Lake City, Utah
KECA 1430 1000
Los Angeles, Calif.
KEHE 780 500
Los Angeles, Calif.
KELD 1370 100
El Dorado, Ark.
KERN 1370 100
Bakersfield, Calif.

KEUB 1420 100
Price, Utah
KEX 1180 5000
Portland, Ore.
KFAB 770 10000
Lincoln, Neb.
KFAC 1300 1000
Los Angeles, Calif.
KFBB 1280 1000
Great Falls, Mont.
KFBI 1050 5000
Abilene, Kans.
KFBK 1490 5000
Sacramento, Calif.
KFDM 560 500
Beaumont, Texas
KFDY 780 1000
Brookings, S. D.
KFEL 920 500
Denver, Colo.
KFEQ 680 2500
St. Joseph, Mo.
KFGQ 1370 100
Boone, Iowa
KFH 1300 1000
Wichita, Kans.
KFI 640 50000
Los Angeles, Calif.
KFIO 1120 100
Spokane, Wash.
KFIZ 1420 100
Fond du Lac, Wis.
KFJB 1200 100
Marshalltown, Iowa
KFJI 1210 100
Klamath Falls, Ore.
KFJM 1370 100
Grand Forks, N. D.
KFJR 1300 500
Portland, Ore.
KFJZ 1370 100
Fort Worth, Texas
KFKA 880 500
Greeley, Colo.
KFKU 1220 1000
Lawrence, Kans.
KFNF 890 500
Shenandoah, Iowa
KFOR 1210 100
Lincoln, Neb.
KFOX 1250 1000
Long Beach, Calif.
KFPL 1310 100
Dublin, Texas
KFPW 1210 100
Fort Smith, Ark.
KFPY 890 1000
Spokane, Wash.
KFQD 780 250
Anchorage, Alaska
KFRC 610 1000
San Francisco, Calif.
KFRO 1370 100
Longview, Texas
KFRU 630 500
Columbia, Mo.
KFSD 600 1000
San Diego, Calif.

KFSD 1120 500
Los Angeles, Calif.

KFUO 550 500
St. Louis, Mo.

KFVD 1000 250
Los Angeles, Calif.

KFVS 1210 100
Cape Girardeau, Mo.

KFWB 950 1000
Hollywood, Calif.

KFXD 1200 100
Nampa, Idaho

KFXJ 1200 100
Grand Junction, Colo.

KFXM 1210 100
San Bernardino, Calif.

KFXR 1310 100
Oklahoma City, Okla.

KFYO 1310 100
Lubbock, Texas

KFYR 550 1000
Bismarck, N. D.

KGA 1470 5000
Spokane, Wash.

KGAR 1370 100
Tucson, Ariz.

KGB 1330 1000
San Diego, Calif.

KGBU 900 500
Ketchikan, Alaska

KGBX 1230 500
Springfield, Mo.

KGCA 1270 100
Decorah, Iowa

KGCU 1240 250
Mandan, N. D.

KGCX 1310 100
Wolf Point, Mont.

KGDE 1200 100
Fergus Falls, Minn.

KGDM 1100 1000
Stockton, Calif.

KGDY 1340 250
Huron, S. D.

KGEK 1200 100
Sterling, Colo.

KGER 1360 1000
Long Beach, Calif.

KGEZ 1310 100
Kalispell, Mont.

KGFF 1420 100
Shawnee, Okla.

KGFG 1370 100
Oklahoma City, Okla.

KGFI 1500 100
Corpus Christi, Texas

KGFJ 1200 100
Los Angeles, Calif.

KGFK 1500 100
Moorhead, Minn.

KGFL 1370 100
Roswell, N. M.

KGFW 1310 100
Kearney, Neb.

KGFX 630 200
Pierre, S. D.

KGGC 1420 100
San Francisco, Calif.

KGGF 1010 1000
Coffeyville, Kans.

KGGM 1230 250
Albuquerque, N. M.

KGHF 1320 500
Pueblo, Colo.

KGHI 1200 100
Little Rock, Ark.

KGHL 780 1000
Billings, Mont.

KGIR 1340 1000
Butte, Mont.

KGIW 1420 100
Alamosa, Colo.

KGKB 1500 100
Tyler, Texas

KGKL 1370 100
San Angelo, Texas

KGKO 570 250
Wichita Falls, Texas

KGKY 1500 100
Scottsbluff, Neb.

KGLO 1210 100
Mason City, Iowa

KGMB 1320 1000
Honolulu, T. H.

KGNC 1410 1000
Amarillo, Texas

KGNF 1430 1000
North Platte, Neb.

KGNO 1340 250
Dodge City, Kans.

KGO 790 7500
San Francisco, Calif.

KGU 750 2500
Honolulu, T. H.

KGVO 1260 1000
Missoula, Mont.

KGW 620 1000
Portland, Ore.

KGY 1210 100
Olympia, Wash.

KHBC 1400 250
Hilo, T. H.

KHJ 900 1000
Los Angeles, Calif.

KHQ 590 1000
Spokane, Wash.

KHSL 950 250
Chico, Calif.

KICA 1370 100
Clovis, N. M.

KID 1320 500
Idaho Falls, Idaho

KIDO 1350 1000
Boise, Idaho

KIDW 1420 100
Lamar, Colo.

KIEM 1450 500
Eureka, Calif.

KIEV 850 250
Glendale, Calif.

KINY 1310 100
Juneau, Alaska

KIRO 710 1000
Seattle, Wash.

KIT 1310 100
Yakima, Wash.

KIUJ 1310 100
Santa Fe, N. Mex.

KIUL 1210 100
Garden City, Kans.

KIUN 1420 100
Pecos, Texas

KIUP 1370 100
Durango, Colo.

KJBS 1070 500
San Francisco, Calif.

KJR 970 5000
Seattle, Wash.

KLCN 1290 100
Blytheville, Ark.

KLO 1400 500
Ogden, Utah

KLPM 1240 250
Minot, N. D.

KLRA 1390 1000
Little Rock, Ark.

KLS 1440 250
Oakland, Calif.

KLUF 1370 100
Galveston, Texas

KLX 880 1000
Oakland, Calif.

KLZ 560 1000
Denver, Colo.

KMA 930 1000
Shenendoah, Iowa

KMAC 1370 100
San Antonio, Texas

KMBC 950 1000
Kansas City, Mo.

KMED 1310 100
Medford, Ore.

KMJ 580 1000
Fresno, Calif.

KMLB 1200 100
Monroe, La.

KMMJ 740 1000
Clay Center, Neb.

KMO 1330 250
Tacoma, Wash.

KMOX 1090 50000
St. Louis, Mo.

KMPC 710 500
Beverly Hills, Calif.

KMTR 570 1000
Hollywood, Calif.

KNEL 1500 100
Brady, Texas

KNET 1420 100
Palestine, Texas

KNOW 1500 100
Austin, Texas

KNX 1050 50000
Hollywood, Calif.

KOA 830 50000
Denver, Colo.

KOAC 550 1000
Corvallis, Ore.

KOB 1180 10000
Albuquerque, N. M.

KOCA 1210 100
Kilgore, Texas

KOH 1380 500
Reno, Nev.

KOIL 1260 1000
Council Bluffs, Iowa
KOIN 940 1000
Portland, Ore.
KOL 1270 1000
Seattle, Wash.
KOMA 1480 5000
Oklahoma City, Okla.
KOMO 920 1000
Seattle, Wash.
KONO 1370 100
San Antonio, Texas
KOOS 1390 250
Marshfield, Ore.
KORE 1420 100
Eugene, Ore.
KOTN 1500 100
Pine Bluffs, Ark.
KOY 1390 500
Phoenix, Ariz.
KPAC 1260 500
Port Arthur, Texas
KPDN 1310 100
Pampa, Texas
KPLC 1500 100
Lake Charles, La.
KPLT 1500 100
Paris, Texas
KPO 680 50000
San Francisco, Calif.
KPOF 880 500
Denver, Colo.
KPPC 1210 100
Pasadena, Calif.
KPQ 1500 100
Wenatchee, Wash.
KPRC 920 1000
Houston, Texas
KQV 1380 500
Pittsburgh, Pa.
KQW 1010 1000
San Jose, Calif.
KRBC 1420 100
Abilene, Texas
KRE 1370 100
Berkeley, Calif.
KRGV 1260 500
Weslaco, Texas
KRKD 1120 500
Los Angeles, Calif.
KRKO 1370 50
Everett, Wash.
KRLC 1420 100
Lewiston, Idaho
KRLD 1040 10000
Dallas, Texas
KRLH 1420 100
Midland, Texas
KRMD 1310 100
Shreveport, La.
KRNR 1500 100
Roseburg, Ore.
KRNT 1320 500
Des Moines, Iowa
KROC 1310 100
Rochester, Minn.
KROW 930 1000
Oakland, Calif.
KROY 1310 100
Sacramento, Calif.
KRRV 1310 100
Sherman, Texas
KRSC 1120 100
Seattle, Wash.
KSAC 580 500
Manhattan, Kans.
KSCJ 1330 1000
Sioux City, Iowa
KSD 550 1000
St. Louis, Mo.
KSEI 900 250
Pocatello, Idaho
KSFO 560 1000
San Francisco, Calif.
KSL 1130 50000
Salt Lake City, Utah
KSLM 1370 100
Salem, Ore.
KSO 1430 500
Des Moines, Iowa
KSOO 1110 2500
Sioux Falls, S. D.
KSTP 1460 25000
St. Paul, Minn.
KSUN 1200 100
Lowell, Ariz.
KTAR 620 1000
Phoenix, Ariz.
KTAT 1240 1000
Fort Worth, Texas
KTBS 1450 1000
Shreveport, La.
KTEM 1370 100
Temple, Texas
KTEP 1500 100
El Paso, Texas
KTFI 1240 1000
Twin Falls, Idaho
KTHS 1060 10000
Hot Springs, Ark.
KTRB 740 250
Modesto, Calif.
KTRH 1290 1000
Houston, Texas
KTSA 550 1000
San Antonio, Texas
KTSM 1310 100
El Paso, Texas
KTUL 1400 500
Tulsa, Okla.
KTW 1220 1000
Seattle, Wash.
KUJ 1370 100
Walla Walla, Wash.
KUMA 1420 100
Yuma, Ariz.
KUOA 1260 1000
Fayetteville, Ark.
KUSD 890 500
Vermillion, S. D.
KUTA 1500 100
Salt Lake City, Utah
KVCV 1200 100
Redding, Calif.
KVEC 1200 250
San Luis Obispo, Calif.
KVI 570 1000
Tacoma, Wash.
KVL 1370 100
Seattle, Wash.
KVOA 1260 500
Tucson, Ariz.
KVOD 920 500
Denver, Colo.
KVOE 1500 100
Santa Ana, Calif.
KVOL 1310 100
Lafayette, La.
KVOO 1140 25000
Tulsa, Okla.
KVOR 1270 1000
Colorado Spgs., Colo.
KVOS 1200 100
Bellingham, Wash.
KVSO 1210 100
Ardmore, Okla.
KWAT 1310 250
Watsonville, Calif.
KWBG 1420 100
Hutchinson, Kans.
KWG 1200 100
Stockton, Calif.
KWJJ 1040 500
Portland, Ore.
KWK 1350 1000
St. Louis, Mo.
KWKH 1100 10000
Shreveport, La.
KWLC 1270 100
Decorah, Iowa
KWSC 1220 1000
Pullman, Wash.
KWTN 1210 100
Watertown, S. D.
KWTO 560 5000
Springfield, Mo.
KWYO 1370 100
Sheridan, Wyo.
KXA 760 250
Seattle, Wash.
KXL 1420 100
Portland, Ore.
KXO 1500 100
El Centro, Calif.
KXRO 1310 100
Aberdeen, Wash.
KXYZ 1440 1000
Houston, Texas
KYA 1230 1000
San Francisco, Calif.
KYOS 1040 250
Merced, Calif.
KYW 1020 10000
Philadelphia, Pa.
NAA 690 1000
Arlington, Va.
RDN 680 500
San Salvador, E. S.
TGW 1210 10000
Guatemala, Gua.
TGX 1400 250
Guatemala City
TIEP 850 500
San Jose, C. R.

TIFA 1050 75
San Jose, C. R.
TIFS 1441 7.5
Cartago, C. R.
TIGA 1014 30
Cartago, C. R.
TIGH 1000 500
San Jose, C. R.
TIGPH 650 1000
San Jose, C. R.
TIRH 930 50
San Jose, C. R.
TIVCA 1225 ....
San Jose, C. R.
TIX 800 ....
San Jose, C. R.
VAS 685 2000
Glace Bay, N. S.
VE9EK 1185 10
Montmagny, Que.
VOAC 1065 40
St. John's, Nfld.
VOAS 940 100
St. John's, Nfld.
VOGY 840 400
St. John's, Nfld.
VONF 1195 500
St. John's, Nfld.
VOWR 681 500
St. John's, Nfld.
WAAB 1410 500
Boston, Mass.
WAAF 920 1000
Chicago, Ill.
WAAT 940 500
Jersey City, N. J.
WAAW 660 500
Omaha, Neb.
WABC 860 50000
New York, N. Y.
WABI 1200 100
Bangor, Maine
WABY 1370 100
Albany, N. Y.
WACO 1420 100
Waco, Texas
WADC 1320 1000
Akron, Ohio
WAGF 1370 250
Dothan, Ala.
WAGM 1420 100
Presque Isle, Me.
WAIM 1200 100
Anderson, S. C.
WALA 1380 500
Mobile, Ala.
WALR 1210 100
Zanesville, Ohio
WAML 1310 100
Laurel, Miss.
WAPI 1140 5000
Birmingham, Ala.
WAPO 1420 100
Chattanooga, Tenn.
WARD 1400 500
Brooklyn, N. Y.
WASH 1270 500
Grand Rapids, Mich.
WATL 1370 100
Atlanta, Ga.
WATR 1190 100
Waterbury, Conn.
WAVE 940 1000
Louisville, Ky.
WAWZ 1350 500
Zarephath, N. J.
WAYX 1200 100
Waycross, Ga.
WAZL 1420 100
Hazleton, Pa.
WBBA 890 500
West Lafayette, Ind.
WBAL 760 2500
Baltimore, Md.
WBAL 1060 10000
Baltimore, Md.
WBAP 800 50000
Fort Worth, Texas
WBAX 1210 100
Wilkes-Barre, Pa.
WBBC 1400 500
Brooklyn, N. Y.
WBBL 1210 100
Richmond, Va.
WBBM 770 50000
Chicago, Ill
WBBR 1300 1000
Brooklyn, N. Y.
WBBZ 1200 100
Ponca City, Okla.
WBCM 1410 500
Bay City, Mich.
WBEN 900 1000
Buffalo, N. Y.
WBEO 1310 100
Marquette, Mich.
WBIG 1440 500
Greensboro, N. C.
WBLY 1210 100
Lima, Ohio
WBNO 1200 100
New Orleans, La.
WBNS 1430 500
Columbus, Ohio
WBNX 1350 250
New York, N. Y.
WBNY 1370 100
Buffalo, N. Y.
WBOQ 860 50000
New York, N. Y.
WBOW 1310 100
Terre Haute, Ind.
WBRB 1210 100
Red Bank, N. J.
WBRC 930 1000
Birmingham, Ala.
WBRE 1310 100
Wilkes-Barre, Pa.
WBT 1080 50000
Charlotte, N. C.
WBTM 1370 100
Danville, Va.
WBZ 990 50000
Boston, Mass.
WBZA 990 1000
Springfield, Mass.
WCAD 1220 500
Canton, N. Y.
WCAE 1220 1000
Pittsburgh, Pa.
WCAL 1250 1000
Northfield, Minn
WCAM 1280 500
Camden, N. J.
WCAO 600 500
Baltimore, Md.
WCAP 1280 500
Asbury Park, N. J.
WCAT 1200 100
Rapid City, S. D.
WCAU 1170 50000
Philadelphia, Pa.
WCAX 1200 100
Burlington, Vt.
WCAZ 1070 100
Carthage, Ill.
WCBA 1440 500
Allentown, Pa.
WCBD 1080 5000
Waukegan, Ill.
WCBM 1370 100
Baltimore, Md.
WCBS 1420 100
Springfield, Ill.
WCCO 810 50000
Minneapolis, Minn.
WCFL 970 5000
Chicago, Ill.
WCHS 580 500
Charleston, W. Va.
WCHV 1420 100
Charlottesville, Va.
WCKY 1490 5000
Covington, Ky.
WCLO 1200 100
Janesville, Wis.
WCLS 1310 100
Joliet, Ill.
WCMI 1310 100
Ashland, Ky.
WCNW 1500 100
Brooklyn, N. Y.
WCOA 1340 500
Pensacola, Fla.
WCOC 880 500
Meridian, Miss.
WCOL 1210 100
Columbus, Ohio
WCOP 1120 500
Boston, Mass.
WCPO 1200 100
Cincinnati, Ohio
WCRW 1210 100
Chicago, Ill.
WCSC 1360 500
Charleston, S. C.
WCSH 940 1000
Portland, Me.
WDAE 1220 1000
Tampa, Fla.
WDAF 610 1000
Kansas City, Mo.
WDAH 1310 100
El Paso, Texas

WDAS 1370 100
Philadelphia, Pa.
WDAY 940 1000
Fargo, N. D.
WDBJ 930 1000
Roanoke, Va.
WDBO 580 1000
Orlando, Fla.
WDEL 1120 250
Wilmington, Del.
WDEV 550 500
Waterbury, Vt.
WDGY 1180 1000
Minneapolis, Minn.
WDNC 1500 100
Durham, N. C.
WDOD 1280 1000
Chattanooga, Tenn.
WDRC 1330 1000
Hartford, Conn.
WDSU 1250 1000
New Orleans, La.
WDWS 1370 100
Champaign, Ill.
WDZ 1020 250
Tuscola, Ill.
WEAF 660 50000
New York, N. Y.
WEAN 780 500
Providence, R. I.
WEBC 1290 1000
Superior, Wis.
WEBQ 1210 100
Harrisburg, Ill.
WEBR 1310 100
Buffalo, N. Y.
WEDC 1210 100
Chicago, Ill.
WEED 1420 100
Rocky Mount, N. C.
WEEI 590 1000
Boston, Mass.
WEEU 830 1000
Reading, Pa.
WEGL 1400 500
Brooklyn, N. Y.
WEHS 1420 100
Cicero, Ill.
WELI 900 500
New Haven, Conn.
WELL 1420 100
Battle Creek, Mich.
WEMP 1310 100
Milwaukee, Wis.
WENR 870 50000
Chicago, Ill.
WEOA 1370 100
Evansville, Ind.
WESG 850 1000
Elmira, N. Y.
WEST 1200 100
Easton, Pa.
WEVD 1300 1000
New York, N. Y.
WEW 760 1000
St. Louis, Mo.
WEXL 1310 50
Royal Oak, Mich.

WEXP 1370 100
Clarksburg, W. Va.
WFAA 800 50000
Dallas, Texas
WFAB 1300 1000
New York, N. Y.
WFAM 1200 100
South Bend, Ind.
WFAS 1210 100
White Plains, N. Y.
WFBC 1300 1000
Greenville, S. C.
WFBG 1310 100
Altoona, Pa.
WFBL 1360 1000
Syracuse, N. Y.
WFBM 1230 1000
Indianapolis, Ind.
WFBR 1270 500
Baltimore, Md.
WFDF 1310 100
Flint, Mich.
WFEA 1340 500
Manchester, N. H.
WFIL 560 1000
Philadelphia, Pa.
WFLA 620 1000
Clearwater, Fla.
WFMD 900 500
Frederick, Md.
WFOY 1210 100
St. Augustine, Fla.
WGAL 1500 100
Lancaster, Pa.
WGAR 1450 500
Cleveland, Ohio
WGBB 1210 100
Freeport, N. Y.
WGBF 630 500
Evansville, Ind.
WGBI 880 500
Scranton, Pa.
WGCM 1210 100
Gulfport, Miss.
WGES 1360 500
Chicago, Ill.
WGH 1310 100
Newport News, Va.
WGL 1370 100
Fort Wayne, Ind.
WGN 720 50000
Chicago, Ill.
WGNY 1210 100
Chester, N. Y.
WGPC 1420 100
Albany, Ga.
WGR 550 1000
Buffalo, N. Y.
WGRC 1370 250
New Albany, Ind.
WGST 890 1000
Atlanta, Ga.
WGY 790 50000
Schenectady, N. Y.
WHA 940 2500
Madison, Wis.
WHAM 1150 50000
Rochester, N. Y.

WHAS 820 50000
Louisville, Ky.
WHAT 1310 100
Philadelphia, Pa.
WHAZ 1300 500
Troy, N. Y.
WHB 860 1000
Kansas City, Mo.
WHBB 1500 100
Selma, Alabama
WHBC 1200 100
Canton, Ohio
WHBF 1210 100
Rock Island, Ill.
WHBI 1250 1000
Newark, N. J.
WHBL 1300 500
Sheboygan, Wis.
WHBQ 1370 100
Memphis, Tenn.
WHBU 1210 100
Anderson, Ind.
WHBY 1200 100
Green Bay, Wis.
WHDF 1370 100
Calumet, Mich.
WHDH 830 1000
Boston, Mass.
WHDL 1420 100
Olean, N. Y.
WHEB 740 250
Portsmouth, N. H.
WHEC 1430 500
Rochester, N. Y.
WHEF 1500 100
Kosciusko, Miss.
WHFC 1420 100
Cicero, Ill.
WHIO 1260 1000
Dayton, Ohio
WHIS 1410 500
Bluefield, W. Va.
WHJB 620 250
Greensburg, Pa.
WHK 1390 1000
Cleveland, Ohio
WHKC 640 500
Columbus, Ohio
WHLB 1370 100
Virginia, Minn.
WHN 1010 1000
New York, N. Y.
WHO 1000 50000
Des Moines, Iowa
WHOM 1450 250
Jersey City, N. J.
WHP 1430 500
Harrisburg, Pa.
WIBA 1280 1000
Madison, Wis.
WIBG 970 100
Glenside, Pa.
WIBM 1370 100
Jackson, Mich.
WIBU 1210 100
Poynette, Wis.
WIBW 580 1000
Topeka, Kans.

WIBX 1200 100
Utica, N. Y.

WICC 600 500
Bridgeport, Conn.

WIL 1200 100
St. Louis, Mo.

WILL 580 1000
Urbana, Ill.

WILM 1420 100
Wilmington, Del.

WIND 560 1000
Gary, Ind.

WINS 1180 1000
New York, N. Y.

WIOD 1300 1000
Miami, Fla.

WIP 610 1000
Philadelphia, Pa.

WIRE 1400 500
Indianapolis, Ind.

WIS 560 1000
Columbia, S. C.

WISN 1120 250
Milwaukee, Wis.

WJAC 1310 100
Johnstown, Pa.

WJAG 1060 1000
Norfolk, Neb.

WJAR 890 1000
Providence, R. I.

WJAS 1290 1000
Pittsburgh, Pa.

WJAX 900 1000
Jacksonville, Fla.

WJAY 610 500
Cleveland, Ohio

WJBC 1200 100
Bloomington, Ill.

WJBK 1500 100
Detroit, Mich.

WJBL 1200 100
Decatur, Ill.

WJBO 1420 100
Baton Rouge, La.

WJBR 1420 100
Gastonia, N. C.

WJBW 1200 100
New Orleans, La.

WJBY 1210 100
Gadsden, Ala.

WJDX 1270 1000
Jackson, Miss.

WJEJ 1210 100
Hagerstown, Md.

WJIM 1210 100
Lansing, Mich.

WJJD 1130 20000
Chicago, Ill.

WJMS 1420 100
Ironwood, Mich.

WJNO 1200 100
W. Palm Beach, Fla.

WJR 750 50000
Detroit, Mich.

WJRD 1200 100
Tuscaloosa, Ala.

WJSV 1460 10000
Washington, D. C.

WJW 1210 100
Akron, Ohio

WJZ 760 50000
New York, N. Y.

WKAQ 1240 1000
San Juan, P. R.

WKAR 850 1000
East Lansing, Mich.

WKBB 1500 100
East Dubuque, Ill.

WKBH 1380 1000
LaCrosse, Wis.

WKBI 1420 100
Cicero, Ill.

WKBN 570 500
Youngstown, Ohio

WKBO 1200 100
Harrisburg, Pa.

WKBV 1500 100
Richmond, Ind.

WKBW 1480 5000
Buffalo, N. Y.

WKBZ 1500 100
Muskegon, Mich.

WKEU 1500 100
Griffin, Ga.

WKOK 1210 100
Sunbury, Pa.

WKRC 550 1000
Cincinnati, Ohio

WKY 900 1000
Oklahoma City, Okla.

WKZO 590 1000
Kalamazoo, Mich.

WLAC 1470 5000
Nashville, Tenn.

WLAK 1310 100
Lakeland, Fla.

WLAP 1420 100
Lexington, Ky.

WLB 1250 1000
Minneapolis, Minn.

WLBC 1310 100
Muncie, Ind.

WLBF 1420 100
Kansas City, Kans.

WLBL 900 2500
Stevens Point, Wis.

WLBZ 620 500
Bangor, Me.

WLEU 1420 100
Erie, Pa.

WLLH 1370 100
Lowell, Mass.

WLMU 1210 100
Middlesboro, Ky.

WLNH 1310 100
Laconia, N. H.

WLS 870 50000
Chicago, Ill.

WLTH 1400 500
Brooklyn, N. Y.

WLVA 1200 100
Lynchburg, Va.

WLW 700 500000
Cincinnati, Ohio

WLWL 1100 5000
New York, N. Y.

WMAL 630 250
Washington, D. C.

WMAQ 670 50000
Chicago, Ill.

WMAS 1420 100
Springfield, Mass.

WMAZ 1180 1000
Maçon, Ga.

WMBC 1420 100
Detroit, Mich.

WMBD 1440 500
Peoria, Ill.

WMBG 1210 100
Richmond, Va.

WMBH 1420 100
Joplin, Mo.

WMBI 1080 5000
Chicago, Ill.

WMBO 1310 100
Auburn, N. Y.

WMBQ 1500 100
Brooklyn, N. Y.

WMBR 1370 100
Jacksonville, Fla.

WMC 780 1000
Memphis, Tenn.

WMCA 570 500
New York, N. Y.

WMEX 1500 100
Boston, Mass.

WMFD 1370 100
Wilmington, N. C.

WMFF 1310 250
Plattsburg, N. Y.

WMFG 1210 100
Hibbing, Minn.

WMFJ 1420 100
Daytona Beach, Fla.

WMFN 1210 100
Clarksdale, Miss.

WMFO 1370 100
Decatur, Ala.

WMFR 1200 100
High Point, N. C.

WMIN 1370 100
St. Paul, Minn.

WMMN 890 250
Fairmont, W. Va.

WMPC 1200 100
Lapeer, Mich.

WMSD 1420 100
Sheffield, Ala.

WMT 600 1000
Cedar Rapids, Iowa

WNAC 1230 1000
Boston, Mass.

WNAD 1010 1000
Norman, Okla.

WNAX 570 1000
Yankton, S. D.

WNBC 1380 250
New Britain, Conn.

WNBF 1500 100
Binghamton, N. Y.

WNBH 1310 100
New Bedford, Mass.

WNBR 1430 500
Memphis, Tenn.

WNBX 1260 1000
Springfield, Vt.

WNBZ 1290 100
Saranac Lake, N. Y.

WNEL 1290 1000
San Juan, P. R.

WNEW 1250 1000
Newark, N. J.

WNLC 1500 100
New London, Conn.

WNOX 1010 1000
Knoxville, Tenn.

WNRI 1200 100
Newport, R. I.

WNYC 810 1000
New York, N. Y.

WOAI 1190 50000
San Antonio, Texas

WOC 1370 100
Davenport, Iowa

WOCL 1210 50
Jamestown, N. Y.

WOI 640 5000
Ames, Iowa

WOKO 1430 500
Albany, N. Y.

WOL 1310 100
Washington, D. C.

WOLS 1200 100
Florence, S. C.

WOMT 1210 100
Manitowoc, Wis.

WOOD 1270 500
Grand Rapids, Mich.

WOPI 1500 100
Bristol, Tenn.

WOR 710 50000
Newark, N. J.

WORC 1280 500
Worcester, Mass.

WORK 1320 1000
York, Pa.

WORL 920 500
Boston, Mass.

WOS 630 500
Jefferson City, Mo.

WOSU 570 750
Columbus, Ohio

WOV 1130 1000
New York, N. Y.

WOW 590 5000
Omaha, Neb.

WOWO 1160 10000
Fort Wayne, Ind.

WPAD 1420 100
Paducah, Ky.

WPAR 1420 100
Parkersburg, W. Va.

WPAX 1210 100
Thomasville, Ga.

WPAY 1370 100
Portsmouth, Ohio

WPEN 920 250
Philadelphia, Pa.

WPFB 1370 100
Hattiesburg, Miss.

WPG 1100 5000
Atlantic City, N. J.

WPHR 880 500
Petersburg, Va.

WPRO 630 250
Providence, R. I.

WPRP 1420 100
Ponce, P. R.

WPTF 680 5000
Raleigh, N. C.

WQAM 560 1000
Miami, Fla.

WQAN 880 250
Scranton, Pa.

WQBC 1360 1000
Vicksburg, Miss.

WQDM 1370 100
St. Albans, Vt.

WRAK 1370 100
Williamsport, Pa.

WRAW 1310 100
Reading, Pa.

WRAX 920 250
Philadelphia, Pa.

WRBL 1200 100
Columbus, Ga.

WRC 950 500
Washington, D. C.

WRDO 1370 100
Augusta, Me.

WRDW 1500 100
Augusta, Ga.

WREC 600 1000
Memphis, Tenn.

WREN 1220 1000
Lawrence, Kans.

WRGA 1500 100
Rome, Ga.

WRJN 1370 100
Racine, Wis.

WROK 1410 500
Rockford, Ill.

WROL 1310 100
Knoxville, Tenn.

WRR 1280 500
Dallas, Texas

WRUF 830 5000
Gainesville, Fla.

WRVA 1110 5000
Richmond, Va.

WSAI 1330 1000
Cincinnati, Ohio

WSAJ 1310 100
Grove City, Pa.

WSAN 1440 500
Allentown, Pa.

WSAR 1350 1000
Fall River, Mass.

WSAY 1210 100
Rochester, N. Y.

WSAZ 1190 1000
Huntington, W. Va.

WSB 740 50000
Atlanta, Ga.

WSBC 1210 100
Chicago, Ill.

WSBT 1360 500
South Bend, Ind.

WSFA 1410 500
Mongtomery, Ala.

WSGN 1310 100
Birmingham, Ala.

WSIX 1210 100
Springfield, Tenn.

WSJS 1310 100
Winston-Salem, N. C.

WSM 650 50000
Nashville, Tenn.

WSMB 1320 500
New Orleans, La.

WSMK 1380 200
Dayton, Ohio

WSOC 1210 100
Charlotte, N. C.

WSPA 920 1000
Spartanburg, S. C.

WSPD 1340 1000
Toledo, Ohio

WSPG 640 500
Portland, Me.

WSPR 1140 500
Springfield, Mass.

WSUI 880 500
Iowa City, Iowa

WSUN 620 1000
St. Petersburg, Fla.

WSVA 550 500
Harrisonburg, Va.

WSVS 1370 50
Buffalo, N. Y.

WSYB 1500 100
Rutland, Vt.

WSYR 570 250
Syracuse, N. Y.

WTAD 900 500
Quincy, Ill.

WTAG 580 500
Worcester, Mass.

WTAL 1310 100
Tallahassee, Fla.

WTAM 1070 50000
Cleveland, Ohio

WTAQ 1330 1000
Green Bay, Wis.

WTAR 780 500
Norfolk, Va.

WTAW 1120 500
College Station, Tex.

WTAX 1210 100
Springfield, Ill.

WTBO 800 250
Cumberland, Md.

WTCN 1250 1000
Minneapolis, Minn.

WTEL 1310 100
Philadelphia, Pa.

WTFI 1450 500
Athens, Ga.

WTHT 1200 100
Hartford, Conn.

WTIC 1040 50000
Hartford, Conn.

WTJS 1310 100
Jackson, Tenn.

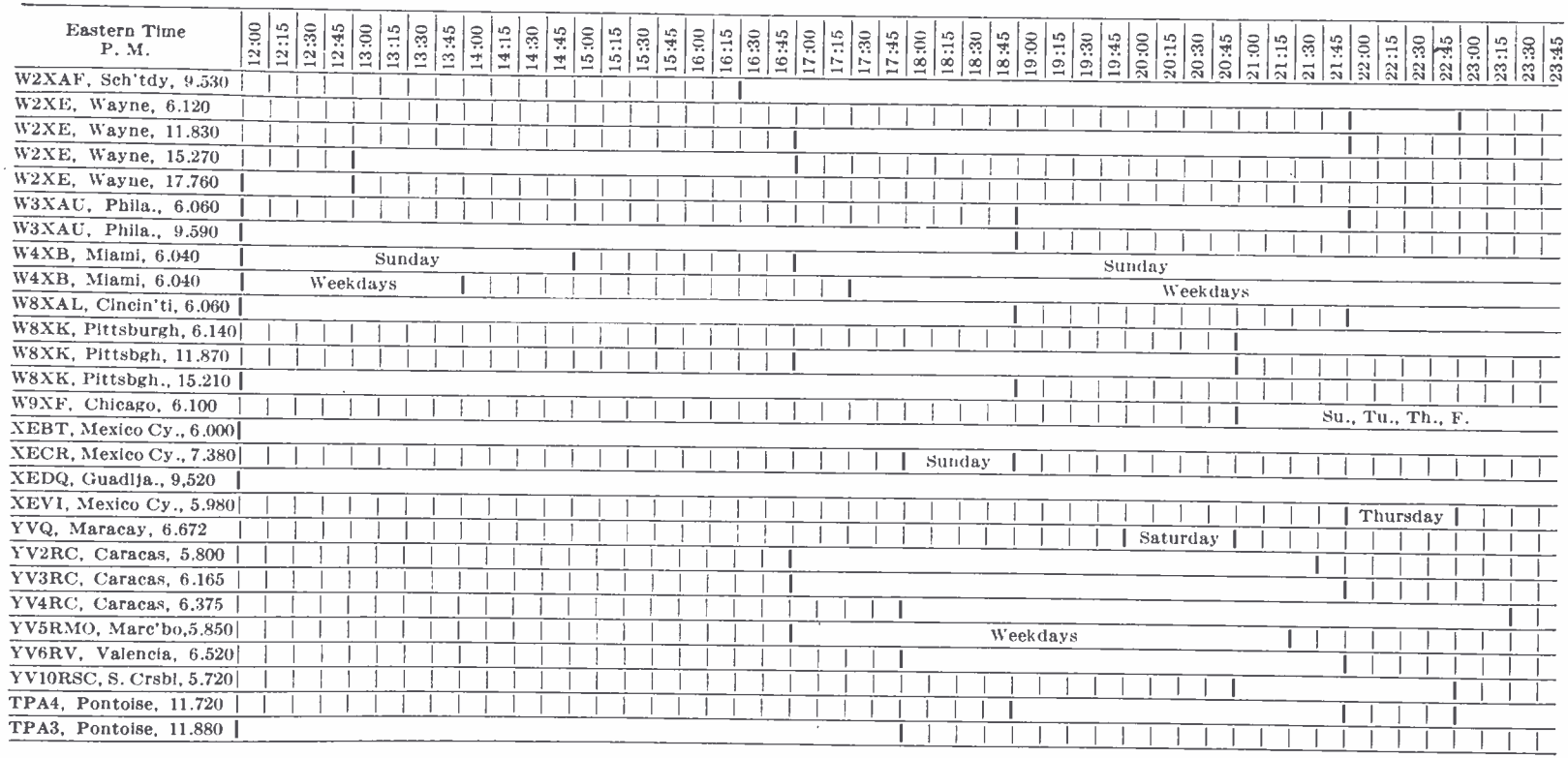
WTMJ 620 1000
Milwaukee, Wis.

WTMV 1500 100
East St. Louis, Ill.

WTNJ 1280 500
Trenton, N. J.
WTOC 1260 1000
Savannah, Ga.
WTRC 1310 100
Elkhart, Ind.
WVFW 1400 500
Brooklyn, N. Y.
WWAE 1200 100
Hammond, Ind.
WWJ 920 1000
Detroit, Mich.
WWL 850 10000
New Orleans, La.
WWNC 570 1000
Asheville, N. C
WWRL 1500 100
Woodside, N. Y
WWSW 1500 100
Pittsburgh, Pa
WWVA 1160 5000
Wheeling, W. Va.
WXYZ 1240 1000
Detroit, Mich.
W1XBS 1530 1000
Waterbury, Conn.
W2XR 1550 1000
Long Island City, N. Y.
W6XAI 1550 1000
Bakersfield, Calif
W9XBY 1530 1000
Kansas City, Mo
XEA 1060 500
Guadalajara, Jal.
XEAA 920 200
Mexicali, B. C.
XEAC 1240 250
Tijuana, L. C.
XEAF 990 500
Nogales, Son.
XEAG 1310 10
Cordoba, Ver.
XEAI 1240 100
Mexico City, D. F.
XEAM 750 7.5
Matamoros, Tams.
XEAO 560 250
Mexicali, B. C.
XEAQ 1090 1000
Rosarito, L. C.
XEAS 1160 100
Saltillo, Coah.
XEAT 1210 50
Hidalgo, Chih.
XEAW 960 50000
Reynosa, Tams.
XEAZ 1420 7
Guanajuato, Gto.
XEB 1030 10000
Mexico City, D. F.
XEBC 730 5000
Agua Caliente, L. C.
XEBH 930 500
Hermosillo, Sonora
XEBK 1000 100
Nuevo Laredo, Tams.
XEC 1160 30
Tijuana, L. C.

XECW 1310 10
Mexico City, D. F.
XED 1155 2500
Guadalajara, Jal.
XEE 1210 50
Durango, Dgo.
XEF 980 100
Juarez, Chih.
XEFA 1180 500
Mexico City, D. F.
XEFB 1420 100
Monterrey, N. L.
XEFC 560 100
Merida, Yuc.
XEFE 1340 250
Laredo, Tams.
XEFI 1440 250
Chihuahua, Chih.
XEFJ 1230 100
Monterrey, N. L.
XEFL 1150 250
Tijuana, L. C.
XEFO 940 5000
Mexico City, D. F.
XEFV 1210 100
Juarez, Chih.
XEFW 1310 250
Tampico, Tams.
XEFZ 1370 100
Mexico City, D. F.
XEG 1270 200
Ensenada, B. C.
XEH 1150 250
Monterrey. N. L.
XEI 1370 125
Morelia, Mich.
XEJ 1020 1000
Juarez, Chih.
XEK 990 100
Mexico City, D. F.
XEKL 1240 500
Leon, Guan.
XEL 1100 250
Mexico City, D. F.
XELA 1240 50
Saltillo, Coah.
XELO 1110 10000
Piedras Negras, Coah.
XEME 1240 15
Merida, Yuc.
XEMO 860 5000
Tijuana, L. C.
XEMX 1280 12
Mexico City, D. F.
XEMZ 820 ....
Coronado Isl., L. C.
XEN 710 1000
Mexico City, D. F.
XENT 910 150000
Nuevo Laredo, Tams.
XEOK 760 250
Tijuana, L. C.
XEOX 640 500
Saltillo, Coah.
XEP 1160 500
Juarez, Chih.
XEPN 590 50000
Piedras Negras, Coah.

XERA 840 250000
Villa Acuna, Coah.
XES 990 250
Tampico, Tams.
XESL 1160 ....
Tijuana, L. C.
XET 690 500
Monterrey, N. L.
XETB 1310 125
Torreon, Coah.
XETF 1220 12
Veracruz, Ver.
XETH 1210 100
Puebla, Pue.
XEU 1010 250
Veracruz, Ver.
XEW 890 50000
Mexico City, D. F.
XEWZ 1150 100
Mexico City, D. F.
XEX 1310 125
Monterrey, N. L.
XEXM 610 ....
Mexico City, D. F.
XEY 1000 10
Merida, Yuc.
XEYZ 780 10000
Mexico City, D. F.
XEZ 630 500
Merida, Yuc.
XEZZ 1370 100
San Luis Potosi, S. L. P.
XFA 1310 5
Aguascallentes, Ags.
XFB 1270 250
Jalapa, Ver.
XFC 810 350
Aguascallentes, Ags.
XFD 1340 350
Jalapa, Ver.
XFO 940 5000
Mexico City, D. F.
XFX 610 1000
Mexico City, D. F.
YNLF 1275 20
Managua, Nicaragua
YNOP 1230 100
Managua, Nicaragua
YNVA 950 30
Managua, Nicaragua



Hints on Tuning the Short Waves

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

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

Eastern Time P. M.	12:00	12:15	12:30	12:45	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00	18:15	18:30	18:45	19:00	19:15	19:30	19:45	20:00	20:15	20:30	20:45	21:00	21:15	21:30	21:45	22:00	22:15	22:30	22:45	23:00	23:15	23:30	23:45
HJ1ABG, Bar'q'lla, 6.042																																																
HJ1ABJ, S'ta M'ta, 6.006																																																
HJ2ABD, Bucar'ga, 5.980																																																
HJ3ABF, Bogota, 6.170																																																
HJ3ABH, Bogota, 6.012																							Sunday																									
HJ3ABH, Bogota, 6.012																									Weekdays																							
HJ4ABA, Medellin, 11.720																																																
HJ4ABD, Medellin, 5.760																																																
HJ4ABE, Medellin, 5.930																																																
HJ5ABC, Cali, 6.150																																	M., Tu., W., F.																
HJ5ABD, Cali, 6.490																																	Th., Sa., Su.																
HP5B, Panama Cy., 6.030																																																
HP5J, Panama Cy., 9.590																																																
HRN, Tegucigalpa, 5.875																																																
I2RO, Rome, 9.635																										Monday, Wednesday, Friday																							
I2RO, Rome, 11.810																																																
OAX4D, Lima, 5.780																																															Wednesday, Saturday		
OAX4G, Lima, 6.230																																																
ORK, Brussels, 10.330																																																
Prado, Riobamba, 6.620																																															Thursday		
PRF5, Rio de Jan., 9.500																																																
RAN, Moscow, 9.530																																																
TGWA, Gtmla. Cy., 6.000																																			Wkds.													Weekdays	
TG1X, Gtmla. Cy., 9.450																																			Wkds.												Weekdays	
TG2X, Gtmla. Cy., 5.940																																																
TIEP, San Jose, 6.710																																																
TIGPH, San Jose, 5.820																																																
TIPG, San Jose, 6.385																							Weekdays																									
TIRCC, San Jose, 6.550																									Daily										Su., Th.													
TI5HH, SanRamon, 5.520																																																
TI8WS, Punt'rnas, 7.550																																																
VK3LR, Melb'rne, 9.580																																															Friday	
W1XAL, Boston, 6.040																							Sunday											M., Tu., Th.													
W1XAL, Boston, 11.790																	Sunday																																
W1XK, Millis, 9.570																																																
W2XAD, Sch'tdy, 15.330										Daily																																							
W2XAD, Sch'tdy, 15.330								Sunday																																								

Eastern Time P. M.	12:00	12:15	12:30	12:45	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00	18:15	18:30	18:45	19:00	19:15	19:30	19:45	20:00	20:15	20:30	20:45	21:00	21:15	21:30	21:45	22:00	22:15	22:30	22:45	23:00	23:15	23:30	23:45
CEC, Santiago, 10.670																																																
CHNX, Halifax, 6.110																																																
CJRO, Winnipeg, 6.150																							Sunday																										
CJRO, Winnipeg, 6.150																																					Weekdays												
CJRX, Winnipeg, 11.720																							Sunday																										
CJRX, Winnipeg, 11.720																																					Weekdays												
COCD, Havana, 6.130																							Weekdays																										
COCD, Havana, 6.130																																	Sunday																
COCH, Havana, 9.428																																																
COCO, Havana, 6.010																																																
CO9JQ, Camaguey, 8.665																																																
CRCX, Toronto, 6.090																																																
CT1AA, Lisbon, 9.650																					Tuesday, Thursday, Saturday																												
DJA, Berlin, 9.560																																																
DJB, Berlin, 15.200																																																
DJD, Berlin, 11.770																																																
DJN, Berlin, 9.540																																																
EAQ, Madrid, 9.862					Saturday																				Daily																									
HAT4, Budapest, 9.125																									Sunday																									
GSA, Daventry, 6.050																																																
GSB, Daventry, 9.510																																																
GSC, Daventry, 9.580																																																
GSD, Daventry, 11.750																																																
GSF, Daventry, 15.140																																																
GSO, Daventry, 15.180																																																
GSP, Daventry, 15.310																																																
HBL, Geneva, 9.595																							Sa.																										
HBP, Geneva, 7.797																							Sa.																										
HCJB, Quito, 8.900																																																
HC2ET, Guyaquil, 4.600																																																
HC2RL, Guyaquil, 6.650																																																
HIH, San Pedro, 6.814																																																
HIX, Trujillo, 5.980																																																
HIZ, Trujillo, 6.315																																																
HJ1ABB, Bar'q'lla, 6.447																																																
HJ1ABD, Car'gena, 7.280																																																
HJ1ABE, Car'gena, 6.115																																																

QUICK INDEX TO ALL STATION DATA

NORTH AMERICAN BROADCAST

Frequency Checks—February, Page 33
Owners' Address .....May, Page 77
Time on the Air.....February, Page 78
By Frequencies.....September, Page 59
By Locations.....September, Page 76
By Calls .....September, Page 82
The Month's Changes..Sept., Page 47

SHORT WAVE

By Frequencies.....September, Page 48
By Locations .....September, Page 53
By Calls .....September, Page 57
When to Tune .....September, Page 95

FOREIGN BROADCAST

Time of Europeans.....October, Page 3
By Frequencies .....May, Page 62
By Locations .....May, Page 71
By Call Letters.....May, Page 76

LONG WAVE

By Frequencies .....April, Page 49
By Locations .....April, Page 51
By Call Letters .....April, Page 52

MISCELLANEOUS

Which Is the Best Aerial....March, 1935
Eliminating Noises.....April, 1935
Sets for the Short Waves....April, 1935
Short Wave Symbols.....April, 1935
The "V" Doublet Antenna.....May, 1935
Recording Programs....December,, 1935
For Short Wave Beginners .....
..... January, 1936
Roster of DX Clubs.....March, 1936
Apex Stations .....April, 1936
Assorted S. W. Information..May, 1936
A Tuned Antenna.....May, 1936
The Fading Problem.....May, 1936
A Good Pre-Selector.....June, 1936
Choosing an Aerial.....September, 1936

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

I THOUGHT RADIO WAS A PLAYTHING

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

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

A short time ago I was just barely getting by. It was the same old story—a little job; a salary as small as the job.

If you had told me that I would soon be making $30 and more a week in my own Radio business—I'd thought you were crazy. To me, Radio was a plaything. Now I know it's a big business where specialized tralning pays rich rewards.

But I am getting ahead of my story—let me tell you how it all started. I was hard up because I had been kidding myself—that's all—not because I had to be. I thought a fellow either had to be lucky or have a string of college degrees to make good money.

One day I picked up a magazine and an ad attracted me because it seemed to fit my case. It said, "I will train you to start a spare time or full time Radio service business of your own WITHOUT CAPITAL."

"They're trying to kid somebody," I thought, "but I'll find out what it's all about."

I wrote in, and within a few days received a 64-page book telling about the opportunities in Radio; how I could prepare right at home in my spare time, and how they would show me how to start making money in my neighborhood selling and repairing Radio sets. It would have sounded too good to be true if it had not been backed up by nearly 100 letters from fellows who had taken their course and were very enthusiastic about it.

What has happened since seems almost like a dream. I started to take their course, and soon I was ready to start making money in my neighborhood—as much as $5 and $15 a week. It wasn't long until I had saved enough money to start a full time business of my own.

That business in a surprisingly short time grew to the point where I am clearing over $30 a week. All this took place under the watchful guidance of my friends at the National Radio Institute. They also offered to train me for jobs in Broadcasting Stations, Radio Factories, Radio Jobbers and Dealers, Aviation Radio, Television, Short Wave Stations, Automobile, Police Radio, Loud Speaker Systems, and other branches of Radio.

THINK IT OVER

Friend—you may not be as bad off as I was—but think it over—are you satisfied? Are you making as much money as you need? Would you sign a contract to stay where you are for the next ten years at the same salary? Those are the things you have to think about—because no one is going to make it his business to push you ahead—you must make it your own business.

TAKE MY TIP

Write for their book, "Rich Rewards in Radio." It won't cost you anything except a postage stamp. It shows you a lot of things which I don't believe you know now about Radio—a lot of facts and figures on the opportunities in this new, fast-growing field—where the jobs are, what they pay, how to get ready for them. Beginners as well as experienced men are making as much as $500 to $1,500 a year more as a result of N. R. I. Training. And at the same time they send the book "Rich Rewards in Radio," **they'll send you, without any cost or obligation, a Free Lesson,** to prove that their training is easy, practical, fascinating. The lesson they send, "Radio Receiver Troubles—Their Cause and Remedy," is valuable. And when you read this lesson, you'll know why so many fellows have mastered N. R. I. Training and are now making good money as Radio Experts.

You are not placing yourself under any obligation by writing for this material as they will gladly send it to anyone who is ambitious and wants to get ahead. Mail the coupon in an envelope or paste it on a 1c postcard. **Just address Mr. J. E. Smith, President, National Radio Institute, Dept. 6JO, Washington, D. C.**

J. E. SMITH, President, National Radio Institute
Dept. 6JO, Washington, D. C.

MAIL THIS COUPON

Dear Mr. Smith:

Without obligation, send me the sample lesson and your book about spare time and full time Radio opportunities, and how I can train for them at home in spare time. (Please print plainly.)

Name..... Age....

Address.....

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

14X1

Exclusive New MIDWEST ELECTRIK-SAVER

Slashes Radio Current Bills IN HALF!

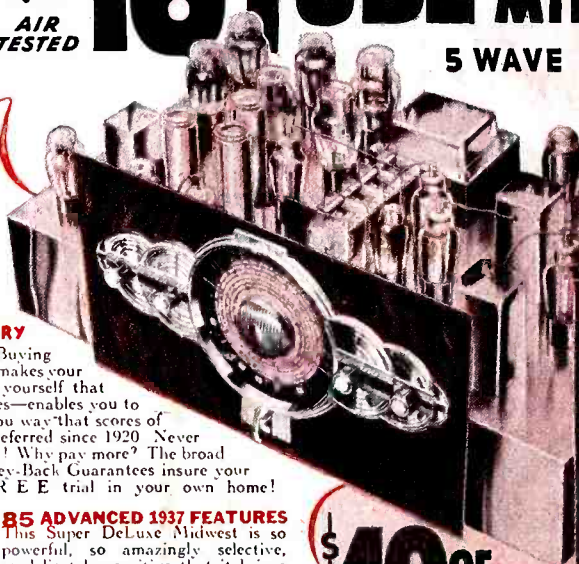
The Electrik-Saver is today's most sensational radio feature. It cuts radio wattage consumption as much as 50% and results in Midwest 16 and 18-tube radios consuming no more current than an ordinary 7 or 8-tube set.

This feature enables the "Air Tested" Midwest to operate on low line voltages—as low as 80 volts! In addition, the Electrik-Saver increases tube life, reduces strain on the set, eliminates repair bills and makes for more consistent and gloriously realistic reception.

NEW 1937 AIR TESTED

16-TUBE MIDWEST

5 WAVE BANDS
9 *to* 2,200 METERS



SAVE UP TO 50%
DIRECT FROM MIDWEST FACTORY

NO middlemen's profits to pay! Buying direct from the Midwest factory makes your radio dollar go twice as far. See for yourself that Midwest offers you greater radio values—enables you to buy the more economical factory-to-you way that scores of thousands of radio purchasers have preferred since 1920. Never before so much radio for so little money! Why pay more? The broad Midwest Foreign Reception and Money-Back Guarantees insure your satisfaction. You get 30 days FREE trial in your own home!

Once again, Midwest demonstrates its leadership by offering the world's most powerful and most beautiful ALL-WAVE 16-tube, 5-Band Radio. A startling achievement, it makes the whole world your playground. Powerful Triple-Twin tubes (two tubes in one!) give 18-tube results. This advanced radio is a master achievement, a highly perfected, precisely built, radio-musical instrument that will thrill you with its marvelous super performance . . . glorious crystal-clear "concert" realism . . . and magnificent foreign reception. The Dual Audio Program Expander gives a living, vital realistic quality to voice and musical reproduction. Before you buy, write for the FREE 40-page four color 1937 catalog TODAY.

85 ADVANCED 1937 FEATURES

This Super DeLuxe Midwest is so powerful, so amazingly selective, so delicately sensitive that it brings in distant foreign stations with full loud speaker volume on channels adjacent to powerful locals. Scores of marvelous Midwest features, many of them exclusive, make it easy to parade the nations of the world before you. You can switch instantly from American programs . . . to Canadian, police, amateur, commercial, airplane and ship broadcasts . . . to the finest and most fascinating foreign programs. The new Midwest Tuning System, for example, shows you exactly where to tune for foreign stations . . . while Automatic Aerial Adaption triples the number of foreign stations that can be secured and doubles the excitement and joy of short wave tuning.

With a Midwest, the finest entertainment the world has to offer is at your command. It is preferred by famous orchestra leaders, musicians, movie stars and discriminating radio purchasers everywhere. It enjoys an increasing world-wide sale because it outperforms ordinary receivers costing twice as much. You can order your Midwest "Air-Tested" radio from the new 40-page catalog with as much certainty of satisfaction as if you were to come yourself to our great factory. (It pictures the beautiful 1937 radios . . . in their actual colors!) You pay as little as 10c a day. Three iron-clad guarantees protect you: (1) A Foreign Reception Guarantee—(2) Absolute Guarantee of Satisfaction—(3) One-Year Warranty. Fill in and mail the coupon NOW!

Only MIDWEST gives you

- 16 TUBES
- 5 WAVE BANDS
- 9 TO 2200 METERS
- ELECTRIK-SAVER
- PUSH BUTTON TUNING
- AUTOMATIC AERIAL ADAPTION
- DUAL AUDIO PROGRAM EXPANDER
- 30 DAYS FREE TRIAL

$49.95 (LESS TUBES) COMPLETE WITH GIANT THEATRE-SONIC SPEAKER

TERMS AS LOW AS **10¢** A DAY

MY MIDWEST HAS UNEQUALLED BEAUTY OF TONE AND SHARPNESS OF SELECTIVITY. *Glen Gray*

CONGRATULATIONS FOR CREATING THE MIDWEST. IT BRINGS IN WONDERFUL FOREIGN RECEPTION. *Rubinoff*

MAIL COUPON TODAY

Free 30-DAY TRIAL OFFER *and* 40-PAGE FOUR-COLOR *Free* CATALOG

MIDWEST RADIO CORPORATION
Dept. 10-81, Cincinnati, Ohio

Special offer and prices prevail only when dealing direct with factory by mail.

Without obligation on my part, send me your new FREE catalog and complete details of your liberal 30-day FREE trial offer. This is NOT an order.

Name.....

Address.....

Town..... State.....

MIDWEST RADIO CORP.

DEPT. C-81 — Established 1920

CINCINNATI, OHIO, U.S.A.
Cable Address MIRACO...All Codes