

DECEMBER 1938

RADIO INDEX

The All-Wave Radio Log Authority



25

The North American Stations With
Sunday Time on the Air
The Monthly Frequency Checks
Dialing Asiatic Stations
How to Solve Loud Speaker Problems

No. 124



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TO

RADIO IN DEX

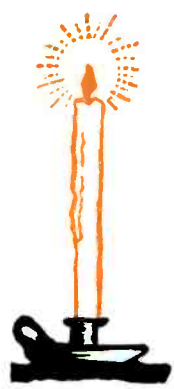
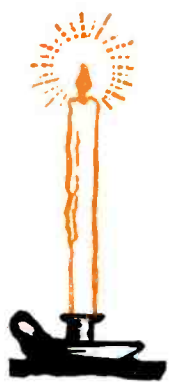
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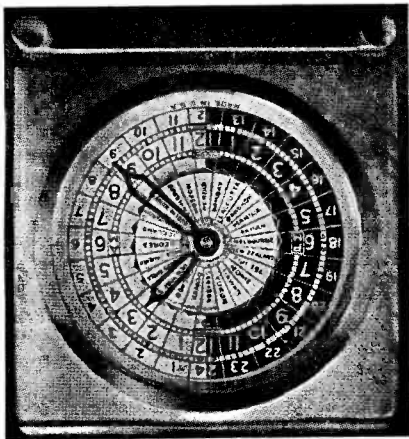
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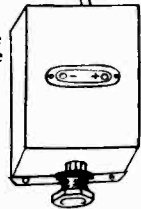
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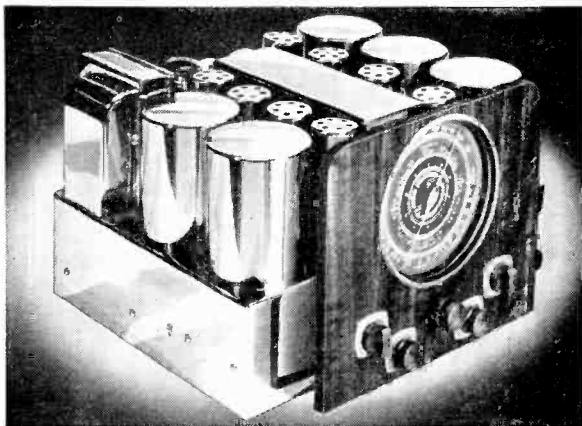
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DECEMBER 1, 1938



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FIFTEENTH YEAR

NUMBER 124

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FOR SALE AT YOUR NEWSSTAND

TURNER DIAL Meets Some LOUD SPEAKER Problems

••• By B. Francis Dashiell

TURNER Dial was at work in the service department of Higrade Radio Sales and Service when Bill Wood, his young assistant, returned from an errand. "Say!" called Bill, "I just met Mr. West and he wants us to put a loud speaker upstairs in his house and run it from the radio down on the first floor!"

Turner laid down the test prods he had been using on a set that had a broken connection. "What did you tell him?" he asked. "You know there are several ways of doing that kind of job."

"Sure," said Wood. "But I told him you could do it. At least, I hope you can, 'cause I promised we'd fix it up right away." Without further concern in the ability of Turner Dial to solve any and all speaker problems, Bill turned toward an unfinished job on the work bench. "What sort of extra-speaker hook-up is best?" he optimistically inquired.

"Well," answered Turner, "as far as I can remember, they have a fine set with good, high fidelity reception. You probably didn't think of it, but an additional loud speaker placed upstairs calls for concealed wiring and some sort of speaker cabinet. That means a little more expense!"

Bill Wood looked up from his work. "I thought he'd rather have another radio upstairs, so I told him about our new 'Lightweights,' but there wasn't a chance. They could be independent of the set downstairs and hear different programs."



But Dial was searching his desk for a service bulletin which described the circuit in the all-wave set that he had sold to Mr. West last Christmas. "No," Turner said, "he wouldn't buy another set, even though it's a swell idea. A good many people like extra speakers, but don't always get them to work as nicely as they should."

Wood leaned against Turner's desk. "Mr. West said for us to go ahead if you could do the job and get the same tone he now has in the big receiver."

Turner Dial leaned back in his chair. "In that case," he said, "we'll have to give him a speaker that is identical to the one now in his set. Then there'll have to be some replacements and alterations in the receiver." Turner picked up the circuit diagram. "But it's all simple, and since Mr. West is anxious about it you better go out there and get his set right away."

The November air had the chill of winter to it, and Bill Wood pulled on

his overcoat as he reached for the keys to the light truck that was used by the store. "On the way I'll deliver that set which had the speaker cone recentered in order to stop it from rattling all the time," he said.

Before he had finished talking Turner Dial was greeting a customer who had just entered the store. "I want a good radio!" declared the man. Turner could see he was agitated. "Of course, I have a set, but it's no good. I got it last year from a wholesale place. It has been back to the factory and still it's as bad as ever." With a disgusted wave of his hand the customer turned his attention to the long row of new 1939 receivers on display.

But Turner was a service man with an inquisitive mind. When confronted with a problem he never gave up. "I'd like to make a sale," he said, "but that set of yours is a very good make. What's wrong with it? We've been able to service most everything that has come to this shop."

"That set cost enough to be good!" exclaimed the man. "It worked fine until it developed a hum. I complained, and the firm mailed me a set of tubes. They didn't help a bit so I shipped the set to the factory for repairs. The hum came back. It's been going on for six months and I guess I'm stuck good and proper."

Turner was doing some quick thinking. "I feel that you are mistaken," he commented. "Those people sell good sets. Is the hum constant but not so very loud?"

"That's right!" the man said. "It's not loud on strong stations, but the hum won't tune out, and we sim-

ply can't put up with it any longer."

Turner picked up pencil and paper. "Let me send for that radio," he said. "I think it can be fixed so it'll be good as new. I wouldn't throw out a good radio just because it hums!"

When the customer had given his address and departed, Turner picked up the telephone and made a call. "Hello!" he commenced. "This is Higrade Radio. When the man comes in to get Mr. West's radio will you please ask him to go to 289 Taylor Avenue and pick up another receiver?"

It was some time before Bill Wood returned to the shop. "Why must you have Mr. West's radio?" he asked. "It seems to me that we could have hooked the speaker on out at the house." Then he gazed at the other set. "What's wrong with this baby? It looks like it's in pretty good shape."

"Hum in the speaker," replied Turner. "At least that's what I think. Suppose you go to work on it while I look over the West job. Turn it on and let's see how it sounds."

Wood plugged in the set, and after it was warmed up, tuned to a station. A steady, deep hum began and continued although the volume was turned up and down and different stations tuned in. "The Boss would call that 'non-tunable hum'," thought Bill to himself.

"Humph!" grunted Turner. "It's just as I thought, but it could be worse. Now listen to me, Bill!" And Turner began to point, as he always did when trying to impress his instructions on anyone. "Take a short piece of insulated wire and clean the ends for a fraction of an inch."

Wood did as he was told, but won-

dered what Turner Dial had in his mind. "There it is," he said. "What now?"

But Turner was removing the chassis from Mr. West's receiver. "Find the output transformer terminals and leads to the loud-speaker voice coil," Dial instructed without glancing up. "Bend the piece of wire into an 'U' shape, and short circuit it across the two leads from the voice coil. But tune in a station good and loud."

Bill quickly located the pair of flexible voice-coil leads coming from the tiny coil attached to the apex of the paper cone. He shorted them where soldered to the lugs of the output audio transformer. Instantly the station that was broadcasting ceased to be heard, but the steady hum persisted. "Say!" called Wood excitedly. "That hum is still there even when the speaker is short circuited and dead! What on earth makes that happen?"

"Just as I expected," answered Turner, who did not share Wood's excitement. He laid down his tools and walked over toward Bill and the receiver. "Now I think you'll find all the trouble here." And he laid a finger on the power pack. "Test out the condensers and filter units."

"But how did you know that?" asked Bill Wood in a puzzled tone of voice.

Turner Dial leaned on the bench. "You know all about speakers," he said. "They have large electro-magnets that are magnetized by a flow of direct current through the field windings. The current is steady and the strength of the magnet is steady. The little voice coil is supported freely between the poles of the magnet, and

it is free to float around a bit as the cone of the speaker vibrates."

"But," Wood objected, "all speakers are like that, and when the voice coil is dead the cone simply cannot vibrate and reproduce sound. So, why the hum in a speaker that has its voice coil deadened by a short circuit?"

"It's this way," continued Turner. "The direct current flowing in the field magnet creates a steady magnetic field, and the voice coil stands perfectly still until a radio signal passes through. The magnetic field around the voice coil attracts and repels the permanent magnetic field flowing between the pole pieces of the electro-magnet. The latter cannot move, so the coil must move, and this transmits vibrations to the cone which then creates sound waves in the air. When you shorted the voice coil it could no longer respond to the audio signals and the broadcast ended."

"But the hum lingered on," interrupted Wood.

"That was because the magnetic field surrounding the voice coil was not steady as it should be," Turner Dial said. "That magnetic field was vibrating the same as the alternating current operating the receiver, or at 60 cycles a second. That was the pitch of the hum we heard." Turner picked up a screw driver and held it close to the speaker field magnet. "Here," he said to Bill, "Feel how this vibrates. If everything was right you would not hear hum or feel this magnetic vibration!"

"Now, here's what's wrong," Turner continued. "The current flowing through this speaker field winding is not a steady direct current as it

should be. It's a pulsating current having breaks in it equal to the alternations in the house current. That's because the current is not being rectified and filtered as it should. The vibrations or breaks in the magnetic field cause alternating currents to be set up in the voice coil, and these create vibrations in the cone. Shorting the voice coil still does not prevent the currents from being induced in the winding. Of course, hum can also be caused by defective tubes and units, but it would stop instantly when the voice coil is shorted out." Turner touched the filter condensers and power transformer. "Your trouble is here, Bill," he said. "The current for the speaker magnet is not being rectified properly."

Both men worked silently, but soon Bill Wood spoke. "It must be this filter condenser—it's bad." He made the replacement, and the set was turned on. All trace of hum was gone! "Say, that's great!" Bill exclaimed. "It didn't take much time to fix it either."

"If this speaker had a 'hum-bucking' coil," remarked Turner, "we could have looked for a broken or shorted winding. Hum-bucking coils turn away any hum voltage that is set up in a voice coil when the field current is poorly filtered. It's a little coil wound at one end of the voice coil, in case you ever have to look for it."

"That's over," sighed Bill Wood to himself. He turned to Dial and said: "Well, what next? Want some help on that extra speaker? How are you planning to do that job?"

"We could hook up a magnetic speaker by attaching two wires to the

plates of the output tubes through bypass condensers. Lots of service men do it that way 'cause it saves some figuring and replacement work. But we'll have to do differently in order to keep the good tone Mr. West insists on having. We can't use an electro-dynamic speaker like the one you just repaired, for that means two extra wires to carry the field current from the set, and I don't think the set would stand that overload." Turner stepped back to the stock room, and Wood followed. "So we must use a permanent-magnet dynamic speaker. It has no field winding and has a strong, permanent magnet instead. It operates in precisely the same manner as the speaker in the set."

"Then," continued Turner, as he searched the shelves, "the speaker must be attached to a baffle board. It helps the low notes for it acts as a wall or fence between the front and rear of the speaker. Otherwise the sound waves from the front would come around the edge and cause sound interference. In most receivers the cabinet and side walls act as a baffle."

"If Mr. West knew all this," said Bill Wood, "he would realize that installing an extra speaker is not so easy."

"Now that you understand," suggested Turner, "you can tell him about it yourself." Dial reached for a small carton that was on the shelf. "That's not all," he remarked. "Here is the most important job of all."

Wood saw that the box contained a transformer, and immediately he understood why Turner had to have Mr. West's receiver down at the shop. He was going to put in another trans-

former! "What's the matter with the transformer now in the set," he eagerly asked.

Turner Dial removed the transformer from the box. "Loud speakers," he said, "are matched to the resistance of the transformer winding that supplies the voice coil with current. The primary winding, too, is matched to the tube or tubes providing the audio power signal. All radio tubes have certain loads attached to their plates. This load is measured in ohms, and is an alternating-current resistance or *impedance*. The load or resistance in the plate circuit of a power tube must be equal to the load recommended by the tube manufacturer. If a tube requires 7,000 ohms plate load, then the A. C. resistance or impedance of the transformer primary winding must also be 7,000 ohms. The secondary resistance of the same output transformer is much lower, as it matches the resistance of the voice coil in the speaker. When a speaker has 15 ohms impedance then the transformer secondary also has 15 ohms impedance. That is why any change in loud speakers may affect the load on the secondary, and the load on the secondary automatically changes the load on the primary winding. Then the transformer will not match up with the tubes, and distortion and poor tone are the result. That's what service men and radio experimenters must guard against."

"I see," said Wood. "Then you take out the old transformer and replace it with one that will match the two new speakers and still not change the proper load on the audio tubes of the set?"

Turner smiled. "It's even easier

than that," he said. "This transformer has an universal output secondary with a large number of taps, but its primary has the 7,000-ohm impedance of the original transformer. That makes it match perfectly."

The old transformer by now had been removed. Turner set the new one in place and soldered the two leads from the primary to the same terminals used by the original transformer. Then he measured off a long piece of double cord. "I think this is enough to run upstairs to the new speaker," he commented to Bill Wood. He attached the speaker to one end and carried it to the front of the store with the wire trailing along on the floor. "Now, we've got to hook the two speakers to the secondary of the transformer so as not to throw any additional load on the primary and cause a mismatch, and yet have the two speakers match the section of the secondary to which they are connected." Turner studied the printed sheet which accompanied the transformer.

Wood stood by with the hot soldering iron in his hand. "The old speaker has an impedance of 8 ohms, and the new one only 6 ohms," said Turner. "The length of wire should be considered, and it figures to about 6 ohms. That means the new speaker and wire have an alternating-current resistance of 12 ohms in all. Each speaker must be attached to a pair of taps having a value of *one-half* of the total impedance of its voice coil. So, from the table on this circular, we find that taps 1 and 3 are for 4 ohms, or one-half of the old speaker, and that taps 2 and 5 are

(Please turn to page 95)



DIALING The Foreign Stations

PART THREE

RECEPTION of foreign stations on the broadcast band, as most DXers have learned, is definitely a seasonal matter. With the first cool nights of fall, stations in the Antipodes and South America commence to push their carriers into the United States. Towards the end of November, the Europeans make their initial appearance of the year—and in December, Asiatic stations come over the horizon.

In the past two issues of RADEN, this section has followed the seasonal cycle closely, paying particular attention to the problems attending reception of the stations best heard during those months. The October issue showed an accent on stations in South America, New Zealand and Australia, while in November, European reception was spotlighted. December finds Asiatic reception approaching its peak, and so our attention swings to yet another point of the compass.

For North American DXers, Asia must rank fourth behind South America, Australia and Europe in the reliability with which its medium-wave signals are received. While virtually all DXers in the United States and

Canada can report stations from the first two continents, and a large majority of the listeners in the East and Middle West have some success with Europe, reception of stations in Asia is confined largely to the midnight marauders on the Pacific Coast. Of all the continents, only Africa is received with less success.

On the surface, it would appear that Asiatic transmitters should be received throughout the United States at least as well as broadcasters of equal power in Australia and New Zealand. At any given point in the United States or Canada, the Japanese stations are from one to two thousand miles closer than the frequently-heard stations in the Antipodes. While signals from Australia and New Zealand must cross a tropic region and are held up accordingly, carriers from Japan follow a path through the arctic wastes of the North Pacific, Alaska and the Northwest Territories of Canada. The difference in time assures an hour or more every winter morning when total darkness covers the entire route of the signal.

But while all these favorable factors would seem to indicate satisfac-

tory reception of Japanese stations throughout the North American continent, such is not the case. DXers in the Pacific Time Zone report satisfactory results, but the signals lose strength rapidly as they travel East. Infrequent success is claimed by listeners in the Mountain Time Zone. A few, favorably-located Central DXers hear an occasional Jap. And among the Eastern night owls, the Asiatic stations are rarely heard. Even the veteran dial twister, with an impressive log of Aussies and Zedders, can seldom boast of more than one Japanese verie to show for many years of DXing, and those who have still to hear their first Nipponese station are legion.

An attempt to explain this phenomenon would be merely a conjecture, and most listeners are content to let it go as one of the vagaries of reception. Perhaps the answer lies in the fact that the Great Circle path of the signal approaches the magnetic North Pole and the carrier suffers some form of interference. Perhaps there is some other explanation. But whatever the reason for this peculiar behavior, DXers are obliged to accept it as inevitable and adjust their DX activities accordingly.

Any attempt by this writer to expound upon Asiatic reception would be futile. While the fundamentals of good tuning technique, as outlined in detail in the October issue, will hold true for reception from any point of the compass, it would be useless to offer tips and suggestions for reception which has not as yet been accomplished. Fifteen years of DXing in Ohio and Pennsylvania have yet to produce a single Japanese catch, so



This card from JBCK has to be seen to be fully appreciated. The photograph of the aerial towers is framed in gold, and the rays are light lilac in color. The call letters are printed in black, and spangled with many golden dots. (Courtesy of Anthony C. Tarr).

there is nothing concrete to be had from this source.

However, among the vast RADEX family, there are countless DXers who have had no little success in logging and verifying Asiatic stations, and two of these have been invited to round out the list of continents by giving their tips on the how's and when's and where's of reception from Asia.

First to accept this invitation is Mrs. Dora Newcomb, Oxnard, Calif., vice-president of the Newark News Radio Club and a veteran of many a midnight battle with the DX elements.

"After listening to the radio for the past 12 years," she writes, "I have found that there is no particular season for the Japanese stations. Usually they will be found to be coming through all winter.

"They start to come in here about 1 a. m., PST, and increase in strength until they sign off. Sometime during the program, they may give the call letters in English. I usually listen for about an hour, and make a record of

the time of announcements, type of music, talking and so forth. The report, together with an international reply coupon, is always sent direct to the station. So far, I have always had a reply from every station I have written to, and so there is no complaint to make.

"There isn't much I can tell about the Chinese stations, as I only have XGOA verified and it is the only one to whom I have written. I have heard another one or two, but haven't taken the trouble to try to identify enough of the program for a report. That is one of the reasons I am also a bit short on the Japanese verifications. Every morning when they are coming in good, I promise myself to work on them the next morning. And so it goes. Hence I should have at least 30 of them verified, whereas I only have 19."

Anthony C. Tarr, Seattle, Wash., vice-president of the Universal DX Club and a regular contributor to RADEX columns, goes into more detail with tips on tuning and reporting.

"It is practically impossible to identify a Jap other than by its frequency," he advises. "As far as I know, the only time they announce is right at sign-off, and since this is usually around 9 a. m., EST, you can see that reception at that time is impossible in the East. In fact, it is very poor even here in the West. And so the only solution is to have a correct list of calls and frequencies, and go by that. Off hand, I recall only one instance—JORK and JFBK on 720—where two stations are on one frequency.

"Last season, it was very easy to report to the Japanese stations, because from 4.30 to 4.55 a. m., EST,

many of them presented a program intended to teach English to Japanese students. And at 4:55 came a five-minute period of news in English. My observations showed that many of the 10 KW stations had these programs daily, while a few seemed to join the chain only occasionally.

"About the earliest I have ever heard a Japanese here is 1:15 a. m., PST, although I have a personal friend who once heard one at 11:30 p. m., PST. As a rule, when the Japanese are coming in well, the VK's are not as good as usual, and vice versa. However, when reception conditions are particularly favorable, the whole band will be full of signals, and in some cases a J- and a VK- on the same frequency will take turns fading in and out. In fact, last season, I secured a report on 4RK and JOLK, both on 910 kcys, simultaneously. So you see it is next to impossible to forecast what may take place, as practically anything can—and probably will—happen.

"I have found the best time for the Japanese to be between 2 and 4 a. m., PST, although as I said before, the 1:30-2:00 English program was frequently heard last year on eight or more stations at one time, with four or five others coming in with a different program. While my records for last year show that most of my reports were secured in September and November, the stations are heard pretty well throughout the winter.

"When taking down a report for a verification, particularly when native music or language is heard, it should be sufficient to list what actually is heard, as per the following example:

- 4:03:00 a.m. Announcement by man in Japanese.
- 4:03:30 a.m. Solo by man with accompaniment of stringed instruments.
- 4:07:00 a.m. Announcement by man in Japanese.
- 4:05:30 a.m. Soprano solo with piano accompaniment.
- 4:15:15 a.m. Announcement by man in Japanese.
- 4:17:00 a.m. Japanese dance music by typical Japanese orchestra.

And so on for as long as one cares to listen.

"Too much emphasis cannot be laid upon the fact that the *correct* time is essential—to the quarter minute, if at all possible. I happen to know of a New Zealand listener who was refused a verie because his reported time of a sign-off was a half-minute incorrect!

"Courtesy also demands that the abbreviation 'Jap' be not used for 'Japanese.' In fact, the proper name for Japan is Nippon, and the inhabitants are known as Nipponese. Also, do not refer to their selections as 'native music,' for it is quite as familiar to them as the fox trot is to Americans.

"When addressing a report, the call letters and city are quite sufficient. While I have only six Jap veries, I did report to 13 of them last season. The reason I secured no more replies was due to the fact that I was erroneously informed that the Japanese stations were insulted if they received an IRC. Later my New Zealand correspondent backed down and admitted that he

was wrong. In every case so far, when stations use the same call letters with the numerals 'one' and 'two' as a suffix, they have used the same verification card with no indication as to which transmitter was being verified.

"As to the stations best heard, I would place JOAK-1, Tokio, 590 kcys, at the top of the list. Second best would be JOHK at Sendai, 770 kcys, while JBCK, Seishin, 850 kcys, would rank third. JOAK-1 uses 150 KW, while JOHK and JBCK use 10 KW. From there on, perhaps my complete Japanese log would be an indication of those most likely to be heard. As a rule, the 10 KW stations are about on a par, while the 500-watters are somewhat erratic and a 'catch-as-catch-can' proposition.

"Following is my complete log of Japs heard here; with frequency in kilocycles and power in kilowatts:

590	JOAK-1	150	Tokio
690	JOBK-1	10	Osaka
730	JOCK-1	10	Nagoya
770	JOHK	10	Sendai
780	JOPK	.5	Shizuoka
790	JOGK	10	Kumamoto
810	JOJK	10	Sapporo
830	JOJK	10	Hiroshima
850	JBCK	10	Seishin
870	JOBK-2	10	Tokio
910	JOLK	.5	Fukkuok
920	JOQK	.5	Niigata
940	JOBK-2	10	Osaka
980	JOXK	.5	unknown
990	JOCK-2	10	Nagoya
1050	JOJG	.5	Kagoshima
1060	JOIG	.5	Toyama

"Other Asiatic stations I have heard are: XGOA, Nanking, China, 660 ksyes, 75KW (probably off the air now); MTCY, Shinkyo, China, 560 kcys, 10 KW; RW-54 Khabarovsk, U. S. S. R., 540 kcys, 10 K.W.; and RW-32,

Vladivostok, U. S. S. R., 655 kcys, 10 KW.

"The title of 'friendliest station' should go to JBCK, Seishin, Korea, 850 kcys. The chief engineer, Haruhika Kakigi, has written me several letters and sent me some stamps. One of his letters is worth quoting:

"From 6:30 to 6:55 p. m. (4:30 to 4:55 a. m., EST) we usually spend this period for foreign language lecture, trying to aid high school students in foreign language studies. In your country hardly no student understands or reads Japanese language, but Japanese students are taught to read English language, and though not in practical use, they can comprehend English. So ability to read English language aids students in understanding English speaking people and countries. If you keep patient to hold your dial until 6:55 p. m. (4:45 a. m., EST) you can hear current topics broadcast in English for five minutes.

... I try to correspond our radio friends as promptly as possible, so encourage your friends also to catch our wave. ... We are located at Manchukuo border line and about 30 minutes beautiful highway drive from Seishin City will bring you to the station. You will find here 60 meters towers standing on cliff. ... Besides reception reports, we welcome personal letters, so write to us if you have any news or otherwise."

As previously stated, any attempt by the writer to give further tips on reception of Asiatic stations would be futile. However, it stands to reason that the fundamentals of good tuning procedure, as described in detail in the October issue, will be equally effective

when dialing stations at any point of the compass.

Here again, the advantages of "spot-tuning" cannot be over-emphasized. Using the list of Nipponese stations stressed by Mr. Tarr and choosing the proper time, DXers in any locality should concentrate their attention on, say, the three "best-heard" stations which he mentioned—JOAK-1 on 590, JOHK on 770 and JBCK on 850. As usual, it is wise to "park" on those frequencies for at least five minutes, allowing ample time for the stations to fade in if they are not heard at first. And once a station is coming in well, it is always a good idea to take down a complete and comprehensive report before going after another catch. As Mrs. Newcomb pointed out, it is always too easy to postpone the actual logging until another time.

If the first group of "selected stations" cannot be heard, another group may be tried—and so on for the duration of the period when the Japs should be heard.

Pacific Coast DXers probably will have little difficulty dialing a goodly crop of Asiatic stations during the winter season, but listeners in the Middle West and the Eastern states will have to remember the old adage about patience and perseverance being the prime essentials for DX success. It is possible to hear Japs in the Eastern Time Zone, as not a few DXers can testify, but it may take careful attention for many a morning before an intelligent report can be made out. If a Nipponese verie is worth having, it should be worth the effort necessary to secure it.

(Please turn to page 95)

HIGH FREQUENCY GLOBE TROTTING

● ● ● By RAY LA ROCQUE

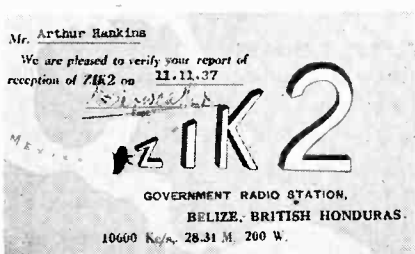
STRETCHING hundreds of miles to the southward from the mighty Himalaya Mountains are the ancient and vast plateaus and valleys of British India. All India Radio, a new and fast-growing network of short and medium wave stations is bringing to the world the music and customs of the Hindu people via its many broadcasters.

We are not going to try to convey the impression that India is a new country on the shortwaves, for there are many of us who remember—not so long ago—about 1935, we believe, when short-wave addicts were hearing (when conditions were good and the set was working properly) VUB on 9565 kcs. before W1XK came on the air Sunday mornings. Then there were the two wavelengths of the Calcutta station—VUC. However, in those days, India was just a station on the pages of a log book for most of us were unable to hear VUB—even under the most ideal DX conditions.

Now, as will be noted in this month's review, listeners are hearing India on assorted frequencies with apparently not too much difficulty. Stations in Delhi, Bombay, Calcutta, and Madras on the 4, 6, and 9 megacycle bands are being heard more and more consistently with the advent of colder weather. All India Radio is not standing still—it is moving forward and many new transmitters will continue to spring into operation for months to come.

India

VUD-3 on 15160 kcs. in Delhi is heard daily from 8:30-10:30 p. m.



Z1K2, the government station in Belize, British Honduras, issue this three color card. The land surface is white, and the water light blue. The location of British Honduras on the map is in red and the printing in black. A notation on the back of the card tells us that the principal products of this country are mahogany, chicle, bananas, coconuts and citrus fruits. (Courtesy of A. M. Hankins).

with a very good signal. It is now possible to hear the entire transmission. The signal holds up and the news which is given in English from 10:10-10:20 p. m. is clearly and entirely audible. (Marion-La. and Herz-III.)

VUD-2 on 9590 kcs. at Delhi is heard in the mornings as late as 8 a. m. There is usually a little QRM from VK6ME or 2ME. (Skyten-Mass.)

VUC-2 on 4880 kcs. at Calcutta is heard on the west coast from about 8:30 to 9:45 a. m. A station announcement may sometimes be heard at 8:55, but for the most part, station identifications are few and far between. VUB-2 on 4905 kcs. at Bombay is heard at approximately the same time as VUC-2. VUM-2 on 4950 kcs. at Madras on same schedule as VUB-2 and heard equally as

well. VUD-2 on 4995 kcs. at Delhi is another of the 4 megacycle stations which is being heard on the west coast. (R274—Wash.)

HELPFUL REPORTS

We are grateful for every letter and report from our followers. Most particularly desirable are reports on new stations, changes in frequency, location, call letters, or schedule. Next in the line of desirable reports are those on reception of stations not commonly heard.

How to go about reporting these stations? First you should always show the call letters, location, and exact frequency (when known) of the station. The time the station is heard is very important and, when possible, mention the time that reception reaches its peak. Be sure to mention any and all particulars that you may note when listening—particulars that may aid the other fellow in identifying, such as chimes, cuckoo calls, or other identification signals; peculiar announcements or slogans, languages used, male or female announcers, and the programs that are broadcast most frequently!

Basing our ratings on the above desired items we will, next month, inaugurate our "Report-o-meter". The "Report-o-meter" will register the first report received on any new station or change in present station. It will also register for succeeding reports which contain facts missing from previous reports.

By reporting in the manner outlined in previous paragraphs you will be assisting your fellow DXer to increase his log. Of course, he will want to reciprocate and repay you the favor. So what say? Do you want to help us to help you help yourself?

MEGACYCLE BREVITIES

Out of the west coast, according to Tony Tarr, they are hearing a new Java station on 3100 kcs. between 9-10 a.m. Particulars regarding call letters and location are lacking. . . And Tony says that some fellows out on the coast are hearing TAP on 9465 kcs. in Ankara, Turkey from 7-7:30 a.m. TAQ is also reported—they're heard around 2 p.m. on 15195 kcs. These reports will bear confirmation, however. . . Press Wireless has authority to move transmitter from Hicksville to Little Neck, Long Island and operate on the following frequencies: WHJ on 17440 kcs., WCW on 15850, WPK on 13840, WJQ on 10010, WBS on 7615, WEE on 6920 kcs., WBX on 5345 kcs. All with a power of one kilowatt.

A new and different field of DX is proving to be very good fishing for one of our most consistent reporters, Chet Roman of Chicago. His activities center on the bands "in between" the standard broadcast band and the shortwave broadcast bands. His is not, however, an interest in the hams or the police calls, but in the numerous other commercial and emergency service stations that are found on those bands. He has in his log many odd calls belonging to air bases, forestry stations coast guard, and border

patrol stations among the many others. Chet would like to see more space devoted to these stations, but lack of interest on the part of others makes it unwise to devote more space to these bands at present.

There are reports that a Capetown, So. Africa, station is operating on 9625 kcs. . . . Although we have yet to see reports on any of these, the N.N.R.C. has official information that the following are or will be operating soon: YV5RM on 5010 kcs. in Caracas, YV6RU in Ciudad Bolivar, YV2RN in San Cristobal, and YV3RN in Barquisimeto.

QUOTE AND UNQUOTE

F. J. Fraser, Ottawa, Ontario: "I believe the station reported as 'Radio Turkey' to be Tokyo, and heard what I described in a note at the time as 'primitive race song, accompanied by clappers and pipe instruments.' This was 8:30 p. m. September 1st and 2nd and it came through on subsequent dates, reception becoming more unstable as time went on during the evening. Now, many mornings this Spring and Summer I have listened to Tokyo (7-7:30 a. m.) and I am quite familiar with the program, but could never catch it at any other time in the morning. Occasionally, I was sure I heard Tokyo during the evening and on the 9th and 10th of this month (October) I heard JZK give its usual half hour program. On these programs about 8:20 p. m. there were curious 'Radio Turkey' renderings that I had heard previously at the same

time and at exactly the same place on the dial—i. e. very close to GSO!"

Chester Roman, Chicago, Illinois: "I'd appreciate it if anyone could supply me with the following information. Location of the station WWOO on 3410 kcs., WWXA on 3410 kcs., and WNI on 9170 kcs., somewhere in Missouri."

Kenneth D. Morey, 14 Lawndale St., Easthampton, Mass.: "Will you please put notice in RADEX that anyone in this district who desires to join our Hampshire Radio Signal Survey League Chapter can do so by contacting me."

J. J. Kolibonso, Batavia, Java: "I like tuning the shortwaves—I have been tuning shortwaves for four years, never the BCB stations as I seldom hear them. We are dependent on the shortwaves, especially for European reception. I also hear the U. S. A. stations, but they come in here not so loud as the Europeans. The best are GSG, GSH, DJB, GSB, IRF, CSW3, PHI. Their signals are regularly R8-9. From U. S. A. I hear W2XE, W3XAL, W8XK, W2XAF, with R5 and then not regularly. Many South American stations are heard on the 42-50 meter band, but it is not easy to log these stations as they always use announcements in Spanish, which I cannot understand. Apart from this their music is very good, tangos, and rumbas—which I like very much! On these bands the QRM is like machine gun fire, and to top it off we have the interference from automobiles that go by."

ULTRA HIGH

Very reliable conditions prevailed on the ultra high bands during the month and on several occasions the bands were "wide open" and good foreign reception was enjoyed on the ten meter amateur band. However, foreign countries have yet to start broadcasting, either experimentally or otherwise on these bands and until they do listeners will have to be content with domestic DX.

W1XCS on 100000 kcs. in Storrs, Connecticut is a new experimental broadcast station operated by the Connecticut State College. The station will use 250 watts and will also have available the following frequencies: 110000 kcs., 200000 kcs., and 300000 kcs. (RX)

W2XDG on 38650 kcs. in New York City is still being operated by the N.B.C. on a temporary license pending definite arrangements by the FCC of these ultra high frequency assignments.

W9XA on 26450 kcs. in Kansas City, Mo. has started broadcasting. They are heard on an irregular test schedule at present, coming in best here about the middle of the afternoon. Their programs are mostly relays from KITE, although they do transmit some programs of their own. (RL—Mass.)

W9XJL on 26100 kcs. in Superior, Wisconsin is again being heard in this section after not having been audible for many months. Programs are mainly relays of WEBC. (RL)

W9XTC on 26050 kcs. in Minneapolis, Minn. is still one of the best heard stations on the band in the afternoon. It is without a doubt the

most consistently heard station. (RL)

W9XUP on 25950 kcs. in St. Paul, Minnesota was heard during a freak reception period from 12-1 a. m. Reception of any station on these channels at this hour is very unusual, but the mere fact that they were heard once leads us to tell you to be on the lookout at all hours for unexpected reception on the ultra high frequencies! (RL)

SHORTWAVES IN REVIEW**Angola**

CR6AA on 7177 kcs. in Lobito is heard Wednesday and Saturday from 2:45-4:30 p. m. They are also said to be using 9666 kcs., and 13000 kcs. irregularly. (RL)

Australia

VLR-3 on 11380 kcs. at Melbourne, Australia will operate daily until 3 a. m. for the benefit of listeners in this country, according to announcement over VLR—9580 kcs. At 3 a. m. VLR will replace VLR-3 and will continue for the rest of the transmission. (Davis—Texas)

VK8SK on 6690 kcs. is reported to be a new Australian shortwave broadcasting station. Exact location not known. (N.N.R.C. Bulletin)

British Guiana

VP3BG on 6130 kcs. in Georgetown is now being heard with two transmissions daily. Schedule is Mon., Wed. and Fri. from 4:15-6 p. m. and 6-9 p. m. On Tues., Thurs. and Sat. they broadcast from 11:30-12:30 a. m. and 4:15-9 p. m. Sundays from 8-10 a. m. and 3:30-5 p. m. Time is given in British Guiana Time. (RX)

Cuba

CLX on about 7000 kcs. Their correct address is Observatorio Nacional, Casa Blanca, La Habana, Cuba. Guanabacoa is another municipality in Havana Province and is a town near the city of Havana but not the capital. The Observatory is near the Morro Castle, overlooking the city. (Hidalgo-Cuba)

Czechoslovakia

OLR4A on 11840 kcs. in Prague is now carrying all programs directed to the United States. They no longer shift to the 15 megacycle channel. (Marion—La.)

Curacao

PJC-2 on 9100 kcs. at Willemstad are heard very well till around 8:30 p. m. (RL)

French Indo China

"Boy Landry" on 11710 and 9750 kcs. at Saigon usually broadcast simultaneously. The latter is not on regularly, but when being used is much more easily heard than the former frequency. (RA—New Zealand)

Germany

DJZ on 11801 kcs. at Berlin replaces DJP on the North American transmission from 7:15-10:50 p. m. (Herz—Ill.)

Guatemala

TG3 on 2340 kcs. in Guatemala City is a new station in that city broadcasting on the same network and in parallel with TG1, TG2. The three Guatemala stations along with the two in Quetzaltenango (TGQ and TGQA) are on the air until 3:00 a. m. on Sundays. Programs broadcast by these stations contain only the best musical entertainment. The crack marimba bands of Guatemala and select recorded music offer a

splendid relaxation from the swing jam and jitterbug sessions broadcast over our own stations. Don't get us wrong, we like swing music—but in moderation! (Sekach-Mich. and Bruder-Mass.)

Japan

JZJ on 11800 kcs. replaces JZK on the morning program to the United States between 7-7:30 a. m. (Skyten-Mass.)

JZK on 15160 kcs. in Tokyo is now used on the Japanese program to the United States at 8 p. m., replacing JZL. (Skyten-Mass.) JZK is on the air from 8-8:30 a. m. for the east coast of the United States. (Herz-Ill.)

Java

YDA on 3040 kcs. in Batavia is heard on the west coast from 8:30 to a fade out around 9:30 a. m. Another Java station on 3100 kcs. is being heard around the same time, but the call and city is unknown. (R274—Wash.)

Martinique

"Radio Martinique" on 9700 kcs. is heard very well on Sunday afternoon. They signed with "La Marseillaise" at 4 p. m. (Skyten-Mass.)

Mexico

EXXA on 6174 kcs. in Mexico City broadcasts a half hour program in English every Friday evening from 11 to 11:30 p. m. They relay XEDP, not XEXM! (Parfitt-Ohio)

Mozambique

CR7BH at Lourenzo Marques on 11718 kcs. is being heard occasionally in the afternoons between 3 and 4 p. m. (R220—Mass.)

New Zealand

NEW on 6960 kcs. at Wellington, a station relaying broadcast band 2ZB. They operate daily from noon to 6

a. m. EST. Power is 200 watts and address, 2ZB Radio Station, Wellington, N. Z. (NNRC Bulletin)

Nicaragua

YNRS on 6760 kcs. in Managua is a new station announcing as "Radio Nicaraguense" and heard very well every evening. (Bruder-Mass.)

New Caledonia

FK8AA is the call of the station known as "Radio Noumea" on 6100 kcs. reported here last month. The call, however, is seldom heard. (RL)

Panama

HP5G on 11780 kcs. again after trying 11895 kcs. for a period. (RL)

Pitcairn Island

VR6AY was heard recently and among the many remarks was the one that postage rates had gone up on the island and are now equivalent to about five cents in American money. (R140—Conn.5)

Siam

HS6PJ on 15770 kcs. at Bangkok announced the use of this new frequency for the Monday 8-10 a. m. transmission. (NNRC Bulletin)

Spain

EAJ-43 on 7500 kcs. is heard each night from 8-9 p. m. The program consists of talks and news in Spanish and very good music. The announcements are in Spanish until the end of the program at about 8:55 p. m. when the following is spoken in English: "Hello United States, Canada and all English speaking people. This is Radio Club Tenerife, EAJ-43. We broadcast every day from 1 to 2 a. m. GMT on 40 meters, 7500 kcs." Then, there sounds a gong and a short news period in English. They close down



The Red Square in Moscow. This card was sent as a verification of reception of station RK1, 15080 kcs. The postage stamps used on Soviet verifications are usually very attractive commemoratives. (Photo by courtesy of J. R. Hahn).

saying that QSL cards will be sent to each person submitting a correct report. Their address is P. O. Box 225. (Marion-La.)

"Radio Nacional" on 10370 kcs. at Salamanca, Spain comes on the air at 6:30 p. m. in parallel with the station on the low frequency end of the 20 meter band. The 20 meter station is by far the strongest signal of the two! (R7-Pa.1)

Straits Settlements

ZHO on 6170 kcs. at Singapore is a good catch in anyone's home town. The station signs off at 9:40 a. m. with "God Save the King," which is preceded by "Good night, everybody, good night!" (R274—Wash.)

Union of South Africa

Capetown on 9620 kcs. is being heard on the west coast from 10-11 a. m. with time pips at 10. No doubt they have a longer schedule, but the time given is the time during which they are heard best. (R274—Wash.)

United States

W2XJI on 26300 kcs. at Newark,

N. J. will broadcast programs twice weekly for the Newark News Radio Club. The programs, of special interest to all DXers, will be conducted every Tuesday at 8 p. m. and every Friday at midnight. The first program of the series was transmitted on Friday evening, November 11. (NNRC Bulletin)

W3XAL on 9670 kcs. is now being heard on this new frequency in the evening with programs in Spanish and Portuguese directed to a Latin American audience. (Sekach-Mich. and Bruder-Mass.)

W3XL on 17780 kcs. is the call of the new construction permit granted the NBC for an international broadcast station at Boundbrook, N. J.

U. S. S. R.

"Kazan" on 7350 kcs. at Moscow is heard at 3:30 a. m. Announced frequency is 7500 kcs., but they are far off frequency. All announcements are in Russian and programs consist mostly of operatic music. (UDXC Bulletin)

RV-96 on 15180 kcs. is the call of the station reported here last month. They are heard very well early in the afternoon. (RL)

Vatican City

HVJ on 15121 kcs., the Papal station, is transmitting a program consisting of Catholic news and religious music each Sunday afternoon from 1-1:30 p. m. It is coming in QSA5, R9! Broadcasting starts at 12:55 with a signal note—25 per minute. The program is entirely in English and directed to America. (Barker-Me.)

Join the RADEX Club now! We would like to have every reporter in our list displaying a RADEX Club number after his name, and hope to be pleasantly surprised next month with a list of numbers twice the size of the one below:

Reporters for the month

- RA Alan I. Breen, Dunedin, New Zealand
- R7-Pa. 1 A. M. Hankins, Latrobe, Penna.
- R9-Mo. 1 Walter V. Scholz, Webster Groves, Mo.
- R21-Pa. 3 Edward Lang, Philadelphia, Penna.
- R23-Ill. 4 Richard Wright, Chicago, Ill.
- R35-Cal. 2 Stanley La Rue, Beverly Hills, Calif.
- R49-D.C. 2 David Hill, Washington, D. C.
- R111 Edward Hirsch, St. Albans, N. Y.
- R140-Conn. 5 J. Herbert Hyde, Elmwood, Conn.
- R149 Chester Brown, Bradford, Penna.
- R220 Albert Pickering, West Medway, Mass.
- R274 A. C. Tarr, Seattle, Wash.
- Elvyn Barker, Portland, Me.
- Arthur F. G. Bruder, Allston, Mass
- H. W. Conrad, Guthrie, Okla.
- Isaac T. Davis, Elkhart, Texas
- A. V. Deterly, Baton Rouge, La.
- F. J. Fraser, Ottawa, Ontario, Canada
- Leo Herz, Chicago, Ill.
- Enrique Hidalgo, Cienfuegos, Cuba
- Virgil Horton, Chicago, Ill.
- Charles A. Marion, New Orleans, La.
- Kenneth Morey, Easthampton, Mass.
- Arthur Parfitt, Cleveland, Ohio
- Chester Roman, Chicago, Ill.
- Frank Sekach, Detroit, Mich.
- Robert Skyten, East Brookfield, Mass.
- Robert Trubee, Brentwood, N. Y.

Just Dialing Around

• • • By CARLETON LORD

PET peeve of the month concerns the current tendency of a few orchestra leaders to forget their prime purpose in everyday life and attempt to become personality boys.

The trend might be traced back a dozen years to the days when Rudy Vallee began to announce his own programs. Or perhaps Ben Bernie started it when he laid aside his fiddle at too frequent intervals to kid the public and interview visiting firemen.

But whatever the precedent, the past six months have found an increasing number of bandsmen with battalions of bees in their bonnets. Apparently they believe that no broadcast can be complete without a flood of silly riddles being fired at innocent bystanders.

Once a week Jan Garber has a "Movie Night" and, while his grand band remains silent, dancers are regaled by asinine questions about the stars. The swell Dixieland swing of Bob Crosby is silenced one night each week in favor of a "Candid Camera Club," which is just another name for a musical memory test. The "Makes-You-Want-to-Dance" music of Kay Kyser is interrupted each Wednesday evening in the interests of a sponsor who has the warped notion that a "Kollege of Musical Knowledge" makes good listening.

The cheese cake, however, goes to Horace Heidt, who seems to have the idea that he is the long-awaited Robert Taylor of the air. His devastating personality is thrown into high gear



as, without provocation, he oozes down from the podium to greet the "lovely crowd" gathered to pay tribute. Ah, yes! It is a great evening when Horace salutes the multitude and allows a privileged few to be interviewed before the microphone.

Other lesser-known bandsmen are following the same general idea, but these are notable examples of top-ranking stars who seem to forget that listeners expect them to furnish music in their own distinctive styles. It may be a great experience for the dancers who are questioned, but there are increasing numbers of dialers who wish the riddles and quizzes would be restricted to the vox poppers.

Before the advent of radio, it took years and sometimes decades for American songs to acquire the status of a tradition in the music culture of this country, Andre Kostelanetz points out. In his opinion, one of the little-realized virtues of radio is the speed by which it establishes many songs in the minds and hearts of listeners.

"Within the last five or six years, several selections rapidly became known to and appreciated by the public," he explains. "Songs that would have required almost ten times that period in the past, have earned a permanent place in American music."

Whether this influence of radio is really beneficial will be something to decide in future years. For every popular song introduced by radio, three or four really excellent tunes are rapidly killed by constant repetition. Those complaints by music publishers against the Hit Parade seem to bear out this contention.

Traditional Strauss, Friml, Lehar and Herbert successes did not require a radio stimulant to become popular. If they had been pushed by every band in the air, it is not unlikely that they might have suffered the same fate as more recent hits of equal appeal.

* * *

TIME MARCHES ON — It could only happen in Hollywood. On one of Jimmy Durante's radio appearances, he got an agent to secure the services of two writers, Arthur Sheekman and Nat Perrin. These two boys turned out an uproariously funny script and Durante showed his appreciation by presenting each of the pair with a fine watch.

This burned up the agent who secured the two script writers, as he felt that he deserved a little something in the way of a commission. Sheekman and Perrin sympathized with him, although they couldn't very well give him part of a watch as his share. So they did the next best thing. They called him on the telephone every ten minutes and told him what time it was.

Radio is infrequently the object of attacks by people who live in the glory of the past. They claim that radio is creating no tradition and will leave no fond memories for posterity to treasure.

They are the persons who will spend hours telling of performances by John Drew, Wilton Lackaye, Jeanne Eagles and other immortals of the theater. Then they will reminisce of the hallowed film achievements of John Bunny, Wallace Reid and Lon Chaney. You are smugly dared to produce radio names from the current crop whose deeds will live in similar fashion.

Broadcasting is, of course, barely 18 years old. Its long pants are still being lengthened to meet the tops of its shoes, and it seldom shaves more than once a week. And while it is hardly fair to compare it with older fields of entertainment, radio makes no apologies and asks no favors.

At this relatively early stage of its history, it has produced some names which will live in the years to come. Walter Damrosch is doing wonderful



The Smoothies, popular radio trio.

work for the musically uninitiated. His intelligent interpretations of the classics have established a new importance for radio.

The Mauve Decade had its Wilson Mizners and Wilton Lackayes, whose brilliant barbs have stood the test of time. But here's a prediction: Fred Allen's salty microphone comments on the current American scene will be remembered years hence as highlights of this time.

Paul Whiteman's air sponsorship of important semi-classical music, as arranged by Ferde Grofe, will recall fond memories in the years to come. The exciting personality of Helen Hayes and the unique programs of Phil Lord will provide plenty of fireside fodder for the old gaffers of a new generation.

* * *

The proving ground for radio comedians' jokes is full of bumps. If his wife won't laugh at his gag, if it leaves his grandmother cold, if his fellow players greet it with blank expressions of pitying scorn—well, the joke's on him.

Wives, fellow-players and a grandmother are among the hardy souls on whom the CBC comedian tries his jest before springing it on network listeners.

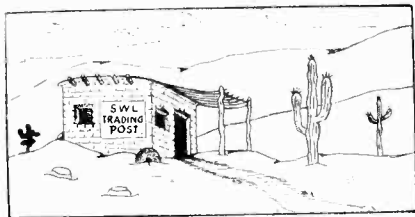
One of Columbia's leading comedians, however, is different. The

very first thought Eddie Cantor gets of an alleged gag is kept quite to himself. "My wife and children," he reports, "are not burdened. When I think of a new joke, I repeat it aloud to myself. By this method, I first judge its effectiveness."

Well known, of course, is Cantor's tested practice of submitting the finished product to invited studio audiences before it goes on the air. It takes the form of a public "dress rehearsal," held in the same studio and under the same conditions as it will be a few hours later before an open microphone. When the gag doesn't get the desired response from the dress rehearsal audience, it gets the hook.

Phil Baker places the whole burden of rating his jokes on his attractive wife, Peggy Cartwright. The worst reward he can look for is a patient smile, which is enough to doom the gem he has uttered. Infinitely more capricious are his little children, Margo, 2, and Stuart, 3. One time he brought his script home, they stole it from his pocket, studied it wonderingly for several minutes, and then ceremoniously tore it into swirling shreds.

It's George Burns' brother—and not Gracie's missing one—who hears the pearl of humor first after George thinks of it. Willy has to laugh at it --and right away.



RAY EVERLY



DXer Ray Everly of Newton, Ill., is a DXer of nearly ten years standing, having started his tuning activities in March of 1929. His first verification was from CKAC, received on November 5, 1929.

Ray uses two receivers, a 1931 model 12-tube Scott, and a 1938 Patterson PRI15, but has used many different kinds in the past, including a Scott battery set, Scott AC-10, HFL Masterpiece, RME69, Patterson PR16 and HRO Jr.

His log to date is 1041 stations, with most of them verified. His tuning is confined exclusively to the broadcast band, and the 20 meter amateurs. He considers his diploma from LR5 as his finest verification,

but his favorite sport is logging 100 watters on the west coast.

A RADEX subscriber since 1930, he has a complete file of back issues from Number 38 to the current month. He is a member of The RADEX Club, the Illinois Director of the Newark News Radio Club and a member of the Quixote Radio Club.

Jim C. Moulton, 4912 Quebec St., N. W., Spring Valley, Washington, D. C. (SWL cards).

W. H. Herman, 1622 E. 78th St., Cleveland, Ohio. (SWL cards).

Jack Wells, 100-14th St., Phenix City, Ala. (cards and correspondence).

John Roscoe, 5351 St. Aubin, Detroit, Mich. (SWL cards).

Raymond A. Skidmore, 2311 Pasadena Ave., Detroit, Mich. (cards and correspondence).

Stanley Brus, 1441 Bell Ave., North Braddock, Pa. (SWL cards).

Roy H. Babbitt, Route 1, Killingly, Conn. (SWL cards).

Sam Graham, Box 435, Panhandle, Texas (SWL cards).

Lewis R. Hill, 2138 S. 1th Ave., Maywood, Ill. (SWL cards).

Cuban Frequency Changes

THE Secretary of Communications of the Republic of Cuba has assigned new frequencies to many of the Havana stations, and granted licenses to two new broadcasters, according to Sr. G. R. Barbarrosa of *Radiomania*, in Havana. The frequencies of the stations in the interior of the country will also be changed, Sr. Barbarrosa states.

The two new stations are CMCH on 1050 kcs., and CMBH on 1600 kcs., extending the broadcast band from 1500 down to 1600 kcs. Other stations which have been moved to this part of the band are CMC, which is now on 1530, and CMBF, broadcasting on 1560 kcs.

QUESTIONS and ANSWERS

W. L. D., Brooklyn, N. Y.: I get high power stations about 20 points off on my dial. How can I correct this?

Answer: The set is not properly aligned or the oscillator circuit is out of adjustment, provided that the dial mechanism has not slipped. Take the receiver to a good service man and have it tested with an oscillator and adjusted and lined up so that all stations come in at their proper points on the dial.

B. O. B., Kingsport, Tenn.: I want to build a metal locator which is similar to a radio receiver. Where can I get plans, and will it locate metal under the surface of the earth?

Answer: Every now and then a metal locator, which is a sort of radio divining apparatus, is invented. Several of the popular magazines publishing scientific articles have described such devices, and we suggest you write the editors for further information. We cannot say whether the instruments are useful, but they are theoretically correct from a radio standpoint.

J. P. B., Vandergrift, Pa.: I travel a lot and carry my radio along. But it is hard to use suitable aeriels in hotels and elsewhere. A short wire out of the window does not seem sufficient. What do you suggest?

Answer: For a small receiver a good antenna is almost a necessity. Use a metal battery clip attached to a piece of wire and hook it to the bed spring in your room. Then, an extra piece of wire dropped out of the window will help. This method might give you enough antenna capacity. It is very difficult, as a rule, to obtain enough antenna length in hotel rooms for distant reception on small sets.

M. R., Amherst, Mass.: My broadcast receiver often picks up key-operated tele-

graph stations. How can I keep this form of interference out?

Answer: On the broadcast band it is common to hear code signals if one is located not far from large radio telegraph stations. While the code is not on the same wave-length as your broadcast band, you frequently hear the harmonics. Then, too, the set may be at fault by having some inherent system of harmonics to which it is sensitive. These signals are almost impossible to eradicate, but sometimes a good wave trap is beneficial. The trap can be tuned to reject the unwanted signal on that particular wave length, but it will also hold back broadcast signals on the same wave.

A. E. D., Chicago, Ill.: My Zenith had glass tubes which I replaced with metal tubes. The broadcast band is broad and image frequencies appear on the short waves. What shall I use?

Answer: If the set worked well with glass tubes, it was aligned at the factory for those tubes. The use of metal tubes calls for realignment. But we think the metal-glass tubes would be better than the all metal. We do not believe the reception would be improved, and perhaps it would be best for you to go back to the original tubes.

E. D., Pawnee City, Nebr.: A power line with transformers is behind my house, and interference is so bad on my set that from 20 meters up the set is useless. What can I do?

Answer: We are very sorry, but there is little that you can do. A short antenna, as far away as possible, with noise reducing lead-in and no ground, might improve things. The interference from transformers and wires comes from leakage, which is worse in wet weather, and induction from the magnetic field around the lines.

V. O., Independence, Mo.: I like to hear short wave stations, but my Philco

116-B does not get many such signals. Will I have to get a regular communications receiver?

Answer: Very few of the earlier all-wave receivers will bring in many short wave stations on one band at a time. They usually pick up only the stronger stations if conditions on the bands are right. The modern all-wave sets are better but not as good as a commercial communications receiver. This is quite natural. The communications receiver will crowd all the bands with signals, often so that they are difficult to understand. Tuning, however, is sharp, and there is no trouble receiving hundreds of stations. For real DX work, when tone is not valued too highly, the sharp-tuning communications receivers are hard to beat. Good ones, however, are more costly than all-wave home receivers.

A. F., Toronto, Can.: I have a Radiola 60. Which is the detector tube? How can I hook a phonograph pickup to this set?

Answer: The Radiola 60 has 9 tubes. The first detector is a type 27 tube third from the type 80 in the corner of the chassis. The second detector is a type 27 second from the other end, next to the type 71A audio tube. Connect the phonograph pickup to the second detector by means of an adapter which can be purchased as any large radio supply house.

W. K., Indianapolis, Ind.: How can I attach an R.C.A. speaker to a 1937 R.C.A. receiver so as to use two speakers?

Answer: An article elsewhere in this magazine deals with the installation of an extra speaker. Not knowing the model of your set and the resistances of the two speakers we cannot give you definite details for best operation.

M. S., Oakland, Calif.: I have read much about pre-selectors. I would like to build one, if you can give me the names of some good kits.

Answer: Write to the Meissner Mfg. Co., Mt. Carmel, Ill., and the J. W. Miller Co., 5917 So. Main Street, Los Angeles, Calif., for information about their kits. But please mention RADEX.

C. A. Benson, Ill.: I built a two tube battery set and wish to eliminate hum as I expect to use headphones. How is this done? An electric lamp will be close to the receiver.

Answer: A battery set should have no hum in it as hum is the result of poor rectification of house lighting current. Any hum you might pick up will be due to induction from power lines. The low-voltage wires of the nearby electric lamp should not prove troublesome.

W. H., Pittsburgh, Pa.: My Stewart Warner 801 brings in automobile static and 160-meter amateurs on 760 kilocycles. Is this a natural point for interference or images?



From radio station WKAT in Miami Beach, Florida, comes this appropriate card, showing a "kat" at the microphone. In the upper right hand corner, "Today's Temperature" is given, as high, 82, and low, 70 degrees. Russell H. Bennett, the Chief Engineer, signed the card. (Courtesy of Francis Coradetti).

Answer: It is likely that this frequency is a weak spot in your tuning and that harmonics and image frequencies appear at this point on the dial. We suggest you

have the set aligned and adjusted by a competent service man. A good wave trap tuned against 760 meters should reject some of the interfering signals.

W. J. A., Venice, Calif.: I have a Crosley model 53 Low Boy. Tell me what causes it to fade and have intermittent reception. What is the remedy?

Answer: The volume control may be in need of cleaning or replacing. Tubes, of course, must be in good shape. Sometimes a new 0.5 mfd. condenser that is between the speaker voice coil and type 45 audio output tube grid-bias resistor, is a big help. Check all resistors, condensers and unsoldered contacts, such as the speaker plug.

L. H., Ottawa, Ont.: I have a 6 tube Majestic and get two-point reception of a local station, just 20 points lower than the correct setting where the station also is heard. Why is this?

Answer: This could not be a form of image frequency, unless it comes in the form of a harmonic. There is little you can do, since often the harmonic of a station is picked up the same as its fundamental signal, and this harmonic sets up its own image or double-spot signal. There are many combinations that can be computed for signals, and we think your trouble is one of these. We suggest you try a wave trap tuned to the interfering signal at the incorrect dial reading.

Mr. Charles Houde, Managing Director of CHNC, "The Voice of La Baie des Chaleurs," New Carlisle, Quebec, calls our attention to the fact that his station will commence broadcasting on the new frequency of 610 kcs. on January 1st, 1939. CHNC's present assignment is 960 kcs.

Amateur Calls Heard

The names and addresses of persons reporting stations shown in this list are indicated by small letters following the call signs. Key to the small letters is given at the end of the column. Stations are listed only if reported by more than one listener.

TEN METERS

G2VM (g); G2ZV (g); G5LJ (g); G5SI (g); G8SA (g); HC1FG (g); H17G (gi); HR4AF (g); K4EIL (i); K4EIG (d); K4FAB (gi); K4FDC (i); K4SA (gi); K6MNV (i); LU1DI (gi); LU9BV (i); PAOFB (g); T12FG (i); T13AV (g); VK2GU (g); VP5IS (i); XE2PC (i); XE2SE (g); YN3DG (d); YV1AP (i); YV1AQ (dgi); ZE1JZ (i); ZS6DW (i); ZS6S (i).

TWENTY METERS

CO2JJ (ab); CO2WW (ab); CX2CO (ai); EI6G (bi); FA3HC (ej); G2AV (bg); G2DV (bi); G2MF (bi); G2PU (bi); G2UT (bj); G2XV (bi); G5KH (bi); G5ML (dgi); G5NI (bg); G5QN (bi); G6HV (bi); HC1FG (dgi); HC1PZ (aj); HC2HP (bj); HH2B (bdef); HH4AS (bj); HH5PA (dgi); H13N (bdii); H15X (bcgij); H17G (abei); HK3CG (di); HK3LC (bde); HK4AG (bi); HR5C (bdgij); KA1BH (af); KA7EF (bf); K4EVC (abd); K4FAY (abi); K4FKC (bcb); K5AH (bi); K6ILW (deg); K6OJI (bdg); LU1JC (ab); LU4BC (bdij); LU7BK (ej); LU8AC (bi).

OA4C (gi); PK3WI (af); PK6XX (efj); PY1FR (bb); PY2AK (di); TG9BA (bj); T12AV (di); T12FG (adegi); T12LR (bdhi); VK2NS (bdgij); VK2TO (aj); VK3BZ (ij); VK3EH (ab); VK3HG (ij); VK3KX (ab); VK4JP (abei); VK4JU (dej); VK4VD (ej); VK5BF (ij); VK6MW (ij); VK7CL (af); VP1BA (bdei); VP3AA (bcfg); VP6FO (bcdeb); VP7NS (bcdgj); VP7NU (bdgj); VP9G (bj); XE1Q (abci); XE2IK (bg); YN1OP (ij); YV1AQ (bcdjgbi); YV4AE (dgi); YV5ABF (bgbi); YV5ABY (bdg); ZS5AW (af); ZS6DW (bd); ZS6H (a).

THE REPORTERS

- (a) C. J. Fern, Jr., Lihue, Kauai, Hawaii.
 (b) A. M. Hankins, Latrobe, Pa.
 (c) Lewis R. Hill, Maywood, Ill.
 (d) Merton T. Meade, Kansas City, Mo.
 (e) Benjamin Peet, New York, N. Y.
 (f) Harold Satterthwaite, Los Angeles, Calif.
 (g) Bob Taglauer, Covington, Ky.
 (h) John Tate, Petersburg, Va.
 (i) Walter E. Welch, Lynn, Mass.
 (j) Jack Wells, Phenix City, Ala.

4:10-4:25	WQAN	880	Scranton, Pa.
	KWNO	1200	Winona, Minn.
	WHDL	1400	Olean, N. Y.
4:15-4:30	KRIS	1330	Corpus Christi, Tex.
	WEBR	1310	Buffalo, N. Y.
	WIBM	1370	Jackson, Mich.
4:20-4:35	KBST	1500	Big Spring, Tex.
	WPAR	1420	Parkersburg, W. Va.
4:25-4:40	KSO	1430	Des Moines, Iowa
	WCLO	1200	Janesville, Wis.
4:30-4:45	KROC	1310	Rochester, Minn.
	WFOA	1370	Evansville, Ind.
4:35-4:50	KDAL	1500	Duluth, Minn.
	WELL	1420	Battle Creek, Mich.
4:40-4:55	WHBC	1200	Canton, Ohio
	WTAW	1120	College Sta., Tex.
4:45-5:00	KRMD	1310	Shreveport, La.
	WSAU	1370	Wausau, Wis.
4:50-5:05	KNEL	1500	Brady, Tex.
	WLAP	1420	Lexington, Ky.
4:55-5:10	KFDM	560	Beaumont, Tex.
	WFAM	1200	South Bend, Ind.
5:00-5:15	KPDN	1310	Pampa, Tex.
	WHLS	1370	Port Huron, Mich.
5:05-5:20	KPLT	1500	Paris, Tex.
5:05-5:20	WCBS	1420	Springfield, Ill.
5:10-5:25	KGKO	570	Forth Worth, Tex.
5:15-5:30	KFPL	1310	Dublin, Tex.
	WDWS	1370	Champaign, Ill.
5:20-5:35	KAWM	1500	Gallup, New Mex.
	WPAD	1420	Paducah, Ky.
5:25-5:40	KGLO	1210	Mason City, Iowa
	WJBC	1200	Bloomington, Ills.
5:30-5:45	KRRV	1310	Sherman, Tex.
	WGL	1370	Fort Wayne, Ind.
5:35-5:50	KGKY	1500	Scottsbluff, Neb.
5:40-5:55	WIBU	1210	Poynette, Wis.
5:45-6:00	KRBA	1310	Lufkin, Tex.

The Second Thursday

3:00-3:15	WKAT	1500	Miami Beach, Fla.
3:05-5:20	WJRD	1200	Tuscaloosa, Ala.
3:10-3:25	WSOC	1210	Charlotte, N. C.
3:15-3:30	WAML	1310	Laurel, Miss.
3:20-3:35	WPRA	1370	Mayaguez, P. R.
3:25-3:40	WPAX	1210	Thomasville, Ga.
3:30-3:45	WQAM	560	Miami, Fla.
3:35-3:50	WPRP	1420	Ponce, P. R.
3:40-3:55	WFTC	1200	Kinston, N. C.
3:45-4:00	WKAQ	1240	San Juan, P. R.
3:50-4:05	WBIG	1440	Greensboro, N. C.
3:55-4:10	WFOY	1210	St. Augustine, Fla.
4:00-4:15	WAGF	1370	Dothan, Ala.
4:05-4:20	KPLC	1500	Lake Charles, La.
	WFDF	1310	Flint, Mich.
4:10-4:25	WGRM	1210	Grenada, Miss.
	WSPD	1340	Toledo, Ohio
4:15-4:30	WCOP	1200	Cincinnati, Ohio
	WMFO	1370	Decatur, Ala.
4:20-4:35	KFIZ	1420	Fond du Lac, Wis.
	WKEU	1500	Griffin, Ga.
4:25-4:40	WGBF	630	Evansville, Ind.
	WGCM	1210	Miss. City, Miss.
4:30-4:45	KFYO	1310	Lubbock, Tex.
	WAVE	940	Louisville, Ky.
	WFOR	1370	Hattiesburg, Miss.
4:35-4:50	KFJM	1410	Grand Forks, N. Dk.
	WMP5	1430	Memphis, Tenn.
	WTMW	1500	E. St. Louis, Ills.
4:40-4:55	KTCU	1240	Mandan, N. Dak.
	KQV	1380	Pittsburgh, Pa.
	WBHP	1200	Huntsville, Ala.
4:45-5:00	KWOS	1310	Jefferson City, Mo.
	WCOC	880	Meridan, Miss.

4:50-5:05	WGRC	1370	New Albany, Ind.
	KOTN	1500	Pine Bluff, Ark.
4:55-5:10	WWEV	760	St. Louis, Mo.
	WJMS	1420	Ironwood, Mich.
5:00-5:15	KGHF	1320	Pueblo, Colo.
	WHDF	1370	Calumet, Mich.
5:05-5:20	KGFI	1500	Brownsville, Tex.
	WTRC	1310	Elkhart, Ind.
5:10-5:25	KHBG	1210	Okmulgee, Okla.
5:15-5:30	KONO	1370	San Antonio, Tex.
5:20-5:35	KGKB	1500	Tyler, Tex.
5:25-5:40	KASA	1210	Elk City, Okla.
5:30-5:45	KFRO	1370	Longview, Tex.
5:35-5:50	KNOW	1500	Austin, Tex.
5:40-5:55	WMFG	1210	Hibbing, Minn.
5:45-6:00	KRLH	1420	Midland, Tex.
5:50-6:05	KCRJ	1310	Jerome, Ariz.
5:55-6:10	KIUL	1210	Garden City, Kans.
	KVOA	1260	Tucson, Ariz.
6:06-6:20	KHUB	1310	Watsonville, Calif.
6:10-6:25	KSAN	1420	San Francisco, Calif.
6:15-6:30	KGAR	1370	Tucson, Ariz.
6:20-6:35	KSRO	1310	Santa Rosa, Calif.
6:25-6:40	KTRB	740	Modesto, Calif.
6:30-6:45	KJBS	1070	San Francisco, Calif.
6:35-6:50	KSUB	1310	Cedar City, Utah
6:40-6:55	KDON	1210	Monterey, Calif.
6:45-7:00	KGU	750	Honolulu, T. H.
6:50-7:05	KHSL	1260	Chico, Calif.
6:55-7:10	KROY	1210	Sacramento, Calif.

The Second Friday

3:00-3:15	WSVS	1370	Buffalo, N. Y.
3:05-3:20	WJAC	1310	Johnstown, Pa.
3:10-3:25	WJTN	1210	Jamestown, N. Y.
3:15-3:30	WBLK	1370	Clarksburg, W. Va.
3:20-3:35	WLEU	1420	Erie, Pa.
3:25-3:40	WCAP	1280	Asbury Park, N. J.
	WSAY	1210	Rochester, N. Y.
3:30-3:45	WDEV	550	Waberbury, Vt.
	WGH	1310	Newport News, Va.
3:35-3:50	WCNW	1500	Brooklyn, N. Y.
	WMBS	1420	Uniontown, Pa.
3:40-3:55	WFAS	1210	White Plains, N. Y.
	WMBG	1350	Richmond, Va.
3:45-4:00	WOKO	1430	Albany, N. Y.
	WRAW	1310	Reading, Pa.
3:50-4:05	WDAS	1370	Philadelphia, Pa.
	WVSYB	1500	Rutland, Vt.
3:55-4:10	WNBZ	1290	Saranac Lake, N. Y.
	WSYR	570	Syracuse, N. Y.
4:00-4:15	WBRE	1310	Wilkes-Barre, Pa.
4:05-4:20	WBTM	1370	Danville, Va.
	WNLC	1500	New London, Conn.
4:10-4:25	WGBB	1210	Freeport, N. Y.
	WHCC	1430	Rochester, N. Y.
4:15-4:30	WAZL	1420	Hazleton, Pa.
	WTHT	1200	Hartford, Conn.
4:20-4:35	WMBQ	1500	Brooklyn, N. Y.
	WRAC	1370	Williamsport, Pa.
NINETEEN — RADEX			
4:25-4:40	WBOW	1310	Terre Haute, Ind.
	WGNV	1210	Newburgh, N. Y.
4:30-4:45	WJBL	1200	Decatur, Ills.
4:35-4:50	KATE	1420	Albert Lea, Minn.
	WKBB	1500	Dubuque, Iowa
4:40-4:55	KARK	890	Little Rock, Ark.
	WJIM	1210	Lansing, Mich.
4:45-5:00	WEXL	1310	Royal Oak, Mich.
	WHLB	1370	Virginia, Minn.
4:50-5:05	KIUN	1420	Pecos, Tex.
	WOMI	1500	Owensboro, Ky.
4:55-5:10	KFJB	1200	Marshalltown, Iowa
5:00-5:15	KGGM	1230	Albuquerque, N. Mex

	WBEO	1310	Marquette, Mich.
→5:05-5:20	KGIW	1420	Alamosa, Colo.
	JKBV	1500	Richmond, Ind.
5:10-5:25	KGDE	1200	Fergus Falls, Minn.
	WHBF	1210	Rock Island, Ills.
→5:15-5:30	KGFL	1370	Roswell, N. Mex.
	WEMP	1310	Milwaukee, Wis.
5:20-5:35	KEUB	1420	Price, Utah
→5:25-5:40	WCAT	1200	Rapid City, S. Dak.
	WEBQ	1210	Harrisburg, Ills.
5:30-5:45	KWYO	1370	Sheridan, Wyo.
5:35-5:50	KIDW	1420	Lamar, Colo.
5:40-5:55	KFXJ	1200	Grand Junction, Colo.
5:45-6:00	KGBX	1230	Springfield, Mo.
→5:50-6:05	KRQA	1310	Santa Fe, N. Mex.
→5:35-5:30	KTSM	1310	El Paso, Texas
5:55-6:10	KOKO	1370	La Junta, Colo.

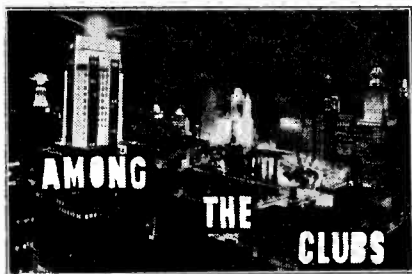
5:50-6:05	KOBH	1370	Rapid City, S. D.
5:55-6:10	KPFA	1210	Helena, Mont.
6:00-6:15	KIT	1250	Yakima, Wash.
6:05-6:20	KGBU	900	Ketchikan, Alaska
6:10-6:25	KFJI	1210	Klamath Falls, Ore.
6:15-6:30	KGEZ	1310	Kalispell, Mont.
6:25-6:40	KGY	1210	Olympia, Wash.
6:30-6:45	KXRO	1310	Aberdeen, Wash.
6:35-6:50	KGCX	1450	Wolf Point, Mont.
6:40-6:55	KFIO	1120	Spokane, Wash.
6:45-7:00	KINY	1430	Juneau, Alaska
6:50-7:05	KFOD	780	Anchorage, Alaska
6:55-7:10	KRCL	1390	Lewistown, Idaho

The Second Saturday

3:30-3:45	WTOL	1200	Toledo, Ohio
3:35-3:50	WKBZ	1500	Muskegon, Mich.
3:40-3:55	WJW	1210	Akron, Ohio
3:45-4:00	WBNS	1430	Columbus, Ohio
3:50-4:05	WGAR	1450	Cleveland, Ohio
	WOLS	1200	Florence, S. C.
3:55-4:10	WCOL	1210	Columbus, Ohio
	WLAJ	1310	Lakeland, Fla.
4:00-4:15	WCAZ	1070	Carthage, Ills.
	WQBC	1360	Vicksburg, Miss.
4:05-4:20	WJBO	1120	Baton Rouge, La.
	WSMK	1380	Dayton, Ohio
4:10-4:25	WOMT	1210	Manitowoc, Wis.
	WTAL	1310	Tallahassee, Fla.
4:15-4:33	WNEL	1290	Sun Juan, P. R.
	WOSU	570	Columbus, Ohio
4:20-4:35	WDZ	1020	Tuscola, Ills.
	WMSD	1420	Muscle Shoals, Ala.
4:25-4:40	WGTM	1310	Wilson, N. C.
	WHBU	1210	Anderson, Ind.
4:30-4:45	KCMO	1370	Kansas City, Mo.
	WJBW	1200	New Orleans, La.
	WKBN	570	Youngstown, Ohio
5:35-4:50	WGPC	1420	Albany, Ga.
	WNAD	1010	Norman, Okla.
	WXYZ	1240	Detroit, Mich.
4:40-4:55	KOVC	1500	Valley City, N. Dak.
	WTAX	1210	Springfield, Ills.
	WTJS	1310	Jackson, Tenn.
4:45-5:00	KLCN	1290	Blytheville, Ark.
	WMBR	1370	Jacksonville, Fla.
	WMPC	1200	Lapeer, Mich.
4:50-5:05	KGCA	1270	Decorah, Iowa.
4:55-5:10	KOCA	1210	Kilgore, Tex.
	KVOL	1310	Lafayette, La.
5:00-5:15	KBIX	1500	Muskogee, Okla.
	WBNO	1200	New Orleans, La.
5:05-5:20	KPAC	1260	Port Arthur, Texas
	WHBQ	1370	Memphis, Tenn.
5:10-5:25	KANS	1210	Wichita, Kans.
	WROL	1310	Knoxville, Tenn.
5:15-5:30	KMLB	1200	Montoe, La.
	KTRH	1290	Houston, Texas
5:20-5:35	KLPM	1360	Minot, N. D.
5:25-5:40	KVSO	1210	Ardmore, Okla.
5:30-5:45	KWLC	1270	Decorah, Iowa
5:35-5:50	KTSM	1310	El Paso, Texas
5:40-5:55	KWTN	1210	Watertown, S. D.
5:45-6:00	WLB	760	Minneapolis, Minn.



In the oval is shown a view of the old 1 kilowatt station used by JOAK. It is now used as a studio only, situated on Mt. Atago, (Atago-Yama), in Tokyo. The large picture shows the newer 10 kilowatt JOAK building and towers, located at Shingo, north of Tokio. These photographs were taken by Hidewo Kikutani, formerly Chief Engineer of the Japanese shortwave experimental station J1AA. (Courtesy of Mrs. Dora Newcomb).



Since the announcement of the formation of the RADEX Club in our September number, we have enrolled members from all the states except Idaho, Nevada, South Dakota and Wyoming, and from all parts of Canada except Prince Edward Island. We also have members in Cuba, Mexico, Newfoundland, Canal Zone, England, Guatemala, Honduras, Haiti, New Zealand, Bahrain Island, and the Union of South Africa.

Originally, membership was extended to our subscribers, but commencing on November 15 all our readers may enjoy the benefits of enrollment in this rapidly-growing Club. There is no charge for membership, and no requirement except an interest in DXing. On receipt of your application, which may be sent on a postal card if you wish, we will send your membership card.

We have designed some attractive ornaments for our readers' radio rooms, to be awarded to club members who succeed in hearing stations on all continents. These awards will not be diplomas, but something new and much more attractive than the usual Verified All Continents citations. We

hope to have some finished within a few weeks so we can illustrate them in our January issue.

Shortwave Scoop—Box

IRX on approximately 9650 kcs. comes on the air nightly at 6 p. m. with a strong signal. (Jacobs—Ohio)

ZHO on 6170 cs. at Singapore reported elsewhere has just shifted as we go to press and is no longer heard in the early morning. ZHP on 9690 kcs. replaces ZHO on this transmission. (R274—Wash.)

RV-15 on 4273 kcs. is not to be heard on that frequency at present. There are new unidentified Soviet stations on 6050 kcs. and 6830 kcs. working in parallel. One of these may be RV-15! (R274—Wash.)

KZIB on 9500 kcs. in Manila, Philippine Islands is being reported in the early morning out here on the west coast. (R274—Wash.)

Scoop Box reporters: George Jacobs, Cincinnati, Ohio; and R274—Anthony C. Tarr, Seattle, Wash.

(These scoop box report credits will count in next month's "Report-o-meter".)

China's best-known station, XGOA, formerly at Nanking, is now operating from Chungking, in Szechwan Province, on 1450 kcs. It is believed that the 1000 watt transmitter of XGOS is used.

TELEVISION

. . . by E. F. McDonald, Jr. *

The recent publication in the newspapers of the country of a statement to the effect that television receivers will be put on the market for sale to the public before the opening of the New York World's Fair next spring has brought many inquiries as to the position of Zenith Radio Corporation in the television field.

The offering for sale of television receivers at this time in view of the present state of the art is, in our opinion, unfair to the public, and premature, both for economic and technical reasons. Such premature introduction of television commercially will result in loading the public with undue experimental replacement cost, which, in turn, will result in retarding, instead of furthering development and in unprofitable operations for the companies engaging in such a program.

We do not believe the radio industry should ask the public to pay for its experimentation in television, at least without putting the public on notice that receivers put out at this time are on an experimental basis and may be subject to many costly changes and replacements.

I still feel as I stated at the last stockholders' meeting that "general use of television in the homes is just around the corner for the *stock salesmen only*." On the other hand, when we have overcome all of our difficulties, and when I say we, I mean the radio industry, television will no

doubt become a glorious new experience and a wonderful new industry. I feel that I am as close to the television picture as the next man and Zenith is prepared at this time to produce and sell television receivers but I am not ready to take the public's money until television is good and ready to provide money's worth to that public.

Television holds the most fascinating possibilities ever envisioned by an eager public but we cannot agree that television receivers are ready for mass production and country-wide distribution on any such basis as even the first radio broadcast sets that were distributed in the early Twenties.

Television is essentially different from anything with which we have had to deal in the past. The first automobiles constructed and sold to the public, unless they have been worn out from use, will still operate on our highways today, and with the gasoline now used. Likewise, the first radio broadcast receivers constructed and sold to the public will still operate and reproduce programs broadcast from the most modern broadcasting stations of today. On the other hand, the television receiving set of one year ago is already obsolete and cannot be operated in the home with the latest television transmitter of today.

What the public should know, and has not been told, about television is that the receivers must be matched to, synchronized with and built on the

* President, Zenith Radio Corp.

same standards as the transmitters. Any major change made in the television transmitter will necessitate a change in the receiver. This, of course, is not true of radio receiving sets. It is not only conceivable, but quite possible, that within a year from today the standards of the television transmitter, which, incidentally, have not yet been officially adopted, may again make obsolete all television receivers manufactured and sold today.

No organization is better informed on television today than the Federal Communications Commission, yet within the past two weeks, the Commission has asked this question: "Whether or not we believe that the development of television has reached the stage where the Commission might call formal hearings with respect to the *adoption of standards.*"

Television for the public is not new as the recent announcements might lead one to assume. In Chicago, it was introduced to the public in 1928 by radio station WCFL; in 1929 by the Western Television Company; and in 1930 by radio station WMAQ, then owned by the Chicago Daily News. Television programs were broadcast at that time. Due to the interest then aroused, over 1,000 television receivers were sold to the public in the Chicago area, every one of which is useless today because of the changes which have been made in transmitters.

The Federal Communications Commission has given long and serious consideration to the matter of television. It has, in its wisdom, issued only eighteen television licenses, all of which are experimental and not commercial. Of the experimental transmitting stations constructed under

these licenses, only a few are of the modern high definition type. Not one permit or license has been issued by the Commission for the construction and operation of a commercial television station.

There are many technical problems in television which are still unsolved. Among these is the inability at present to eliminate interference with television reception caused by the operation of automobiles. On the wave lengths now selected for and allocated to television, every spark plug in the twenty-five million automobiles in the United States operates as a transmitter and creates interference in its immediate vicinity. This interference makes impossible satisfactory television reception below the fourth or fifth floor of most buildings facing a street upon which automobiles are operated.

Its effect is to put in the picture on the receiver a series of spots having the appearance of a snow storm. This, of course, destroys the picture. The only cure for this condition, at least at present, is to arrange to have all automobile manufacturers shield all new automobiles constructed, and also to have the owners of automobiles now in use do the same. This task, of course, is impossible of achievement. Some other means must be found of removing this difficulty.

The economic problems which must be settled before the public should be asked to buy television receivers are no less serious than the technical difficulties. In the present state of the art, it is not possible to transmit a television program beyond a radius of from thirty to fifty miles, depending upon the height of the transmitting station above the ground, and even in

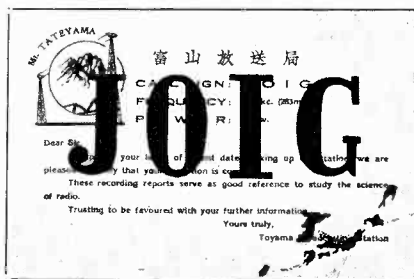
that area buildings and other structures situated between the transmitter and the receiver make good reception extremely difficult. In other words, in order to furnish television programs to purchasers of television receiving sets throughout the United States, it will be necessary to construct more than 2,000 television transmitting stations. Even though we had this multiplicity of television transmitters, no economical means has yet been discovered to connect these transmitting stations to make possible chain transmitting of television.

Another of the economic problems presented is the matter of programs. The stupendous cost of transmitting television naturally sets aside the thought that advertisers and sponsors can possibly maintain advertising budgets sufficiently large to pay the cost of such programs. In England, the public has had television for nearly three years. Fortunately, only from 4,000 to 8,000 television receivers have been sold, and these at prices from \$200.00 to \$400.00 each. I say fortunately because only that many persons have been disappointed. Despite the fact that the English people are apparently satisfied with radio programs which would be unacceptable to the Americans, the English have nevertheless registered disapproval of the type of television programs which the British Broadcasting Corporation (a government subsidy) has been able to present under the present limitations of television operation.

In the opinion of conservative producers, the cost of a single program of the type now transmitted in England, of one hour's duration for each

day from one television transmitter, will be one million dollars a year. We feel that this estimated cost is most conservative, as we do not believe the American public will be satisfied for any considerable period of time with television programs that are less entertaining than the present-day movies. In other words, the people of our country will expect and demand the transmission of motion pictures.

The motion picture industry expends over three hundred million dollars per year to produce approximately three hundred feature pictures, each of which represents a little more than one hour's entertainment. This economic load is paid for through the box offices of the moving picture houses. No source of revenue has yet been provided for the more costly television. Certainly, we cannot expect the advertisers of America to pay this bill.



The call letters on this card from JOIG in Toyama, Japan, are printed in yellowish orange, and the printing is black. The small picture shows Mount Tateyama. In the lower right hand corner is a map of the Japanese Islands, showing the location of Toyama. JOCK in Nagoya sends a card which is very similar to this one. (Courtesy of Mrs. Dora Newcomb).

WHAT'S ON THE AIR TONIGHT

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

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

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

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

To learn which stations broadcast the various network programs in your locality, look up your own, or neighboring, city, in the Index by Locations, commencing on page 76.

SUNDAY

E-11:30 am, C-10:30, M-9:30, P-8:30
 E-10:30 am, C-9:30, M-8:30, P-7:30
C—Major Bowes' Family
 Entire Network except Pacific Network first half hour; full network last half hour.

E-noon, C-11:00, M-10:00, P-9:00
B—Radio City Music Hall
 To Blue network and Canadian National network
 E-12:30, C-11:30, M-10:30, P-9:30

C—Salt Lake City Choir
 Available to full network.

E-2:00, C-1:00, M-noon, P-11:00
B—RCA Magic Key
 CBF CBL CFCE CMQ KANS
 KARK KARK KDKA KDYL KECA
 KEEN KEX KFBC KFDK KFSB
 KFYE KGA KJR KLO KMA KMPD
 KML KOA KOAM KOB KOIL
 KPFA KRIS KSEI KSO KSOO
 KTAR KTBS KTFI KTHS KTMS
 KTSM KV00 KWG KWK KXYZ
 WABY WAGA WAMA WAVE
 WBAL WBOW WBRB WRB WBSA
 WCOL WCSB WCSI WDAY WDSU
 WEAN WERC WERR WENR
 WFPA WFBC WFPA WFIL WLA
 WGAL WGBF WHAM WHK WIBA
 WICC WIOF WIRE WIS WJAX
 WJBO WIDX WJTN WJZ WKY
 WLEU WLW WMAL WMFF WMPS
 WMT WOAI WOOD WORK WOWO
 WPTF WRBN WROL WRFD WSN
 WSGN WSM WSO WSPD WSN
 WSYR WTAR WTCN WTMJ WUNC
 WXYZ

E-3:00, C-2:00, M-1:00, P-noon
C—Philharmonic Symphony
 To entire network, and 6 Canadian National and French networks

E-4:00 pm, C-3:00, M-2:00, P-1:00
M—Benay Venuta's Program
 WOR to Full Network

E-4:30 pm, C-3:30, M-2:30, P-1:30
M—Court of Human Relations
 WCAE WGN WOR WSAI WSYR

E-5:00 pm, C-4:00, M-3:00, P-2:00

B—Metropolitan Opera Auditions
 WJZ WBZ WBSA WEAN WICC
 WFIL WBAL WMAL WSYR
 WHAM WEBR KDKA WHK WSPD
 WXYZ WOWO WENR KWK WTAR
 WJAX WIOD WUNC WSB WBRB
 WJDX WMT WTCN KSO KOIL
 WCKY WRFD WJTN WSMB WAVE
 WSM KV00 WKY KTHS KTHS
 KFBC WOAI KFEL WFLA WSTN
 KLO KGO KECA KJR KEX WRAP
 KGA

E-5:30 pm, C-4:30, M-3:30, P-2:30
R—Spelling Bee
 WEAF WNAE WVIC WJAR WTAG
 WKCSH KYW WDEL WFRB WLV
 WGY WRN WCAE WTAM WLW
 WIRE WMAQ KSD WWJ KPTP
 WHO WOW WDAF

C—Ben Bernie; Lew Lehr
 WABC WADC WOKO WCAO WEEI
 WBR WBBC WKRC WGAR KRNT
 WJR WDRB WFBM KMBC WHAS
 KFAB WCAU WJAS WPRO KMOX
 WFBL WJSV WHCQ WISN WCOO
 KRFD KTRH KOMA WJNO KTSB
 KWKH KTUL WGST WAPI WREC
 WLAC WWL WBT WRVA WTOC
 WMBR WQAM WDBO WDAE

E-6:00 pm, C-5:00, M-4:00, P-3:00
C—Silver Theater; Helen Hayes
 WABC WOKO WCAO WEEI
 WKBW WBBM WKRC WGAR
 KRNT WJR WDRB WFBM KMBC
 WHAS KFAB WCAU WJAS WPRO
 KMOX WJSV WADC WBSN WHIO
 WHCQ WISN WBT WJNO WGST
 WREC WWL KVI KRFD KTRH
 KOMA KPSA KTUL WMBR WQAM
 WDBO WDAE WKAC WFRB WCOO
 KLZ KSL KNX KOIN KSPB KIPD
 KPBY and Canadian Broadcasting Corporation.

E-6:30 pm, C-5:30, M-4:30, P-3:30
C—Billy House; Jack Fulton
 WABC WOKO WCAO WEEI
 WKBW WBBM WKRC WGAR
 KRNT WJR WDRB WFBM KMBC
 WHAS KFAB WCAU WJAS WPRO
 KMOX WFBL WJSV WADC WBSN
 WHIO WHCQ WORC WLBZ WMNN
 WHF WHEW WGBI WMAS WTRW
 WHX WWVA WFH WAIN WCHS
 WBT WBIG WMAZ WPAR WRVA

WDBJ WTOC WJNO WGST WAPI
 WDFD WNOX KLRA WREC WCOO
 WSPA WLAC WWL KGGM KRLD
 KTRH KOMA KPSA KTUL WMBR
 WQAM WDBO WDAE WDC KDAL
 WMPG KGLO WCCO KCSJ WHLB
 WMAX KVOR KLZ RSL KARM
 KFBB KOY KROY KGAT KNX
 KOIN KSOB KIRO KPEY KVI
 KHRC KGBR WPG WNBZ WESG
 WEOA WBRK WSBT WNBX
 WKBN WRDW WDNC WJSJ
 WCOA WACO WKBR WTAQ
 WKBH KGVO KOH KWKH

R—A Tale of Today
 KDKA WEAF WGY WLW WMAQ
 WRC WTAM

R—Jack Benny; Kenny Baker
 WEAF WRC WGY KPIC WOAI
 WSPD WOKH WMJB WNAE WVIC
 WJAR WTAG WCHS KYW WFRB
 WBN WCAE WTAM WMAQ WWJ
 WTAR WCOL WDEL KSD WLW
 WPTF WSOC KSTP WIS WJAX
 WWNC KTRS KARK KV00 CLZ
 CBM WERC WGRB WIOD WSN
 WFLA WQAL WIRE WHO WOW
 WDAF KANS WTMJ WBA WDAY
 KFBF WAVE WSM WMC WBRB
 WSB WJDX WSMB KGBX WKY
 WSYR WHAM WGL WFPA KELO
 WPRO WOSC WFCB KGNC KRIS
 WFAA

E-7:30 pm, C-6:30, M-5:30, P-4:30
C—"Passing Parade"; Oscar Bradley
 WABC WOKO WCAO WEEI WGR
 WKRC WGAR WJR WDRB WFBM
 WHAS WCAU WJAS WPRO WFLB
 WISV WADC WBSN WHIO WHEC
 WORC WPG WLBZ WNRB WHF
 WSET WMAS WIRX WYVA
 WKBN WBT WDNC WBIG WRVA
 WDBJ WTOC WJSJ WGST WDDO
 WNOX KLRA WREC WAPI WSPA
 WLAC WWL WCOA WJNO KRFD
 KTRH KPSA KWKH KTUL WAZ
 WMBR WQAM WDBO WDAE KLZ
 WCHS

E-8:00 pm, C-7:00, M-6:00, P-5:00
C—Orson Welles—Drama
 Available to full network
R—Charlie McCarthy; Nelson Eddy
 CFCE CICT KOFI KFI KFYE
 KGW KHQ KOA KOMO KPO KPBC

KSD KSTP KTAI KTBS KVOO
 KYW WAVE WHEN WCAE WCHS
 WDAF WDAY WVEF WFAA
 WFBR WFLL WGY WHO WIBA
 WIOD WIRE WIS WJAR WJAX
 WJDX WKY WLW WMAQ WMC
 WNAC WOAI WOW WPTF WRC
 WRVA WSB WSM WSMB WSOB
 WSUN WTAG WTAM WTAR WTRC
 WTMJ WWJ WWNC

E-11:00 pm, C-10:00, M-9:00, P-8:00
 R-Walter Winchell
 WBAP KARK WSM WMC WSB
 WKY WAVE WBRC WJDX WSMB
 KTBS KPPO WJAX WFLL WSUN
 WIOD KOA KDYL KPO KIDO
 KGW KOMO KHQ KFT KGRB
 KGIL KTAI KFRK KWG KMJ
 KSEI KERN KPFA KVOO KTFI

WMC WSB WBRC WSMB WAVE
 WSM WROL KFDM KGIB KVOO
 WKY KGNC WFAA KTBS KARK
 WTMJ WIBA WDAY KFTR KSOO

E-8:30 pm, C-7:30, M-6:30, P-5:30
 C-"Dick and Pat"

WABC WOKO WCAO WEEI WGR
 WABC WKRC WCAJ WRB WDRB
 KMBC KFAB WCAJ WJAX WPRO
 WFLL WJWV WADC WIBC WORA
 WLBJ WHIP WMAZ WBCT WRVA
 WGST KRNT WFHM WHAS KMXX
 WAPI WREC WLAC KRLL KOMA
 KTSa KWKH KTUL WCCO WNAX
 WBWB

MONDAY

E-9:00 pm, C-8:00, M-7:00, P-6:00
 C-Ford Symphony Concert

CFBC CKAC KFAB KFBR KIRO
 KFPY KGAR RGLG KGOV KIRO
 KLLA KLZ KMBC KMOX KNX
 KOIH KOIN KOMA KOY KRLL
 KRNT KSCJ KSFQ KSL KTRH
 KTSa KFUL KVI KVOR KWKH
 WABC WBRM WFBG WBNS WBKX
 WBT WCAO WCAU WCCO WCHS
 WCOA WCOB WDAE WDBJ WDFH
 WDOO WDRB WEEI WFLL WFBM
 WGAR WGBI WGR WGST WHAS
 WHBC WHIO WHI WIBW WISN
 WJAX WJNO WJR WJWV WKBB
 WKBN WKBW WKIC WLAC WLBJ
 WMRD WMBR WMMN WNAX
 WNBX WNOX WOKO WORC WPRO
 WQAQ WRBC WRVA WSBT WSFA
 WTLA WTOG WWL WVVVA

E-6:45 pm, C-5:45, M-4:45, P-3:45
 C-Sophie Tucker and Her Show

WCAO WBMM WKRC KRNT
 WFBM KMBC WHAS WFAB KMOX
 WJWV WCHS WMMN WISN WMBD
 WIBW KFII WBT WDNC WRIG
 WMAZ WRVA WDBJ WGST WAPI
 WDOO WNOX KLRA WREC WCOO
 WSPA WLAC WWL KRLL KTRH
 KOMA KWKH KTUL WDBJ WKBB
 KDAL WMPG WCCO KSCJ WHLB

B-Lowell Thomas
 WJZ WBZ WBZA WRAL WJAL
 WLW KDKA WXYZ WIOD CHL
 WJAX WFLA WSUN WTAM WOOD
 WSYR WIAM WEHR WEAN
 WSPD WRTD

E-7:00 pm, C-6:00, M-5:00, P-4:00
 R-Amos 'n' Andy

WEAF WNAC WTRC WJAR WTAG
 WFSB WDEL WMBG KYW WFBR
 WRC WGY WHEN WCAE WTAM
 WWJ KSD KSTP WLAV CBL CBLM

E-7:15 pm, C-6:15, M-5:15, P-4:15
 C-"Lum and Abner"

WABC WOKO WEEI WGR WBRM
 WABC WRB WDRB KFAB WCAU
 WHAS WPRO WFLL WJWV WHNS
 WHIO WLEC WBT WRVA WGST
 WMBR WQAM WDBO WDAE
 WJNO WGAR KRNT WFBM WHAS
 KMXX KLRA WREC WLAC WAPI
 KRLL KTRH KOMA KTSa KTUL
 WCCO

R-The Voice of Firestone

WEAF WNAC WTRC WJAR WTAG
 WCHS KYW WFBR WIC WGY
 WBEN WCAE WTAM WWJ WCOL
 WIOD WIRE WMAQ KPBC WGL
 CBL CBL WTMJ WEHC WHIO
 WOV WDAF WROL WIRA WFAA
 WPTF WSOC WTAI WMC WSB
 WOAI WUNC WVOG WFLA WSUN
 WCY WSMB WAVE KSD WIS
 WSM KANS WLAV WFEA WFCB
 WMBG WDEL WLW KRIS KARK
 KGNC KGBX KSTP WDAY KFYP
 WTRC WJDX KRKY KELO KTHS
 KSOO

E-9:00 pm, C-8:00, M-7:00, P-6:00
 C-Lux Radio Theater

WABC WADC WOKO WCAO WEEI
 WKRW WBRM WKRC WGAR
 KRNT WRB WDRB WFBM KMBC
 WFAA KFAB WCAJ WJAX WPRO
 KMOX WFLA WJWV WHNS WHIO
 WHEC WORC WISN WMBD WMAS
 WIBW KFII WBT WRVA WDBJ
 WGST KLRA WRFC WLAC WWL
 QAM WDAE WJNO CKAC CFRB
 KVI KRLL KTRH KOMA KTSa
 KTUL WCCO WNAX KIZ KSL
 KNX KOIN KSFQ KIRO KFPY
 and Canadian Broadcasting Corp.

R-Manhattan Merry Go-Round

CFBC KDYL KFI KFYL KGW
 KHQ KOA KOMO KPO KPBC KSD
 KSTP KTBS KTHS KYW WAVE
 WBEN WCAE WCKY WCHS WDAF
 WDAY WDAF WIBC WEEI WFAA
 WFBR WFLL WGY WHO WIBA
 WIOD WIRE WIS WJAR WJAX
 WJDX WKY WMAQ WMC WOAI
 WOW WPTF WRC WRVA WSB
 WSM WSMB WSOB WTAG WTAM
 WTAR WTRC WTMJ WWJ WWNC

E-9:30 pm, C-8:30, M-7:30, P-6:30
 B-Walter Winchell

WJZ WRZ WBZA WRAL WJAL
 WFIL WREN WICC KDKA WHIK
 WSYR WTCN WLW WEAN WENR
 WMT WXYZ KSO KWK WOOD
 KOIL WEHR WIAM WSPD WJTN

R-Album of Familiar Music

CFBC CRCT KDYL KFI KFTR
 KGW KHQ KOA KOMO KPO KPBC
 KSD KSTP KTBS KYW WAPI
 WAVE WBEN WCAE WCHS WDAF
 WDAY WDAF WIBC WEEI WFAA
 WFBR WFLL WGY WHO WIBA
 WIOD WIRE WIS WJAR WJAX
 WJDX WKY WMAQ WMC WOAI
 WWP WPTF WRC WRVA WSAI WSP
 WSM WSMB WSOB WTAG WTAM
 WTAI WTMJ WWJ WWNC

E-9:45 pm, C-8:45, M-7:45, P-6:45
 B-Irene Rich-Drama

WJZ WBZ WBZA WRAL WJAL
 WEAN WICC WFIL WEHR WXYZ
 WENR KWK WMT WTCN WHIK
 KSO KOIL WSYR WHAM WREN
 KDKA WLW WSPD WJTN

E-10:00 pm, C-9:00, M-8:00, P-7:00
 R-Horace Heidt's Brigadiers

KDYL KPFA KEX KFSD KQA
 WERC WFBR WGY WHO WIRA
 WIRE JAR WMAQ WNAC WOOD
 WOW WRC WSAI WTAG WTAM
 WTRC WTMJ WWJ

R-Edwin C. Hill

WEAF WNAC WTRC WJAR WTAG
 WCHS KYW WDEL WFBR WGY
 WREN WCAE WTAM WWJ KSD
 KSTP WSAI WIRE WHO WOW
 WMBG

E-7:30 pm, C-6:30, M-5:30, P-4:30
 C-Eddie Cantor's Camel Caravan

WABC WADC WCAO WEEI WGR
 WABC WRB WDRB KFAB WCAU
 WHAS WPRO WFLL WJWV WHNS
 WHIO WLEC WBT WRVA WGST
 WMBR WQAM WDBO WDAE
 WJNO WGAR KRNT WFBM WHAS
 KMXX KLRA WREC WLAC WAPI
 KRLL KTRH KOMA KTSa KTUL
 WCCO

R-Hour of Charm

WEAF WNAC WTRC WJAR WTAG
 WCHS KYW WDEL WFBR WGY
 WREN WCAE WTAM WWJ KSD
 KSTP WSAI WIRE WHO WOW
 WPTF WSPC WWNC WIS
 WJAX WFLA WSUN WIOD WAVE
 WSM WMC WBRC WSB WSMB
 WJDX KVOO WKY WFAA KTBS
 KARK KPBC WOAI WTMJ KOA
 KEX KDYL KIDO KGRB KPFA
 KGO KECA KJR WFBR WRC WGY
 KGA

E-9:30 pm, C-8:30, M-7:30, P-6:30
 R-The Pall Mall Program

WEAF WNAC WTRC WJAR WTAG
 WCHS KYW WDEL WFBR WRC
 WGY WHEN WCAE WTAM WWJ
 WCKY WIRE WMAQ KSD KSTP
 WHIO WOW WDAF WMBG WGL
 WOOD WSYR WHAM WEBC
 WTAI WPTF WSOB WWNC WOSC
 WJAX WFLA WSUN WIOD WTMJ
 WIRA KOA KFUL KPO KFI KGW
 KOMO WGBT KHQ KFRK KFSD
 KWG KMJ KERN

E-10:00 pm, C-9:00, M-8:00, P-7:00
 B-"True or False"

WJZ WBZ WBZA WEAN WICC
 WFIL WRAL WJAX WSRB
 WHAM WBT DKA WTRF WSPD
 WXYZ WOWO WENR KWK WMT
 WTCN KSO KOIL WREN WLW
 WJTN WVOG KLO KGO KECA
 KFSD KEX KJR KGA CFBC

E-8:00 pm, 7-7:00, M-6:00, P-5:00
 C-The Monday Night Show

WCAO WKRC WHAS WCAU
 KMXX WJWV WCHS WAIM WRDW
 WBT WYAN WBIG WMAZ WDBJ
 WTOG WGST KLRA KRLL KTRH
 KTSa WAO KDAL WMPG WCCO
 WHLB

R-Al Pearce and His Gang

WEAF WNAC WTRC WJAR WTAG
 WCHS KYW WDEL WFBR WRC
 WBT WYAN WCAE WTAM WWJ
 WLW WSPD WMBG WDBL WJWV
 WPTF WSOB WOAI KPBC WFBP
 WGal WIRE WMAQ KSD KSTP
 WHIO WOW WDAF WGBF WERC
 KELO KANS WJAX WFLA WIOD

C—Guy Lombardo's Orchestra
 WABC WOKO WCAO WEEI
 WKBW WBBM WKRC WGAR
 KRNT WJR WDRC WFPM KMBC
 WHAS KFAB WCAU WJAS WPRO
 KMOX WFBL WWSV WADC WTNS
 WHIO WJWB WBT WWL KSL
 KNX KOIN KSFO KIRO KFPY
 KVI WCCO KLZ

R—Contented Program
 WFAP WNAK WVIC WJAR WTAG
 WCHS KYW WRC WGY WBEH
 WCAE WTAM WWT WMAQ WFBZ
 KOA KDYL KPO KOMO KHQ
 KSD WJO WOV WDAF CBL CBM
 WTAR WPTF WSOZ WIS WWNC
 WJAX WFLA-WSUN WIOD WAVE
 WSM WMC KARK WSMB WKY
 WFAX KTBS WCOL WCKY KPBC
 WOAI KFI KGW WSB WIRE
 WOOD WMBG KSTP WTMJ WJLA
 WDEL WFBZ WBRC KVOO

E-10:30 pm, C-9:30, M-8:30, P-7:30

C—Eddie Cantor's Camel Caravan
 WBBM KRNT WFPM WJAS
 KFAB KMOX WEOA WISN WMBD
 WSPF WJWB KFH WAPI WDDO
 WNOX KFLA WTEC WSPA WLAC
 WVL KRLD KTRH KOMA KTSN
 KWIK KTEL WOC KDAL WTAQ
 WMEG WKBH KOLO WCCO KSCJ
 WHLB WNAK KLZ KSL KOY
 KGAR KNX KOIN KSFO KIRO
 KFPY KVI KGGM WGST

R—Al Pearce and His Gang
 KOA KDYL KPO KFI KGW
 KOMO KHQ KTAR KFBR KWG
 KMJ KOB KERN KGIR KGHJ
 KPFA

E-11:00 pm, C-10:00, M-9:00, P-8:00

R—Amos 'n' Andy
 WHO WOV WDAF WMC WSB
 WOAI WKY WSMB WIRE WMAQ
 KDYL KPO KFI KGW KOMO KHQ
 KPBC KOA KWG WSM KFBR
 KMJ KERN WBRC KVOO WRAP

E-11:45 pm, C-10:45, M-9:45, P-8:15
 R—Edwin C. Hill
 WDAF WMAQ WMC WSB WBRC
 WSMB WSM WKY WRAP KPBC
 WOAI KVOO WJAX WFLA-WSUN
 WIOD KOA KDYL KPO KFI KGW
 KOMO KHQ KFBR KWG KMJ
 KERN

TUESDAY

E-6:45 pm, C-5:45, M-4:45, P-3:45

B—Lowell Thomas
 See Monday.

E-7:00 pm, C-6:00, M-5:00, P-4:00

B—Easy Aces
 WJZ WRZ WBZA WRAL WMAJ
 WFIL WSYR WHAM KDKA WIKI
 WXYZ WCKY WEBR WMT KSO
 KOIL KWK WENR WCC WEAN
 WIRE WTCN WSPD KOA KPO
 KDYL KFI KGW KOMO KHQ
 WJTN

R—Amos 'n' Andy

E-7:30 pm, C-6:30, M-5:30, P-4:30

C—Helen Menken Drama

WABC WOKO WCAO WEEI WGR
 WBBM WKRC WGAR KRNT WJR
 KMBC WHAS KFAB WCAU WJAS
 WPRO KMOX WFBL WWSV WHIO
 WHEC WORC KLZ KSL KNX
 KOIN KSFO KIRO KFPY KVI
 WADC WFPM
 E-8:00 pm, C-7:00, M-6:00, P-5:00
 C—Ed. G. Robinson: Claire Trevor
 WABC WADC WOKO WCAO

WEEI WGR WBBM WKRC WGAR
 KRNT WJR WDRC WFPM KMBC
 WHAS KFAB WCAU WJAS WPRO
 KMOX WFBL WWSV WBSN WHIO
 WHEC WORC WISN WMBD
 WMAS WJWB WJAX KPH WBT
 WJVA WJBL WGST KFLA WTEC
 WFLA WJOL WJAM WDAE WJNO
 CRAC CFRB KRID KTRH KOMA
 KTSN KTEL WCCO WNAK KLZ
 KSL WAPI and Canadian Broad-
 casting Corp.

R—Johnny Presents Russ Morgan
 WFAP WNAK WVIC WJAR WTAG
 WCHS KYW WFBZ WRC WGY
 WBEH WCAE WTAM WMAQ KSD
 WHO WOV WDAF WJW WDEL
 KSTP WPTF WWNC WIS WJAX
 WIOD WFLA-WSUN KPBC WLW
 WTMJ WSMB WOAI WIRE WSB
 WMBG WKY WBP WTAR KVOO
 WEBC WJBA WDAY KFYR WAVE
 WSM WMC WBRC WJDX KGHX
 KTBS

E-8:30 pm, C-7:30, M-6:30, P-5:30

C—Al Jolson Show
 WABC WADC WOKO WCAO WEEI
 WGR WBBM WKRC WGR KRNT
 WJR WDRC WFPM KMBC WHAS
 KFAB WCAU WJAS WPRO KMOX
 WFBL WWSV WBSN WHIO WHEC
 WOLC WISN WMBD WMAS
 WJWB WJAX KPH WBT WJVA
 WJBL WGST KFLA WREC WLAC
 WVL WQAM WDAE WJNO CRAC
 CFRB KRID KTRH KOMA KTSN
 KPUL WCCO WNAK KLZ KSL
 WAPI and Canadian Broadcasting
 Corp.

R—For Men Only

WFAP WTAG WCHS KYW WDEL
 WFBR WRC WGY WBEH WCAE
 WTAM WJW WJW WIRE WMAQ
 KSD KSTP WHO WOV WDAF
 WTAR WJAX WFLA-WSUN WIOF
 WFSB WSM WMC WBRC WSB
 WJWB WJDX KVOO WKY WRAP
 KTBS KARK KPBC WOAI WTMJ
 WJBA WLAK

E-9:00 pm, C-8:00, M-7:00, P-6:00

C—"We, The People"

WABC WADC WOKO WCAO WEEI
 WKBW WBBM WKRC WGAR
 KRNT WJR WDRC WFPM KMBC
 WHAS KFAB WCAU WJAS WPRO
 KMOX WFBL WWSV WBSN WHIO
 WHEC WHP WISN WMBD WJWB
 WJBN WRVA WGST WREC WWL
 WMBR WQAM WDBO WDAE
 WJNO CFRB KRID KTRH KOMA
 KTSN KTEL WCCO WNAK KSL
 KLZ KSL KOY KGAR KARM KNX
 KOIN KSFO KIRO KFPY KVI

E-9:30 pm, C-8:30, M-7:30, P-6:30

C—Benny Goodman's Orchestra

WABC WOKO WCAO WEEI
 WKBW WBBM WKRC WGAR
 KRNT WJR WDRC WFPM KMBC
 WHAS KFAB WCAU WJAS WPRO
 KMOX WFBL WWSV WBSN WHIO
 WHEC WHP WISN WMBD WJWB
 WJBN WRVA WGST WREC WWL
 WMBR WQAM WDBO WDAE
 WJNO CFRB KRID KTRH KOMA
 KTSN KTEL WCCO WNAK KSL
 KLZ KSL KOY KGAR KARM KNX
 KOIN KSFO KIRO KFPY KVI
 WCHS KOY WMPG

WHLB WGBI KDAL KGLO WKBH
 WTAQ WNBX WEOA WAPI

R—Fibber McGee and Company
 WFAP WNAK WVIC WJAR WTAG
 WCHS KYW WFBZ WRC WGY
 WBEH WCAE WTAM WJW WIRE
 WMAQ KSD KSTP WHO WOV
 WDAF WJWB WMBG WOOD WBEBC
 WTAR WPTF WSOZ WJAX WFLA-
 WSUN WIOD WTMJ WJBA WDAY
 KFYR WAVE WSM WMC WBRC
 WSB WSMB WKY KVOO WRAP
 KTBS KARK KPBC WOAI KOA
 KDYL KPO KFI KGW KOMO KHQ
 KTAR KFBR KWG KMJ KERN
 WLW CCFE WDEL KANS

E-10:00 pm, C-9:00, M-8:00, P-7:00

C—"Dr. Christian," Jean Hersholt

WABC WOKO WCAO WEEI WKBW
 WBBM WKRC WGAR KRNT WJR
 WDRC WFPM KMBC WHAS
 KFAB WCAU WJAS WPRO KMOX
 WFBL WWSV WBSN WHEC WORC
 WBT WRVA WJNO WGST WMBR
 WQAM WDDO WDAE WCCO
 WADC WJWB WREC WLAC WJW
 KVI KRLD KTRH KOMA KTSN
 KWIK KSCJ KLZ KSL KARM
 KNX KOIN KSFO KIRO KFPY

R—Pepsodent Program

WFAP WNAK WVIC WJAR WTAG
 WCHS KYW WDEL WGY WBEH
 WCAE WTAM WJW WLW WIRE
 WMAQ KSD KSTP WHO WOV
 WDAF WMBG WOOD WJAX WSUN
 WIOD WAVE WSM WMC WBRC
 WSB WSMB WJDX KVOO WKY
 WRAP WFBZ WRC KANS WFLA
 KTBS KARK KPBC WOAI KGNB
 WTAQ WJBA KOA KDYL KPO
 KFI KGW KOMO KHQ WTHAM

E-10:30 pm, C-9:30, M-8:30, P-7:30

R—Jimmie Fidler's Gossip

WFAP WNAK WVIC WJAR WTAG
 WCHS KYW WFBZ WRC WGY
 WBEH WCAE WTAM WJW WIRE
 WMAQ KSD WJO WOV WDAF
 WLW WOOD WTMJ WJBA WIOD
 WAVE WSM WMC WSB WKY
 WSMB WRAP KPBC WOAI KOA
 KDYL KPO KFI KGW KOMO
 KHQ WBRC KSTP KVOO WDEL

E-10:45 pm, C-9:45, M-8:45, P-7:45

R—Uncle Ezra

WFAP WNAK WVIC WJAR WTAG
 WCHS KYW WDEL WFBZ WRC
 WGY WBEH WCAE WTAM WLW
 WIRE WMAQ KSD KSTP WHO
 WOV WDAF KVOO WKY WRAP
 KTBS KARK KPBC WOAI WTMJ
 KOA KDYL KPO KFI KGW KHQ

E-11:00 pm, C-10:00, M-9:00, P-8:00

R—Amos 'n' Andy
 See Monday.

WEDNESDAY

E-6:45 pm, S-5:45, M-4:45, P-3:45

B—Lowell Thomas
 See Monday.

C—Sophie Tucker
 See Monday.

E-7:00 pm, C-6:00, M-5:00, P-4:00

B—Easy Aces
 See Tuesday.

R—Amos 'n' Andy
 See Monday.

E-7:15 pm, C-6:15, M-5:15, P-4:15

C—"Lum and Abner"
 See Monday.

R—Edwin C. Hill
 See Monday.

C—"Ask-It Basket"

E-7:30 pm, C-6:30, M-5:00, P-4:30
WABC WOKO WCAO WEEI WGR
WBMM WKRC WGAR KRNT WJR
WDRC WFBM KMBC WHAS KFAB
WCAU WJAS WPRO KMOX WFBL
WJSV WADC WBNS WHIO WHBC
WOHC WLHZ WHP WISN WMRD
WIBW WYVA KFH WKBN WBT
WRVA WJNO WGST WAPI WREC
WWL WNAK KRLD KTRH KOMA
K TSA KWKH WMRR WQAM
WDAE WCCO

E-8:00 pm, C-7:00, M-6:00, P-5:00
C—"Gang Busters"

WABC WOKO WCAO WEEI WGR
WBMM WKRC WGAR KRNT WJR
WDRC WFBM KMBC WHAS KFAB
WCAU WJAS WPRO KMOX WFBL
WJSV WBNS WHIO WHBC WGR
WLHZ WISN KFH WBT WRVA
WGST WAPI WREC WWL WCCO
KRLD KTRH K TSA KOMA

R—One Man's Family

WEAF WNAC WTIC WJAR WTAG
WCSH KYW WFLR WRC WGY
WBEN WCAE WHAM WSYR WWJ
WTAM KSD WHO WOV WDAF
WWNC WLW WMAQ WJBA WERC
WKY WMC WSMB WPRC WAVE
KV00 WMOG KOA KDYL WIS
WTD WBAE WSOB WTAR WSB
KPRC WLK KSTP WTMI WFLA
WSUN CBL WIRE WDEL WSN
WCOL WSM CBM WFAA

E-8:30 pm, C-7:30, M-6:30, P-5:30
B—Hobby Lobby

WJZ WBZ WBZA WEAN WIC
WFIL WBAL WMAL WSYR
WHAM WBRB KDKA WHK WSPD
WXYZ WSAI WTN WHP WBY
KOA WLEL WCOL KDYL WBOV
WLLL WIBM WHIM KPO KFI
KGW KOMO KIQ WFDF

C—Paul Whiteman's Orchestra

WABC WOKO WCAO WEEI WBMM
WKRC WGAR WJR WDRC KFAB
WCAU WJAS WPRO WFBL WJSV
WBNS WHIO WHBC WORC WLHZ
WHP WAPI WAPI WAPI WAPI
WCHS WBT WHG WRVA WDJJ
WJNO WJAS WGST WMRR WQAM
WDAE WTIC WDBO WMIN WGR
WADC WFG WNBX WGH WAIM
WDNC KRNT WFBM WHAS
KMOX WISN WMRD WIBW KFH
WAPI WDDO WNOX KLRA WREC
WCCO WSEA WLAC WWL KMBC
KRLD KTRH KOMA K TSA KWKH
KTUL WACO WOC KDAL WTAQ
WMFG WKBH WCCO KSCJ WHLB
WNAK

R—Tommy Dorsey Orchestra

WEAF WNAC WTIC WJAR WTAG
WCSH KYW WDEL WSOB WTMJ
WFBM WRC WGY WRBN WTAM
WWJ WMAQ KSD KSTP WHO
WOW WDAE WMBG WOOD WTAR
WPTF WWNC WIS WLAX WFLA
WSUN WJOD WAVE WSM WMC
WPRC WSB WLAW WIRE WSMR
WGY WFAA KTRB KPRC KARK
E-9:00 pm, C-8:00, M-7:00, P-6:00

C—"Everybody's Music"

Available to full network
R—Town Hall: Fred Allen
WEAF WNAC WTIC WJAR WTAG
WCSH KYW WFLR WRC WGY
REN WTAM WWJ WMAQ WHO
WOW WDAF WLW WCAE KSD

KARK WIRE WTMJ WSMR WFAA
KPRC WQAI WJBA KSTP WAVE
WJAX WFLA-WSUN WTDI WSM
WMC WSB WJDX WKY WDEL
KOA WIS WTAR WSOB WITF
WLAK

E-9:30 pm, C-8:30, M-7:30, P-6:30
C—Texaco Star Theater

WABC WOKO WCAO WEEI
WBMM WBMM WKRC WGAR
KRNT WJR WDRC WFBM KMBC
WHAS KFAB WCAU WJAS WPRO
KMOX WFBL WJSV WADC WBNS
WHIO WHBC WORC WPG WLHZ
WHP WAPI WAPI WAPI WAPI
WMBD WGBI WSBT WMAS
WIBW WBX KFH WRDW WCHS
WBT WDNC WBIG WRVA WDBJ
WTOC WJNO WJIS WGST WAPI
WDDO WNOX KLRA WREC WSEA
WLAC WWL KYI KGMJ KRLD
KTRH KOMA K TSA KWKH KTUL
WMRR WQAM WDBO WDAE WOC
WKBB KDAL WTAQ WMFG
WKBH WCCO KSCJ WHLB WNAK
KYOR KLZ KSL KARM KFSB
KGYO KOY KGR KNN KOIN
KSPD KIRO

E-10:00 pm, C-9:00, M-8:00, P-7:00
R—Kay Kyser's Class

WEAF WBN WNAC WJAR WTAG
WCSH KYW WFLR WRC WGY
WBRC WBEN WCAE WTAM WFEA
KTRB KGBX KDYL KSEI KTM
WMBG KOB KOA WVI WLW
WMAQ KSD WHO WOV WDAF
KSTP WTMJ WJBA WERC WDAY
KFYR WPTF WOOD WWNC WJZ
WLAX WJOD WAVE WSM WMC
KGU WSB WDX WSM WCY
WFAA KTRB KPRC WQAI KGIR
KPO KGIL KFI KTR WSOB
WFLA-WSUN WSOB KHQ WGL
WDEL WORK KFBK KWG WFR
WTAR WIRE KGW KOMO KMJ
KERN KPFA KIDO WTIC WSYR
WALA KARK KV00 KANS WGAL
KTFI

E-10:30 pm, C-9:30, M-8:30, P-7:30
C—"Hi Can Be Done"

WABC WOKO WCAO WEEI WKRB
WBMM KRNT WJR WDRC WFBM
KMBC WHAS KFAB WCAU WJAS
WPRO KMOX WFBL WBNS WHIO
WHBC WORC WNRB WMAS WIBX
WCHS WOC WKRC WCAO

E-11:00 pm, C-10:00, M-9:00, P-8:00
B—Amos 'n' Andy

See Monday.
E-11:15 pm, C-10:15, M-9:15, P-8:15
R—Edwin C. Hill
See Monday.

THURSDAY

E-6:45 pm, C-5:45, M-4:45, P-3:45
B—Lowell Thomas

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

E-7:30 pm, C-6:30, M-5:30, P-4:30
C—Joe Fenner

WABC WOKO WCAO WEEI WGR
WBMM WKRC WGAR KRNT WJR
WDRC WFBM KMBC WHAS
KFAB WCAU WJAS WPRO KMOX
WFBL WJSV WADC WBNS WHIO
WHBC WORC WHP WISN WMRD

WIBW KFH WKBN WCHS WBT
WBYA WJNO WGST WAPI WNOX
WREC WLAC WWL WMAS KRLD
KTRH KOMA K TSA KTUL WMRR
WQAM WDBO WDAE WOC WCCO
KSCJ WNAK WGBI

E-8:00 pm, C-7:00, M-6:00, P-5:00
C—Kate Smith Hour

WABC WOKO WCAO WEEI WGR
WBMM WKRC WGAR KRNT WJR
WDRC WFBM KMBC WHAS KFAB
WCAU WJAS WPRO KMOX WFBL
WJSV WADC WBNS WHIO WHBC
WGOR WLHZ WFOA WHP WISN
WMRD WIBW KFH WKBN WBT
WDDO WNOX KLRA WREC
WSEA WLAC WWL WNAK KRLD
KTRH KOMA K TSA KWKH KTUL
WACO WMRR WQAM WDBO
WDAE WOC KDAL WTAG WKRB
WCCO KSCJ

R—Rudy Vallee Hour

WEAF WNAC WTIC WJAR WREN
WERC WCHS WTAG WTRC WGY
WKY WFRB KDYL KSTP WTMJ
KOA KFI KPO KGW KOMO WLW
KIQ KYW KPRC WQAI KSD
WHO WOV WDAF WMC WJBA
WJAX WFLA WJOD WAVE
WIRE WSB WSMB WTAM WWJ
KVOO WBAF WSM WMBG WCAE
WDEL WBRB

E-8:30 pm, C-7:30, M-6:30, P-5:30
C—Joe Fenner: Ben Pollack

KLZ KSL KARM KNN KOIN
KSPD KIRO KFPY KVI

E-9:00 pm, C-8:00, M-7:00, P-6:00
C—Major Bowes' Amateur Hour

WABC WOKO WCAO WEEI WGR
WBMM WBMM WKRC WGAR
KRNT WJR WDRC WFBM KMBC
KMOX WFBL WJSV WADC WBNS
WHIO WHBC WORC WLHZ WNRB
WHP WISN WMRD WGBI WMAS
WIBW WBX KFH WKBN WCHS
WBT WRIG WRVA WDBJ WGST
WAPI WDDO WNOX KLRA WREC
KGAU WLAC WTOP KRLD KTRH
KOMA K TSA KWKH KTUL WJNO
WMRR WQAM WDAE OKAC ORB
WOC WTAQ WKBH KIRO KXX
KOIN KSPD KFPY KVI WWL
KOY WFOA WOC KSCJ WNAK
KLZ KSL KFSB

R—Good News of 1939

WEAF WBN WNAC WTIC WJAR
WTAG WCHS KYW WFLR WRC
WGY WRBN WCAE WTAM WWJ
WIRE WMAQ KSD KSTP WHO
WOW WDAF WLW WSPD WABC
WBYR WHAM WFLA WBRB
WJOD WDEL WERC WTAR WPTF
WSOB WFLA-WSUN WJOD WMC
WJZ WBRB WDX WSM WAVE
WSM KV00 WKY WBAF KTRB
KARK KPRC WQAI WTMJ WJBA
WDAY KFYR KOA KDYL KPO
KFI KGW KOMO KIQ KTR
KFBK KGW KMJ KERN KGAR
KGIL KGNC KTHS CBM CBL

E-10:00 pm, C-9:00, M-8:00, P-7:00
C—"Columbia Workshop"

Available to full network
R—Kraft Music Hall
WEAF WNAC WTIC WJAR WTAG
WCSH WREN WRC WGY KYW
WHO WOV WDAF WCAE WTAM
WWJ WLW KSD KFYR WREC

WKY KTBS KARK WTMJ WSB
 BAP KPRC WOAI KOMO KOA
 KPO DYI KFI KGW KHK WIBA
 KSTP KTRB WJX WPTF WIS
 WIOD WAVE WTAR WFLA WDAY
 WSM WMC WIRE WMAQ WBRC
 WFBR WJAX WDEL WHOL WSMB
 WMBG CBL CBM CBF WSOE
 WSYR WHAM WFBC KGIR KGHL
 KPFA KTHS WOOD

E-11:00 pm, C-10:00, M-9:00, P-8:00
 R—Amos 'n' Andy
 See Monday.
 E-11:30 pm, C-10:30, M-9:30, P-8:30
 C—Kate Smith Hour
 KVOR KLZ KSL KFBB KGVO
 KOY KGAR KARM KNN KOIN
 KSFO KIRO KFPY KVI

FRIDAY

E-6:45 pm, C-5:45, M-4:45, P-3:45
 B—Lowell Thomas
 See Monday.
 C—Sophie Tucker
 See Monday.
 E-7:00 pm, C-6:00, M-5:00, P-4:00
 R—Amos 'n' Andy
 See Monday.
 E-7:15 pm, C-6:15, M-5:15, P-4:15
 C—"Lum and Abner"
 See Monday.
 R—Jimmie Fidler

WEAF WNAC WTIC WJAR WTAG
 WCHS KYW WFBR WDEL WRC
 WGY WJW WBEN WCAE WTAM
 E-7:30 pm, C-6:30, M-5:30, P-4:30

C—"Wonder Show"; Jack Haley
 WABC WADC WEEI WGR WBMM
 WKRC WGAR KRNT WJR WDRC
 WKRC KMBC KFAB KMOX WJSV
 WBNS WHIO WHCC WISN WMAS
 WBXW WYVA KHF WRVA KLRA
 WREB KRLL KOMA KWKH KTUL
 WOC KGLO WCCO KSCJ

E-8:00 pm, C-7:00, M-6:00, P-5:00
 B—Criminal Histories; Warden Lives
 WJZ WBZ WBZA WEAN WIC
 WFLB WBAL WMAL WSYR WHAM
 WEBR KDKA WHK WSPD WXYZ
 WLS KWK WMT WTCN KSO
 KOIL WREN WSAI WRTD WGL
 WGBF WMC WJTN WSB WBRC
 WJDX WSMB WAVE WSM KXYZ
 KGRO KTHS KPO KFI KGW
 KOMO KTIQ KYOD

C—"Campana's First Nighter"
 WABC WADC WOKO WCAO WEEI
 WJR WBMM WKRC WGAR KRNT
 WJR WDRC WFBM KMBC WHAS
 KFAB WCAU WJAS WPRO KMOX
 WFIL WJSV WBNS WHIO WHCC
 WLZB WBW WYVA KRLL KTRH
 KOMA KTSa KWKH KDAL WCCO
 WNAK KLZ KSL KOY KGAR
 WREB WJAX WFLA WDEL WRC
 WGST WRVA

R—Citrus Service Concert
 WEAF WNAC WTIC WJAR WTAG
 WCHS KYW WDEL WFBR WRC
 WGY WBEN WCAE WTAM WJW
 WIRE WMAQ KSD KSTP WHO
 WOW WDAF WSAI CBM CBF
 WTAR WPTF WSOE WFBC
 WNNC WIS WSCS WJAX WTMJ
 WSUN WIOD WAVE WMC WBRC
 WSB WSMB WJDX KVOO WFAA
 WHO WOW WDAF KOA WKY CHL

E-8:30 pm, C-7:30, M-6:30, P-5:30
 C—Burns and Allen
 WABC WOKO WCAO WEEI WGR
 WBMM WKRC WGAR KRNT WJR
 WDRC WFBM KMBC WHAS KFAB
 WCAU WJAS WPRO KMOX WFIL
 WJSV WADC WBNS WHIO WHCC
 WREB WJW WDEL WHOL WSMB
 WMBG CBL CBM CBF WSOE
 WSYR WHAM WFBC KGIR KGHL
 WNBC WBW WIRX KPH WAIM
 WCHS WBT WDNC WBIG WRVA
 WDBJ WTOG WJNO WSJS WGST
 WAPI WDDO WNOX KLRA WREC
 WCCO WSAF WLAC WWL WGH
 KRLL KTRH KOMA KTSa KWKH
 KTUL WMBR WQAM WDBO
 WDAE WOC KDAL WTAQ WMFG
 WKRB WCCO KSCJ WHLB WNAE
 E-9:00 pm, C-8:00, M-7:00, P-6:00

C—"Hollywood Hotel"
 WABC WOKO WEEI WKBW
 WBMM WKRC WGAR KRNT WJR
 WDRC WFBM KMBC WHAS KFAB
 WCAU WJAS WPRO KMOX WFIL
 WJSV WADC WBNS WHIO WHCC
 KFH WBT WRVA WGST WNOX
 KLRA WREC WLAC WWL KVI
 KRLL KTRH KOMA KTSa KWKH
 WMBR WMBR CFBR WCCO KLZ
 KSL KNX KOIN KSFO KIRO
 KEPY and Canadian Broadcasting Corp.

R—Waltz Time
 WEAF WNAC WTIC WJAR WTAG
 WCHS KYW WFBR WDEL WRC
 WGY WJW WBEN WCAE WTAM
 WHO WOW WDAF WSAI WTAQ
 WCKY WIRE WDEL CBM CBF
 WCKY

E-9:30 pm, C-8:30, M-7:30, P-6:30
 R—Death Valley Days
 WEAF WNAC WTIC WJAR WTAG
 WCHS KYW WFBR WDEL WRC
 WGY WBEN WCAE WTAM WJW
 WIRE WMAQ KSD KSTP WHO
 WDEL WFBR WDEL WRC
 E-10:00 pm, C-9:00, M-8:00, P-7:00

R—Guy Lombardo Orchestra
 WEAF WNAC WTIC WJAR WTAG
 WCHS KYW WDEL WFBR WRC
 WGY WBEN WCAE WTAM WJW
 WIRE WMAQ KSD KSTP WHO
 WDEL WFBR WDEL WRC
 WSAI WIRE WMAQ KSD KSTP
 WHO WOW WDAF WBSB KANS
 WAVE WSM WMC WBRC WSMB
 WJDX KVOO WTKY WFAA KTBS
 KPRC WOAI WTMJ WIRX WDAY
 KPFR KOA KDYL KPO KFI KGW
 KOMA KHQ WSB

E-10:30 pm, C-9:30, M-8:30, P-7:30
 R—Jimmie Fidler
 See Tuesday
 E-10:45 pm, C-9:45, M-8:45, P-7:45
 R—Uncle Ezra
 WEAF WNAC WTIC WJAR WTAG
 WCHS KYW WDEL WFBR WRC
 WGY WBEN WCAE WTAM WJW
 WIRE WMAQ KSD KSTP WHO
 WDAF KVOO WKY WFAA KTBS
 KARK KPRC WOAI WTMJ KO
 KDYL KPO KFI KGW KOMO
 KHIQ

E-11:00 pm, C-10:00, M-9:00, P-8:00
 R—Amos 'n' Andy
 See Monday.
 E-11:30 pm, C-10:30, M-9:30, P-8:30
 C—Burns and Allen
 KVOR KLZ KSL KFBB KGVO
 KOY KGAR KNN KOIN KSFO
 KIRO KFPY KGMH KIIBC

SATURDAY

E-6:00 pm, C-5:00, M-4:00, P-3:00
 R—Kaltenmeyer's Kindergarten
 Available to network
 E-7:00 pm, C-6:00, M-5:00, P-4:00
 C—Saturday Night Swing Club
 Available to full network
 R—Avalon Time
 WEAF WNAC WTIC WJAR WPTF
 WSOE WFBC WJAR WTAG WCHS
 KYW WDEL WFBR WRC WGY
 WBEN WCAE WTAM WJW WIRE
 WMAQ WNNC WIS WSCS KSD
 KSTP WHO WOW WDAF WFLA
 WSTN WIOD WAVE WSM WMC
 WIRE WSB WSMB WJDX KVOO
 WKY WBP KTBS WLW WJAX
 E-7:30 pm, C-6:30, M-5:30, P-4:30
 B—Uncle Jim's Question Bee
 WJZ WBZ WBZA WGY KDKA
 WTAM WMAQ

C—Joe E. Brown
 WABC WOKO WCAO WEEI WGR
 WFBM WKRC WGAR KRNT WJR
 WDRC WFBM KMBC WHAS
 KFAB WCAU WJAS WPRO KMOX
 WFIL WJSV WADC WBNS WHIO
 WHCC WYVA WEA WHP WISN
 WMBD WBW KFH WCHS WBT
 WRVA WJNO WGST WAPI WDDO
 WNOX KLRA WREC WLAC WWL
 WDBJ KRLL KTRH KOMA KTSa
 KWKH KTUL WMBR WQAM
 WDRD WDAE WOC KGLO WCCO
 KSCJ WNAE

E-8:00 pm, C-7:00, M-6:00, P-5:00
 C—Johnny Presents
 WABC WGAR WJR WDRC KMBC
 KFAB WCAU WJAS WPRO WJSV
 WADC WBNS WHIO WHCC
 WBNF WHP WGBI WYVA WCHS
 WBT WBIG WRVA WGST WOKO
 WCAO WEEI WGR WHBM WKRC
 KLRA WCOA WHAS KRNT WFBM
 KMOX WISN KPH WAPI KRLL
 KTRH KTSa WCCO WCCO

R—Quaker Party
 WEAF WNAC WTIC WJAR WTAG
 WCHS KYW WDEL WFBR WRC
 WGY WBEN WCAE WTAM WJW
 WIRE WMAQ KSD KSTP WHO
 WOW WDAF WLW WMBG KANS
 WTAR WPTF WSOE WFBC WIS
 WJAX WFLA-WSUN WIOD WMC
 WERC WJDX WSMB WAVE WSM
 KVOO WKY WBP KTBS KARK
 KPRC WOAI WTMJ WDAY KPR
 KOA KDYL KPO KFI KGW WSB
 E-8:30 pm, C-7:30, M-6:30, P-5:30

C—"Professor Quiz"
 WABC WADC WOKO WCAO WEEI
 WJR WBMM WKRC WGAR WJR
 WDRC KMBC KFAB WCAU WJAS
 WPRO KMOX WJSV WBNS WHCC
 WBT WRVA WGST WWL KRNT
 WFBM WHAS WFLA WGH WTOG
 WAPI KRLL KTRH KTBS WCCO

R—Fred Waring
 WEAF WNAC WTIC WJAR WTAG
 WCHS KYW WDEL WFBR WRC
 WGY WBEN WCAE WTAM WJW
 WIRE WMAQ KSD KSTP WHO
 WOW WDAF WSAI CBM CBF
 WTAR WPTF WSOE WFBC
 WNNC WIS WSCS WJAX WTMJ
 WSUN WIOD WAVE WMC WBRC
 WSB WSMB WJDX KVOO WKY
 WBP KTBS KPRC WOAI

E-9:00 pm, C-8:00, M-7:00, P-6:00	WGAR WIR KVI WFRM WHAS	WHIO WHEC WORC WPG WLBZ
B-National Barn Dance	KFAB WCAU WJAS KMOX WFBL	WYBF WMAN WHP WISN WMBD
WJZ WBZ WBZA WBAL WMAL	WWSV WBNS WHEC WMBD	WGBI WSPB WMAS WTBW WIBX
WSYT WIAM WTMJ WIBA	WWSA KFBI WBT WHIG WRVA	WWSA KFBI WCHS WBT WDNC
KDKA WXPZ WFIL WMC WSB	WTOC WJNO WGST WAPI WDOD	WHIG WRVA WDBJ WTOC WSJS
KCBS WSPD WEAN WHK WSMB	WNOX KLRA WREC WSEA WLAC	WGST KGAR WDOD WNOX KLRA
WOOD WTPD WJW KARK WBRG	WWL WCOA KFPY KRLD KTRH	WREC WJNO WSPA WLAC WWL
WKY WTAP KPCB WBAI WDAY	KOMA K TSA KWKH KTTL	WCOA KGLO KBLD KTRH KOMA
WCC WJTN KVOO WEHR WDAY	WMBR WQAM WDBO WDAE WOC	KTSA KWKH KTUL WACO WAPI
WTAR WAVE WERC KFTB KTTIS	KLZ KSL KARM KNX KOIN	WMBR WQAM WDBO WDAE WOC
WTN KWK WMT KSO KOIL	KSFO KIRO	WKBB WTAQ WKRH WDBO KSCJ
WBEW WJDX		WNAX KVOB KLZ KSL KFBB
R-Vox Pop	R-America Dances	KOY KOH KNX KOIN KSFO
WEAF WNAC WTIC WIAR WTAG	To Red network	KFPY KVI KGMB WJSV WEOA
WCSH KRW WDEL WFBR WHC	E-10:00 pm, C-9:00, M-8:00, P-7:00	WNIX WCOG
WCY WBEW WCAE WTAM WWI	C-"Your Hit Parades"	E-11:00 pm, C-10:00, M-9:00, P-8:00
WIRE WMAQ KSD KSTP WOW	WABC WOKO WCAO WEEI	B-National Barn Dance
WDAF WCKY WBRF	WKBW WBBM WKRC WGAR	KTAR KGHJ KPFA KGIR KOA
E-9:30 pm, C18:30, M-7:30, P-6:30	KKNT WJR WDRC WFBM	KFI KDYL KGW KOMO KPO
C-Saturday Night Serenade	WHAS KFAB WCAU WJAS	KHQ WBOV KTFI KOB KSEI
WCAO WEEI WKBW WBBM	KMOX WFBL WADC WRNS	WBOW

CLASSIFIED INDEX TO CHAIN PROGRAMS

WC indicates West Coast programs. Time is given in Eastern Standard, all P.M. unless otherwise stated.

Comedy

Sun, 5:30 pm, Lew Lehr, CBS	11:00, Ben Bernie, CBS (WC)
6:30 pm, Billy House, CBS	11:30, Harry Salter, Red (WC)
7:00, Jack Benny, Red	Mon, 8:00, Richard Himber, CBS
11 pm, Lew Lehr, CBS (WC)	8:00, Carl Hoff, Red
Mon, 7:30, Eddie Cantor, CBS	8:30, Benny Kreuger, CBS
8:00, Henry Youngman, CBS	9:00, Phil Spitalny, Red
10:30, Eddie Cantor, CBS (WC)	9:30, Eddie Duchin, Red
Tues, 8:30, Parkyakarus, CBS	10:00, Guy Lombardo, CBS
10:00, Bob Hope, Red	10:30, Carl Hoff, Red (WC)
10:00, Jerry Colonna, Red	11:30, Benny Kreuger, CBS (WC)
12:00, Parkyakarus, CBS (WC)	Tues, 8:00, Russ Morgan, Red
Wed, 9:00, Fred Allen, Red	8:30, Lud Gluskin, CBS
Thur, 7:30, Joe Penner, CBS	8:30, Peter Van Steeden, Red
8:30, Joe Penner, CBS	9:30, Benny Goodman, CBS
9:00, Frank oMrgan, Fannie Brice, Red	10:00, Skinnay Ennis, Red
10:00, Bob Burns, Red	12:00, Lud Gluskin, CBS (WC)
Fri, 7:30, Jack Haley, CBS	Wed, 8:30, Paul Whiteman, CBS
Sat, 7:30, Joe E. Brown, CBS	8:30, Tommy Dorsey, Red
8:00, Col. Stoopnagle, Red	8:30, Harvey Salter, Blue
11:00, Joe E. Brown, CBS (WC)	9:00, Peter Van Steeden, Red
	9:30, David Broekman, CBS
	10:00, Kay Kyser, Red
	10:30, Frankie Masters, CBS
	Thur, 7:30, Ben Pollack, CBS
	8:00, Jack Miller, CBS
	8:00, Rudy Vallee, Red
	8:30, Ben Pollack, CBS
	9:00, Meredith Willson, Red
	10:00, Johnny Trotter, Red
	11:30, Jack Miller, CBS (WC)
	Fri, 7:30, Ted Fio Rito, CBS
	8:30, Ray Noble, CBS
	9:00, Victor Young, CBS
	9:00, Abe Lyman, Red
	10:00, Guy Lombardo, Red
	11:30, Ray Noble, CBS (WC)
	Sat, 7:00, Saturday Night Swing Club, CBS
	7:30, Harry Sosnik, CBS
	8:00, Russ Morgan, CBS
	8:30, Fred Waring, Red
	9:00, America Dances, Red
	9:30, Gus Haenschen, CBS
	10:00, Hit Parade, CBS
	11:00, Harry Sosnik, CBS (WC)

Concerts

Sun, 12:30 pm, Radio City Music Hall, Blue	
3:00, N. Y. Philharmonic, CBS	
5:00, Metropolitan Opera Auditions, Blue.	
9:00, Ford Sunday Evening Hour, CBS	
Mon, 8:30, Alfred Wallenstein, Red	
Wed, 9:00, Everybody's Music, CBS	
Fri, 8:00, Frank Black, Red	

Dance Bands

Sun, 5:30 pm, Ben Bernie, CBS	
6:30, Carl Hohengarten, CBS	
7:00, Harry Salter, Red	
7:00, Phil Harris, Red	
7:30, Oscar Bradley, CBS	
8:00, Robert Armbruster, Red	
9:00, Don Donie, Red	
9:30, Gus Haenschen, Red	
10:00, Horace Heidt, Red	

Dialog

Sun, 8:00 pm, Edgar Bergen, Charlie McCarthy, Red
 Mon, 7:00, Amos 'n' Andy, Red
 7:15, Lum and Abner, CBS
 8:30, Pick and Pat, CBS
 11:00, Amos 'n' Andy, Red (WC)
 11:15, Lum and Abner, CBS (WC)
 11:30, Pick and Pat, CBS (WC)
 Tues, 7:00, Easy Aces, Blue
 7:00, Amos 'n' Andy, Red
 9:30, Fibber McGee and Molly, Red
 11:00, Amos 'n' Andy, Red (WC)
 Wed, 7:00, Amos 'n' Andy, Red
 7:00, Easy Aces, Blue
 7:15, Lum and Abner, CBS
 11:00, Amos 'n' Andy, Red (WC)
 11:15, Lum and Abner, CBS (WC)
 Thur, 7:00, Amos 'n' Andy, Red
 7:00, Easy Aces, Blue
 11:00, Amos 'n' Andy, Red (WC)
 Fri, 7:00, Amos 'n' Andy, Red
 7:15, Lum and Abner, CBS
 8:30, Burns and Allen, CBS
 11:00, Amos 'n' Andy, Red (WC)
 11:15, Lum and Abner, CBS (WC)
 11:30, Burns and Allen, CBS (WC)
 Sat, 8:00, Tommy Riggs and Betty Lou, Red

Drama

Sun, 6:00 pm, Silver Theater, CBS
 6:30, Tale of Today, Red
 8:00, Orson Welles, CBS
 9:45, Irene Rich, Blue
 11:15, Irene Rich, Blue (WC)
 Mon, 9:00, Lux Radio Theater, CBS
 Tues, 7:30, Helen Menken, Red
 8:00, Edward Robinson, Claire Trevor, CBS
 10:00, Jean Hersholt, CBS
 11:30, Edward Robinson, Claire Trevor, CBS (WC)
 Wed, 8:00, Gang Buster (Phil Lord), CBS
 8:00, One Man's Family, Red
 Thur, 10:00, Columbia Workshop, CBS
 Fri, 8:00, First Nighter, CBS
 9:00, Hollywood Hotel, CBS
 9:30, Death Valley Days, Red
 10:00, Grand Central Station, CBS
 12:00, First Nighter, CBS (WC)
 8:00, Warden Lawes, Blue

News

Sun, 11:00 pm, Press Radio, Red and Blue
 Fri, 9:30, March of Time, Blue
 Daily except Sunday, 6:00, Press Radio, CBS
 6:25, Press Radio, Red
 Daily except Saturday and Sunday, 6:45, Lowell Thomas, Blue

Popular Programs

Sun, 11:30 am, Major Bowes Family, CBS
 12:30 pm, Salt Lake Tabernacle, CBS
 1:00, Church of the Air, CBS
 2:00, RCA Magic Key, Blue
 4:30, Court of Human Relations, MBS
 5:00, Spelling Bee, Red
 6:30, The Laugh Liner, CBS
 7:30, Passing Parade, CBS

8:00, Chase and Sanborn Program, Red
 9:00, Manhattan Merry-Go-Round, Red
 9:30, Album of Familiar Music, Red
 10:00, Horace Heidt's Brigadiers, Red
 Mon, 6:45, Sophie Tucker Show, CBS
 8:00, Monday Night Show, CBS
 8:00, Al Pearce and Gang, Red
 8:30, Voice of Firestone, Red
 9:00, Hour of Charm, Red
 9:30, Pall Mall Program, Red
 10:00, Contented Program, Red
 10:00, True or False, Blue
 10:30, Al Pearce and Gang, Red (WC)
 11:30, Voice of Firestone, Red (WC)
 12:30, Vox Pop, Red (WC)
 Tues, 8:00, Johnny Presents, Red
 8:30, For Men Only, Red
 9:00, We, The People, CBS
 9:00, Vox Pop, Red (WC)
 10:45, Uncle Ezra, Red
 Wed, 6:45, Sophie Tucker Show, CBS
 7:30, Ask-It Basket, CBS
 8:00, Town Hall Tonight, Red
 8:30, Hobby Lobby, Blue
 9:30, For Men Only, Red
 10:30, It Can Be Done, CBS
 10:30, NBC Minstrel Show, Blue
 Thur, 9:00, Major Bowes' Amateurs, CBS
 9:00, Major Bowes' Amateurs, CBS
 9:00, Good News of 1939, Red
 10:00, Kraft Music Hall, Red
 Fri, 6:45, Sophie Tucker Show, CBS
 8:00, Cities Serice Concert, Red
 8:00, Warden Lawes, Blue
 9:00, Waltz Time, Red
 9:00, Hollywood Hotel, CBS
 9:30, Death Valley Days, Red
 9:30, March of Time, Blue
 8:00, Johnny Presents, CBS
 8:30, Professor Quiz, CBS
 9:00, National Barn Dance, Blue
 10:45, Uncle Ezra, Red
 11:00, National Barn Dance, Blue (WC)

Singers

Sun, 4:00 pm, Benay Venuta, MBS
 5:30, Manny Prager, CBS
 6:30, Jack Fulton, CBS
 7:00, Kenny Baker, Red
 8:00, Nelson Eddy, Red
 8:00, Dorothy Lamour, Red
 9:00, Rachel Carlay, Red
 9:00, Pierre Le Kreeun, Red
 9:30, Frank Munn, Red
 9:30, Jean Dickenson, Red
 9:30, Elizabeth Lennox, Red

Mon,	8:30, Edward Roecker, CBS
	8:30, Edward Roecker, CBS
	8:30, Margaret Speaks, Red
	10:00, The Lullaby Lady, Red
Tues,	8:30, Al Jolson, CBS
	8:30, Martha Raye, CBS
	9:30, Donald Novis, Red
	12:00, Al Jolson, CBS (WC)
	12:00, Martha Raye, CBS (WC)
Wed,	9:30, Jane Froman, CBS
	9:30, Kenny Baker, CBS
	10:00, Virginia Sims, Red
	10:30, Marion Francis, CBS
Thur,	8:00, Kate Smith, CBS
	10:00, Bing Crosby, Red
	11:30, Kate Smith, CBS (WC)
Fri,	7:30, Jack Haley, CBS
	7:30, Virginia Verrill, CBS
	8:00, Lucille Manners, Red
	8:30, Tony Martin, CBS
	9:00, Frances Langford, CBS
	9:00, Jean Sablon, CBS
	9:00, Frank Munn, Red
	11:30, Tony Martin, CBS (WC)
Sat,	9:00, Henry Burr, Blue
	9:30, Mary Eastman, CBS
	9:30, Bill Perry, CBS
	10:00, Freda Gibson, Buddy Clark, CBS
	11:00, Henry Burr, Blue (WC)

Talks

Sun,	9:30, Walter Winchell, Blue
	11:00, Walter Winchell, Blue (WC)
Mon,	7:15, Edwin C. Hill, Red
	11:15, Edwin C. Hill, Red
Tues,	9:00, Gabriel Heatter, CBS
	10:30, Jimmy Fidler, Red
Wed,	10:30, Edgar A. Guest, CBS
Fri,	7:15, Jimmy Fidler, Red
	10:30, Jimmy Fidler, Red (WC)

THERE is nothing unusual about spending 30 days in jail after appearing in a courtroom, but Josef Cherniavsky once spent a month behind bars after playing his cello before the Russian Imperial Court.

It seems that the Czar's personal adjutant, General Komaroff, requisitioned a string trio from the Preobra-

jonsky Regiment Symphony orchestra to play at a musical given for the Imperial Court. Cherniavsky was one of the instrumentalists selected to play.

Now the General didn't care much what the trio played, but he did have his own ideas about how the musicians rendered their selections. He insisted that the players march into his presence after a certain fashion, and demanded that they play while standing erect with their heels together. Any musician knows that such a stance would play hob with any player, especially a cellist.

Cherniavsky argued that in order to play, he would have to place the cello between his legs. But the good General insisted that he would have to play with his heels together—or else.

Following the General's orders, Cherniavsky clicked his heels together and proceeded to play with the cello at his side. That is, until carried away by the tempo, he placed the cello between his legs.

After the selection was finished, the Court applauded politely and left. Then the General, with all the pomp and ceremony he could muster, descended upon the musicians, particularly Cherniavsky. With some choice Russian epithets, Josef was told he had disobeyed orders. A military guard was called.

Thirty days later Josef and his fellow musicians were released from the brig.

Across the EDITOR'S Desk

WAY down on the "slimy, slushy, sloppy, slippery, sloping banks of the Silvery Rio Grande," according to Mr. M. M. Valentine there is a meek little 250 watt "signal squirter" known as KPAB. Mr. Valentine is the General Manager of this station, owned by the Pan American Broadcasting Company of Laredo, Texas, and he tells us that although it operates on 1500 kcs. "for the public convenience and necessity," it is also anxious to receive DX reports.

Mr. Valentine is planning a special DX broadcast to take place sometime during the latter part of January, and in addition to the usual verification cards, souvenirs from the Mexican border will be sent to successful listeners. The souvenirs will consist of sombreros, serapes, pottery, dressed fleas, and many other characteristic Mexican pieces.

May we request all our readers to drop Mr. Valentine a note, expressing their appreciation of his offer to broadcast a program for their entertainment?

JOE Lippincott of East Vassalboro, Maine, requests us to mention the special broadcasts which will take place on December 9 and 10, from San Jose, Costa Rica. Three stations will broadcast on these days, between 2 and 4 am, EST, and it is expected that some other San Jose stations may join in the fun; the three scheduled, however, are TIXD on 800 kcs.,

TIRH on 950 kcs. and TI2XD on 11920 kcs. It is likely that each station will use a special identifying signal so they can be distinguished from each other, and make it possible to verify each one separately.

Stations TIXD and TI2XD broadcast, on their regular schedules, from 11 am to 1:30 pm, and from 5 to 11 pm, EST. Their call letters and slogans are given every thirty minutes.

IN another part of this edition of RADEX appears a short article on Television, written by Mr. E. F. McDonald, Jr., President of the Zenith Radio Corporation. In his article, Mr. McDonald gives some very excellent reasons why Television remains "around the corner," and why it should not be made available prematurely to the general public.

While we should like to see Television on the market, so we may enjoy its benefits and pleasures, we agree with Zenith's president that these receivers should not be sold until a standard number of lines and type of scanning has been adopted. At the present time 441 lines are being transmitted in experimental broadcasts; eight years ago, in Chicago, we were thrilled by crude 60-line images as broadcast by WMAQ. It is possible that even in one year from now, our present 441-line pictures will be antiquated.

DUE to circumstances beyond their control, station KGY in Olympia, Washington, was not able to broadcast the special program which was scheduled for November 19. The Federal Communications Commission ordered that, because of the desire of many broadcast stations to transmit late election returns during the second week in November, the frequency check periods for November were deferred until the third week, making it impossible for KGY to broadcast between the hours of 3 and 6:30 am, EST, as planned.

Mr. Otto Renninger, Jr., of the Technical Staff of KGY, will notify us of another date for this broadcast.

ANSWERING our questionnaire which was sent to all the North American broadcasting stations, XEAF in Nogales, Sonora, informs us that they are pleased to verify correct reports of reception free of charge. Sr. Rene Mascarenas M., writing for the station, advises us that the name of the company owning XEAF is the Cia. Radiodifusora Sonorense, S. A., and the address, Altos Banco de Nogales, or P. O. Box 711 in Nogales, Arizona. The General Manager is now Gaston Mascarenas M. XEAF broadcasts daily from 11 am until 3 pm, and from 7 pm until midnight. On Mondays, only the 7 to midnight broadcast is scheduled.

For photographs used in RADEX this month we thank the following contributors: National Broadcasting Company, Jerry Hahn, Tony Tarr, Mrs. Dora Newcomb, A. M. Hankins, James Walker, Ray E. Everly, and Francis Coradetti.

Asiatic Stations

FROM Alan I. Breen, of Dunedin, New Zealand, Honorary Member of The Radex Club, comes timely information concerning the new Indian stations, and some active Shanghai broadcasters.

The latest additions to the All-India Radio System are VUT, at Trichinopoly, due on the air in December, 1938, and VUY, Dacca, scheduled to start broadcasting in March of 1939. A complete list of the Indian stations follows:

Broadcast Band

758	VUT	Trichinopoly, 5 kw.
810	VUC	Calcutta, 1.5 kw.
886	VUD	Delhi, 20 kw.
1022	VUV	Lucknow, 5 kw.
1086	VUL	Lahore, 5 kw.
1168	VUY	Dacca, 5 kw.
1231	VUB	Bombay, 1.5 kw.
1420	VUM	Madras, .25 kw.
1500	VUP	Peshawar, .25 kw.

Shortwave

4880	VUC2	Calcutta, 10 kw.
4905	VUB2	Bombay, 10 kw.
4950	VUM2	Madras, 10 kw.
4995	VUD2	Delhi, 10 kw.
9530	VUC2	Calcutta, 10 kw.
9550	VUB2	Bombay, 10 kw.
9590	VUD2	Delhi, 10 kw.
9590	VUD3	Delhi, 5 kw.
15160	VUD3	Delhi, 5 kw.

Mr. Breen has been fortunate in obtaining an authentic list of the Shanghai, China stations which are actually operating. Unfortunately, the stations are all of low power. Only one, XMHD on 760 kcs. has 1000 watts. XMHB on 980 is 500 watts; XHHZ on 1160 is 150 watts; XHHB on 740 and XLHA on 800 are both 50-watters, and all the rest are 100-watters.

740	XHHB	1120	XMHJ
760	XMHD	1140	XHHM
800	XLHA	1160	XHHZ
840	XHHU	1200	XHHN
860	XLHG	1220	XHHG
940	XHHE	1240	XHHY
960	XHHF	1260	XHHP
980	XMHB	1280	XHHC
1000	XQHT	1320	XHHT
1020	XLHB	1340	XHHK
1040	XHHH	1360	XQHD
1080	XHHJ	1380	XQHK

The BROADCASTING Stations of the WORLD

All the world's broadcasting stations which use at least 1000 watts of power, are shown in this list. Frequencies are given in the first column, the power in kilowatts in the second column. Complete lists, showing all the stations, regardless of power used, are printed by Continents, from month to month. The South Americans were listed in the October issue, and the stations of Oceania in the September issue.

153	5	....	Ankara, Turkey	592	100	....	Vicnna, Germany
155	7	....	Kaunas, Lithuania	600	25	CNR	Rabat, Morocco
160	10	....	Hilversum, Netherlands	600	75	PRH2	Porto Alegre, Brazil
160	150	....	Brasov, Roumania	600	10	SBD	Sundsvall, Sweden
166	220	....	Lahti, Finland	600	10	ZTC	Cape Town, U.S. Africa
172	500	....	Moscow, U.S.S.R.	601	15	....	Athens, Greece
180	100	....	Shinkyo, Manchukuo	610	1	CX4	Montevideo, Uruguay
182	80	....	Paris, France	610	20	....	Florence, Italy
185	5	....	Istanbul, Turkey	610	3	JOJK	Kanazawa, Japan
191	60	....	Berlin, Germany	610	50	KZRM	Manila, Philippines
200	20	....	Irkutsk, C.S.S.R.	610	3.5	2FC	Sydney, Australia
208	35	....	Droitwich, Gt. Britain	620	1	CBF2	Santiago, Chile
208	16	....	Minsk, U.S.S.R.	620	2	LV3	Cordoba, Argentina
216	150	....	Reykjavik, Iceland	620	4.5	3AR	Melbourne, Australia
218	100	....	Motala, Sweden	620	15	....	Brussels, Belgium
224	120	....	Novosibirsk, U.S.S.R.	620	20	....	Cairo, Egypt
232	150	....	Warsaw, Poland	629	20	CT1AA	Lisbon, Portugal
232	100	....	Luxembourg	629	20	....	Khristiansand, Norway
240	60	....	Moscow, U.S.S.R.	630	5	LS3	Moscow Aires, Argentina
248	100	....	Kalundborg, Denmark	630	7	4QN	Clevedon, Australia
248	100	....	Kiev, U.S.S.R.	630	1	7ZL	Hobart, Australia
256	25	....	Tashkent, U.S.S.R.	638	120	....	Praha, Czechoslovakia
260	60	....	Oslo, Norway	640	10	ZTJ	Johannesburg, U.S. Africa
260	1	....	Bergen, Norway	640	7.5	5CK	Crystal Brook, Australia
260	10	....	Vigra, Norway	640	1	CB64	Vina del Mar, Chile
271	100	....	Leningrad, U.S.S.R.	648	100	....	Lvons-la-Doua, France
283	35	....	Tiflis, U.S.S.R.	648	10	....	Petrozavodsk, U.S.S.R.
300	100	....	Moscow, U.S.S.R.	650	2	CX6	Montevideo, Uruguay
349	20	....	Saratov, U.S.S.R.	650	10	1YA	Auckland, New Zealand
347	10	....	Finnmark, Norway	658	100	....	Cologne, Germany
350	10	....	Archangel, U.S.S.R.	660	10	XGZ	Nanking, China
355	20	....	Boston-on-Don, U.S.S.R.	668	20	....	Jerusalem, Palestine
360	20	HAL 2	Budapest, Hungary	668	70	NR	Manchester, Gt. Britain
375	50	....	Svecllovakia	670	7	LS4	Buenos Aires, Argentina
392	30	....	Banska Bystrica, Czechoslovakia	670	2	PRC5	Belem, Brazil
401	1 1/4	....	Geneva, Switzerland	670	7.5	2CO	Corowa, Australia
413	10	....	Voronezh, U.S.S.R.	674	3	MTFY	Harbin, Manchukuo
510	50	....	Baranowicze, Poland	677	100	....	Sottens, Switzerland
510	1	....	Innsbruck, Germany	680	1	CB68	Valparaiso, Chile
527	6.3	....	Ljubljana, Jugoslavia	680	5	PRC2	Porto Alegre, Brazil
527	10	....	Viipuri, Finland	680	5	4YZ	Invercargill, New Zealand
530	10	....	Bolzano, Italy	686	20	....	Belgrade, Jugoslavia
536	50	....	Wilno, Poland	690	10	JOBK1	Osaka, Japan
546	120	....	Budapest, Hungary	690	3.5	6WF	Perth, Australia
550	100	....	Beromunster, Switzerland	695	120	....	Paris, France
550	10	2CR	Cumnock, Australia	700	5	VPB	Colombo, Ceylon
560	10	MTCY1	Shinkyo, Manchukuo	700	7	2NR	Grafton, Australia
560	10	XGOG	Chengt'u, China	700	55	....	Stockholm, Sweden
560	10	ZUG	Grahamstown, U. S. Africa	710	10	JODK2	Keijo, Korea
560	10	6WA	Minding, Australia	710	5	LS1	Buenos Aires, Argentina
565	100	....	Athlone, Irish Free State	710	7	7NT	Kelso, Australia
565	10	....	Memel, Lithuania	710	1	XGOS	Chunking, China
565	3	....	Palermo, Italy	713	120	....	Rome, Italy
570	5	CB57	Santiago, Chile	720	1	JFBK	Taiwan, Formosa
570	60	2YA	Wellington, New Zealand	720	25	PRA8	Pernambuco, Brazil
570	100	....	Stuttgart, Germany	720	10	3YA	Christchurch, New Zealand
580	1	JFCK	Taichu, Formosa	720	2	6GF	Kalgoorlie, Australia
580	10	3WV	Horshtm, Australia	722	1	....	Frederikstad, Norway
583	20	....	Alpes-Grenobles, France	722	17	....	Lopikerkapel, Netherlands
583	50	....	Madona, Latvia	722	10	....	Kharkov, U.S.S.R.
590	6	LS10	Moscow Aires, Argentina	730	1	CB73	Santiago, Chile
590	150	JOAK1	Tokyo, Japan	730	3	EAJ2	Madrid, Spain

730	5.5	EAJ5	Seville, Spain	855	3	VUB	Bombay, India
730	10	JOCK1	Nagoya, Japan	859	100	....	Strasbourg, France
730	1	LV1	San Juan, Argentina	860	2.5	PRA3	Rio de Janeiro, Brazil
730	4	5CL	Adelaide, Australia	868	50	....	Poznan, Poland
730	20	....	Tallin, Estonia	870	150	JOAK2	Tokyo, Japan
740	1	JOSK	Kokura, Japan	870	26	LR6	Buenos Aires, Argentina
740	10	PRA4	San Salvador, Brazil	870	1	2GB	Sydney, Australia
740	3	2BL	Sydney, Australia	877	70	....	London, Gt. Britain
740	100	....	Munich, Germany	880	22	PR13	Bello Horizonte, Brazil
740	1	....	Pori, Finland	880	15	....	Linz, Germany
749	120	....	Marseille, France	882	20	VUD	New Delhi, India
750	1.5	HS7PJ	Bangkok, Siam	886	15	....	Graz, Germany
750	10	JFAK	Taihoku, Formosa	890	1	CB90	Santiago, Chile
750	2.5	KGU	Honolulu, Hawaii	890	1.5	CX18	Montevideo, Uruguay
750	10	LRA	Buenos Aires, Argentina	890	1	MTBY	Hoten, Manchukuo
750	1	XGOK	Canton, China	890	1.5	ZP9	Asuncion, Paraguay
750	1.5	ZTD	Durban, U.S. Africa	890	10	....	Helsinki, Finland
750	12	....	Katowice, Poland	895	1.5	....	Limoges, France
750	10	....	Maritzburg, U.S. Africa	900	1	CB90	Valparaiso, Chile
760	10	CB76	Valparaiso, Chile	900	1	KZIB	Manila, P. I.
760	1	JQAK1	Diren, Manchukuo	900	2	LU2	Bahia Blanca, Arg.
760	10	PRA6	Sao Paulo, Brazil	900	5	PRB7	Rio de Janeiro, Brazil
760	1	XMHD	Shanghai, China	910	12	LR2	Buenos Aires, Arg.
767	60	....	Burghead, Gt. Britain	910	2	4RK	Rockhampton, Australia
767	70	....	Falkirk, Gt. Britain	913	60	....	Toulouse, France
770	1	CX12	Montevideo, Uruguay	920	1	....	Shanghai, China
770	10	JOHK	Sendai, Japan	920	32	....	Brno, Czechoslovakia
770	3.5	3LO	Melbourne, Australia	930	2.5	CB93	Santiago, Chile
770	10	....	Stalino, U.S.S.R.	930	1	CX20	Montevideo, Uruguay
776	120	....	Toulouse, France	932	15	....	Brussels, Belgium
780	1	....	Santiago, Chile	940	10	JOBK2	Osaka, Japan
780	1	KZEG	Manila, Philippines	940	10	PRF4	Rio de Janeiro, Brazil
780	5	LT1	Rosario, Argentina	940	10	SBB	Goteborg, Sweden
780	120	....	Leipzig, Germany	940	1	XHHE	Shanghai, China
780	1	2KA	Katoomba, Australia	940	12	....	Algiers, Algeria
790	7.5	EAJ1	Barcelona, Spain	950	31	LR3	Buenos Aires, Argentina
790	10	JOGK	Kumamoto, Japan	950	1	2UE	Sydney, Australia
790	11	LR10	Buenos Aires, Argentina	950	100	....	Breslau, Germany
790	10	XGOV	Changsha, China	959	60	....	Paris, France
790	10	4YA	Dunedin, New Zealand	960	2	LV2	Cordoba, Arg.
795	50	....	Lwow, Poland	960	5	PRF3	Sao Paulo, Brazil
800	1.5	PRA3	Rio de Janeiro, Brazil	960	10	RW13	Odessa, U.S.S.R.
800	2.5	4QG	Brisbane, Australia	960	1	XHFF	Shanghai, China
804	70	....	Cardiff, Gt. Britain	960	5	YV5RA	Caracas, Venezuela
804	5	....	Penmon, Gt. Britain	968	30	....	Bordeaux, France
810	10	JOIK	Sapporo, Japan	970	1	CB97	Santiago, Chile
810	3	VUC	Calcutta, India	970	50	JODK1	Keijo, Korea
810	1	CX14	Montevideo, Uruguay	974	1	HCBJ	Quito, Ecuador
814	50	....	Milan, Italy	977	100	....	Belfast, Gt. Britain
820	1	CB82	Santiago, Chile	980	20	PRE8	Rio de Janeiro, Brazil
820	1	LV7	Tucuman, Argentina	980	1	YV1RB	Rio Cristobal, Venez.
820	12	....	Bucharest, Roumania	980	2	6AM	Northam, Australia
823	10	....	Bodo, Norway	980	24	....	Torun, Poland
830	10	JOPK	Hiroshima, Japan	986	50	....	Bologna, Italy
830	20	LR5	Buenos Aires, Argentina	990	10	JOCK2	Nagoya, Japan
830	7	3GI	Longford, Australia	990	16	LR4	Buenos Aires, Arg.
832	1.5	....	Agen, France	990	2	XGOD	Hangchow, China
832	35	....	Kiev, U.S.S.R.	990	2	2GZ	Orange, Australia
832	10	....	Stavanger, Norway	995	60	....	Hilversum, Netherlands
840	1	....	Valparaiso, Chile	1000	2	HJ3ABH	Bogota, Colombia
140	5	PRH9	Sao Paulo, Brazil	1000	10	PRB9	Sao Paulo, Brazil
840	5	2YC	Wellington, New Zealand	1000	14	....	Bratislava, Czechoslovakia
841	100	....	Berlin, Germany	1010	1	CB101	Santiago, Chile
845	2	ZBW	Hong Kong	1010	1	CX24	Montevideo, Uruguay
850	2	CX16	Montevideo, Uruguay	1010	5	XGOW	Hangkow, China
850	3	EAJ3	Valencia, Spain	1013	4	....	Chernigov, U.S.S.R.
850	10	JBCK	Seishin, Korea	1913	70	....	Daventry, Gt. Britain
850	10	OAX4A	Lima, Peru	1020	3	EAJ15	Barcelona, Spain
850	1	5RM	Renmark, Australia	1020	1	2KY	Sydney, Australia
850	....	....	Porsgrund, Norway	1020	2	....	Cracow, Poland
850	10	....	Simferopol, U.S.S.R.	1030	5	CT1GL	Paredo, Portugal
850	100	....	Sofia, Bulgaria	1030	5	LR9	Buenos Aires, Arg.
855	2.5	HSP1	Bangkok, Siam				

1030	1	XGOL	Foochow, China	1213	60	....	Lille, France
1031	100	....	Konigsberg, Germany	1220	25	PRA9	Rio de Janeiro, Brazil
1040	10	CP4	La Paz, Bolivia	1220	2	4AK	Oakey, Australia
1040	10	PRG2	Sao Paulo, Brazil	1220	1	4ZB	Dunedin, New Zealand
1040	2	5PI	Crystal Brook, Australia	1222	60	....	Rome, Italy
1040	10	....	Leningrad, U.S.S.R.	1230	15	LS8	Buenos Aires, Arg.
1040	120	....	Rennes-Bretagne, France	1230	2	2NC	Newcastle, Australia
1050	1.5	CX26	Montevideo, Uruguay	1230	5	....	Gleiwitz, Germany
1050	2	2CA	Canberra, Australia	1231	5	....	Gorlitz, Germany
1050	50	....	Falkirk, Gt. Britain	1235	1	6CK	Cork, I.F.S.
1059	20	....	Bari, Italy	1240	2	LU7	Bahia Blanca, Arg.
1060	5	CB106	Santiago, Chile	1240	1	3TR	Sale, Australia
1060	5	PRD2	Rio de Janeiro, Brazil	1240	17	....	Saarbrucken, Germany
1060	2	4SB	Brisbane, Australia	1250	1	CB125	Santiago, Chile
1065	1	JQAK2	Dairen, Manchukuo	1250	1	CX36	Montevideo, Uruguay
1068	2	....	Paris, France	1258	1	....	Bilbao, Spain
1068	10	....	Tiraspol, U.S.S.R.	1258	15	....	Riga, Latvia
1070	50	LR1	Buenos Aires, Argentina	1258	1	....	Rome, Italy
1070	2	6WB	Katanning, Australia	1258	1	....	Salamanca, Spain
1077	13	....	Bordeaux, France	1260	5	PRA5	Sao Paulo, Brazil
1080	4.5	LT3	Rosario, Arg.	1260	2	3SR	Shepparton, Australia
1080	2	SCC	Falun, Sweden	1260	2	....	Nurnberg, Germany
1080	10	....	Joao Pessoa, Brazil	1260	2	....	Buenos Aires, Arg.
1090	1.05	CX28	Montevideo, Uruguay	1270	1	2SM	Sydney, Australia
1090	2	3LK	Lubeck, Australia	1276	27	....	Juan-les-Pins, France
1095	10	....	Vinnitsa, U.S.S.R.	1276	2	....	Varna, Bulgaria
1100	50	PRG9	Sao Paulo, Brazil	1280	25	PRG3	Rio de Janeiro, Brazil
1104	25	....	Kuldiga, Latvia	1285	5	....	Redmoss, Gt. Britain
1104	10	....	Naples, Italy	1294	5	....	Klagenfurt, Germany
1110	1	CB111	Vina del Mar, Chile	1294	5	....	Vorarlberg, Germany
1110	5	LS5	Buenos Aires, Arg.	1300	1	CB130	Santiago, Chile
1113	100	....	Melnik, Czechoslovakia	1300	5	CPX	La Paz, Bolivia
1120	5	LV5	San Juan, Arg.	1300	3	PRH6	Bello Horizonte, Brazil
1120	5	PRH8	Rio de Janeiro, Brazil	1300	2	XQHC	Shanghai, China
1120	1	YV1RF	Maracaibo, Venezuela	1300	2	2TM	Tamworth, Australia
1120	1	4BC	Brisbane, Australia	1310	10	LS11	La Plata, Arg.
1122	6	....	Nyregyhaza, Hungary	1312	2.5	....	Malmö, Sweden
1122	60	....	Stagshaw, Gt. Britain	1320	1	CB132	Valparaiso, Chile
1130	1	CX30	Montevideo, Uruguay	1320	1	HAE2	Magyarovar, Hungary
1130	1	ZP1	Asuncion, Paraguay	1320	1	KGMB	Honolulu, Hawaii
1130	1	2ZB	Wellington, New Zealand	1320	1	PRD8	Nichteroy, Brazil
1131	100	SBH	Horby, Sweden	1320	2	PRE9	Fortaleza, Brazil
1140	5	CB114	Santiago, Chile	1320	2	PRH4	Sao Paulo, Brazil
1140	10	....	Genoa, Italy	1330	2	....	Bremen, Germany
1140	10	....	Trieste, Italy	1330	2	....	Hanover, Germany
1140	7	....	Turin, Italy	1330	2	....	Kiel, Germany
1149	50	....	Cardiff, Gr. Britain	1330	2	....	Stettin, Germany
1149	20	....	London, Gt. Britain	1339	2	....	Lodz, Poland
1149	20	....	Manchester, Gt. Britain	1339	5	....	Montpellier, France
1150	7	LR8	Buenos Aires, Arg.	1340	1	CB134	Santiago, Chile
1150	1	XGOZ	Chinkiang, China	1340	5	PRE4	Sao Paulo, Brazil
1150	2	2WG	Wagga, Australia	1348	2	....	Konigsberg, Germany
1158	10	....	Kosice, Poland	1348	2	....	Salzburg, Germany
1160	1	CB116	Valparaiso, Chile	1350	6	LS6	Buenos Aires, Argentina
1160	5	PRH3	Sao Paulo, Brazil	1350	1	XGOE	Nanning, China
1167	15	....	Monte Ceneri, Switzerland	1357	2	....	Bari, Italy
1170	2	2NZ	Inverell, Australia	1357	5	....	Genoa, Italy
1176	10	....	Copenhagen, Denmark	1357	4	....	Milan, Italy
1180	5	CB118	Santiago, Chile	1357	1	....	Rome, Italy
1185	60	....	Nice-Corse, France	1360	5	PRC8	Rio de Janeiro, Brazil
1190	30	LS2	Buenos Aires, Arg.	1360	5	....	Warsaw, Poland
1190	1	2CH	Sydney, Australia	1380	5	CB138	Santiago, Chile
1190	2	....	Coblenz, Germany	1380	1	4BH	Brisbane, Australia
1190	2	....	Trier, Germany	1384	7	....	Warsaw, Poland
1195	25	....	Frankfurt-am-Main, Germany	1390	1	CB139	Valparaiso, Chile
1195	5	....	Freiburg-im-Breisgau, Germany	1393	25	....	Lyons, France
1200	1	CB120	Valparaiso, Chile	1400	5	PRD5	Rio de Janeiro, Brazil
1200	1	HJ3ABE	Bogota, Colombia	1402	2	....	Stara-Zagora, Bulgaria
1200	1	PRB6	Sao Paulo, Brazil	1410	1	CW37	Colonia, Uruguay
1204	5	....	Moravska-Ostrava, Czecho	1410	5	PRE7	Sao Paulo, Brazil
				1411	15	....	Fecamp, France
				1420	2	PRB2	Curitiba, Brazil
				1420	2	....	Kaiserlautern, Germany

1430	5	PRE2	Rio de Janeiro, Brazil
1430	1	3ZB	Christchurch, New Zealand
1438	1.2	....	Miskolc, Hungary
1440	10	LS7	Buenos Aires, Arg.
1440	3	PRF9	Porto Alegre, Brazil
1450	1	PRB4	Santos, Brazil
1456	5	....	Paris, France
1460	5	....	Dresden, Germany
1465	1.2	....	Pecs, Hungary
1470	1	PRE6	Nitheroy, Brazil
1474	1	....	Bournemouth, Gt. Britain
1480	1	PRD3	Petropolis, Brazil
1500	10	CB150	Santiago, Chile
1500	2	VUP	Peshawar, India

A new Amateur Column will appear in the January issue.



Christmas Seals

PROTECT YOUR HOME AND FAMILY FROM TUBERCULOSIS

BUY them from your local tuberculosis association

USE them on your Holiday letters and packages

The National, State and Local Tuberculosis Associations in the United States

QSA and R Codes

The R code describes the volume with which a signal is heard.

R1 is a signal that is barely perceptible.

R2 is a very weak signal.

R3 is a weak signal.

R4 are signals of fair volume.

R5 are fairly good signals.

R6 are good signals.

R7 are moderately strong signals.

R8 are strong signals.

R9 are extremely strong signals.

The QSA Code is used to describe the understandability of a station's signal.

QSA1 is a signal that is unreadable.

QSA2 is one that is barely perceptible. A word can be understood now and then.

QSA3 is understandable with difficulty.

QSA4 is a signal that can be understood with practically no difficulty.

QSA5 is perfectly understandable.

Some persons describe radio signals further by employing the S and X symbols, S to indicate fading and X to indicate static, in this manner:

S is slight fading.

SS is deep fading.

SSS is a complete fadeout.

R is rapid fading (fluttering).

X is slight static.

XX is bad static.

XXX is very heavy static.

The letter N indicates that either fading or static was not present.

These symbols are written like this:

(a) QSA5, R7/S/XX

(b) QSA4, R7/N/N

Example (a) means that the station had a perfectly understandable signal at moderately strong volume, with slight fading and bad static. Example (b) means the station was easily understandable at quite strong volume, no fading and no static being present.

Twenty Stentors

LISTED below are the twenty shortwave stations which possessed the loudest voices in each of the Time Zones last month. Arranged according to the number of reports received, this chart can be used by new listeners as a guide to the stations which they are most apt to receive in their own localities. Beginners should not attempt to tune for difficult catches until they become familiar enough with their receivers to bring in these easy-to-get stations regularly.

Best in EST	Best in CST	Best in MST	Best in PST	Best in World *
Tokyo	London	London	ZBW3	VUD
Rome	ZRK	TGWA	OZF	VUC2
VK3ME	Martinique	HJ1ABP	VUB2	HJ1ABP
London	Tokyo	HP5A	Tokyo	Paris
CSW	Rome	HJ1ABD	VPD2	LRX
Berlin	VK3ME	HJ3ABD	TGQA	Huizen
Salamanca	Berlin	HJ3ABH	TDB	VUM2
VLR	SPW	HJ4ABE	TGWA	COCQ
VK6ME	Huizen	YDB	London	CXA8
TGWA	RKI	TGQA	VLR	COBC
SPW	Praha	TIEP	VUD2	COCO
HP5J	HP5G	VPD2	VK3ME	OFE
SPD	LRX	TG2X	XTJ	RWG
RKI	Paris	Tokyo	ZHP	OFD
Praha	HIN	Praha	FK8AA	TAQ
HP5G	EAR	HP5G	HS8PJ	VUC
HJ3ABX	HCIB	Paris	JDY	VUB
LRX	XEXA	HCIB	ZRK	VUD3
COCM	VK6ME	HAT4	Berlin	Berlin
Paris	HAT4	VUB2	T14NRH	FK8AA

*Exclusive of the USA and Canada.

Time is Eastern Standard. Subtract 1 hour for Central, 2 hours for Mountain and 3 hours for Pacific.

Berlin. Deutscher Kurzwellensender, Haus des Bundfunks, Berlin, Charlottenburg 9 Transmitters are at Zeesen. Can be identified by a tune on a music box which precedes each transmission. These stations verify by card for an IRC.

The directions in which the programs are radiated are shown in parentheses: A, Asia; Af, Africa; CA, Central America; NA, North America; SA, South America.

DJA, 9560, 12:05-11 am (A); 6-10:50 pm (CA).

DJB, 15200 kcs, 12:05-11 am (A); 4:50-10:50 pm (NA); Sunday only 11:10 am-12:25 pm (NA).

DJC, 6020, 11:30 am-4:25 pm (Af).

D'D, 11770, 10:30 am-4:25 pm (Af); 4:50-10:50 pm (NA).

D'E, 17760, 12:05-5:50 am (A); 6-7:50 am (SA); 8-10 am (A); 4:50-6:7:50 am (SA); 8-11 am (A); Sunday only, 11:10 am-12:25 pm (SA).

DIL, 15110, 12:05-2 am (Af); 8-9

DJN, 9540, 4:50-10:50 pm (SA).

D'O, 15280, 12:05-11 am (A); 4:50-10:50 pm (SA).

DJR, 15340, 8-9 am (CA); 4:50-10:50 pm (CA).

D'S, 21450, 12:05-11 am (A).

DJZ, 11801, 7:15-10:50 pm (NA).

Eindhoven: N. V. Philips' Radio, Eindhoven, Netherlands. Philips' Holland-India Broadcasting Station (PHOHI).

PC1, 9590, Sun, 2-3 pm; 7:15-8:15 pm; 8:25-10:25 pm; Tues, 1:45-3:40 pm; 7:15-10:30 pm; Wed, 7:15-8:50 pm; Fri, 8-9 pm.

PCJ2, 15220, Tues, 2:-3:30 am; Wed, 9:30-11:30 am.

PHI, 11730, Mon through Fri, 6:15-6:45 pm; Sat, 7:15-7:45 pm.

PHI2, 17770, Mon through Fri, 7:40-8:55 am; Sun, 6:25-9:40 am.

London: British Broadcasting Corp., London, W1, England. Big Ben strikes the hours. Reports are acknowledged but not positively verified. Transmitters are at Daventry.

GSA, 6050, 12:20-4 pm; 4:15-6 pm.

GSB, 9510, 1:30-4 pm; 4:15-8:30 pm; 9:20-11:20 pm.

GSC, 9580, 6-8:30 pm; 9:20-11:25 pm.

GSD, 11750, 3-5:15 am; 9-noon; 12:20-4 pm; 4:15-8:30 pm; 9:20-11:25 pm.

GSE, 11860, 3:5:15 am; 5:45-8:30 am; 9 am-noon.

GSF, 11860, 3-5:15 am; 5:45-8:50 am; 9 am-noon.

GSG, 17790, 5:45-8:50 am; 9 am-noon; 12:20-4 pm.

GSH, 21470, 5:45-8:50 am; 9 am-noon.

GSI, 21530, 5:45-8:50 am; 9 am-noon; 1:30-4 pm.

GSL, 6110, 6-8:30 pm; 9:20-11:25 pm.

GSO, 15180, 3-5:30 am; 9 am-noon; 4:15-8:30 pm.

GSP, 15310, 3-5:15 am; 12:20-4 pm; 4:15-6 pm.

Martinique: "Radio Martinique," Fort de France, Martinique, 9700 kcs. Sign off with Marseillaise. Address, Poste Seri. Boite 136 6-7:45 pm

Paris: "Paris Mondial," Ministry of Haussmann, Paris VIIIe.

TPAQ, 15243, 6-11 am.

TPA3, 11885, 2-5 am; 11:15 am-6 pm.

TPA4, 11718, 7-9:15 pm; 9:30 pm-midnight.

TPB3, 17810, 9:30-11 am.

TPB6, 11718, 7-9:15 pm.

TPB7, 11885, 9:30 pm-midn't.

TPB11, 9550, 11:15 am-6 pm.

TPB11, 15130, 2-5 am.

Praha: The Czechoslovak Shortwave Station, Fochova Tr. 16.

OK1MPT, 5145, Fri, 4:40-5:10 pm

OLR2A, 6010, Wed, Thur, 4:40-5:10 pm.

OLR3A, 9550, Mon, 4:40-5:10 pm.

OLR4A, 11840, Daily 1:55-4:30 pm; Mon through Fri, 7:55-10:55 pm; Sun, 5:55-8:55 pm.

OLR5A, 15230, Mon through Fri,

7:55-10:55 pm; Sun, 5:55-8:55 pm; Tues, 4:40-5:10 pm.

Rome: E.I.A.R., 5 Via Montello, Rome, Italy.

ICC, 6355, 3-3:30 pm.

IQY, 11676, 12:10-1 pm; 1:35-2:35 pm; 3-3:30 pm; 7-9 pm.

IRF, 9830, 3-3:30 pm; 7-9 pm.

2RO, 11810, 4:40-8:45 am; 10 am-2:55 pm; 3:50-4:05 pm; 5:30-5:55 pm; 7-9 pm.

Tokyo: Broadcasting Corp. of Japan, Hibiya Park, Tokyo.

JVP, 7510, 8-9:30 am.

JZI, 9535, 2:30-4 pm; 4:30-5:30 pm.

JZI, 11800, 7-7:30 am; 8-9:30 am; 2:30-4 pm; 4:30-5:30 pm.

"Radio Nacional," Salamanca, Spain, 10370, 6:30 pm-?

CCOCM, 9833, Havana, Cuba. Transradio Columbia, 23 No. 1113, Vedado. 8 am to 10:30 pm.

COCO, 6010, Havana, Cuba. Relays CMCK. Luis Casas R., Aptdo 98. 8 am-10 pm.

COCQ, 9670, Havana, Cuba, "de la RCA Victor," Calle 25 No. 225. Noon-10 pm.

CSW, 9940, Lisbon, Portugal, 1-8 pm.

FK8AA, 6122, Noumea, New Caledonia, Relays FJP. 44 rue de l'Alma. Tues, Sat, 2:30-3:30 am.

HAT4, 9125, Budapest, Hungary, Sun, Wed, 7-8 pm; Sat, 6-7 pm.

HCJB, 4107, Quito, Ecuador, 7-8:15 am; 11:30 am-2:30 pm; 4:45-10:15 pm.

HCJB, 12450, Quito, Ecuador, 4:30-7:15 pm.

HJ1ABP, 9618, Cartagena, Colombia, Aptdo. 37, 6-10 pm.

HJ3ABD, 4840, Bogota, Colombia, Aptdo. 509, 9 am-2 pm; 6 pm-midn't.

HJ3ABH, 4900, Bogota, Colombia, Aptdo. 565, 6-11 pm.

HJ3ABX, 6015, Bogota, Colombia, Aptdo. 2665, Sun, noon-1:30 pm; 6-11 pm; weekdays, 10:30 am-2 pm; 5:30-11 pm.

HP5A, 11700, Panama City, Panama. Radio-Tatro Estrella de Panama, Aptdo. 054. Weekdays 6-10 pm.

HP5C, 11780, Janana City, Panama. "Ron Dalley," Box 1121. Daily 6-10 pm.

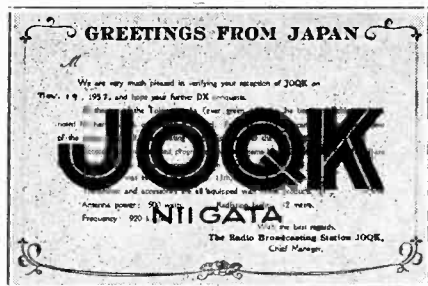
- HP5I**, 11895, Aguadulce, Panama. "La Voz del Interior," verifies free. Daily 7:30-9:30 pm.
- H58PJ**, 9510, Bangkok, Siam, Mon, Thur, 8-10 am.
- JDY**, 9925, Dairen, Kwangtung. Re-lays JQAK. Daily 7-8 am.
- JQAK**. Daily 7-8 am.
- LRX**, 9660, Buenos Aires, Argentina. "Radio El Mundo" Calls Maipu 555. Daily 10:30 am-12:30 am.
- OFB**, 15190, Lahti, Finland. Week-days, 5-6:30 am; 10 am-5 pm.
- OFC**, 11780, Lahti, Finland, see OFB.
- OFD**, 9500, Lahti, Finland, see OFB.
- OFZ**, 9520, Copenhagen, Denmark, 2-6 pm; 10-11 pm.
- PLP**, 11000, Bandoeng, Java, N.E.I. Weekdays, 4:30-10 am.
- RAN**, 9595, Moscow, U.S.S.R. Radio Centre, Soliakka 12. Daily 7-9:15 pm.
- RKI**, 7520, Moscow, U.S.R. Radio Centre, Soliakka 12. Daily 7-9:15 pm.
- SPD**, 11535, Warsaw, Poland, 6-9 pm.
- SPW**, 13635, Warsaw, Poland, 6-9 pm.
- TAQ**, 9670, 14770, 15180, Ankara, Turkey. Testing.
- TCQA**, 6420, Quezaltenango, Guatemala. Sat, 10 pm-1 am Sun; Sun, 1-3 pm; other days, 9-11 pm.
- TCWA**, 9685, Guatemala City, Guat. Radiodifusora Nacional. Verifies free Sun, 7-10:45 pm. Weekdays, 10-11:30 pm.
- TCWA**, 15170, Guatemala City, Guat. Same as above.
- T62X**, Guatemala City, Guat. Same as above.
- TILS**, 5905, San Jose, Costa Rica. Apto. 3. 6-11 pm.
- TI4NRH**, 9694, Heredia, Costa Rica. Apto. 40. Tues, Thur, Sat, 9-10 pm.
- VK2ME**, 9690, Sydney, Australia. Am? amalgated Wireless, 47 York St. Sun, 1-3 am; 5-11 am.
- VK3ME**, 9510, Melbourne, Australia. Amalgated Wireless, 167 King St. Weekdays 4-7 am.
- VK6ME**, 9590, Perth, Australia. Amalgated Wireless. Weekdays 4-6 am.
- VLR**, 9580, Melbourne, Australia. 1-9:45 am.
- TAQ**, 9670, 14770, 15180, Ankara, Turkey. Testing.
- TCQA**, 6420, Quezaltenango, Guatemala. Sat, 10 pm-1 am Sun; Sun, 1-3 pm; other days, 9-11 pm.
- T62X**, Guatemala City, Guat. Same as above.
- TI4NRH**, 9694, Heredia, Costa Rica.
- VPD2**, 9530, Suva, Fiji, 5:30-7 am.
- VUB2**, 5905, Bombay, India, 7 am-12:30 pm.
- VUB2**, 9550, Bombay, India, 1-3:30 am; 9:30-11:30 pm.
- VUC2**, 5880, Calcutta, India, 6:30 am-noon.
- VUC2**, 9530, Calcutta, India, 2-4 am.
- VUD2**, 5995, Delhi, India, 7:30 am-12:30 pm.
- VUD2**, 9590, Delhi, India, 1:30-3:30 am; 8:30-11:30 pm.
- VUD3**, 15160, Delhi, India, 7:30 am-12:30 pm.
- VUM2**, 5880, Madras, India, 7 am-12:30 pm.
- W2XE**, New York, N. Y. Columbia Broadcasting Sys., 485 Madison Ave. 6120 kcs: 11:30 pm to 12:30 am. 11830 kcs: Sat and Sun, 6:30-11 pm; Mon through Fri, 6-11 pm. 2120 kcs: Sat and Sun, 8 am to 1 pm; Mon through Fri 7:30 am.
- W3XAL**, New York, N. Y. (Bound Brook, N. J.). National Broadcasting Co., Rockefeller Plaza. 6100 kcs: 9 pm to 1 am. 17780 kcs: 9 am to 9 pm.
- W3XAU**, Philadelphia, Pa. 1622 Chestnut St. 6060 kcs: Tues, Fri, Sun, 1 pm to midnight; Wed, 1-10 pm. 9590 kcs: Mon, Thur, Sat, 1 pm to 1 am.; Tues, Fri, Sun, midnight to 1 am; Wed, 10 pm to 1 am.
- XETA**, 11760, Monterrey, N. J., Mexico. Apto. 203. Daily 1:30-3:30 pm.
- XEWI**, 11900, Mexico City, D. F. 9 pm to midnight.
- XEWW**, 15160, Mexico City, D. F. Apto. 2516. 8 pm to 12:30 am.
- XTJ**, 11690, Hankow, China, 1-1:30 am; 7:05-7:35 am.
- YUA**, 6100, Belgrade, Yugoslavia. "Radio Beograd." noon to 5 pm.
- YV5RC**, 5970, Caracas, Venezuela. Apto. 2009. Sun, 8:30 am to 9:30 pm; Weekdays, 7 am to 10 pm.

ZBW3, 9525, Hong Kong, Box 200. Sun midnight to 1 am; 3-9:30 am. Weekdays 4-10 am.

ZIK2, 10600, Belize, British Honduras. Tues, Thur, Sat, 7:30-8 pm.

ZGE, 6200, Kuala Lumpur, Fed. Malay States. Sun, Tues, Fri, 6:40-8:40 am.

ZRK, 9606, Cape Town, U. of South Africa. P. O. Box 4559, Johannesburg. Sun, 3:30-4:30 am; 8-11:40 am. Weekdays, 11:45 pm to 12:45 am.



This very pretty card with large red call letters comes from Niigata, Japan, a broadcast band station which has been heard on our west coast.. (Courtesy of A. C. Tarr.)

Applications to the FCC

(Only applications which are set for hearing are shown in this list.)

- KAND, Corsicana, Tex., CP 250 w. days (E).
- KEX, Portland, Ore., CP change freq. to 1160, unlt'd. (E).
- KEEL, Denver, Colo., CP day pwr. of 1 kw. (E).
- KFJZ, Ft. Worth, Tex., CP change freq. to 930, pwr. to 500 w. unlt'd. (E).
- KGNO, Dodge City, Kans., CP 500 w. (E).
- KRKO, Everett, Wash., CP 100 (.25) unlt'd. (E).

- KRSC, Seattle, Wash., CP change pwr. to 500 w. Amended for 1 kw. (E).
- KVOD, Denver, Colo., CP 630 kcs., 1 kw. (C).
- WBNX, New York, N. Y., CP 5 kw. (C).
- WDEL, Wilmington, Del., CP 1000 w. (E).
- WGRC, New Albany, Ind., CP 800 kcs., 250 w. unlt'd. (E).
- WIP, Philadelphia, Pa., CP 5 kw, and move xmitter to Brooklawn, N. J. (E).
- WIRE, Indianapolis, Ind., CP 5 kw. (E).
- WIS, Columbia, S. C., special exp. authority for new satellite station at Sumter, S. C., 560 kcs., 10 to 100 w. from LS to sunrise. (E).
- WJRD, Tuscaloosa, Ala., mod. of lic. for 100 (.25) unlt'd. (E).
- WLAC, Nashville, Tenn., CP for 50 kw. (E).
- WMBC, Detroit, Mich., CP 1420 kcs., 250 w. unlt'd. (E).
- WMBR, Jacksonville, Fla., CP 1120 kcs., 500 (1). (E).
- WRAW, Reading, Pa., CP 250 w. (E).
- WSFA, Montgomery, Ala., CP 1410 kcs., 1 kw. unlt'd. (E).
- WSJS, Winston Salem, N. C., CP 100 (.25) (E).
- WTEL, Philadelphia, Pa., mod. of lic. to share with WHAT (E).
- WTMW, E. St. Louis, Ill., mod. of lic. for 250 w. (E).
- WTOL, Toledo, Ohio, mod. of lic. to work unlt'd. hours. (E).
- NEW, Akron, Ohio, Summit Radio Corp., 1530 kcs., 1 kw. unlt'd. (E).
- NEW, Ashland, Wis., CP 1310 kcs., 100 (.25) (E).
- NEW, Brunswick, Ga., CP 1420 kcs., 100 (.25) (E).
- NEW, Cleveland, Ohio, Cuyahoga Valley Brdctg. Co., CP 1500 kcs., 100 w. days (E).
- NEW, Ely, Wyo., Eastern Nev. Brdctg. Co., CP 1500 kcs., 100 w. days. (E).
- NEW, Everett, Wash., Cascade Brdctg. Co., CP 1420 kcs., 100 (.25) unlt'd. (E).
- NEW, Hastings, Nebr., South Nebr. Brdctg. Co., CP 920 kcs., 1000 (5) unlt'd. (E).
- NEW, Louisville, Ky., Ky. Brdctg. Corp., CP 1210 kcs., 100 (.25) (E).
- NEW, Mansfield, Ohio, CP 1370 kcs., 250 w. days (E).
- NEW, Metuchen, N. J., Bernard Goldsmith, CP 1420 kcs., 100 w. days (E).
- NEW, Norfolk, Va., Colonial Brdctg. Corp., CP 1370 kcs., 100 (.25) (C).
- NEW, Ocala, Fla., John T. Alsop, Jr., CP 1500 kcs., 100 w. unlt'd. (E).
- NEW, Phoenix, Ariz., M. C. Reese, CP 1200 kcs., 100 (.25) (E).
- NEW, Rockville, Md., Monocacy Brdctg. Co., CP 1140 kcs., 250 w. days (E).
- NEW, San Juan, P. R., Enrique Abarca Sanfeliz, CP 580 kcs., 1000 (5) (E).
- NEW, Sedalia, Mo., CP 1500 kcs., 100 (.25) unlt'd. (E).

(E) indicates the application is set for hearing before an Examiner. (C) indicates it is set for hearing before the Commission, freq. (Frequency); mod. (modification); lic. (license); pwr. (power); unlt'd. (unlimited time); ltd. (limited time); CP (construction permit); hrs. (hours); xmitter (transmitter); exp. (experimental); LS (local sunset).

NEW, Springfield, Ohio, Springfield Brdstg. Corp., CP 1310 kcs., 100 w. unlt'd. (E).
 NEW, Sumter, S. C., J. Samuel Broady, CP 1310 kcs., 100 (.25) unlt'd. (E).
 NEW, Tacoma, Wash., Tacoma Brdstg Co., CP 1420 kcs., 100 (.25) (E).
 NEW, Tacoma, Wash., Michael J. Mingo, CP 1400 kcs., 250 w. unlt'd. (E).
 NEW, Victoria, Texas, Radio Enterprises, Inc., CP 1310 kcs., 100 (.25), unlt'd. (E).

Recommendations to FCC Examiners

KATE, Albert Lea, Minn., rec. grant of appl. for mod. of lic. for 100 (.25) (C).
 KEEN, Seattle, Wash., rec. grant of CP for 1420 kcs., 100 (.25).
 KOY, Phoenix, Ariz., rec. grant of app. for mod. of lic. for 550 kcs.
 WGNV, Newburgh, N. Y., rec. grant of CP for 1220 kcs., 250 w. days.
 WHP, Harrisburg, Pa., rec. grant of CP for 1000 (5).
 WPRA, Managuz, P. R., rec. grant of CP for 780 kcs., 1000 (2.5) (C).
 WRBL, Columbus, Ga., rec. mod. of CP for 1330 kcs., 1 kw. (C).
 WTAQ, Green Bay, Wis., rec. grant of CP for 1000 (5).
 NEW, Atlantic City, N. J., Press Union Pub. Co., rec. grant of CP for 1200 kcs., 100 (.25) unlt'd.
 NEW, Denver, Colo., F. W. Meyer, rec. grant of CP 1310 kcs., 100 (2.5).
 NEW, Emporia, Kans., Emporia Brdstg. Co., Inc., rec. grant of CP 1370 kcs., 100 w. days.
 NEW, Lihue, Hawaii, Garden Island Pub. Co., rec. grant of CP for 1500 kcs., 100 (.25) Unlt'd.
 NEW, Goldshoro, N. C., rec. grant of CP 1370 kcs., 100 w. unlt'd. (C).
 NEW, New Bern, N. C., Nathan Frank, rec. grant CP 1500 kcs., 100 w.
 NFW, Rock Hill, S. C., rec. grant CP 1500 kcs., 100 w. days.
 NEW, St. Petersburg, Fla., Pinellas Brdstg. Co., rec. grant CP 1370 kcs., 100 (.25) unlt'd.
 NEW, Vancouver, Wash., Vancouver Radio Corp., rec. grant CP 880 kcs., 250 w. days.
 NEW, Wallace, Idaho, rec. grant CP 1420 kcs., 100 (.25) unlt'd.
 NEW, Washington, D. C., Lawrence J. Heller, rec. denial CP 1310 kcs., 100 (.25).

The Month's Changes in Station Data

New

870 XERC Mexico City, D. F.
 950 WTRY Troy, N. Y.
 1200 CHGB St. Anne de la Pocatiere, P. G.
 1210 WPIV Petersburg, Va.
 1210 WTMA Charleston, S. C.
 1370 WCOS Columbia, S. C.
 1490 XEDR Guaymas, Son.
 1600 CMBH Havana, Cuba

Frequency

670 XELO Tijuana, B. Cfa., from 580
 990 XEK Mexico City, D. F., from 890

1150 XEL Mexico City, D. F., from 1100
 1240 XEBU Chihuahua, Chih., from 1200
 1340 XEFC Merida, Yuc., from 550

Power

630 CJRC Winnipeg, Man., from 500
 890 XEW Mexico City, D. F., 100000 from 50000
 1120 CHSJ St. John, N. B., 100 from 500
 1310 XETB Torreon, Coah., 500 from 125

Reinstated

960 XECL Mexicali, B. Cfa.

Call

950 CBV Quebec, P. Q., from CRCK
 1120 CBJ Chicoutimi, P. Q., from CRCS

Network

1210 WJIM Lansing, Mich., new Blue
 1310 WFDF Flint, Mich., new Blue
 1310 WLAK Lakeland, Fla., new NBC
 1370 WIBM Jackson, Mich., new Blue
 1420 WAPO Chattanooga, Tenn., new NBC
 1420 WELL Battle Creek, Mich., new Blue

Delete

610 XEXM Mexico City, D. F.
 610 XEYO Mexico City, D. F.
 730 XERB Rosarito Beach, B. Cfa.
 760 XEOK Tijuana, B. Cfa.
 860 XENC Mexico City, D. F.
 870 XEJW Mexico City, D. F.
 1160 XEFM Leon, Gto.
 1180 XEFA Tacuba, D. F.
 1230 XEAF Zacatecas, Zac.
 1240 XELA Saltito Coah.
 1250 XEXH San Luis Potosi, S.L.P.
 1310 XEFS Mexico City, D. F.
 1320 XEAU Tijuana, B. Cfa.

Permit to Change Frequency

770 KFAB Lincoln, Nebr., to 1080
 1190 WATR Waterbury, Conn., to 1290
 1240 KLPN Minot, N. Dak., to 1360
 1310 KINY Juneau, Alaska, to 1450
 1370 KAST Astoria, Ore., to 1200
 1370 KSIM Salem, Ore., to 1360.

Permit to Change Power

560 WFIL Philadelphia, Pa., to 1000
 580 WILL Urbana, Ill., to 5000
 590 WKZO Kalamazoo, Mich., to 250 (1)
 760 KXA Seattle, Wash., to 1000
 770 KFAB Lincoln, Nebr., to 50000
 850 WKAR E. Lansing, Mich., to 5000
 850 WWL New Orleans, La., to 50000
 880 CMW Havana, Cuba, to 5000
 880 WRNL Richmond, Va., to 1000
 890 KENF Shenandoah, Iowa, to 1000 (5)
 890 WMMN Fairmont, W. Va., to 1000 (5)
 900 KGBU etchikan, Alaska, to 1000
 04C KRLD Dallas, Texas, to 50000
 1110 WRVA Richmond, Va., to 50000
 1190 WATR Waterbury, Conn., to 250
 1240 KLPN Minot, N. Dak., to 500 (1)
 1250 KIT Yakima, Wash., to 500 (1)
 126G WNBX Springfield, Vt., to 1000
 1310 KINY Juneau, Alaska, to 250
 1350 KWK St. Louis, Mo., to 5000
 1370 KAST Astoria, Ore., to 100 (.25)
 1370 KSIM Salem, Ore., to 500
 1380 WNBC New Britain, Conn., to 1000 (1)
 1380 WSMK Dayton, Ohio, to 250 (.5)
 1450 WGAR Cleveland, Ohio, to 1000 (5)

**NORTH AMERICAN B. C. STATIONS BY FREQUENCIES
WITH SUNDAY'S TIME ON THE AIR**

KEY TO SYMBOLS

As shown in the Index by Frequencies

Frequencies are given in kilocycles per second, and wavelengths in meters. Night power is shown in watts in third column. Daytime power is shown in parentheses in fourth column, in kilowatts. Thus: (.25) indicates 250 watts. Exact frequencies, when not multiples of ten, are shown in the fourth column.

- Second Column Symbols**
 a Verifies for return postage.
 b Verifies only occasionally.
 c Does not verify.
 d Verifies—no postage required.
 e Verifies for International Reply Coupon
 f Verifies for 10 cents.
 z No information available.
Fourth Column Symbols
 A Status in doubt—in Court.
 B National "Blue" Network.
 C Columbia Network.
 D Daytime only.
 F Canadian Network.

- G Assigned this frequency but using another under Special Authorization.
 H Assigned another frequency—using this one under Special Authorization.
 J Assigned lower power but using this power under Special Authorization.
 K Licensed for facsimile.
 L Limited time.
 M Mutual Network.
 N National "Red" and "Blue" Networks.
 P Has Construction Permit only.

- Q Station not in use.
 R National "Red" Network.
 S Sundays only.
 Sy Synchronized.
 X Has Permit to change 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.

540 kcs. (555.2 m.)

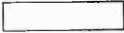


EASTERN STANDARD PACIFIC STANDARD

- CJRM a 1000 P
 ZNS d 400

Regina, Sask.
 Nassau, Bahamas

550 kcs. (545.1 m.)



- CFNB a 500 F(1)
 KFUB a 500 2(1)

Fredericton, N. B.
 St. Louis, Mo.

9:30 am-1:30 pm; (6:30-10:30 am; 1-4:5:30 pm; 10:15-2:30 pm; 7:15-8:15 pm.)
 11:15 pm.
 9 am-1 am. (6 am-10 pm)
 Silent (Silent)

- KFYR a 1000 N(5)
 KOAC a 1000
 KSD a 1000 2R(5)
 KTSA a 1000 C(5)
 WDEV a 500 D
 WGR a 1000 C(5)
 WKRC a 1000 C(5)
 WSVB a 500 D

Bismarck, N. Dak.
 Corvallis, Ore.
 St. Louis, Mo.
 San Antonio, Tex.
 Waterbury, Vt.
 Buffalo, N. Y.
 Cincinnati, Ohio
 Harrisonburg, Va.

10 am-12:30 pm. (6:30(7-9:30 am)
 7 am-midnight. (4 am-9 pm)
 9:30 am-5 pm. (6:30 am-2 pm)

560 kcs. (535.4 m.)



- KFDM a 500 N(1)
 KLZ a 1000 C(5)
 KSFO a 1000 C(5)
 KWTO a 5000 D
 WFIL a 1000 BMX
 WIND a 1000 (5)
 WIS a 1000 N(5)
 WQAM a 1000 C

Beaumont, Texas
 Denver, Colo.
 San Francisco, Calif.
 Springfield, Mo.
 Philadelphia, Pa.
 Gary, Ind.
 Columbia, S. C.
 Miami, Fla.

9-5 am. (6-2 am)
 8 am.-midnight. (5 am-9 pm)
 7:45 am-midnight (4:45 am-9 pm)

570 kcs. (526 m.)



- CMCY a 10000
 KGKO a 1000 B(5)
 KMTR a 1000
 KVI a 1000 C(5)
 WKBN a 500 1C
 WMCA a 1000
 WNAX a 1000 C(5)
 WOSU a 750 1(1)
 WSYR a 1000 Ba
 WSYU a 1000 Qa
 WWNC a 1000 N

Havana, Cuba
 Ft. Worth, Texas
 Los Angeles, Calif.
 Tacoma, Wash.
 Youngstown, Ohio
 New York, N. Y.
 Yankton, S. Dak.
 Columbus, Ohio
 Syracuse, N. Y.
 Syracuse, N. Y.
 Asheville, N. C.

11-3 am. (8 am-midnight)
 Silent (Silent)
 8 am-midnight (5 am-9 pm)

580 kcs. (516.9 m.)



- CFPR a 50
 CHRC a 100

Prince Rupert, B. C.
 Quebec, P. Q.

11:30 am-midnight (8:30 am-9 pm)

NORTH AMERICAN E. C. STATIONS BY FREQUENCIES

SUNDAY TIME

Eastern Standard

(Pacific Standard)

CKCL	a	100	F	Toronto, Ont.	10 am-11:30 pm.	(7 am-7:30 pm)
CKPR	a	1000	....	Fort William, Ont.	1:30 pm-11:30 pm;	(10:30 am-8:30 pm)
CKUA	a	500	....	Edmonton, Alta.		
KMJ	a	1000	KN	Fresno, Calif.		
KSAC	a	500	2(1)	Manhattan, Kans.	Silent.	(Silent)
WCHS	a	500	C(1)	Charleston, W. Va.	8:45-1 am.	(5:45 am-10 pm)
WDBO	a	1000	C(5)	Orlando, Fla.	7:30-12:05 am.	(4:30 am-9:05 pm)
WIBW	a	1000	C2(5)	Topeka, Kans.		
WILL	a	1000	DX	Urbana, Ill.	Silent.	(Silent)
WTAG	a	1000	R	Worcester, Mass.	9 am-midnight.	(6 am-9 pm)
XEMU	z	250	....	Piedras Negras, Coah.		

590 kcs. (508.2 m.)

KHQ	a	1000	R(5)	Spokane, Wash.	11 am-3 am.	(8 am-midnight)
WEEI	a	1000	C(5)	Boston, Mass.	8-1 am.	(5 am-10 pm)
WKZO	a	1000	BDX	Kalamazoo, Mich.	8:15 am-5:15 pm.	(5:15 am-2:15 pm)
WOW	a	1000	R(5)	Omaha, Nebr.	8 am-2 am.	(5 am-11 pm)

600 kcs. (499.7 m.)

CFCF	a	500	BF	Montreal, P. Q.	9 am-11:15 pm.	(6 am-8:15 pm)
CJOR	a	500	....	Vancouver, B. C.		
FQN	a	250	609	St. Pierre, Miquelon		
KFSD	a	1000	B	San Diego, Calif.		
WCAO	a	1000	CJ	Baltimore, Md.	8:45 am-midnight.	(5:45 am-9 pm)
WICC	a	500	BM(1)	Bridgeport, Conn.	8:1:30 am.	(5 am-10:30 pm)
WMT	a	1000	BM(5)	Cedar Rapids, Iowa		
WREC	a	1000	C(5)	Memphis, Tenn.		

610 kcs. (491.5 m.)

KFAR	z	1000	P	Fairbanks, Alaska		
KFRC	c	1000	M(5)	San Francisco, Calif.		
WCLE	a	500	DM	Cleveland, Ohio	7:45 am to Cleveland SS.	(4:45 am to Cleveland SS)
WDAF	a	1000	R(5)	Kansas City, Mo.	8-1 am.	(5 am-10 pm)
WTOD	a	1000	Na	Miami, Fla.	8 am-midnight.	(5 am-9 pm)
WIP	a	1000	....	Philadelphia, Pa.		
WMBF	a	1000	Qa	Miami, Fla.		

620 kcs. (483.6 m.)

KGW	a	1000	R(5)	Portland, Ore.		
KTAR	a	1000	N	Phoenix, Ariz.		
KWFT	z	250	(1)P	Wichita Falls, Tex.		
TIPG	z	2000	625	San Jose, Costa Rica		
WFLA	a	1000	Na(5)	Tampa, Fla.		
WHJB	a	250	CD	Greensburg, Pa.		
WLBZ	a	500	CM(1)	Bangor, Maine		
WSUN	a	1000	Na(5)	St. Petersburg, Fla.		
WTMJ	a	1000	N(5)	Milwaukee, Wis.		

630 kcs. (475.9 m.)

CFCO	a	100	F	Chatham, Ont.		
CFCY	a	1000	F	Charlottetown, P.E.I.		
CJRC	a	500	F(1)	Winnipeg, Man.		
CKOV	a	100	F	Kelowna, B. C.	Noon-2 am.	(9 am-11 pm)
KFRU	a	500	i(1)	Columbia, Mo.	8:30 am-6 pm.	(5:30 am-3 pm)
KGFX	a	200	D	Pierre, S. Dak.		
WGBF	a	500	NE(1)	Evansville, Ind.	8-1 am.	(5 am-10 pm)
WMAL	a	250	B(.5)	Washington, D. C.		
WPRO	a	500	C(1)	Providence, R. I.	8 am.-midnight	(5 am-9 pm)
XEZ	z	500	....	Merida, Yuc.		

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME

Eastern Standard

(Pacific Standard)

640 kcs. (468.5 m.)



KFI	a	50000	R	Los Angeles, Calif.	11-3 am.	(8 am-midnight)
WGAN	z	500	DP	Portland, Me.	8 am-8 pm.	(5 am-5 pm)
WHKC	a	500	ML	Columbus, Ohio	8:30 am-8:30 pm.	(5:30 am-5:30 pm)
WOI	a	5000	D	Ames, Iowa	Usually silent.	(Usually silent)
XEBX	z	250	....	Sabinas, Coah.		
YSS	a	500	....	San Salvador, E. S.		

650 kcs. (461.3 m.)



TIX	z	1000	....	San Jose, Costa Rica		
WSM	a	50000	KMN	Nashville, Tenn.		

660 kcs. (454.3 m.)



CMCR	z	150	....	Havana, Cuba		
WAAW	a	500	D	Omaha, Nebr.	9 am-5 pm.	(6 am-2 pm)
WEAF	a	50000	R	New York, N. Y.		
XEAL	z	1000	....	Mexico City, D. F.		
XEAO	a	250	....	Mexicali, B. Cfa.		

670 kcs. (447.5 m.)



WMAQ	a	50000	R	Chicago, Ill.		
XELO	a	10000	....	Tijuana, B. Cfa.		

680 kcs. (440.9 m.)



CMHW	f	500	....	Santa Clara, Cuba	8 am-noon; 3 pm-11 pm.	(5-9 am; noon-8 pm)
KFEQ	a	2500	D	St. Joseph, Mo.		
KFOE	a	50000	R	San Francisco, Calif.		
VAS	a	2000	685	Glace Bay, N. S.	Reports at noon and 11 pm.	(Reports at 9 am and 8 pm)
VOWR	c	500	681	St. John's, Nfld.		
WLAW	a	1000	D	Lawrence, Mass.	8 am to local sunset.	(5 am to sunset at Lawrence, Mass.)
WPTF	a	5000	N	Raleigh, N. C.	9 am-11 pm.	(6 am-8 pm)

690 kcs. (434.5 m.)



CMBG	a	225	....	Havana, Cuba		
CFRB	a	10000	C	Toronto, Ont.	10:30 am-midnight	7:30 am-9 pm
CJ CJ	a	100	F	Calgary, Alta.	11 am-1 am.	(8 am-10 pm)
XET	a	5000	Monterrey, N. L.		

700 kcs. (428.3 m.)



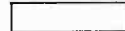
WLW	a	50000	JKMN	Cincinnati, Ohio	8 am-2 am.	(5 am-11 pm)
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710 kcs. (422.3 m.)



KIRO	a	1000	CHJ	Seattle, Wash.		
KMPC	a	500	L	Beverly Hills, Calif.		
WOR	a	50000	KM	Newark, N. J.	8 am-1:30 am.	(5 am-10:30 pm)
XEQ	a	50000	....	Mexico City, D. F.		

720 kcs. (416.4 m.)



CMK	a	250	....	Havana, Cuba		
WGN	a	50000	KM	Chicago, Ill.		
XEH	a	250	....	Monterrey, N. L.		

730 kcs. (410.7 m.)



CFPL	a	100	F	London, Ont.		
CICA	a	1000	F	Edmonton, Alta.	11 am-2 am.	(8 am-11 pm)

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME

Eastern Standard

(Pacific Standard)

740 kcs. (405.2 m.)

KMMJ	a	1000	D	Clay Center, Nebr.	
KTRB	a	250	D	Modesto, Calif.	
WHEB	a	250	D	Portsmouth, N. H.	8 am to sunset at Atlanta, Ga.
WSB	a	50000	R	Atlanta, Ga.	(5 am to sunset)

750 kcs. (399.8 m.)

CMBL	z	500	....	Havana, Cuba	
KGU	a	2500	LN	Honolulu, Hawaii	
WJR	a	50000	C	Detroit, Mich.	
XEAA	a	200	....	Mexicali, B. Cfa.	
XEAM	z	25	....	Matamoros, Tams.	

760 kcs. (394.5 m.)

KXA	a	250	(.5)X	Seattle, Wash.	
WBAL	a	2500	BMSy	Baltimore, Md.	
WCAL	a	1000	2(5)	Northfield, Minn.	
WEW	a	1000	D	St. Louis, Mo.	
WIZ	a	50000	BSy	New York, N. Y.	
WLB	a	1000	2(5)	Minneapolis, Minn.	

770 kcs. (389.4 m.)

KFAB	a	10000	CSyXZ	Lincoln, Nebr.	
WBBM	a	50000	CSy	Chicago, Ill.	

780 kcs. (384.4 m.)

CHWK	b	100	F	Chilliwack, B. C.	Noon to midnight (9 am-9 pm)
CKSO	a	1000	F	Sudbury, Ont.	Noon to midnight (9 am-9 pm)
CMCU	a	150	....	Havana, Cuba	
KEHE	a	1000	(5)	Los Angeles, Calif.	
KFDY	a	1000	D	Brookings, S. Dak.	
KFQD	c	250	....	Anchorage, Alaska	
KGHL	a	1000	N(5)	Billings, Mont.	
KWLK	z	250	DP	Longview, Wash.	11 am to sunset at Longview, Wash.
WEAN	a	1000	BM(5)	Providence, R. I.	
WMC	a	1000	R(5)	Memphis, Tenn.	8 am-1 am. (5 am-10 pm)
WPIC	z	250	DP	Sharon, Pa.	8 am to L. S. (5 am to sunset at Sharon)
WTAR	a	1000	N	Norfolk, Va.	8:30 am-midnight (5:30 am-9 pm)
XEN	a	1000	....	Mexico City, D. F.	

790 kcs. (379.5 m.)

CMGH	a	250	....	Matanzas, Cuba	
KGO	a	7500	B	San Francisco, Calif.	
KOAM	z	1000	DN	Pittsburg, Kans.	8:30 am to L. S. (5:30 am to sunset at Pittsburg)
WGY	a	50000	R	Schenectady, N. Y.	9 am-1 am. (6 am-10 pm)

800 kcs. (374.8 m.)

HIX	a	800	....	Ciudad Trujillo, D. R.	
WBAP	a	50000	Na	Fort Worth, Tex.	9:30-10:15 am; 11 am-1 pm; 4:30-6:30 pm; 10 pm-1 am. (6:30-7:15 am; 8-10 am; 1:30-3:30 pm; 7 pm-10 pm)
WFAA	a	50000	Na	Dallas, Texas	3:30-9:30 am; 10:15-11 am; 1-4:30 pm, 6:30-10 pm. (5:30-6:30 am; 7:15-8 am; 10 am-1:30 pm; 3:30-7 pm)
WTBO	a	250	D	Cumberland, Md.	7:30 am-6 pm. (4:30 am-3 pm)

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME

Eastern Standard

(Pacific Standard)

310 kcs. (370.2 m.)



CMCF	a	5000		Havana, Cuba
WCCO	a	50000	C	Minneapolis, Minn.
WNYC	a	1000	D	New York, N. Y.
XEBZ	a	100	.....	Mexico City, D. F.
XEDF	a	100	.....	Nuevo Laredo, Tams.

320 kcs. (365.6 m.)



WHAS	a	50000	C	Louisville, Ky.
XEBG	z	1000	.....	Tijuana, B. Cfa.

330 kcs. (361.2 m.)



CMJX	a	150	.....	Camaguey, Cuba
KOA	a	50000	R	Denver, Colo.
WEUF	a	1000	D	Reading, Pa.
WHDH	a	1000	L	Boston, Mass.
WRUF	a	5000	I.	Gainesville, Fla.

340 kcs. (356.9 m.)



CBL	a	50000	F	Toronto, Ont.
CFQC	a	1000	F	Saskatoon, Sask.
VOGY	a	400	.....	St. Johns, Nfld.
XERA	a	250000	.....	Villa Acuna, Coah.

10:30 am-midnight (7:30 am-9 pm)

350 kcs. (352.7 m.)



CMCM	a	250	.....	Havana, Cuba
KTEV	a	250	D	Glendale, Calif.
WESG	a	1000	CDH	Elmira, N. Y.
WKAR	a	1000	DX	E. Lansing, Mich.
WWL	a	10000	CX	New Orleans, La.

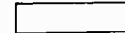
9 am to sunset at New Orleans (6 am to sunset at New Orleans)
7 am-5 pm. (4 am-2 pm)

360 kcs. (348.6 m.)



WABC	a	50000	Ca	New York, N. Y.
WBOQ	a	50000	Qa	New York, N. Y.
WHB	a	1000	DM	Kansas City, Mo.
XEMO	a	5000	.....	Tijuana, B. Cfa.

370 kcs. (344.6 m.)



WENR	a	50000	Ba	Chicago, Ill.
WLS	a	50000	Ba	Chicago, Ill.
XEFB	a	200	.....	Monterrey, N. L.
XEJW	z	500	.....	Mexico City, D. F.
XERC	z	500	.....	Mexico City, D. F.

380 kcs. (340.7 m.)



CBO	a	1000	F	Ottawa, Ont.
CFJC	a	1000	F	Kamloops, B. C.
CMW	a	1400	X	Havana, Cuba
KFKA	a	500	2M(1)	Greeley, Colo.

10 am-midnight (7 am-9 pm.)
11 am-1 pm; 2:30-8:10 am; 11:30 am-5 pm; 6:30-8:45 pm 2 pm; 3:30-5:45 pm)

KLX	a	1000	.....	Oakland, Calif.
KPOF	a	1000	2	Denver, Colo.
WCOC	a	1000	C	Meridian, Miss.
WGBI	a	500	C1(1)	Scranton, Pa.
WQAN	a	500	1(1)	Scranton, Pa.
WRNL	a	500	DX	Richmond, Va.
WSUI	a	500	(1)	Iowa City, Iowa

9 am-1 am. (6 am-10 pm)
8 am to L. S. (5 am to sunset at Richmond, Va.)

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME

Eastern Standard

(Pacific Standard)

890 kcs. (336.9 m.)

Station	Class	Power	Frequency	Location	Eastern Standard	Pacific Standard
KARK	a	500	N(1)	Little Rock, Ark.		
KFNF	a	500	2X(1)	Shenandoah, Iowa	9 am-7:45 pm.	(6 am-4:45 pm)
KFPY	a	1000	C(5)	Spokane, Wash.		
KUSD	a	500	2	Vermillion, S. Dak.		
WBAA	a	500	(1)	W. Lafayette, Ind.	(Silent)	Silent
WGST	a	1000	C(5)	Atlanta, Ga.		
WJAR	a	1000	R(5)	Providence, R. I.	9 am-1 am.	
WMMN	a	500	CX(1)	Fairmount, W. Va.		
XEW	a	10	....	Mexico City, D. F.		

900 kcs. (333.1 m.)

Station	Class	Power	Frequency	Location	Eastern Standard	Pacific Standard
KGBU	a	500	X	Ketchikan, Alaska		
KHJ	a	1000	M(5)	Los Angeles, Calif.	11 am-3 am.	(8 am-midnight)
KSEI	a	250	N(1)	Pocatello, Idaho		
WBEN	a	1000	R(5)	Buffalo, N. Y.		
WELI	a	500	D	New Haven, Conn.		
WFMD	a	500	D	Frederick, Md.	8:45 am to L. S.	(5:45 am to Sunset at Frederick, Md.)
WJAX	a	1000	N(5)	Jacksonville, Fla.	8 am-midnight	(5 am-9 pm)
WKY	a	1000	N(5)	Oklahoma City, Okla.		
WLBL	a	5000	D	Stevens Point, Wis.	Usually silent.	(Usually silent)
WTAD	a	1000	D	Quincy, Ill.		

910 kcs. (329.6 m.)

Station	Class	Power	Frequency	Location	Eastern Standard	Pacific Standard
CBF	a	5000	FN	Montreal, P. Q.		
CJAT	a	1000	F	Trail, B. C.		
CKY	a	15000	F	Winnipeg, Man.	Noon-1:30 am.	(9 am-10:30 pm)
CMOA	z	150	....	Havana, Cuba		
XENT	a	150000	....	Nuevo Laredo, Tams.	7 pm-8:15 am.	(4 pm-5:15 am)

920 kcs. (325.9.)

Station	Class	Power	Frequency	Location	Eastern Standard	Pacific Standard
KFEL	a	500	Ma	Denver, Colo.		
KOMO	a	1000	R(5)	Seattle, Wash.		
KPRC	a	1000	R(5)	Houston, Texas	8:30 am-1 am.	(5:30 am-10 pm)
KVOD	a	500	Ba	Denver, Colo.	9 am-12:30 pm; 9:30 pm-2:30 am.	(6-9:30 am; 6:30-11:30 pm)
WAAF	a	1000	D	Chicago, Ill.		
WORL	a	500	D	Boston, Mass.	8 am to L. S.	(5 am to Sunset at Worcester, Mass.)
WPEN	a	1000	....	Philadelphia, Pa.		
WRAX	a	1000	Q	Philadelphia, Pa.		
WSPA	a	1000	D	Spartanburg, S. C.	8 am to L. S.	(5 am to Sunset at Spartanburg, S. C.)
WWJ	a	5000	R	Detroit, Mich.		

930 kcs. (322.4 m.)

Station	Class	Power	Frequency	Location	Eastern Standard	Pacific Standard
CFAC	a	1000	F	Calgary, Alta.		
CFCH	a	100	F	North Bay, Ont.		
CFLC	a	100	....	Prescott, Ont.		
CHNS	a	1000	F	Halifax, N. S.		
CKPC	a	100	F	Brantford, Ont.		
KMA	a	1000	B(5)	Shenandoah, Iowa		
KROW	a	1000	....	Oakland, Calif.		
WBRC	a	1000	R(5)	Birmingham, Ala.	8 am-1 am.	(5 am-10 pm)
WDBJ	a	1000	C(5)	Roanoke, Va.	8 am-midnight	(5 am-9 pm)
XEBH	a	500	....	Hermosillo, Son.		

940 kcs. (319 m.)

Station	Class	Power	Frequency	Location	Eastern Standard	Pacific Standard
CMBZ	a	500	X	Havana, Cuba		
KOIN	a	1000	C(5)	Portland, Ore.		
WAAT	a	500	D	Jersey City, N. J.		
AVE	a	1000	N	Louisville, Ky.	9 am-2 am.	(6 am-11 pm)

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

WCSH	a	1000	R(2.5)	Portland, Me.	8 am to midnight.	(5 am-9 pm)
WDAY	a	1000	N(5)	Fargo, N. Dak.		
WHA	a	5000	D	Madison, Wis.	Silent.	(Silent)
WICA	a	250	D	Ashtabula, Ohio	8 am.-L. S.	(5 am to Sunset at Ashtabule, Ohio)
XEFO	a	5000	....	Mexico City, D. F.		

950 kcs. (315.6 m.)

CJOC	a	100	F	Lethridge, Alta.	10 am-1:30 am.	(9 am-9 pm)
CBV	a	1000	F	Quebec, P. Q.	Noon-midnight.	(7 am-10:30 pm)
KFWB	a	1000	(5)	Los Angeles, Calif.	11 am-3 am.	(8 am-midnight)
KMBC	a	1000	C(5)	Kansas City, Mo.		
WHAL	z	500	DP	Saginaw, Mich.		
WRC	a	1000	R(5)	Washington, D. C.		
WTRY	z	1000	DP	Troy, N. Y.		

960 kcs. (312.3 m.)

CBY	c	100	F	Toronto, Ont.	11 am-midnight	(8 am-9 pm)
CFRN	a	100	F	Edmonton, Alta.	11:30 am-12:30 am.	(8:30 am-9:30 pm)
CHNC	a	1000	F	New Carlisle, P. Q.		
CMKS	z	60	....	Guantanamo, Cuba		
XEAW	c	100000	....	Revnosa, Tams.	5-7:15 am; 7-11 pm.	(2-5:15 am; 4-8 pm)
XECL	z	1000	....	Mexicali, B. Cfa.		

970 kcs. (309.1 m.)

CMCK	a	5000	....	Havana, Cuba		
CMBY	z	200	....	Havana, Cuba		
KJR	a	5000	B	Seattle, Wash.		
WCFL	a	5000	N	Chicago, Ill.		
WIBG	a	100	D	Glenside, Pa.	8:30 am-5 pm.	(5:30 am-2 pm)

980 kcs. (306 m.)

KDKA	b	50000	B	Pittsburgh, Pa.		
XEAC	a	1000	....	Tijuana, B. Cfa.		
XEFE	z	250	X	Nuevo Laredo, Tams.		

990 kcs. (302.8 m.)

CMKL	z	200	....	Bayamo, Cuba		
WBZ	a	50000	BSy	Boston, Mass.		
WBZA	a	1000	BSy	Springfield, Mass.		
XEAF	a	750	....	Nogales, Son.		
XEK	a	100	....	Mexico City, D. F.		
XES	a	250	....	Tampico, Tams.		

1000 kcs. (299.8 m.)

CMBZ	a	500	X(1)	Havana, Cuba		
KFVD	a	1000	L	Los Angeles, Calif.		
VOCM	z	200	1006	St. John's Nfld.		
WHO	a	50000	KR	Des Moines, Iowa		
XEBI	a	25	....	Aguascalientes, Ags.		

1010 kcs. (296.9 m.)

CHML	a	100	F	Hamilton, Ont.	9:30 am-11:30 pm.	(6:30 am-8:30 pm)
CKCD	a	100	1	Vancouver, B. C.	Silent	(Silent)
CKCK	a	1000	F	Regina, Sask.	10:45 am-2 am.	(7:45 am-11 pm)
CKCO	a	100	F	Ottawa, Ont.		
CKIC	a	50	....	Wolfville, N. S.		
CKWX	a	100	1	Vancouver, B. C.	Noon-1:45 am.	(9 am-10:45 pm)
CMJA	a	250	....	Camaguey, Cuba		
CMQ	a	25000	....	Havana, Cuba		
KGGF	a	1000	2M	Coffeyville, Kans.	11:30 am-10 pm.	(8:30 am-7 pm)
KQW	a	1000	M	San Jose, Calif.	11 am-3 am.	(8 am-midnight)

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME

Eastern Standard

(Pacific Standard)

WHN a 1000 (5)
 WNAD a 1000 2
 WNOX a 1000 C(5)
 XFFQ a 50
 XEU a 250

New York, N. Y. 8 am-1 am.
 Norman, Okla. Silent.
 Knoxville, Tenn. 8:30 am-1 am.
 Cananea, Son.
 Veracruz, Ver.

(5 am-10 pm)
 (Silent)
 (5:30 am-10 pm)

1020 kcs. (293.9 m.)

KYW a 10000 R
 WDZ a 250 D
 XEJ a 1000

Philadelphia, Pa. 7 am-1:15 am. (4 am-10:15 pm)
 Tuscola, Ill.
 Juarez, Chih.

1030 kcs. (291.1 m.)

CFCN a 10000
 CJBR z 1000 F
 CKLW a 5000 FM
 CMCK a 5000
 XEB a 10000

Calgary, Alta.
 Rimouski, P. Q.
 Windsor, Ont.
 Havana, Cuba
 Mexico City, D. F.

1040 kcs. (288.3 m.)

KRLD a 10000 CX
 KWJJ a 500 D
 KYOS b 250 H

Dallas, Texas
 Merced, Calif. 11 am-L. S. (8 am-L.S.)
 Portland, Ore. 10 am-L. S.; mid- (7 am-L. S.; 9 pm-3
 night-n am. am)
 Hartford, Conn. 8:45 am-1 am. (5:45 am-10 pm)

1050 kcs. (285.5 m.)

CBM a 5000 FR
 CMCH z
 CMKD a 1000
 HIT z 50
 KFBI a 5000 L
 KNX a 50000 C
 WEAU z 1000 D
 WIBC z 1000 D

Montreal, P. Q.
 Havana, Cuba
 Santiago, Cuba
 Ciudad Trujillo, D. R.
 Abilene, Kans. 9 am-L. S. (6 am-10 pm)
 Los Angeles, Calif. 10 am-4 am. (7 am-1 am)
 Eau Claire, Wis.
 Indianapolis, Ind.

1060 kcs. (282.8 m.)

KTHS z 1000 HN
 VOAC z 40 1065
 WBAL a 10000 BHM
 WJAG a 1000 DH
 W3XJ z 100 P

Hot Springs, Ark. 9 am-L.S.; 9 pm-1 (6 am-L. S.; 6-10
 am. pm)
 St. John's, Nfld.
 Baltimore, Md.
 Norfolk, Nebr. 11 am-6:15 pm. (8 am-3:15 pm)
 College Park, Md.

1070 kcs. (280.2 m.)

CMBX a 150
 CMHA z 50
 KJBS a 500 L
 WCAZ a 100 D
 WTAM a 50000 R

Havana, Cuba
 Sagua la Grande, Cuba
 San Francisco, Calif. 1 am-L. S. (10 pm-L. S.)
 Carthage, Ill. 11 am-5 pm. (8 am-2 pm)
 Cleveland, Ohio

1080 kcs. (277.6 m.)

WBT a 50000 C
 WCBD a 5000 1L
 WBMI a 5000 1L
 XEBA z 20
 XEBK a 100
 XEDP a 500

Charlotte, N. C.
 Chicago, Ill. Noon-3:30 pm. (9 am-12:30 pm)
 Chicago, Ill.
 Guzman, Jal.
 Nuevo Laredo, Tams.
 Mexico City, D. F.

1090 kcs. (275.1 m.)

HIN a 740
 KMOX a 50000 C

Ciudad Trujillo, D. R.
 St. Louis, Mo.

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME

Eastern Standard

(Pacific Standard)

1100 kcs. (272.6 m.)

CBR	a	5000	F	Vancouver, B. C.		
KGDM	a	1000	DM	Stockton, Calif.		
KWKH	a	10000	CH	Shreveport, La.		
WBIL	a	5000	1	New York, N. Y.		
WPG	a	5000	C1	Atlantic City, N. J.	9 am-8 pm; 9:15 pm.	(6 am-5 pm; 6:15-9 pm)

1110 kcs. (270.1 m.)

CMCJ	a	500	X	Havana, Cuba	9 am-L. S.	(6 am-L.S.)
KSOO	a	5000	LN	Sioux Falls, S. Dak.	8:30 am-midnight.	(5:30 am-9 pm)
WRVA	a	50000	CM	Richmond, Va.		

1120 kcs. (267.7 m.)

CHLP	a	100	F	Chicoutimi, P. Q.	8 am-11 pm.	(5 am-8 pm)
CHSJ	a	100	F(1)	Montreal, P. Q.	10 am-11:15 pm.	(7 am-8:15 pm)
CKOC	a	500	F(1)	St. John, N. B.		
CKX	a	1000	F	Hamilton, Ont.	1 pm-12:30 am.	(10 am19:30 pm)
CMGF	a	75	....	Brandon, Man.		
CMKM	a	100	....	Matanzas, Cuba		
KFIO	a	100	D	Manzanillo, Cuba		
KFSG	a	500	a(2.5)	Spokane, Wash.		
KRKD	a	500	a(2.5)	Los Angeles, Calif.		
KRSC	a	250	....	Los Angeles, Calif.		
KTBC	z	1000	DP	Seattle, Wash.		
WCOP	a	500	D	Austin, Texas	8 am-L. S.	(5 am-L. S.)
WDEL	a	250	R(.5)	Boston, Mass.		
WISN	a	250	C(1)	Wilmington, Del.	8:30 am-1 am.	(5:30 am-10 pm)
WJBO	a	500	B	Milwaukee, Wis.		
WTAW	a	500	L	Baton Rouge, La.		
				College Station, Tex.		

1130 kcs. (265.3 m.)

CMJI	a	150	....	Ciego de Avila, Cuba	9 am to Sunset at	(6 am to Sunset at
KSL	a	50000	C	Salt Lake City, Utah	Salt Lake City.	Salt Lake City)
WJJD	a	20000	L	Chicago, Ill.		
WOV	a	1000	D	New York, N. Y.		
XEJP	z	100	....	Mexico City, D. F.		

1140 kcs. (263 m.)

CMBC	a	150	....	Havana, Cuba		
KVOO	a	25000	N	Tulsa, Okla.	9 am-1 am.	(6 am-10 pm)
WAPI	a	5000	C	Birmingham, Ala.	8 am to Sunset at	(5 am to Sunset at
WSPR	a	500	DM	Springfield, Mass.	Birmingham, Ala.	Birmingham, Ala.)

1150 kcs. (260.7 m.)

CMJF	z	200	....	Camaguey, Cuba		
WHAM	a	50000	B	Rochester, N. Y.		
XEBP	z	250	....	Durango, Dgo.		
XEC	a	100	....	Tijuana, B. Cfa.		
XEDW	z	20	....	Minatitlan, Ver.		
XEL	z	250	....	Mexico City, D. F.		

1160 kcs. (258.5 m.)

CMHJ	a	100	....	Cienfuegos, Cuba		
CMKG	z	....	....	Santiago, Cuba		
WOWO	a	10000	1B	Fort Wayne, Ind.		
WWVA	a	5000	1C	Wheeling, W. Va.		
XEAS	a	100	....	Salttillo Coah.		
XFD	a	2500	....	Guadalajara, Jal.		
XEP	a	500	....	Juarez, Chih.		

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME

Eastern Standard

(Pacific Standard)

1170 kcs. (256.3 m.)

CMBS	a	150	X	Havana, Cuba		
WCAU	a	5000	C	Philadelphia, Pa.	9 am-1 am.	(6 am-10 pm)
KEXX	z	1000		Mexico City, D. F.		

1180 kcs. (254.1 m.)

CMJO	a	50		Ciego de Avila, Cuba		
KEX	a	5000	2B	Portland, Ore.		
KOB	a	10000	2N	Albuquerque, N. Mex.	11 am-1 am.	(8 am-10 pm)
WDGY	a	1000		Minneapolis, Min.	7 am-7 pm.	(4 am-4 pm)
WINS	a	1000		New York, N. Y.		
WMAZ	a	1000	C(5)	Macon, Ga.		
XEFA	z	500		Tavuba, D. F.		

1190 kcs. (252 m.)

CMKX	z	75		Santiago, Cuba		
KTKC	a	250	D	Visalia, Calif.	10 am-L. S.	(7 am-L. S.)
VONF	a	500	1195	St. John's Nfld.		
WATR	a	100	DXZ	Waterbury, Conn.		
WOAI	a	50000	N	San Antonio, Tex.	8:30 am-1230 am.	(5:30 am-9:30 pm)
WSAZ	a	1000	L	Huntington, W. Va.	9 am-7 pm.	(6 am-4 pm)

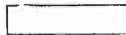
1200 kcs. (249.9 m.)

CFGP	z	100		Grande Prairie, Alta.		
CHAB	a	100	F	Moose Jaw, Sask.	10:15 am-1 am.	(7:17 am-10 pm)
CHGB	z	100	P	St. Anne de Pocatiere, P.Q.		
CKNX	b	100		Wingham, Ont.	10:30 am-1:30 pm; 7-7:30 pm.	(7:30-10:30 am; 4-5:30 pm)
CKTB	a	100	F	St. Catharines, Ont.		
CMCO	a	150		Havana, Cuba		
KADA	a	100	M	Ada, Okla.		
KBTM	a	100	D	Jonesboro, Ark.	9 am-6:30 pm.	(6 am-3:30 pm)
KDNC	z	100	(.25) P	Lewistown, Mont.		
KELO	z	100	N	Sioux Falls, S. Dak.	1 pm-1 am.	(10 am-10 pm)
KFJB	a	100	(.25)	Marshalltown, Iowa	Noon-8 pm.	(9 am-5 pm)
KFXD	a	100	(.25)	Nampa, Idaho		
KFXJ	a	100	(.25)	Grand Junction, Colo.		
KGCI	z	100	DP	Coeur d'Alene, Idaho		
KGDE	c	100	(.25)	Fergus Falls, Minn.		
KGEK	a	100	L	Sterling, Colo.	1-2:15 pm.	(10-11:15 am)
KGFI	a	100		Los Angeles, Calif.		
KGHI	a	100	(.25)	Little Rock, Ark.		
KGVL	z	100	DP	Greenville, Tex.		
KMLB	a	100	(.25)	Monroe, La.		
KOOS	a	100	(.25)	Marshfield, Ore.		
KSUN	a	100	(.25)	Lowell, Ariz.	11 am-midnight.	(8 am-9 pm)
KVCV	a	100		Redding, Calif.		
KVEC	a	100	(.25)	San Luis Obispo, Calif.	11:30 am-3 am.	(8:30 am-midnight)
KVOS	b	100	M	Bellingham, Wash.		
KWG	a	100	N	Stockton, Calif.		
KWNO	z	250	D	Winona, Minn.		
WABI	a	100	(.25)	Bangor, Maine		
WAIM	a	100	C	Anderson, S. C.		
WAYX	a	100	(.25)	Waycross, Ga.		
WBBZ	a	100	M(.25)	Ponca City, Okla		
WBHP	a	100		Huntsville, Alta.		
WBNO	a	100	2	New Orleans, La.		
WCAT	a	100	D	Rapid City, S. Dak.	Silent.	(Silent)
WCAX	a	100	(.25)	Burlington, Vt.		
WCLO	a	100	(.25)	Janesville, Wis.	10 am-3 pm.	(7 am-Noon.)
WCPO	a	100	(.25)	Cincinnati, Ohio	8 am.-11 pm.	(5 am-8 pm)
WDSM	z	100	P	Superior, Wis.		
WENY	z	250	DP	Elmira, N. Y.		
WEST	a	100	3(.25)	Easton, Pa.		
WFAM	a	100	4	South Bend, Ind.		

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME			Eastern Standard	(Pacific Standard)
WFTC	a	100	(.25) Kinston, N. C.	
WHBC	a	100	(.25) Canton, Ohio	
WHBY	a	100	(.25) Green Bay, Wis.	10 am-11 pm. (7 am-8pm)
WIBX	a	100	C(.25) Utica, N. Y.	
WIL	a	100	(.25) St. Louis, Mo.	
WJBC	a	100	5(.25) Bloomington, Ill.	
WJBL	a	100	5 Decatur, Ill.	8-10 am; 1:30-4 pm; (5:7 am; 10:30 am-1 pm)
WJBW	a	100	2 New Orleans, La.	8:30 pm-1 am. (5:30-10 pm)
WJHL	z	100	(.25)P Johnson City, Tenn.	
WJNO	a	100	C(.25) W. Palm Beach, Fla.	2-11 am; 1-6 pm; 10 pm-1 am. (11 pm-8 am; 10 am-3 pm; 7-10 pm)
WJRD	a	250	D Tuscaloosa, Ala.	
WKBO	a	100	3(.25) Harrisburg, Pa.	8:30 am-midnight. (5:30 am-9 pm)
WLVA	a	100	(.25) Lynchburg, Va.	Noon-6 pm. (9 am-3 pm)
WMFR	a	100	D High Point, N. C.	
WMPC	a	100	(.25) Lapeer, Mich.	7:45 am-7 pm. (4:45 am-4 pm)
WOLS	z	100	D Florence, S. C.	9 am-L. S. 8 am-11 pm.
WRBL	a	100	(.25) Columbus, Ga.	10 am-7 pm. (7 am-4 pm)
WSAL	z	250	D Salisbury, Md.	
WTHT	z	100	M Hartford, Conn.	
WTOL	a	100	D Toledo, Ohio	
WWAE	a	100	4 Hammond, Ind.	

1210 kcs. (247.8 m.)



CHLT	z	100	..... Sherbrooke, P. Q.	
CJCS	a	50	..... Stratford, Ont.	
CJCU	z	50	..... Aklavik, N. W. T.	
CKBI	a	100	F..... Prince Albert, Sask.	
CKCH	a	100	F..... Hull, P. Q.	
CKMC	a	50	..... Cobalt, Ont.	
CMHI	a	250	..... Santa Clara, Cuba	
KALB	a	100	(.25) Alexandria, La.	
KANS	a	100	N..... Wichita, Kans.	
KASA	c	100	..... Elk City, Okla.	
KDLR	a	100	..... Devils Lake, N. Dak.	
KDON	z	100	M..... Monterey, Calif.	
KEJI	a	100	..... Klamath Falls, Ore.	
KFOR	a	100	CM(.25) Lincoln, Nebr.	
KFPW	a	100	..... Fort Smith, Ark.	
KFVS	a	100	5(.25) Cape Girardeau, Mo.	10 am-3 pm; 6-9:35 pm. (7 am-noon; 3-6:35 pm)
KFXM	a	100	2M San Bernardino, Calif.	4-9:45 pm; midnight -3 am. (1-6:45 pm; 9 pm-midnight)
KGLO	a	100	C(.25) Mason City, Iowa	
KGY	a	100	M Olympia, Wash.	Silent. (Silent)
KHBG	z	100	D Okmulgee, Okla.	
KIUL	a	100	..... Garden City, Kans.	Noon-8 pm. (9 am-5 pm)
KLAH	a	100	(.25) Carlsbad, N. Mex.	11 am-9 pm. (8 am-6 pm)
KOCA	a	100	(.25) Kilgore, Texas	
KPFA	a	100	N(.25) Helena, Mont.	1 pm--midnight. (10 am-9 pm)
KPPC	a	100	2 Pasadena, Calif.	
KROY	a	100	CD Sacramento, Calif.	
KVSO	a	100	M(.25) Ardmore, Okla.	
KWJB	z	100	(.25) Ardmore, Okla.	
WALR	a	100	..... Zanesville, Ohio	8 am-midnight. (5 am-9 pm)
WBAX	a	100	M Wilkes-Barre, Pa.	
WBBL	a	100	S Richmond, Va.	
WBLY	a	100	D Lima, Ohio	
WBRB	a	100	3 Red Bank, N. J.	Silent. (Silent)
WCOL	a	100	N Columbus, Ohio	8 am-1 am. (5 am-10 pm)
WCOU	a	100	..... Lewiston, Maine	
WCOV	z	100	DP Montgomery, Ala.	
WCRW	a	100	4 Chicago, Ill.	Noon-3 pm; 6-8 pm. (9 am-noon; 3-5 pm)
WEBQ	a	100	5(.25) Harrisburg, Ill.	7-10 am; 5-10:30 pm. (4:7 am; 2-7:30 pm)

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME			Eastern Standard	(Pacific Standard)
WEDC	a	100 4	Chicago, Ill.	9:30-11 am; 4:30-6 pm (6:30-8 am; 1:30-3 pm) 8-9 pm; 11 pm-midnight. (5-6 pm; 8-9 pm)
WFAS	a	100 3	White Plains, N. Y.	
WFOY	a	100 (.25)	St. Augustine, Fla.	8 am-8:45 pm. (5 am-5:45 pm)
WGBB	a	100 3	Freeport, N. Y.	
WGCM	a	100 (.25)	Gulfport, Miss.	
WGNV	a	100 3	Newburgh, N. Y.	
WGRM	a	100	Grenada, Miss.	8 am-L. S. (5 am-L. S.)
WHAI	z	250 DP	Greenfield, Mass.	
WHBF	a	100 (.25)	Rock Island, Ill.	
WHBU	a	100 (.25)	Anderson, Ind.	
WTBU	a	100 (.25)	Poynette, Wis.	
WTBY	a	100 (.25)	Gadsden, Ala.	7 am-11 pm. (4 am-8 pm)
WIFI	a	100	Hagerstown, Md.	9 am-10 pm. (6 am-7 pm)
WIIM	z	100 B(.25)	Lansing, Mich.	
WIMC	z	250 DP	Rice Lake, Wis.	
WITN	a	100 B(.25)	Jamestown, N. Y.	
WIV	a	100 (.25)	Akron, Ohio	9 am-midnight. (6 am-9 pm)
WKOK	a	100	Sunbury, Pa.	
WMFG	a	100 (.25)	Hibbing, Minn.	
WOCB	z	100 (.25) P	Cape Cod, Mass.	
WOMT	a	100	Manitowoc, Wis.	
WPAZ	a	100 D	Thomasville, Ga.	9 am-3 pm. (6 am-noon)
WPIV	z	100 (.25) P	Petersburg, Va.	
WRAL	z	100 (.25) P	Raleigh, N. C.	
WSAY	z	100 (.25)	Rochester, N. Y.	
WSBC	a	100 (.25)	Chicago, Ill.	
WSIX	a	100 (.25)	Nashville, Tenn.	
WSNJ	z	100 D	Bridgeton, N. J.	
WSOC	a	100 N(.25)	Charlotte, N. C.	9 am-midnight. (6 am-9 pm)
WTAY	a	100	Springfield, Ill.	
WTMA	z	100 (.25) P	Charleston, S. C.	
XEE	a	50	Durango, Dgo.	
XEFV	a	50	Juarez, Chih.	
XETH	a	100	Puebla, Pue.	

1220 kcs. (245.8 m.)



CMJE	z	50	Camaguey, Cuba	
KFKU	a	1000 a(5)	Lawrence, Kans.	
KTMS	z	500 B	Santa Barbara, Calif.	
KTW	a	1000 25	Seattle, Wash.	
KWSC	a	1000 2(5)	Pullman, Wash.	Silent.
WCAD	a	500 D	Canton, N. Y.	Silent.
WCAE	a	1000 MR(5)	Pittsburgh, Pa.	8 am-1 am. (Silent)
WDAE	a	1000 C(5)	Tampa, Fla.	(5 am-10 pm)
WREN	a	1000 Ba(5)	Lawrence, Kans.	
XEBL	a	50	Mazatlan, Sin.	
XEDA	z	200	Gral. Anaya, D. F.	
XETF	a	12	Veracruz, Ver.	

1230 kcs. (243.8 m.)



CMBC	z	150	Havana, Cuba	
KGBX	a	500 N	Springfield, Mo.	
KGGM	a	1000	Albuquerque, N. Mex.	10 am-1 am. (7 am-10 pm)
KYA	a	1000 (5)	San Francisco, Calif.	
WFBM	a	1000 C(5)	Indianapolis, Ind.	
WNAC	a	1000 R(5)	Boston, Mass.	
WOL	a	1000 M	Washington, D.C.	
XECA	z	250	Tampico, Tamps	
XEG	z	250	Monterrey, N. L.	

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME Eastern Standard (Pacific Standard)

1240 kcs. (241.8 m.)



CJCB	a	1000	F	Sydney, N. S.	10-11:30 am; 2:30-11 pm.	(7-8:30 am; 11:30 am-8 pm)
CMHB	z	50	....	Sancti Spiritus, Cuba		
KGCU	a	250	....	Mandan, N. Dak.		
KLPM	a	250	1XZ	Minot, N. Dak.		
KTAT	a	1000	M	Fort Worth, Tex.		
KTFI	a	1000	N	Twin Falls, Idaho	9 am-1 am.	(6 am-10 pm)
WKAQ	a	1000	....	San Juan, P. R.		
WXYZ	a	1000	B	Detroit, Mich.		
XEBO	z	50	....	Chihuahua, Chih.		
XEME	z	50	....	Merida, Yuc.		

1250 kcs. (239.9 m.)



CMKC	a	150	....	Santiago, Cuba		
HRN	c	50	....	Tegucigalpa, Hond.		
KFOX	a	1000	....	Long Beach, Calif.		
KIT	a	250	MX(.5)	Yakima, Wash.		
KXOK	z	1000	P	St. Louis, Mo.		
WAIR	a	250	D	Winston-Salem, N. C.	8 am-L. S.	(5 am-L.S.)
WDSU	a	1000	B	New Orleans, La.		
WHBI	a	1000	(2.5)	Newark, N. J.		
WKST	z	250	DP	New Castle, Pa.		
WMRO	z	250	DP	Aurora, Ill.		
WNEW	a	1000	(2.5)	New York, N. Y.		
WTCN	a	1000	B(5)	Minneapolis, Minn.	9 am-1 am.	
XEAI	z	500	....	Mexico City, D. F.		

1260 kcs. (238 m.)



CMX	a	1000	....	Havana, Cuba	8 am-1 am.	
KGVO	a	1000	C(5)	Missoula, Mont.		
KHSL	a	250	....	Chico, Calif.		
KOIL	a	1000	BM(5)	Omaha, Nebr.		
KPAC	a	500	D	Port Arthur, Tex.		
KRGV	a	1000	MN	Weslaco, Texas	8 am-midnight.	(5 am-9 pm)
KUOA	a	5000	D	Siloam Springs, Ark.	7 am-L. S.	(3 am-L. S.)
KVOA	a	1000	....	Tucson, Ariz.		
WHIO	a	1000	C(5)	Dayton, Ohio		
WNBX	a	500	CMJX(1)	Springfield, Vt.	9 am-midnight	(6 am-9 pm)
WTOC	a	1000	C	Savannah, Ga.		

1270 kcs. (236.1 m.)



CMHD	b	250	....	Caibarien, Cuba		
KGCA	a	100	2D	Decorah, Iowa		
KOL	a	1000	M(5)	Seattle, Wash.		
KVOR	a	1000	C	Colorado Springs, C.	10 am-1:45 am.	(7 am-10:45 pm)
KWLC	a	100	2D	Decorah, Iowa		
WASH	a	500	DNA	Grand Rapids, Mich.		
WFBR	a	500	R(1)	Baltimore, Md.	9 am-midnight.	(6 am-9 pm)
WJDX	a	1000	R(5)	Jackson, Miss.		
WOOD	a	500	Na	Grand Rapids, Mich.		
XEBB	a	250	....	Jalapa, Ver.		
XEXE	z	17	....	Texcoco, D. F.		

1280 kcs. (234.2 m.)



CMKO	z	200	....	Holguin, Cuba		
KFBB	a	1000	C(5)	Great Falls, Mont.	11 am-midnight.	(8 am-9 pm)
KLS	a	250	....	Oakland, Calif.		
WCAM	a	500	1	Camden, N. J.	10:15 am-12:30 pm; 3-5 pm.	(7:15-9:30 am; noon-2 pm)
WCAP	a	500	1	Asbury Park, N. J.	6-10:15 am; 12:30-3 pm; 8 pm-midnight.	(3-7:15 am; 9:30 am-noon; 5-9 pm)

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME		Eastern Standard		(Pacific Standard)	
WDOD	a 1000	C(5)	Chattanooga, Tenn.	7:30 am-1 am.	(4:30 am-10 pm)
WIBA	a 1000	N(5)	Madison, Wis.	8 am-1 am.	(5 am-10 pm)
WORC	a 500	C	Worcester, Mass.	8:45 am-11:15 pm.	(5:45 am-8:15 pm)
WRR	a 500	M	Dallas, Texas		
WTNJ	a 500	I	Trenton, N. J.		
XEMX	z 100	....	Mexico City, D. F.		

1290 kcs. (232.4 m.)

CMCG	a 150	....	Havana, Cuba		
CMJK	a 200	....	Camaguey, Cuba		
KDYL	a 1000	RX	Salt Lake City, Utah		
KLCN	a 100	D	Blytheville, Ark.		
KTRH	a 1000	C(5)	Houston, Texas	9 am-1 am.	(6 am-10 pm)
WEBC	a 1000	N(5)	Duluth, Minn.	9 am-1 am.	(6 am-10 pm)
WJAS	a 1000	C(5)	Pittsburgh, Pa.		
WNBZ	a 100	D	Saranac Lake, N. Y.	9:30 am-2 pm.	(6:30-11 am)
WNEL	a 1000	(2.5)	San Juan, P. R.		

1300 kcs. (230.6 m.)

CMHX	a 200	....	Cienfuegos, Cuba		
KALE	a 1000	M	Portland, Ore.	11 am-3 am.	(8 am-midnight)
KFAC	a 1000	....	Los Angeles, Calif.		
KFH	a 1000	C(5)	Wichita, Kans.	9 am-1 am.	(6 am-10 pm)
WBRR	a 1000	I	Brooklyn, N. Y.	8-11 am; 3-8 pm.	(5-8 am; noon-5 pm)
WEVD	a 1000	I	New York, N. Y.		
WFAB	a 1000	I	New York, N. Y.		
WFBC	a 1000	N(5)	Greenville, S. C.	6:30 am-midnight.	(3:30 am-9 pm)
WHAZ	a 1000	I	Troy, N. Y.		
WHBL	a 250	....	Sheboygan, Wis.	9 am-midnight.	(6 am-9 pm)

1310 kcs. 228.9 m.)

CHCK	a 50	....	Charlottetown, P.E.I.		
CJKL	a 100	F	North Bay, Ont.		
CJLS	a 100	F	Yarmouth, N. S.		
CKCV	a 100	F	Quebec, P. O.		
KAND	z 100	DM	Corsicana, Tex.		
KARM	a 100	C	Fresno, Calif.		
KBND	z 100	(.25)P	Bend, Ore.		
KCKN	a 100	....	Kansas City, Kans.	9:45 am-1 am.	(6:45 am-10 pm)
KCRJ	a 100	(.25)	Jerome, Ariz.		
KFPL	b 100	(.25)	Dublin, Texas		
KFYO	a 100	M(.25)	Lubbock, Texas		
KGEZ	a 100	....	Kalispell, Mont.		
KGFV	a 100	....	Kearney, Nebr.	9 am-11:30 pm.	(6 am-8:30 pm)
KHUB	a 250	D	Watsonville, Calif.		
KINY	a 100	XZ	Juneau, Alaska		
KOCY	a 100	(.25)	Oklahoma City, Okla.		
KOME	z 250	DP	Tulsa, Okla.		
KPDN	a 100	D	Pampa, Texas		
KRBA	z 100	D	Lufkin, Texas	9 am-6:15 pm.	(6 am-3:15 pm)
KRMD	a 100	(.25)	Shreveport, La.	10 am-10 pm.	(7 am-7 pm)
KROC	a 100	(.25)	Rochester, Minn.		
KRQA	a 100	....	Santa Fe, N. Mex.		
KRRV	z 250	D	Sherman, Texas		
KSRO	a 100	(.25)	Santa Rosa, Calif.		
KSUB	a 100	....	Cedar City, Utah		
KTSM	a 100	N(.25)	El Paso, Texas	9-11:30 am; 2-9:30 pm; 11 pm-1 am.	(6-8:30 am; 11 am-6:30 pm; 8-10 pm)
KVIC	z 100	P	Victoria, Texas		
KVOL	a 100	....	Lafayette, La.	Noon-7 pm.	(9 am-4 pm)
KVOX	z 100	(.25)	Moorhead, Minn.	8 am-10 pm.	(5 am-7 pm)
KWCC	z 100	D	Poplar Bluff, Mo.		
KWOS	z 100	D	Jefferson City, Mo.	9 am-9 pm.	(6 am 7 pm)
KXRO	a 100	M(.25)	Aberdeen, Wash.		
WAMBL	a 100	(.25)	Laurel, Miss.		
WBEO	a 100	D	Marquette, Mich.		
WBOW	a 100	N(.25)	Terre Haute, Ind.		

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME

Eastern Standard

(Pacific Standard)

WBRE	a	100	N(.25)	Wilkes-Barre, Pa.		
WBRK	z	100	C(.25)	Pittsfield, Mass.		
WCLS	a	100	L	Joliet, Ill.		
WCMI	a	100	(.25)	Ashland, Ky.		
WDAH	a	100	S(.25)	El Paso, Tex.		
WEBR	a	100	B(.25)	Buffalo, N. Y.	8:30 am-midnight.	(5:30 am-9 pm)
WEMP	a	100	D	Milwaukee, Wis.		
WEXL	a	50	....	Royal Oak, Mich.		
WFBG	a	100	3	Altoona, Pa.		
WFDL	a	100	B	Flint, Mich.		
WGAU	z	100	P(.25)	Athens, Ga.		
WGH	a	100	(.25)	Newport News, Va.		
WGTM	z	100	D	Wilson, N. C.		
WHAT	a	100	4	Philadelphia, Pa.		
WJAC	a	100	3(.25)	Johnstown, Pa.	8:30-10:30 am; 4:30-6:30 pm.	(5:30-7:30 am; 1:30-3:30 pm)
WLAK	z	100	N	Lakeland, Fla.		
WLBC	a	100	(.25)	Muncie, Ind.	7:45-12:05 am.	(3:45 am-9:05 pm)
WLNH	a	100	M	Laconia, N. H.		
WMBO	a	100	....	Auburn, N. Y.		
WMFF	a	100	B(.25)	Plattsburgh, N. Y.		
WNBH	a	100	M(.25)	New Bedford, Mass.		
WRBW	a	100	....	Reading, Pa.		
WROL	a	100	N(.25)	Knoxville, Tenn.		
WSAJ	a	100	....	Grove City, Pa.		
WSAV	z	100	P	Savannah, Ga.		
WSGN	a	100	B(.25)	Birmingham, Ala.	8 am-midnight.	(5 am-9 pm)
WSJS	a	100	C	Winston-Salem, N. C.	8 am-midnight.	(5 am-9 pm)
WTAL	a	100	(.25)	Tallahassee, Fla.		
WTEL	a	100	4	Philadelphia, Pa.		
WTJS	a	100	(.25)	Jackson, Tenn.	8 am-midnight.	(5 am-9 pm)
WTRC	a	100	(.25)	Elkhart, Ind.	Non-10 pm.	(9 am-7 pm)
XEAG	z	10	....	Cordoba, Ver.		
XEBO	z	25	....	Irapuato, Gto.		
XEFW	a	300	....	Tampico, Tams		
XETB	a	500	....	Torreón, Coah.		
XEX	a	125	....	Monterrey, N. L.		

1320 kcs. (227.1 m.)

CMBQ	z	5000	P	Havana, Cuba		
KGHF	a	500	B	Pueblo, Colo.	11 am-1 am.	(8 am-10 pm)
KGMB	a	1000	CM	Honolulu, Hawaii		
KID	a	500	(1)	Idaho Falls, Idaho		
KRNT	a	1000	C(5)	Des Moines, Iowa	8:30 am-1 am.	(5:30 am-10 pm)
TGI	d	....	....	Guademaalá City, uat.		
WADC	a	1000	C(5)	Akron, Ohio		
WOKR	a	1000	N	York, Pa.	10 am-midnight.	(7 am-9 pm)
WSMB	a	1000	R(5)	New Orleans, La.		

1330 kcs. (225.4 m.)

CMHK	z	250	....	Cruces, Cuba		
KGB	a	1000	M	San Diego, Calif.		
KMO	a	1000	M	Tacoma, Wash.		
KRIS	z	500	NM	Corpus Christi, Tex.	8:30 am-midnight.	(5:30 am-9 pm)
KSCJ	a	1000	C(5)	Sioux City, Iowa		
WDRC	a	1000	C	Hartford, Conn.	9 am-1 am.	(6 am-10 pm)
WSAI	a	1000	MN(5)	Cincinnati, Ohio		
WTAQ	a	1000	C	Green Bay, Wis.	11 am-1 am.	(8 am-10 pm)

1340 kcs. (223.7 m.)

CMAB	z	100	....	Pinar del Rio, Cuba		
CMJW	z	300	....	Camaguey, Cuba		
KDTH	z	500	ADP	Dubuque, Iowa		
KGIR	a	1000	N(5)	Butte, Mont.		
KGNO	a	250	....	Dodge City, Kans.	7:30 am-10 pm.	(4:30 am-7 pm)

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME			Eastern Standard		(Pacific Standard)	
WCOA	a	500	C(1)	Pensacola, Fla.		
WFEA	a	500	MN(1)	Manchester, N. H.		
WFNC	z	250	DP	Fayetteville, N. C.		
WSPD	a	1000	B(5)	Toledo, Ohio	8:30 am-1 am.	(5:30 am-10 pm)
XEAP	z	50	.....	Obregon, Son.		
XEBS	z	200	.....	Mexico City, D. F.		
XEDH	z	200	.....	Villa Acuna, Coah.		
XEFC	a	100	.....	Merida, Yuc.		
XEXD	z	350	.....	Jalapa, Ver.		
1350 kcs. (222.1 m.)						
CMCA	a	450	.....	Havana, Cuba		
CMKW	z	.....	.....	Santiago, Cuba		
KIDO	a	1000	N(2.5)	Boise, Idaho	11 am-1 am.	(8 am-10 pm)
KWK	a	1000	XBM(5)	St. Louis, Mo.		
WAWZ	a	500	1(1)	Zarepinath, N. J.	6-9 am; 11 am-12:30 pm; 3-4:30 pm; 7-8:30 pm.	(3-6 am; 8-9:30 am; noon-1:30 pm; 4-5 pm)
WBNX	a	1000	1	New York, N. Y.		
WMBG	a	500	R	Richmond, Va.	8 am-midnight.	(5 am-9 pm)
1360 kcs. (220.4 m.)						
CMJH	b	200	.....	Ciego de Avila, Cuba		
KCRC	a	250	M	Enid, Okla.		
KGER	a	1000	.....	Long Beach, Calif.		
WCSC	a	500	N(1)	Charleston, S. C.	8 am-midnight.	(5 am-9 pm)
WFBL	a	1000	C(5)	Syracuse, N. Y.		
WGES	a	500	1(1)	Chicago, Ill.		
WQBC	a	1000	D	Vicksburg, Miss.		
WSBT	a	500	1	South Bend, Ind.		
1370 kcs. (218.8 m.)						
CFAR	z	100	.....	Flin Flon, Man.		
CKCW	a	100	F	Moncton, N. B.	3-8 pm.	(Noon-5 pm)
CMGE	a	200	.....	Cardenas, Cuba		
KAST	a	100	DXZ	Astoria, Ore.		
KCMO	a	100	.....	Kansas City, Mo.		
KEEN	a	100	3	Seattle, Wash.		
KELD	z	100	.....	El Dorado, Ark.		
KERN	a	100	N	Bakersfield, Calif.		
KFGQ	a	100	D	Boone, Iowa	8:30-10 am;; 11:30 am-12:30 pm; 3:30-5 pm.	(5:30-7 am; 8:30-9:30 am; 12:30-2 pm)
KFJZ	a	100	M(.25)	Fort Worth, Texas	7:30 am-midnight.	
KFRO	a	250	DM	Longview, Texas		
KGAR	a	100	C(.25)	Tucson, Ariz.	11 am-1 am.	(8 am-10 pm)
KGFL	a	100	4	Roswell, N. Mex.		
KGKL	a	100	(.25)	San Angelo, Texas		
KICA	a	100	4	Clovis, N. Mex.		
KIUP	a	100	.....	Durango, Colo.		
KLUF	a	100	M	Galveston, Tex.	9 am-11:30 pm.	(6 am-8:30 pm)
KMAC	a	100	5(.25)	San Antonio, Tex.		
KOHB	a	100	(.25)	Rapid City, S. Dak.		
KOKO	a	100	.....	La Junta, Colo.		
KONO	a	100	5	San Antonio, Tex.	10 am-noon; 1:30-3 pm; 5-7 pm; 9-11 pm.	(7-9 am; 10:30 am-noon; 2-4 pm; 6-8 pm)
KRE	a	100	(.25)	Berkeley, Calif.		
KRKO	a	50	3	Everett, Wash.		
KRMC	z	100	(.25)	Jamestown, N. Dak.	10 am-7 pm.	(7 am-4 pm)
KSLM	a	100	MXZ	Salem, Ore.		
KTEM	a	250	DM	Temple, Texas		
KTOK	a	100	MN	Oklahoma City, Okla.	8 am-1 am.	(5 am-10 pm)
KUJ	a	100	.....	Walla Walla, Wash.		
KVGB	z	100	.....	Great Bend, Kans.		

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME		Eastern Standard		(Pacific Standard)	
KVRS	z	100	X(.25)	Rock Springs, Wyo.	
KWYO	a	100	(.25)	Sheridan, Wyo.	
WABY	a	100	N(.25)	Albany, N. Y.	
WAGF	a	250	D	Dothan, Ala.	9 am-L. S.
WATL	a	100	(.25)	Atlanta, Ga.	1 am Sun. - 2 am (6 am-L. S.) Mon. (10 pm Sat.-11 pm Sun.)
WBLK	a	100	....	Clarksburg, W. Va.	9 am-11 pm. (6 am-8 pm)
WBNY	a	100	2(.25)	Buffalo, N. Y.	10 am-midnight. (7 am-9 pm)
WBTM	a	100	(.25)	Danville, Va.	
WCMB	a	100	(.25)	Baltimore, Md.	
WDWS	a	100	(.25)	Philadelphia, Pa.	
WDAS	a	100	(.25)	Champaign, Ill.	
WEOA	a	100	C(.25)	Evansville, Ind.	9 am-1 am. (6 am-10 pm)
WFOR	a	100	....	Hattiesburg, Miss.	1-8 pm. (10 am-5 pm)
WGL	a	100	N(.25)	Fort Wayne, Ind.	
WGRC	a	250	D	New Albany, Ind.	9 am-L. S. (6 am-L. S.)
WHBQ	a	100	....	Memphis, Tenn.	
WHDF	a	100	(.25)	Calumet, Mich.	
WHLB	a	100	C(.25)	Virginia, Minn.	
WHLS	z	250	D	Port Huron, Mich.	
WIBM	a	100	(.25)B	Jackson, Mich.	
WLH	a	100	Sy	Lawrence, Mass.	8 am-midnight. (5 am-9 pm)
WLH	a	100	MSy(.25)	Lowell, Mass.	
WMBR	a	100	C(.25)	Jacksonville, Fla.	8 am-midnight. (5 am-9 pm)
WMFD	a	100	D	Wilmington, N. C.	10:30 am-6:15 pm. (7:30 am-3:15 pm)
WMFO	a	100	D	Decatur, Ala.	10 am-L. S. (7 am-L. S.)
WMIN	a	100	(.25)	St. Paul, Minn.	9 am-1 am. (6 am-10 pm)
WOC	a	100	C(.25)	Davenport, Iowa	
WPAY	a	100	....	Portsmouth, Ohio	9:30 am.-8:30 pm. (6:30 am-5:30 pm)
WPRZ	z	100	(.25)	Mayaguez, P. R.	
WRAK	a	100	(.25)	Williamsport, Pa.	10 am-12:30 pm.; 5-7 pm. (7-9:30 am; 2-4 pm)
WRDO	a	100	M	Augusta, Maine	8:45 am-midnight. (5:45 am-9 pm)
WRJN	a	100	(.25)	Racine, Wis.	
WSAU	a	100	(.25)	Wausau, Wis.	8:30 am-11:15 pm. (5:30 am-8:15 pm)
WSVS	a	50	2D	Buffalo, N. Y.	Silent. (Silent)
XECZ	z	100	....	San Luis Potosi, S.L.P.	
XEI	a	125	....	Morelia, Mich.	
XELZ	z	100	....	Mexico City, D. F.	
....	z	100	....	Owen Sound, Ont.	

1380 kcs. (217.3 m.)

CMCW	b	1500	(.25)P	Columbia, S. C.	
KOH	a	500	C	Reno, Nev.	9 am-midnight. (6 am-9 pm)
KQV	a	500	1C	Pittsburgh, Pa.	
WALA	a	500	C(1)	Mobile, Ala.	
WKBH	a	1000	C	La Crosse, Wis.	
WNBC	a	250	DX	New Britain, Conn.	
WSMK	a	200	1CLX	Dayton, Ohio	

1390 kcs. (215.7 m.)

CJGX	z	200	F	Yorkton, Sask.	Noon-11:30 pm. (9 am-8:30 pm)
CMIC	z	150	....	Camaguey, Cuba	
KABR	a	500	(1)	Aberdeen, S. Dak.	10 am-6:15 pm. (7 am-3:15 pm)
KLRA	a	1000	C(5)	Little Rock, Ark.	
KOY	a	1000	C	Phoenix, Ariz.	10 am-2 am. (7 am-11 pm)
KRLC	a	250	....	Lewiston, Idaho	3-10:30 pm. (Noon-7:30 pm)
WHK	a	1000	BM(.25)	Cleveland, Ohio	
WQDM	a	1000	D	St. Albans, Vt.	8:30 am-L. S. (5:30 am-L. S.)

1400 kcs. (214.2 m.)

GMGC	a	150	....	Matanzas, Cuba	
CMKR	z	100	....	Santiago, Cuba	
KHBC	a	250	CM	Hilo, Hawaii	
KLO	a	500	B	Ogden, Utah	

NORTH AMERICAN B. C. STATIONS BY FREQUENCIES

SUNDAY TIME			Eastern Standard		(Pacific Standard)
KTUL	a	1000	C(5)	Tulsa, Okla.	8 am-1:15 am. (5 am-10:15 pm)
TGX	d	.....	.....	Guatemala City, Guat.	
WARD	a	500	2	Brooklyn, N. Y.	
WBBC	a	500	P	Brooklyn	7-10:30 am; 3-4:30 (4-7:30 am; noon-
W EGL	z	500	2(11)	Brooklyn, N. Y.	pm; 9-10:30 pm. 1:30 pm) (6-7:30 pm)
WHDL	a	250	.....	Olean, N. Y.	
WIRE	a	1000	MR(5)	Indianapolis, Ind.	
WLTH	a	500	2	Brooklyn, N. Y.	10:30 am-noon; 1:30 (7:30-9 am; 10:30
					3 pm; 10:30 pm- am-noon; 7:30-9 pm)
WVFW	a	500	2	Brooklyn, N. Y.	Noon-1:30 pm; 4:30 (9-10:30 am; 1:30-4
					-7 pm. pm)

1410 kcs. (212.6 m.)



CKFC	a	50	5	Vancouver, B. C.	
CKMO	a	100	5	Vancouver, B. C.	
CMCQ	a	5000	.....	Havana, Cuba	
KFJM	a	500	(1)	Grand Forks, N. Dak.	10 am-10 pm. (7 am-7 pm)
KGNC	a	1000	MN(2.5)	Amarillo, Texas	
KMED	c	250	N	Medford, Ore.	
W AAB	a	500	M(1)	Boston, Mass.	
WBCM	a	500	(1)	Bay Ctv, Mich.	
WHIS	a	500	(1)	Bluefield, W. Va.	9 am-9 pm. (6 am-6 pm)
WROK	a	500	(1)	Rockford, Ill.	9:30 am-11 pm. (6:30 am-8 pm)
WSFA	a	500	C(1)	Montgomery, Ala.	

1420 kcs. (211.1 m.)



CHLN	z	100	.....	Three Rivers, P. Q.	
CKCA	z	100	.....	Kenora, Ont.	
CKGB	a	100	F	North Bay, Ont.	
KABC	a	100	M(.25)	San Antonio, Tex.	9 am-11:30 pm. (6 am-8:30 pm)
KATE	a	250	D	Albert Lea, Minn.	
KBPS	a	100	4	Portland, Ore.	Silent. (Silent)
KCMC	a	100	M(.25)	Texarkana, Tex.	
KDNT	z	100	D	Denton, Texas	8:30 am-L. S. (5:30 am-L. S.)
KEUB	a	100	.....	Price, Utah	1:45-7 pm. (10:45 am-4 pm)
KFAM	z	100	(.25)	St. Cloud, Minn.	10 am-7 pm. (7 am-4 pm)
KFIZ	a	100	.....	Fond du Lac, Wis.	
KGFF	a	100	M(.25)	Shawnee, Okla.	10 am- 1 am. (7 am-10 pm)
KGIW	a	100	1	Alamosa, Colo.	Noon-3 pm. (9 am-noon)
KGLU	z	100	(.25)	Safford, Ariz.	
KIDW	a	100	1	Lamar, Colo.	
KIUN	a	100	.....	Pecos, Texas	
KLBM	z	100	P(.25)	La Grande, Ore.	
KNET	a	100	D	Palestine, Texas	
KORE	a	100	M	Eugene, Ore.	
KRBC	a	100	M(.25)	Abilene, Tex.	
KRBM	z	100	P(.25)	Bozeman, Mont.	
KRIC	z	100	M(.25)	Beaumont, Texas	
KRIH	a	100	D	Midland, Texas	
KSAN	a	100	.....	San Francisco, Calif.	
KTRI	z	100	(.25)	Sioux City, Iowa	10 am-midnight. (7 am-9 pm)
KUMA	a	100	D	Yuma, Ariz.	
KVAK	z	100	DP	Atchison, Kans.	
KWBG	a	100	.....	Hutchinson, Kans.	9 am-10 pm. (6 am-7 pm)
KXL	a	100	1(.25)	Portland, Ore.	
WACO	a	100	CM(.25)	Waco, Texas	8 am-1 am.
WAGM	a	100	.....	Presque Isle, Me.	
WAPQ	a	100	(.25)N	Chattanooga, Tenn.	7:30 am-midnight. (4:30 am-9 pm)
WAZL	a	100	2	Hazleton, Pa.	
WCBS	a	100	(.25)	Springfield, Ill.	7 am-1 am. (4 am-10 pm)
WCHV	a	100	3(.25)	Charlottesville, Va.	10 am-5 pm. (7 am-2 pm)
WEED	a	100	3(.25)	Rocky Mount, N. C.	
WELL	z	100	B	Battle Creek, Mich.	9 am-midnight. (6 am-9 pm)
WFMJ	z	100	DP	Youngstown, Ohio	
WGNC	z	100	(.25)P	Gastonia, N. C.	

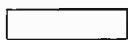
SUNDAY TIME		Eastern Standard		(Pacific Standard)
WGPC	a 100	.....	Albany, Ga.	
WHFC	a 100	(.25)	Cicero, Ill.	8 am-2 am. (5 am-11 pm)
WHMA	z 100	DP	Anniston, Ala.	
WILM	a 100	2	Wilmington, Del.	
WJMS	a 100	.....	Ironwood, Mich.	11 am-7 pm. (8 am-4 pm)
WLAP	a 100	(.25)	Lexington, Ky.	
WLEU	a 100	B(.25)	Erie, Pa.	
WMAS	a 100	C(.25)	Springfield, Mass.	
WMBC	a 100	(.25)	Detroit, Mich.	8:45 am-midnight. (5:45 am-9 pm)
WMBH	a 100	(.25)	Joplin, Mo.	9 am-midnight. (6 am-9 pm)
WMBS	a 250	D	Uniontown, Pa.	
WMFI	a 100	.....	Daytona Beach, Fla.	8 am-9 pm. (5 am-6 pm)
WMSD	a 100	.....	Muscle Shoals City, Ala.	
WPAD	a 100	(.25)	Paducah, Ky.	
WPAR	a 100	C	Parkersburg, W. Va.	
WPRP	a 100	(.25)	Ponce, P. R.	
WSLJ	z 100	P(.25)	Jackson, Miss.	9 am-10 pm. (6 am-7 pm)

1430 kcs. (209.7 m.)



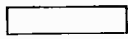
CMIP	a 75	.....	Moron, Cuba	
CMKZ	z 125	.....	Palm Soriano, Cuba	
KECA	a 1000	B(5)	Los Angeles, Calif.	11 am-2 am. (8 am-11 pm)
KGNF	a 1000	D	North Platte, Nebr.	Silent. (Silent)
KSO	a 500	BM(2.5)	Des Moines, Iowa	8 am-2 am. (5 am-11 pm)
WBNS	a 1000	C(5)	Columbus, Ohio	
WHFC	a 500	C(1)	Rochester, N. Y.	
WHP	a 500	C(1)	Harrisburg, Pa.	9 am-1 am. (6 am-10 pm)
WMPS	a 500	B(1)	Memphis, Tenn.	10 am-10 pm. (7 am-7 pm)
WOKO	a 500	C(1)	Albany, N. Y.	9 am-1 am.

1440 kcs. (208.2 m.)



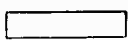
CMBY	z 200	.....	Havana, Cuba	
HPSO	z	.....	Colon, Panama	
KDFN	a 500	.....	Casper, Wyo.	
KELA	a 500	M	Centralia, Wash.	
KXYZ	a 1000	BM	Houston, Texas	
WBIG	a 1000	C	Greensboro, N. C.	8 am-midnight. (5 am-9 pm)
WCBA	a 500	a	Allentown, Pa.	9 am-1 am. (6 am-10 pm)
WMBD	a 1000	C(5)	Peoria, Ill.	
WSAN	a 500	Na	Allentown, Pa.	
XEFI	a 250	.....	Chihuahua, Chih.	

1450 kcs. (206.8 m.)



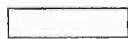
CFCT	a 500	.....	Victoria, B. C.	
GHGS	a 50	F	Summerside, P. E. I.	10 am-noon; 2:30-7:30 pm. (7-9 am; 11:30 am-4:30 pm)
CMHM	z 150	.....	Cienfuegos, Cuba	
KGCX	a 1000	.....	Wolf Point, Mont.	
KIEM	a 500	M(1)	Eureka, Calif.	
KTBS	a 1000	N	Shreveport, La.	
TGQ	d 200	.....	Quezaltenango, Guat.	
WAGA	a 500	B(1)	Atlanta, Ga.	
WGAR	a 500	CX(1)	Cleveland, Ohio	
WHOM	a 250	.....	Jersey City, N. J.	
WSAR	a 1000	M	Fall River, Mass.	
XEF	a 100	.....	Iuarez, Chih.	

1460 kcs. (205.4 m.)



CMKF	z 250	.....	Holguin, Cuba	
KSTP	a 10000	R(25)	St. Paul, Minn.	8 am-2 am. (5 am-11 pm)
WISV	a 10000	C	Washington, D. C.	8 am-1 am. (5 am-10 pm)

1470 kcs. (204 m.)



CMCX	z 150	Havana, Cuba	
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SUNDAY TIME

Eastern Standard

(Pacific Standard)

KGA	a	5000	BM	Spokane, Wash.		
WLAC	a	5000	C	Nashville, Tenn.		
1480 kcs. (202.6 m.)						
KOMA	a	5000	C	Oklahoma City, Okla.	9 am-1 am.	(6 am-10 pm)
WHIP	z	5000	D	Hammond, Ind.		
WKBW	a	5000	C	Buffalo, N. Y.	7 am-1 am.	(4 am-10 pm)
1490 kcs. (201.2 m.)						
CMKQ	z	200	....	Santiago, Cuba		
KFBK	a	10000	N	Sacramento, Calif.	11 am-3 am.	(8 am-midnight)
WCKY	a	10000	N	Covington, Ky.		
XEDR	z	100	....	Guaymas, San.		
1500 kcs. (199.9 m.)						
CJIC	a	100	F	Sault Ste. Marie, Ont.		
CMOX	a	200	....	Havana, Cuba		
KAWM	z	100	....	Gallup, N. Mex.		
KBIX	a	100	M	Muskogee, Okla.	10 am-1 am.	(7 am-10 pm)
KBKR	z	100	(.25)P	Baker, Ore.		
KBST	z	100	M	Big Spring, Tex.		
KDAL	a	100	C	Duluth, Minn.	10 am-midnight.	(7 am-9 pm)
KDB	a	100	M(.25)	Santa Barbara, Calif.		
KGFI	a	100	(.25)	Brownsville, Tex.	9 am-10:30 pm.	(6 am-7:30 pm)
KGKB	a	100	M(.25)	Tyler, Texas		
KGKY	a	100	(.25)	Scottsbluff, Nebr.		
KNEL	a	250	D	Brady, Texas		
KNOW	a	100	CM	Austin, Texas		
KOTN	a	100	D	Pine Bluff, Ark.		
KOVC	a	100	(.25)	Valley City, N. Dak.		
KPAB	z	100	(.25)	Laredo, Tex.	10 am-10 pm.	(7 am-7 pm)
KPLC	a	100	(.25)	Lake Charles, La.		
KPLT	z	250	DM	Paris, Texas		
KPQ	a	100	M(.25)	Wenatchee, Wash.		
KRNR	a	100	M(.25)	Roseburg, Ore.		
KROD	z	100	P	El Paso, Texas		
KSAL	a	100	(.25)	Salina, Kans.		
KSAM	z	100	DP	Huntsville, Texas		
KUTA	z	100	N	Salt Lake City, Utah	11 am-2 am.	(8 am-11 pm)
KVNU	z	100	P	Logan, Utah		
KVOE	a	100	M	Santa Ana, Calif.		
KVWC	z	100	P	Vernon, Texas		
KWEW	z	100	D	Hobbs, N. Mex.		
KXO	a	100	....	El Centro, Calif.		
KYCA	z	100	(.25)P	Prescott, Ariz.		
KYSM	z	100	(.25)	Manhato, Minn.		
WCNW	a	100	1(.25)	Brooklyn, N. Y.	9-11 am; 11 pm-mid-night.	(6-8 am; 8-9 pm)
WDAN	z	250	D	Danville, Ill.	9 am-L. S.	(6 am-L. S.)
WDNC	a	100	C	Durham, N. C.	9 am-11 pm.	(6 am-8 pm)
WGAL	a	100	(.25)	Lancaster, Pa.		
WGIL	z	250	DP	Galesburg, Ill.		
WGKV	z	100	P	Charleston, W. Pa.		
WHBB	a	100	....	Selma, Ala.	10 am-10 pm.	(7 am-7 pm)
WHEF	a	100	(.25)	Kosciusko, Miss.		
WJBK	a	100	(.25)	Detroit, Mich.		
WKAT	a	100	....	Miami Beach, Fla.		
WKBB	a	100	YC(.25)	E. Dubuque, Ill.	9 am-1 am.	(6 am-10 pm)
WKBV	a	100	(.25)	Richmond, Ind.	Silent	(Silent)
WKBZ	a	100	(.25)	Muskegon, Mich.		
WKEU	a	100	D	Griffin, Ga.		
WMEX	a	100	(.25)	Boston, Mass.		
WNBF	a	100	C(.25)	Binghamton, N. Y.		
WNLC	a	100	DM	New London, Conn.	8:30 am-L. S.	(5:30 am-L. S.)
WOMI	a	100	(.25)	Owensboro, Ky.	9 am-midnight.	(6 am-9 pm)
WOPI	a	100	....	Bristol, Tenn.	8 am-10 pm.	(5 am-7 pm)

SUNDAY TIME

Eastern Standard

(Pacific Standard)

WRDW	a	100	C(.25)	Augusta, Ga.		
WRGA	a	100	(.25)	Rome, Ga.	10 am-11 pm.	(7 am-8 pm)
WRTD	a	100	B	Richmond, Va.	8 am-midnight.	(5 am-9 pm)
WSTP	z	100	(.25)P	Salisbury, N. C.		
WSYB	a	100	...	Rutland, Vt.	Silent.	(Silent)
WSMV	a	100	(.25)	E. St. Louis, Ill.		
WWRL	a	100	1(.25)	Woodside, N. Y.		
WWSW	a	100	(.25)	Pittsburgh, Pa.		

1510 kcs. (198.6 m.)

CFRC	a	100	F	Kingston, Ont.		
CKCR	a	100	Waterloo, Ont.	Noon-11:15 pm.	(9 am-8:15 pm)

1520 kcs. (197.3 m.)

TGW	d	1000	Guatemala City, Guat.		
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1530 kcs. (196 m.)

CMC	z	150	Havana, Cuba		
KITE	a	1000	Kansas City, Mo.	9 am-1 am.	(6 am-10 pm)
WBRV	a	1000	M	Waterbury, Conn.	9 am-midnight.	(6 am-9 pm)

1540 kcs. (194.7 m.)

CM9RT	z	200	Guines, Cuba		
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1550 kcs. (193.4 m.)

KPMC	a	1000	M	Bakersfield, Calif.		
WQXR	a	1000	New York, N. Y.		

1560 kcs. (192.2 m.)

CMBF	z	5000	Havana, Cuba		
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1600 kcs. (187.4 m.)

CMBH	z	Havana, Cuba		
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Flashes

Henry J. Leinbach of Nanticoke, Pa. informs us that WOL in Washington has moved to 1230 kcs. That W3XAL has been heard testing on 1570 kcs. That CMCY in Havana is easily heard on the new frequency of 590, and that CMQ is on 1010 kcs.

The Cincinnati Chapter of the Newark News Radio Club reports that WLW on 700, and W8XAL on 6060 kcs will broadcast a DX program for the NNRC on December 18, from 2 to 3 am, EST.

Broadcast Changes

The latest changes in broadcasting station data are:

KDLR, Oevils Lake, N. Dak., is now using 100 watts nights, 250 watts to local sunset.

KDYL, Salt Lake City, now employs 5

kilowatts days, and 1 kilowatt nights.

A new station has been granted a Construction Permit, for Lihue, Hawaii. It is KTOH, owned by the Garden Island Publishing Co., Ltd. It will be on 1500 kcs., with 100 watts nights, 250 watts to local sunset.

WHEF in Kosciusko, Miss. has been deleted.

The Brooklyn stations are now out of the Court of Appeals. WARB, WBBC, WLTH and WVFW are the stations affected.

A new station for Jacksonville, Fla., WJHP, has been granted a Construction Permit. It will transmit on 1290 kcs. with 250 watts, unlimited time.

In Beckley, West Virginia, a new station, WJLS, has been granted a Construction Permit. WJLS will employ 1210 kcs., with 100 watts nights, 250 watts to local sunset.

NORTH AMERICAN B. C. STATIONS BY LOCATIONS

Thomasville
WPAX 1210 100
Waycross
WAYX 1200 100

HAWAII

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

IDAHO

Boise
KIDO 1350 1000 N
Coeur d'Alene
KGCI 1200 100
Idaho Falls
KID 1320 500
Lewiston
KRLC 1390 250
Nampa
KF XD 1200 100
Pocatello
KSEI 900 250 N
Twin Falls
KTFI 1240 1000 N

ILLINOIS

Aurora
WMRO 1250 250
Bloomington
WJBC 1200 100
Carthage
WCAZ 1070 100
Champaign
WDWS 1370 100
Chicago
WAAF 920 1000
WBBM 770 50000 C
WCB D 1080 5000
WCFL 970 5000 N
WCRW 1210 100
WEDC 1210 100
WENR 870 50000 B
WGES 1360 500
WGN 720 50000M
WJJD 1130 20000
WLS 870 50000 B
WMAQ 670 50000 R
WMBI 1080 5000
WSBC 1210 100
Cicero
WHFC 1420 100
Danville
WDAN 1500 250
Decatur
WJBL 1200 100
East Dubuque
WKBB 1500 100 C
East St. Louis
WTM V 1500 100
Galesburg
WGIL 1500 250
Harrisburg
WEBQ 1210 100
Joliet
WCL S 1310 100
Peoria
WMBD 1440 1000 C

Quincy
WTAD 900 1000
Rockford
WROK 1410 500
Rock Island
WHBF 1210 100
Springfield
WCBS 1420 100
WTAX 1210 100
Tuscola
WDZ 1020 250
Urbana
WILL 580 1000

INDIANA

Anderson
WHBU 1210 100
Elkhart
WTRC 1310 100
Evansville
WEOA 1370 100 C
WGBF 630 500 N
Fort Wayne
WGL 1370 100 N
WOWO 1160 10000 B
Gary
WIND 560 1000
Hammond
WHIP 1480 5000
WWAE 1200 100
Indianapolis
WFBM 1230 1000 C
WIBC 1050 1000
WIRE 1400 1000 R
Muncie
WLBC 1310 100
New Albany
WGRC 1370 250
Richmond
WKBV 1500 100
West Bend
WFAM 1200 100
WSBT 1360 500
Terre Haute
WBOW 1310 100 N
West Lafayette
WBAA 890 500

IOWA

Ames
WOI 640 5000
Boone
KFGQ 1370 100
Cedar Rapids
WMT 600 1000 B
Davenport
WOC 1370 100 C
Decorah
KGCA 1270 100
KWLC 1270 100
Des Moines
KRNT 1320 1000 C
KSO 1430 500 B
WHO 1000 50000 R
Dubuque
KDTH 1340 500
Iowa City
WSUI 880 500
Marshalltown
KFJB 1200 100

Mason City
KGLD 1210 100 C
Shenandoah
KFNF 890 500
KMA 930 1000 B
Sioux City
KSCJ 1330 1000 C
KTRI 1420 100

KANSAS

Abilene
KFBI 1050 5000
Atchison
KVAK 1420 100
Coffeyville
KGGF 1010 1000M
Dodge City
KGNU 1340 250
Garden City
KIUL 1210 100
Great Bend
KVBG 1370 100
Hutchinson
KWBG 1420 100
Kansas City
KCKN 1310 100
Lawrence
KFKU 1220 1000
WREN 1220 1000 B
Manhattan
KSAC 580 500
Pittsburg
KOAM 790 1000 N
Salina
KSAL 1500 100
Topeka
WIBW 580 1000 C
Wichita
KANS 1210 100 B
KFH 1300 1000 C

KENTUCKY

Ashland
WCM1 1310 100
Covington
WKCY 1490 10000 N
Lexington
WLAP 1420 100
Louisville
WAVE 940 1000 N
WHAS 820 50000 C
Owensboro
WOMI 1500 100
Paducah
WPAD 1420 100

LOUISIANA

Alexandria
KALB 1210 100
Baton Rouge
WJBO 1120 500 B
Lafayette
KVOL 1310 100
Lake Charles
KPLC 1500 100

Monroe
KMLB 1200 100
New Orleans
WBNO 1200 100
WDSU 1250 1000 B
WIBW 1200 100
WSMB 1320 1000 R
WWL 850 10000 C
Shreveport
KRMD 1310 100
KTBS 1450 1000 N
KWKH 1100 10000 C

MAINE

Augusta
WRDO 1370 100M
Bangor
WABI 1200 100
WLBZ 620 500 C
Lewister
WCOV 1210 100
Portland
WCSH 940 1000 R
WGAN 640 500
Presque Isle
WAGM 1420 100

MARYLAND

Baltimore
WBAL 760 2500 B
WBAL 1060 10000 B
WCAO 600 1000 C
WCBM 1370 100
WFBR 1270 500 R
College Park
W3XJ 1060 100
Cumberland
WTBO 800 250
Frederick
WFMD 900 500
Hagerstown
WJEJ 1210 100
Salisbury
WSAL 1200 250

MASSACHUSETTS

Boston
WAAF 1410 500M
WBZ 990 50000 B
WCOP 1120 500
WEEI 590 1000 C
WHDH 830 1000
WMEX 1500 100
WNAC 1230 1000 R
WORL 920 500
Cape Cod
WOCB 1210 100
Fall River
WSAR 1450 1000M
Greenfield
WHAI 1210 250
Lawrence
WLAW 680 1000
WLLH 1370 100M
Lowell
WLLH 1370 100
New Bedford
WNLH 1310 100M

NORTH AMERICAN B. C. STATIONS BY LOCATIONS

Pittsfield
WBRK 1310 100 C
Springfield
WBZA 990 1000 B
WMAS 1420 100 C
WSPR 1140 500 M
Worcester
WORC 1280 500 C
WTAG 580 1000 R

MICHIGAN

Battle Creek
WELL 1420 100 B
Bay City
WBCM 1410 500
Calumet
WDF 1370 100
Detroit
WJBK 1500 100
WJR 750 5000 C
WMB 1420 100
WWJ 920 5000 R
WXXZ 1240 1000 B
East Lansing
WKAR 850 1000
Flint
WFDF 1310 100 B
Grand Rapids
WASH 1270 500 N
WOOD 1270 500 N
Ironwood
WTMS 1420 100
Jackson
WIBM 1370 100 B
Kalamazoo
WKZO 590 1000 B
Lansing
WJIM 1210 100 B
Lapeer
WMP 1200 100
Marquette
WBEO 1310 100
Muskegon
WKBZ 1500 100
Port Huron
WHLS 1370 250
Royal Oak
WEXL 1310 50
Saginaw
WHAL 950 500

MINNESOTA

Albert Lea
KATE 1420 250
Duluth
KDAL 1500 100 C
WEBC 1290 1000 N
Fergus Falls
KGDE 1200 100
Hibbing
WMFG 1210 100
Mankato
KYSM 1500 100
Minneapolis
WCCO 810 5000 C
WDGY 1180 1000 C
WLB 760 1000
WTCN 1250 1000 B
Moorhead
KVOC 1310 100

Northfield
WCAL 760 1000
Rochester
KROC 1310 100
St. Cloud
KFAM 1420 100
St. Paul
KSTP 1460 10000 R
WMIN 1370 100
Virginia
WHLB 1370 100 C
Winona
KWNO 1200 250

MISSISSIPPI

Grenada
WGRM 1210 100
Gulfport
WGCM 1210 100
Hattiesburg
WFOR 1370 100
Jackson
WIDX 1270 1000 R
WSLT 1420 100
Kosciusko
WHEF 1500 100
Laurel
WAML 1310 100
Meridian
WCOC 880 1000 C
Vicksburg
WQBC 1360 1000

MISSOURI

Cape Girardeau
KFVS 1210 100
Columbia
KFRU 630 500
Jefferson City
KWOS 1310 100
Joplin
WMDH 1420 100
Kansas City
KCMO 1370 100
KITE 1530 1000
KMBC 950 1000 C
WDAF 610 1000 R
WHB 860 1000 M
Poplar Bluff
KWOC 1310 100
St. Joseph
KFEQ 680 2500
St. Louis
KFUO 550 500
KMOX 1090 5000 C
KSD 550 1000 R
KWK 1350 1000 B
KXOK 1250 1000
WEW 760 1000
WIL 1200 100
Springfield
KGBX 1230 500 N
KWTO 560 5000

MONTANA

Billings
KGHL 780 1000 N

Bozeman
KRBM 1420 100
Butte
KGIR 1340 1000 N
Great Falls
KFBB 1280 1000 C
Helena
KPFA 1210 100 N
Kalispell
KGEZ 1310 100
Lewistown
KDNC 1200 100
Missoula
KGV 1260 1000 C
Wolf Point
KGKX 1450 1000

NEBRASKA

Clay Center
KMMJ 740 1000
Kearney
KGF 1310 100
Lincoln
KFAB 770 1000 C
KFOR 1210 100 C
Norfolk
WIAG 1060 1000
North Platte
KGNF 1430 1000
Omaha
KOIL 1260 1000 B
WAAW 660 500
WOW 590 1000 R
Scottsbluff
KGGY 1500 100

NEVADA

Reno
KOH 1380 500 C

NEW HAMPSHIRE

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

NEW JERSEY

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

Whippany
W3XDD ... 50000
Zarephath
WAWZ 1350 500

NEW MEXICO

Albuquerque
KGGM 1230 1000
KOB 1180 10000 N
Carlsbad
KLAH 1210 100
Clovis
KICA 1370 100
Gallup
KAWM 1500 100
Hobbs
KWEW 1500 100
Roswell
KGFL 1370 100
Santa Fe
KRQA 1310 100

NEW YORK

Albany
WABY 1370 100 N
WOKO 1430 500 C
Auburn
WMBO 1310 100
Binghamton
WNBF 1500 100 C
Brooklyn
WARD 1400 500
WBB 1400 500
WBR 1300 1000
WCN 1500 100
WLTH 1400 500
WVFW 1400 500
Buffalo
WBEN 900 1000 B
WBNY 1370 100
WEBR 1310 100 P
WGR 550 1000 C
WKBW 1480 5000 C
WWSV 1370 50
Canton
WCAD 1220 500
Elmira
WENY 1200 250
WESG 850 1000 C
Freeport
WGFB 1210 100
Jamestown
WJTN 1210 100 B
Newburgh
WGN 1210 100
New York
WABC 860 5000 C
WBIL 1100 5000
WBNX 1350 1000
WBOQ 860 5000 C
WEAF 660 5000 R
WEVD 1300 1000
WEAB 1300 1000
WHN 1010 1000
WINS 1180 1000
WJZ 760 5000 B
WMC 570 1000
WNEW 1250 1000
WNYC 810 1000

NORTH AMERICAN B. C. STATIONS BY LOCATIONS

WOV	1130	1000
WOXR	1550	1000
Olean		
WHDL	1400	250
Plattsburg		
WMFF	1310	100 B
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	1000 B
WSYU	570	1000
Troy		
WHAZ	1300	1000
WTRY	950	1000
Utica		
WIBX	1200	100C
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
Fayetteville		
WFNC	1340	250
Gastonia		
WGNC	1420	100
Greensboro		
WBG	1440	1000 C
High Point		
WMFR	1200	100
Kinston		
WFTC	1200	100
Raleigh		
WPTF	680	5000 N
WRAL	1210	100
Rocky Mount		
WEED	1420	100
Salisbury		
WSTP	1500	100
Wilmington		
WMFD	1370	100
Wilson		
WGTM	1310	100
Winston-Salem		
WAIR	1250	250
WSJS	1310	100 C
NORTH DAKOTA		
Bismarck		
KFYR	550	1000 N
Devils Lake		
KDLR	1210	100
Fargo		
WDAY	940	1000 N
Grand Forks		
KFJM	1410	500
Jamestown		
KRMC	1370	100

Mandan		
KGCU	1240	250
Minot		
KI PM	1740	250
Valley City		
KOVC	1500	100
OHIO		
Akron		
WADC	1320	1000 C
WJW	1210	100
Ashtabula		
WICA	940	250
Canton		
WHBC	1200	100
Cincinnati		
WCPO	1200	100
WKRC	550	1000 C
WLW	700	500000N
WSAI	1330	1000 N
Cleveland		
WCLE	610	500M
WGAR	1450	500 C
WHK	1390	1000 B
WTAM	1070	50000 R
Columbus		
WBNS	1430	1000 C
WCOL	1210	100 N
WHKC	640	500M
WOSU	570	750
Dayton		
WHIO	1260	1000 C
WSMK	1380	200 C
Lima		
WBLY	1210	100
Portsmouth		
WPAY	1370	100
Toledo		
WSPD	1340	1000 B
WTOL	1200	100
Youngstown		
WFMJ	1420	100
WKBN	570	500 C
Zanesville		
WALR	1210	100
OKLAHOMA		
Ada		
KADA	1200	100M
Ardmore		
KVSO	1210	100M
Elk City		
KASA	1210	100
Enid		
KCRC	1360	250M
Muskogee		
KBIX	1500	100M
Norman		
WNAD	1010	1000
Oklahoma City		
KOCY	1310	100
KOMA	1480	5000 C
KTOK	1370	100M
WKY	900	1000 N
Okmulgee		
KHBG	1210	100
Ponca City		
WBZ	1200	100M
Shawnee		
KGFF	1420	100M
Tulsa		
KOME	1310	250

KTUL	1400	1000 C
KVOO	1140	25000 N
OREGON		
Astoria		
KAST	1370	100
Baker		
KBKR	1500	100
Bend		
KBND	1310	100
Corvallis		
KOAC	550	1000
Eugene		
KORE	1420	100M
Klamath Falls		
KFJI	1210	100
La Grande		
KLBM	1420	100
Marshfield		
KOOS	1200	100
Medford		
KMED	1410	250 N
Portland		
KALE	1300	1000M
KBPS	1420	100
KEN	1180	5000 B
KGW	620	1000 R
KOIN	940	1000 C
KWJJ	1040	500
KNL	1420	100
Roseburg		
KRNR	1500	100M
Salem		
KSLM	1370	100M
PENNSYLVANIA		
Allentown		
WCBA	1440	500
WSAN	1440	500 N
Altoona		
WFBG	1310	100
Easton		
WEST	1200	100
Erie		
WLEU	1420	100 B
Glenside		
WIBG	970	100
Greensburg		
WHJB	620	250 C
Grove City		
WSAJ	1310	100
Harrisburg		
WHP	1430	500 C
WKBO	1200	100
Hazelton		
WAZL	1420	100
Johnstown		
WJAC	1310	100
Lancaster		
WGAL	1500	100 N
New Castle		
WKST	1250	250
Philadelphia		
KYW	1020	10000 R
WCAU	1170	50000 C
WDAS	1370	100
WFIL	560	1000 B
WHAT	1310	100
WIP		
WPEN	920	1000
WRAX	920	1000

WTEL	1310	100
Pittsburgh		
KDKA	980	50000B
KQV	1380	500 C
WCAE	1220	1000 R
WJAZ	1290	1000 C
WWSW	1500	100
Reading		
WEU	830	1000
WRAW	1310	100
Scranton		
WGBI	880	500 C
WQAN	880	500
Sharon		
WPIC	780	250
Sunbury		
WKOK	1210	100
Uniontown		
WMBS	1420	250
Wilkes-Barre		
WBAN	1210	100M
WBR	1310	100 N
Williamsport		
WRAK	1370	100
York		
WORK	1320	1000 N
PUERTO RICO		
Mayaguez		
WPRA	1370	100
Ponce		
WPRP	1420	100
San Juan		
WKAQ	1240	1000
WNEI	1290	1000
RHODE ISLAND		
Providence		
WEAN	780	1000M
WJAR	890	1000 R
WPRO	630	500 C
SOUTH CAROLINA		
Anderson		
WAIM	1200	100 C
Charleston		
WCSC	1360	500 N
WTMA	1210	100
Columbia		
WCOS	1370	100
WIS	560	1000 N
Florence		
WOLS	1200	100
Greenville		
WFBC	1300	1000 N
Spartanburg		
WSPA	920	1000
SOUTH DAKOTA		
Aberdeen		
KABR	1390	500
Brookings		
KFDY	780	1000
Pierre		
KGFX	630	200
Rapid City		
KOBH	1370	100
WCAT	1200	100
Sioux Falls		
KELO	1200	100 N
KSOO	1110	5000 N

NORTH AMERICAN B. C. STATIONS BY LOCATIONS

Vermillion KUSD 890 500 Yankton WNAX 570 1000 C	KPRC 920 1000 R KTRH 1290 1000 C KXYZ 1440 1000 B Huntsville KSAM 1500 100 Kilgore KOCA 1210 100 Laredo KPAB 1500 100 Longview KFRO 1370 250M Lubbock KFYO 1310 100M Lufkin KRBA 1310 100 Midland KRLH 1420 100 Palestine KNET 1420 100 Pampa KDDN 1310 100 Paris KPLT 1500 250M Pecos KIUN 1420 100 Port Arthur KPAC 1260 500 San Angelo KGGK 1370 100 San Antonio KABC 1420 100M KMAC 1370 100 KONO 1370 100 K TSA 550 1000 C WOAI 1190 50000 N Sherman KRRV 1310 250 Temple KTEM 1370 250M Texarkana KCMC 1420 100M Tyler KGBK 1500 100M Vernon KWVC 1500 100 Waco WACO 1420 100 C Weslaco KRGV 1260 1000 N Wichita Falls KWFT 620 250	St. Albans WQDM 1390 1000 Springfield WNBX 1260 500 C Waterbury WDEV 550 500	WGKU 1500 100 Clarksburg WBLK 1370 100 Fairmont WMMN 890 500 C Huntington WSAZ 1190 1000 Parkersburg WPAR 1420 100 C Wheeling WWVA 1160 5000 C	TENNESSEE Bristol WOPI 1500 100 Chattanooga WAPO 1420 100 N WDOD 1280 1000 C Jackson WTJS 1310 100 Johnson City WIHL 1200 100 Knoxville A NOX 1010 1000 C WROL 1310 100 N Memphis WHBQ 1370 100 WMC 780 1000 R WMPS 1430 500 B WREC 600 1000 C Nashville WLAC 1470 5000 C WSIX 1210 100 WSM 650 50000 N	VIRGINIA Charlottesville WCHV 1420 100 Danville WBTM 1370 100 Harrisonburg WSVA 550 500 Lynchburg WLVA 1200 100 Newport News WGH 1310 100 Norfolk WTAR 780 1000 N Petersburg WPIV 1210 100 Richmond WBBL 1210 100 WMBG 1350 500 R WRNL 880 500 WRTD 1500 100 B WRVA 1110 5000 C Roanoke WDRJ 930 1000 C	TEXAS Abilene KRBC 1420 100M Amarillo KGNC 1410 1000 N Austin KNOW 1500 100 C KTBC 1120 1000 Beaumont KFDM 560 500 N KRIC 1410 100M Big Spring KBST 1500 100M Brady KNEL 1500 250 Brownsville KGFI 1500 100 College Station WTAW 1120 500 Corpus Christi KRIS 1330 500 N Corsicana KAND 1310 100M Dallas KRLD 1040 10000 C WFAA 800 50000 N WRR 1280 500M Denton KDNT 1420 100 Dublin KFPL 1310 100 El Paso KR0D 1500 100 KTSM 1310 100 N WDAH 1310 100 Fort Worth KFJZ 1370 100M KGKO 570 1000 B KTAT 1240 1000M WBAP 800 50000 N Galveston KLUF 1370 100M Greenville KGVL 1200 100 Houston	UTAH Cedar City KSUB 1310 100 Logan KVNU 1500 100 Ogden KLO 1400 500 B Price KEUB 1420 100 Salt Lake City KDYI 1290 1000 R KSL 1130 5000 C KUTA 1500 100 N	VERMONT Burlington WCAJ 1200 100 Rutland WSYB 1500 100	Washington Aberdeen KRRO 1310 100M Bellingham KVOS 1200 100M Centralia KELA 1440 500M Everett KRKO 1370 50 Longview KWLK 780 250 Olympia K6Y 1210 100 M Pullman KWSC 1220 1000 Seattle KEEN 1370 100 KIRO 710 1000 C KJR 970 5000 B KOL 1270 1000 M KOMO 920 1000 R KRSC 1120 250 KRW 1220 1000 KXA 760 250 Spokane KFIO 1120 100 KPPY 890 1000 C KGA 1470 5000 B KHQ 590 1000 R Tacoma KMO 1330 1000M KVI 570 1000 C Walla Walla KUI 1370 100 Wenatchee KIT 1250 250M	WYOMING Casper KDFN 1440 500 Rock Springs KVR5 1370 100 Sheridan KWYO 1370 100	BAHAMAS Nassau ZNS 540 400	CANADA ALBERTA Calgary CFAC 930 1000 F CFCN 1030 10000 CJCF 690 100 F Edmonton CFRN 960 100 F CJCA 730 1000 F CKUA 580 500
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NORTH AMERICAN B. C. STATIONS BY LOCATIONS

Grande Prairie
 CFGP 1200 100
 Lethbridge
 CJOC 950 100 F

BRIT. COLUMBIA

Chilliwack
 CHWK 780 100 F
 Kamloops
 CFJC 880 1000 F
 Kelowna
 CKOV 630 100 F
 Prince Rupert
 CFPR 580 50
 Trail
 CJAT 910 1000 F
 Vancouver
 CBR 1100 5000 F
 CJOR 600 500
 CKCD 1010 100
 CKFC 1410 50
 CKMO 1410 100
 CKWX 1010 100
 Victoria
 CFCT 1450 500

MANITOBA

Brandon
 CKX 1120 1000 F
 Flin Flon
 CFAR 1370 100
 Winnipeg
 CJRC 630 1000 F
 CKY 910 15000 F

NEW BRUNSWICK

Fredericton
 CFNB 550 500 F
 Moncton
 CKCV 1370 100 F
 Sackville
 CBA 50000
 St. John
 CHSJ 1120 100 F

N. W. TERRITORY

Aklavik
 CJU 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 F

ONTARIO

Brantford
 CKPK 930 100 F
 Chatham
 CFCO 630 100 F

Cobalt
 CKMC 1210 50
 Fort William
 CKPR 730 100 F
 Hamilton
 CHML 1010 100 F
 KCO 1120 500 F
 Kenora
 CKCA 1420 100
 Kingston
 CFRC 1510 100 F
 London
 CFPL 730 100 F
 North Bay
 CFCH 930 100 F
 CJKL 1310 100 F
 CKGB 1420 100 F

Ottawa
 CBO 880 1000 F
 KCO 1010 100 F
 Owen Sound
 1370 100
 Prescott
 CFCL 930 100
 St. Catharines
 CKTB 1200 100 F
 Sault Ste. Marie
 CJIC 1500 100 F
 Stratford
 CJCS 1210 50
 Sudbury

CKSO 780 1000 F
 Toronto
 CBL 840 50000 F
 CFRB 690 10000 C
 CKCL 580 100 F
 CRCY 960 100 F

Waterloo
 CKCR 1510 100
 Windsor
 CKLW 1030 5000 F
 Wingham
 CKNX 1200 100

PRINCE EDWARD ISLAND

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

QUEBEC

Chicoutimi
 CBJ 1120 100 F
 Hull
 CKCH 1210 100 F
 Montreal
 CBF 910 50000 N
 CBM 1050 5000 F
 CFCE 600 500 B
 CHLP 1120 100 F
 CKAC 730 5000 C
 New Carlisle
 CHNC 960 1000 F
 Quebec
 CHRC 580 100
 CKCV 1310 100 F

CBV 950 1000 F
 Rimouski
 CJBR 1030 1000 F
 St. Anne de la
 Pocatiere
 CHGB 1200 100
 Sherbrooke
 CHLT 1210 100
 Three Rivers
 CHLN 1420 100

SASKATCHEWAN

Moose Jaw
 CHAB 1200 100 F
 Prince Albert
 CKBI 1210 100 F
 Regina
 CJRM 540 1000 F
 CKCK 1010 1000 F
 Saskatoon
 CFQC 840 1000 F
 Yorkton
 CJGX 1390 100 F

COSTA RICA

San Jose
 TTPG 625 2000
 TIX 650 1000

CUBA

Bayamo
 CMKL 990 200
 Caibarien
 CMHD 1270 250
 Camaguey
 CMJA 1010 250
 CMJC 1390 200
 CMJE 1220 50
 CMJF 1150 200
 CMJK 1290 200
 CMJW 1340 300
 CMJX 830 150
 Cardenas
 CMGE 1370 200
 Ciego de Avila
 CMJI 1360 200
 CMJI 1130 150
 CMJO 1180 50

Cienfuegos
 CMHJ 1160 100
 CMHM 1450 150
 CMHX 1300 200
 Cruces
 CMHK 1330 250
 Guantanamo
 CMKS 960 60
 Havana

CMBC 1140 150
 CMBD 550 500
 CMBF 1560 5000
 CMBG 690 225
 CMBI 750 500
 CMBQ 1320 5000
 CMBS 1170 150
 CMBX 1080 150
 CMBY 1440 200
 CMBZ 940 500
 CMC 1530 150
 CMCA 1350 450
 CMCB 1230 150
 CMCD 630 250

CMCF 810 5000
 CMCG 1290 150
 CMCI 1110 500
 CMCK 970 5000
 CMCL 730 10000
 CMCO 1200 150
 CMCR 660 150
 CMCU 780 150
 CMCV 1380 150
 CMCX 1380 150
 CMCY 590 10000
 CMK 720 250
 CMOA 910 250
 CMON 1500 200
 CMQ 1010 25000
 CMW 880 1100
 CMX 1260 1000
 Holguin
 CMKF 1460 250
 CMKO 1280 200
 Manzanillo
 CMKM 1120 100
 Matanzas
 CMGC 1400 200
 CMGF 1120 75
 CMGH 790 250
 Moron
 CMIP 1130 75
 Palma Soriano
 CMKZ 1430 125
 Pinar del Rio
 CMAB 1340 100
 Sagua la Grande
 CMHA 1070 50
 Sancti Spiritus
 CMHB 1240 50
 Santa Clara
 CMHI 1210 250
 CMHW 820 500
 Santiago
 CMKC 1250 150
 CMKD 1050 1000
 CMKG 1160
 CMKO 1490 200
 CMKR 1400 250
 CMKW 1350
 CMKX 1190 75

DOMINICAN REPUBLIC

Ciudad Trujillo
 HIN 1090 740
 HIT 1050 50
 HIX 800 800

EL SALVADOR

San Salvador
 YSS 610 500

GUATEMALA

Guatemala City
 EGV 1520 1000
 TGV 1400

HONDURAS

TGI 1320
 Quezaltenango
 TGO 1450 200
 05 0571 NPHI
 edp810087

NORTH AMERICAN B. C. STATIONS BY LOCATIONS

MEXICO
AGUASCALIENTES

Aguascalientes
XEBI 1000 25

BAJACALIFORNIA

Mexicali
XEAA 750 200
XEA0 660 250
XECL 960 1000
Tijuana
XEAC 980 1000
XEBG 820 1000
XEC 1150 100
XELO 670 10000
XEMO 860 5000

CHIHUAHUA

Chihuahua
XEBU 1240 50
XEFI 1440 250
Juarez
XEF 1450 100
XEFV 1210 50
XEF 1020 1000
XEP 1160 500
Parral
XEAT 1210 250

COAHUILA

Piedras Negras
XEMU 580 250
XEPN 730 100000
Sabinas
XEBX 640 250
Saltillo
XEAS 1160 100
Torreon
XETB 1310 500

Villa Acuna
XEDH 1340 200
XERA 840 250000

D. F.

Gral. Anaya
XEDA 1220 200
Mexico City
XEAI 1250 500
XEAL 660 1000
XEB 1030 10000
XEB5 1340 200
XEBZ 810 100
XEDP 1080 500
XEF0 940 5000
XEF1 1130 100
XEK 990 100
XEL 1150 250
XELZ 1370 100
XEN 780 1000
XENC 860 50
XEO 710 5000
XERC 870 500
XEW 890 100000
XEXN 1170 1000
Texcoco
XENE 1270 17

DURANGO

Durango
XEBP 1150 250
XEE 1210 50

GUANAJUATO

Irapuato
XERO 1310 25
Leon
XEKL 1240 500

JALISCO

Guadalajara
XED 1160 2500
Guzman
XEBA 1080 20

MICHOACAN

Morelia
XEL 1370 125

NUEVO LEON

Monterrey
XEFI 870 200
XEG 1230 250
XEI 720 250
XET 690 5000
XEX 1310 125

PUEBLA

Puebla
XETH 1210 100

SAN LUIS POTOSI

San Luis Potosi
XECZ 1370 100

SINALOA

Mazatlan
XEBL 1220 50

SONORA

Cananea
XEFQ 1010 50
Hermosillo
XEBH 930 500
Nogales
XEAF 990 750
Obregon
XFAP 1340 50
Guaymas
XEDR 1490 100

TAMAULIPAS

Matamoros
XEAM 750 25

Nuevo Laredo
XEBK 1080 100
XEDF 810 100
XEFE 980 250
XENT 910 150000
Reynosa
XFAW 960 100000
Tampico
XECA 1230 250
XEFW 1310 300
XES 900 250

VERACRUZ

Cordoba
XEAG 1310 10
Jalapa
XEXB 1270 250
XEXD 1340 350
Minatitlan
XELW 1150 20
Veracruz
XETF 1220 12
XEU 1010 250

YUCATAN

Merida
XEFC 1340 100
XEME 1240 50
XEZ 630 500

MIQUELON

St. Pierre
FQN 609 250

NEWFOUNDLAND

St. John's
VOAC 1065 40
VOCM 1006 200
VOGY 840 400
VONF 1195 500
VOWR 681 500

QSA AND R CODES

The R code describes the volume with which a signal is heard.

- R1 is a signal that is barely perceptible.
- R2 is a very weak signal.
- R3 is a weak signal.
- R4 are signals of fair volume.
- R5 are fairly good signals.
- R6 are good signals.
- R7 are moderately strong signals.
- R8 are strong signals.

R9 are extremely strong signals.

The QSA Code is used to describe the understandability of a station's signal.

QSA1 is a signal that is unreadable.

QSA2 is one that is barely perceptible. A word can be understood now and then.

QSA3 is understandable with difficulty.

QSA4 is a signal that can be understood with practically no difficulty.

QSA5 is perfectly understandable.

NORTH AMERICAN B. C. STATIONS BY CALLS

CBA	50000	CHML	1010	100	CKLW	1030	5000	
Sackville, N. B.		Hamilton, Ont.			Windsor, Ont.			
CBF	910	50000	CHNC	960	1000	CKMC	1210	50
Montreal, P. Q.		New Carlisle, Que.			Cobalt, Ont.			
CBJ	1120	100	CHNS	930	1000	CMMO	1410	100
Chicoutimi, P. Q.		Halifax, N. S.			Vancouver, B. C.			
CBK	50000	CHRC	580	100	CKNX	1200	100	
		Quebec, P. Q.			Wingham, Ont.			
CBL	840	50000	CHSJ	1120	100	CKOC	1120	500
Toronto, Ont.		St. John, N. B.			Hamilton, Ont.			
CBM	1050	5000	CHWK	780	100	CKOV	630	100
Montreal, P. Q.		Chilliwack, B. C.			Kelowna, B. C.			
CBO	880	1000	CJAT	910	1000	CKPC	930	100
Ottawa, Ont.		Trail, B. C.			Brantford, Ont.			
CBR	1100	5000	CJBR	1030	1000	CKPR	730	100
Vancouver, B. C.		Rimouski, P. Q.			Fort William, Ont.			
CBV	950	1000	CJCA	730	1000	CKSO	780	1000
Quebec, P. Q.		Edmonton, Alta.			Sudbury, Ont.			
CFAC	930	1000	CJCB	1240	1000	CKTB	1200	100
Calgary, Alta.		Sydney, N. S.			St. Catharines, Ont.			
CFAR	1370	100	CJCJ	690	100	CKUA	580	500
Elin Flon, Man.		Calgary, Alta.			Edmonton, Alta.			
CFCF	600	500	CJCS	1210	50	CKWX	1010	100
Montreal, Que.		Stratford, Ont.			Vancouver, B. C.			
CFCH	930	100	CJCU	1210	50	CKX	1120	1000
North Bay, Ont.		Aklavik, N. W. T.			Brandon, Man.			
CFCN	1030	10000	CJGX	1390	100	CKY	910	15000
Calgary, Alta.		Yorkton, Sask.			Winnipeg, Man.			
CFCO	630	100	CJIC	1500	100	CMAB	1340	100
Chatham, Ont.		S. Ste. Marie, Ont.			Pinar del Rio, Cuba			
CFCT	1450	500	CJKL	1310	100	CMBC	1140	150
Victoria, B. C.		North Bay, Ont.			Havana, Cuba			
CFCY	630	1000	CJLS	1310	100	CMBD	550	500
Charlottetown, P.E.I.		Yarmouth, N. S.			Havana, Cuba			
CFGP	1200	100	CJOC	950	100	CMBF	1560	5000
Grande Prairie, Alta.		Lethbridge, Alta.			Havana, Cuba			
CFJC	880	1000	CJOR	600	500	CMBG	690	225
Kamloops, B. C.		Vancouver, B. C.			Havana, Cuba			
CFLC	930	100	CJRC	630	1000	CMBL	750	500
Prescott, Ont.		Winnipeg, Man.			Havana, Cuba			
CFNB	550	500	CJRM	540	1000	CMBO	1320	5000
Fredericton, N. B.		Regina, Sask.			Havana, Cuba			
CFPL	730	100	CKAC	730	5000	CMBS	1170	150
London, Ont.		Montreal, Que.			Havana, Cuba			
CFPR	580	50	CKBI	1210	100	CMBX	1080	150
Prince Rupert, B. C.		Prince Albert, Sask.			Havana, Cuba			
CFQC	840	1000	CKCA	1420	50000	CMBY	1440	200
Saskatoon, Sask.		Kenora, Ont.			Havana, Cuba			
CFRB	690	10000	CKCD	1010	100	CMBZ	940	500
Toronto, Ont.		Vancouver, B. C.			Havana, Cuba			
CFRC	1510	100	CKCH	1210	100	CMC	1530	150
Kingston, Ont.		Hull, Que.			Havana, Cuba			
CFRN	960	100	CKCK	1010	1000	CMCA	1350	450
Edmonton, Alta.		Regina, Sask.			Havana, Cuba			
CHAB	1200	100	CKCL	580	100	CMCB	1230	150
Moose Jaw, Sask.		Toronto, Ont.			Havana, Cuba			
CHCK	1310	50	CKCO	1010	100	CMCD	630	250
Charlottetown, P.E.I.		Ottawa, Ont.			Havana, Cuba			
CHGB	1200	100	CKCR	1510	100	CMCF	810	5000
St. Anne De La		Waterloo, Ont.			Havana, Cuba			
Pocatiere, P. Q.		CKCV	1310	100	CMCG	1290	150	
		Quebec, Que.			Havana, Cuba			
CHGS	1450	50	CKCW	1370	100	CMCJ	1110	500
Summerside, P.E.I.		Moncton, N. B.			Havana, Cuba			
CHLN	1420	100	CKFC	1410	50	CMCK	970	5000
Three Rivers, P. Q.		Vancouver, B. C.			Havana, Cuba			
CHLP	1120	100	CKGB	1420	100	CMCL	730	10000
Montreal, Que.		North Bay, Ont.			Havana, Cuba			
CHLT	1210	100	CKIC	1010	50	CMCM	850	250
Sherbrooke, P. Q.		Wolfville, N. S.			Havana, Cuba			

NORTH AMERICAN B. C. STATIONS BY CALLS

CMCO 1200	150	CMKG 1160	....	KBIX 1500	100
Havana, Cuba		Santiago, Cuba		Muskogee, Okla.	
CMCQ 1410	5000	CMKL 990	200	KBKR 1500	100
Havana, Cuba		Bayamo, Cuba		Baker, Ore.	
CMCR 660	150	CMKM 1120	100	KBND 1310	100
Havana, Cuba		Manzanillo, Cuba		Bend, Ore.	
CMCU 780	150	CMKO 1280	200	KBPS 1420	100
Havana, Cuba		Holguin, Cuba		Portland, Ore.	
CMCW 1380	150	CMKQ 1490	200	KBST 1500	100
Havana, Cuba		Santiago, Cuba		Big Spring, Texas	
CMCX 1380	150	CMKR 1400	250	KBTM 1200	100
Havana, Cuba		Santiago, Cuba		Jonesboro, Ark.	
CMCY 590	10000	CMKS 960	60	KCKN 1310	100
Havana, Cuba		Guantanamo, Cuba		Kansas City, Kans.	
CMGC 1400	200	CMKW 1350	....	KCMC 1420	100
Matanzas, Cuba		Santiago, Cuba		Texarkana, Texas	
CMGE 1370	200	CMKX 1190	75	KCMO 1370	100
Cardenas, Cuba		Santiago, Cuba		Kansas City, Mo.	
CMGF 1120	75	CMKZ 1430	125	KCRC 1360	250
Matanzas, Cuba		Palma Soriano, Cuba		Enid, Okla.	
CMGH 790	250	CMOA 910	150	KCRJ 1310	100
Matanzas, Cuba		Havana, Cuba		Jerome, Ariz.	
CMHA 1070	50	CMOX 1500	200	KDAL 1500	100
Sagua la Grande, Cuba		Havana, Cuba		Duluth, Minn.	
CMHB 1240	50	CMQ 1010	25000	KDB 1500	100
Sancti Spiritus, Cuba		Havana, Cuba		Santa Barbara, Calif.	
CMHD 1270	250	CMW 880	1400	KDFN 1440	500
Caibarien, Cuba		Havana, Cuba		Casper, Wyo.	
CMHI 1210	250	CMX 1260	1000	KDKA 980	50000
Santa Clara, Cuba		Havana, Cuba		Pittsburgh, Pa.	
CMHJ 1160	100	CMY 960	100	KDLR 1210	100
Cienfuegos, Cuba		Toronto, Ont.		Devils Lake, N. D.	
CMHK 1330	250	FQN 609	250	KDNC 1200	100
Cruces, Cuba		St. Pierre, Miquelon		Lewistown, Mont.	
CHHM 1450	500	HIN 1090	740	KDNT 1420	100
Cienfuegos, Cuba		Ciudad Trujillo, D. R.		Denton, Texas	
CMHW 820	100	HIT 1050	50	KDON 1210	100
Santa Clara, Cuba		Ciudad Trujillo, D. R.		Monterey, Calif.	
CMHX 1300	200	HIX 800	800	KDTH 1340	500
Cienfuegos, Cuba		Ciudad Trujillo, D. R.		Dubuque, Iowa	
CMJA 1010	250	HP50 1440	....	KDYL 1290	1000
Camaguey, Cuba		Panama City, Panama		Salt Lake City, Utah	
CMJC 1390	200	HRN 1250	50	KECA 1430	1000
Camaguey, Cuba		Tegucigalpa, Hon.		Los Angeles, Calif.	
CMJE 1220	50	KABC 1420	100	KEEN 1370	100
Camaguey, Cuba		San Antonio, Texas		Seattle, Wash.	
CMJF 1150	200	KABR 1390	500	KEHE 780	1000
Camaguey, Cuba		Aberdeen, S. Dak.		Los Angeles, Calif.	
CMJH 1360	200	KADA 1200	100	KELA 1440	500
Ciego de Avila, Cuba		Ada, Okla.		Centralia, Wash.	
CMJI 1130	150	KALB 1210	100	KELD 1370	100
Ciego de Avila, Cuba		Alexandria, La.		El Dorado, Ark.	
CMJK 1290	200	KALE 1300	1000	KELO 1200	100
Camaguey, Cuba		Portland, Ore.		Sioux Falls, S. Dak.	
CMJO 1180	50	KAND 1310	100	KERN 1370	100
Ciego de Avila, Cuba		Corsicana, Texas		Rebersfield, Calif.	
CMJP 1430	75	KANS 1210	100	KEUB 1420	100
Camaguey, Cuba		Wichita, Kans.		Price, Utah	
CMJW 1340	300	KARK 890	500	KEX 1180	5000
Camaguey, Cuba		Little Rock, Ark.		Portland, Ore.	
CMJX 830	150	KARM 1310	100	KFAB 770	10000
Camaguey, Cuba		Fresno, Calif.		Lincoln, Neb.	
CMK 720	250	KASA 1210	100	KFAC 1300	1000
Havana, Cuba		Elk City, Okla.		Los Angeles, Calif.	
CMKC 1250	150	KAST 1370	100	KFAM 1420	100
Santiago, Cuba		Astoria, Ore.		St. Cloud, Minn.	
CMKD 1050	1000	KATE 1420	250	KFAR 610	1000
Santiago, Cuba		Albert Lea, Minn.		Fairbanks, Alaska	
CMKE 1460	250	KAWM 1500	100	KFBB 1280	1000
Holguin, Cuba		Gallup, N. Mex.		Great Falls, Mont.	

NORTH AMERICAN B. C. STATIONS BY CALLS

KFBI 1050 5000	KFXJ 1200 100	KGLO 1210 100
Abilene, Kans.	Grand Junction, Colo.	Mason City, Iowa
KFBK 1490 10000	KFXM 1210 100	KGLU 1420 100
Sacramento, Calif.	San Bernardino, Calif.	Safford, Ariz.
KFDM 560 500	KFYO 1310 100	KGMB 1320 1000
Beaumont, Texas	Lubbock, Texas	Honolulu, T. H.
KFDY 780 1000	KFYR 550 1000	KGNC 1410 1000
Brookings, S. D.	Bismarck, N. D.	Amarillo, Texas
KFEL 920 500	KGA 1470 5000	KGNF 1430 1000
Denver, Colo.	Spokane, Wash.	North Platte, Neb.
KFEQ 680 2500	KGAR 1370 100	KGNO 1340 250
St. Joseph, Mo.	Tucson, Ariz.	Dodge City, Kans.
KFGQ 1370 100	KGB 1330 1000	KGO 790 7500
Boone, Iowa	San Diego, Calif.	San Francisco, Calif.
KPH 1300 1000	KGBU 900 500	KGU 750 2500
Wichita, Kans.	Ketchikan, Alaska	Honolulu, T. H.
KPI 640 50000	KGBX 1230 500	KGV 1200 100
Los Angeles, Calif.	Springfield, Mo.	Greenville, Texas
KFIO 1120 100	KGCA 1270 100	KGVO 1260 1000
Spokane, Wash.	Decorah, Iowa	Missoula, Mont.
KFIZ 1420 100	KGCI 1200 100	KGW 620 1000
Fond du Lac, Wis.	Coeur d'Alene, Idaho	Portland, Ore.
KFJB 1200 100	KGCU 1240 250	KGY 1210 100
Marshalltown, Iowa	Mandan, N. D.	Olympia, Wash.
KFJI 1210 100	KGCX 1450 1000	KHBC 1400 250
Klamath Falls, Ore.	Wolf Point, Mont.	Hilo, T. H.
KFJM 1410 500	KGDE 1200 100	KHBB 1210 100
Grand Forks, N. D.	Fergus Falls, Minn.	Oklmulgee, Okla.
KFJZ 1370 100	KGDM 1100 1000	KHJ 900 1000
Fort Worth, Texas	Stockton, Calif.	Los Angeles, Calif.
KFKA 880 500	KGEK 1200 100	KHQ 590 1000
Greeley, Colo.	Sterling, Colo.	Spokane, Wash.
KFKU 1220 1000	KGER 1360 1000	KHSL 1260 250
Lawrence, Kans.	Long Beach, Calif.	Chico, Calif.
KFNF 890 500	KGEZ 1310 100	KHUB 1310 250
Shenandoah, Iowa	Kalispell, Mont.	Watsonville, Calif.
KFOR 1210 100	KGFF 1420 100	KICA 1370 100
Lincoln, Neb.	Shawnee, Okla.	Clovis, N. M.
KFOX 1250 1000	KGFI 1500 100	KID 1320 500
Long Beach, Calif.	Brownsville, Tex.	Idaho Falls, Idaho
KFPL 1310 100	KGFI 1200 100	KIDO 1350 1000
Dublin, Texas	Los Angeles, Calif.	Boise, Idaho
KFPW 1210 100	KGFL 1370 100	KIDW 1420 100
Fort Smith, Ark.	Roswell, N. Mex.	Lamar, Colo.
KFPY 890 1000	KGFW 1310 100	KIEM 1450 500
Spokane, Wash.	Kearney, Neb.	Eureka, Calif.
KFQD 780 250	KGFX 630 200	KIFV 850 250
Anchorage, Alaska	Pierre, S. D.	Glendale, Calif.
KFRC 610 1000	KGGF 1010 1000	KINY 1310 100
San Francisco, Calif.	Coffeyville, Kans.	Inuauat, Alaska
KFRO 1370 250	KGGM 1230 1000	KIRO 710 1000
Longview, Texas	Albuquerque, N. M.	Seattle, Wash.
KFRU 630 500	KGHF 1320 500	KIT 1250 250
Columbia, Mo.	Pueblo, Colo.	Yakima, Wash.
KFSD 600 1000	KGHI 1200 100	KITE 1530 1000
San Diego, Calif.	Little Rock, Ark.	Kansas City, Mo.
KFSG 1120 500	KGHL 780 1000	KIUL 1210 100
Los Angeles, Calif.	Billings, Mont.	Garden City, Kans.
KFUO 550 500	KGIR 1340 1000	KIUN 1420 100
St. Louis, Mo.	Butte, Mont.	Pecos, Texas
KFVD 1000 1000	KGIW 1420 100	KIUP 1370 100
Los Angeles, Calif.	Alamosa, Colo.	Durango, Colo.
KFVS 1210 100	KGKB 1500 100	KJBS 1070 500
Cane Girardeau, Mo.	Tyler, Texas	San Francisco, Calif.
KFWB 950 1000	KGKL 1370 100	KJR 970 5000
Los Angeles, Calif.	San Angelo, Texas	Seattle, Wash.
KFXD 1200 100	KGKO 570 1000	KLAH 1210 100
Nampa, Idaho	Fort Worth, Texas	Carlsbad, N. Mex.
	KGKY 1500 100	KLBM 1420 100
	Scottsbluff, Neb.	La Grande, Ore.

NORTH AMERICAN B. C. STATIONS BY CALLS

KLCN 1290 100	KOMA 1480 5000	KRMD 1310 100
Blytheville, Ark.	Oklahoma City, Okla.	Shreveport, La.
KLO 1400 500	KOME 1310 250	KRRR 1500 100
Ogden, Utah	Tulsa, Okla.	Roseburg, Ore.
KLPM 1240 250	KOMO 920 1000	KRNT 1320 1000
Minot, N. D.	Seattle, Wash.	Des Moines, Iowa
KLRA 1390 1000	KONO 1370 100	KROC 1310 100
Little Rock, Ark.	San Antonio, Texas	Rochester, Minn.
KLS 1280 250	KOOS 1200 100	KROD 1500 100
Oakland, Calif.	Marshfield, Ore.	El Paso, Texas
KLUF 1370 100	KORE 1420 100	KROW 930 1000
Galveston, Texas	Eugene, Ore.	Oakland, Calif.
KLX 880 1000	KOTN 1500 100	KROY 1210 100
Oakland, Calif.	Pine Bluff, Ark.	Sacramento, Calif.
KLZ 560 1000	KOVC 1500 100	KROA 1310 100
Denver, Colo.	Valley City, N. Dak.	Santa Fe, N. Mex.
KMA 930 1000	KOY 1390 1000	KRRV 1310 250
Shenandoah, Iowa	Phoenix, Ariz.	Sherman, Texas
KMAC 1370 100	KPAB 1500 100	KRSC 1120 250
San Antonio, Texas	Laredo, Texas	Seattle, Wash.
KMBC 950 1000	KPAC 1260 500	KSAC 580 500
Kansas City, Mo.	Port Arthur, Texas	Manhattan, Kans.
KMED 1410 250	KPDN 1310 100	KSAL 1500 100
Medford, Ore.	Pampa, Texas	Salina, Kans.
KMJ 580 1000	KPFA 1210 100	KSAM 1500 100
Fresno, Calif.	Helena, Mont.	Hunsville, Texas
KMLB 1200 100	KPLC 1500 100	KSAN 1420 100
Monroe, La.	Lake Charles, La.	San Francisco, Calif.
KMMJ 740 1000	KPLT 1500 250	KSCJ 1330 1000
Clay Center, Neb.	Paris, Texas	Sioux City, Iowa
KMO 1330 1000	KPMC 1550 1000	KSD 550 1000
Tacoma, Wash.	Bakersfield, Calif.	St. Louis, Mo.
KMOX 1090 50000	KPO 680 50000	KSEI 900 250
St. Louis, Mo.	San Francisco, Calif.	Pocatello, Idaho
KMPC 710 500	KPOF 880 1000	KSFO 560 1000
Beverly Hills, Calif.	Denver, Colo.	San Francisco, Calif.
KMTR 570 1000	KPPC 1210 100	KSL 1130 50000
Los Angeles, Calif.	Pasadena, Calif.	Salt Lake City, Utah
KNEL 1500 250	KPO 1500 100	KSML 1370 100
Brady, Texas	Wenatchee, Wash.	Salem, Ore.
KNET 1420 100	KPRC 920 1000	KSO 1430 500
Palestine, Texas	Houston, Texas	Des Moines, Iowa
KNOW 1500 100	KQV 1380 500	KS00 1110 5000
Austin, Texas	Pittsburgh, Pa.	Sioux Falls, S. Dak.
KNX 1050 50000	KQW 1010 1000	KRSO 1310 100
Los Angeles, Calif.	San Jose, Calif.	Santa Rosa, Calif.
KOA 830 50000	KRBA 1310 100	KSTP 1460 10000
Denver, Colo.	Lufkin, Texas	St. Paul, Minn.
KOAC 550 1000	KRBC 1420 100	KSUB 1310 100
Corvallis, Ore.	Abilene, Texas	Cedar City, Utah
KOAM 790 1000	KRBM 1420 100	KSUN 1200 100
Pittsburg, Kans.	Bozeman, Mont.	Lowell, Ariz.
KOB 1180 10000	KRE 1370 100	KTAR 620 1000
Albuquerque, N. M.	Berkeley, Calif.	Phoenix, Ariz.
KOBH 1370 100	KRGV 1260 1000	KTAT 1240 1000
Rapid City, S. Dak.	Weslaco, Texas	Fort Worth, Texas
KOCA 1210 100	KRIC 1420 100	KTBC 1120 1000
Kilgore, Texas	Beaumont, Texas	Austin, Texas
KOCY 1310 100	KRIS 1330 500	KTBS 1450 1000
Oklahoma City, Okla.	Corpus Christi, Tex.	Shreveport, La.
KOH 1380 500	KRKD 1120 500	KTEM 1370 250
Reno, Nev.	Los Angeles, Calif.	Temple, Texas
KOIL 1260 1000	KRKO 1370 50	KTFI 1240 1000
Omaha, Neb.	Everett, Wash.	Twin Falls, Idaho
KOIN 940 1000	KRLC 1390 250	KTHS 1060 10000
Portland, Ore.	Lewiston, Idaho	Hot Springs, Ark.
KOKO 1370 100	KRLD 1040 10000	KTKC 1190 250
La Junta, Colo.	Dallas, Texas	Visalia, Calif.
KOL 1270 1000	KRLH 1420 100	KTMS 1220 500
Seattle, Wash.	Midland, Texas	Santa Barbara, Calif.
	KRMC 1370 100	
	Jamestown, N. Dak.	

NORTH AMERICAN B. C. STATIONS BY CALLS

KTOK 1370	100	KWJJ 1040	500	WAAT 940	500
Oklahoma City, Okla.		Portland, Ore.		Ferrey City, N. J.	
KTRB 740	250	KWK 1350	1000	WAAW 660	500
Modesto, Calif.		St. Louis, Mo.		Omaha, Neb.	
KTRH 1290	1000	KWKH 1100	10000	WABC 860	50000
Houston, Texas		Shreveport, La.		New York, N. Y.	
KTRI 1420	100	KWLC 1270	100	WABI 1200	100
Sioux City, Iowa		Decorah, Iowa		Bangor, Maine	
KTSA 550	1000	KWLK 780	250	WABY 1370	100
San Antonio, Texas		Longview, Wash.		Albany, N. Y.	
KTSM 1310	100	KWNO 1200	250	WACO 1420	100
El Paso, Texas		Winona, Minn.		Waco, Texas	
KTUL 1400	1000	KWOC 1310	100	WADC 1320	1000
Tulsa, Okla.		Poplar Bluff, Mo.		Akron, Ohio	
KTW 1220	1000	KWOS 1310	100	WAGA 1450	500
Seattle, Wash.		Jefferson City, Mo.		Atlanta, Ga.	
KUJ 1370	100	KWSC 1220	1000	WAGF 1370	250
Walla Walla, Wash.		Pullman, Wash.		Dothan, Ala.	
KUMA 1420	100	KWTO 560	5000	WAGM 1420	100
Yuma, Ariz.		Springfield, Mo.		Presque Isle, Me.	
KUOA 1260	5000	KWYO 1370	100	WAIM 1200	100
Siloam Springs, Ark.		Sheridan, Wyo.		Anderson, S. C.	
KUSD 890	500	KXA 760	250	WAIR 1250	250
Vermillion, S. Dak.		Seattle, Wash.		Winston-Salem, N. C.	
KUTA 1500	100	KXL 1420	100	WALA 1380	500
Salt Lake City, Utah		Portland, Ore.		Mobile, Ala.	
KVAK 1420	100	KXO 1500	100	WALR 1210	100
Atchison, Kans.		El Centro, Calif.		Zanesville, Ohio	
KVCV 1200	100	KXOK 1250	1000	WAML 1310	100
Redding, Calif.		St. Louis, Mo.		Laurel, Miss.	
KVEC 1200	100	KXRO 1310	100	WAPI 1140	5000
San Luis Obispo, Cal.		Aberdeen, Wash.		Birmingham, Ala.	
KVGB 1370	100	KXYZ 1440	1000	WPO 1420	100
Great Bend, Kans.		Houston, Texas		Chattanooga, Tenn.	
KVI 570	1000	KYA 1230	1000	WARD 1400	500
Tacoma, Wash.		San Francisco, Calif.		Brooklyn, N. Y.	
XV KVNU 1500	100	KYCA 1500	100	WASH 1270	500
Logan, Utah		Prescott, Ariz.		Grand Rapids, Mich.	
KVOA 1260	1000	KYOS 1040	250	WATL 1370	100
Tucson, Ariz.		Merced, Calif.		Atlanta, Ga.	
KVOD 920	500	KYSM 1500	100	WATR 1190	100
Denver, Colo.		Mankato, Minn.		Waterbury, Conn.	
KVOE 1500	100	KYW 1020	10000	WAVE 940	1000
Santa Ana, Calif.		Philadelphia, Pa.		Louisville, Ky.	
KVOL 1310	100	TGO 1450	200	WAWZ 1350	500
Lafayette, La.		Quezaltenango, Gnat.		Zarephath, N. J.	
KVOO 1140	25000	TGW 1520	1000	WAYX 1200	100
Tulsa, Okla.		Guatemala City, Gnat.		Waycross, Ga.	
KVOR 1270	1000	TGX 1400	....	WAZL 1420	100
Colo. Springs, Colo.		Guatemala City, Gnat.		Hazleton, Pa.	
KVOS 1200	100	TGI 1320	....	WBAA 890	500
Bellingham, Wash.		Guatemala City, Gnat.		West Lafayette, Ind.	
KVOX 1310	100	TIX 650	1000	WBAL 760	2500
Moorhead, Minn.		San Jose, Costa Rica		Baltimore, Md.	
KVRS 1370	100	VAS 685	2000	WBAL 1060	10000
Rock Springs, Wyo.		Glace Bay, N.S.		Baltimore, Md.	
KVSO 1210	100	VOAC 1065	40	WBAP 800	50000
Ardmore, Okla.		St. John's Nfld.		Fort Worth, Texas	
KVWC 1500	100	VOCM 1006	200	WBAX 1210	100
Vernon, Texas		St. John's Nfld.		Wilkes-Barre, Pa.	
KWBG 1420	100	VOGY 840	400	WBBC 1400	500
Hutchinson, Kans.		St. John's Nfld.		Brooklyn, N. Y.	
KWEW 1500	100	VONF 1195	500	WBBL 1210	100
Hobbs, N. Mex.		St. John's Nfld.		Richmond, Va.	
X KWFT 620	250	VOWR 681	500	WBGM 770	50000
Wichita Falls, Texas		St. John's Nfld.		Chicago, Ill.	
KWG 1200	100	WAAB 1410	500	WBRR 1300	1000
Stockton, Calif.		Boston, Mass.		Brooklyn, N. Y.	
KWJB 1210	100	WAAF 920	1000	WBBZ 1200	100
Globe, Ariz.		Chicago, Ill.		Ponca City, Okla.	

NORTH AMERICAN B. C. STATIONS BY CALLS

WBCM 1410	500	WCBM 1370	100	WDCR 1330	1000
Bay City, Mich.		Baltimore, Md.		Hartford, Conn.	
WBEW 900	1000	WCBS 1420	100	WDSM 1200	100
Buffalo, N. Y.		Springfield, Ill.		Superior, Wis.	
WBEO 1310	100	WCCO 810	50000	WDSU 1250	1000
Marquette, Mich.		Minneapolis, Minn.		New Orleans, La.	
WBHP 1200	100	WCFL 970	5000	WDWS 1370	100
Huntsville, Ala.		Chicago, Ill.		Champaign, Ill.	
WBIG 1440	1000	WCHS 580	500	WDZ 1020	250
Greensboro, N. C.		Charleston, W. Va.		Tuscola, Ill.	
WBIL 1100	5000	WCHV 1420	100	WEAF 660	50000
New York, N. Y.		Charlottesville, Va.		New York, N. Y.	
WBLK 1370	100	WCKY 1490	10000	WEAN 780	1000
Clarksburg, W. Va.		Covington, Ky.		Providence, R. I.	
WBLY 1210	100	WCLE 610	500	WEAU 1050	1000
Lima, Ohio		Cleveland, Ohio		Eau Claire, Wis.	
WBNO 1200	100	WCLO 1200	100	WEBC 1290	1000
New Orleans, La.		Janesville, Wis.		Duluth, Minn.	
WBNS 1430	1000	WCLS 1310	100	WEBQ 1210	100
Columbus, Ohio		Toliet, Ill.		Harrisburg, Ill.	
WBNX 1350	1000	WCMI 1310	100	WEBR 1310	100
New York, N. Y.		Ashland, Ky.		Buffalo, N. Y.	
WBNY 1370	100	WCNW 1500	100	WEDC 1210	100
Buffalo, N. Y.		Brooklyn, N. Y.		Chicago, Ill.	
WBOO 860	50000	WCOA 1340	500	WEED 1420	100
New York, N. Y.		Pensacola, Fla.		Rocky Mount, N. C.	
WBOW 1310	100	WCOC 880	1000	WEFI 590	1000
Terre Haute, Ind.		Meridien, Miss.		Boston, Mass.	
WBRB 1210	100	WCOL 1210	100	WEIU 830	1000
Red Bank, N. J.		Columbus, Ohio		Reading, Pa.	
WBRC 930	1000	WCOP 1120	500	WELI 900	500
Birmingham, Ala.		Boston, Mass.		New Haven, Conn.	
WBRE 1310	100	WCOS 1370	100	WELL 1420	100
Wilkes-Barre, Pa.		Columbia, S. C.		Battle Creek, Mich.	
WBRK 1310	100	WCOU 1210	100	WFMP 1310	100
Pittsfield, Mass.		Lewiston, Maine		Milwaukee, Wis.	
WBRV 1530	1000	WCOV 1210	100	WENR 870	50000
Waterbury, Conn.		Montgomery, Ala.		Chicago, Ill.	
WBT 1080	50000	WCPO 1200	100	WENY 1200	250
Charlotte, N. C.		Cincinnati, Ohio		Elmira, N. Y.	
WBTM 1370	100	WCRW 1210	100	WEOA 1370	100
Danville, Va.		Chicago, Ill.		Evansville, Ind.	
WBZ 990	50000	WCSC 1360	500	WESG 850	1000
Boston, Mass.		Charleston, S. C.		Elmira, N. Y.	
WBZA 990	1000	WCSH 940	1000	WEST 1200	100
Springfield, Mass.		Portland, Me.		Easton, Pa.	
WCAD 1220	500	WDAE 1220	1000	WEVD 1300	1000
Canton, N. Y.		Tampa, Fla.		New York, N. Y.	
WCAE 1220	1000	WDAF 610	1000	WEW 760	1000
Pittsburgh, Pa.		Kansas City, Mo.		St. Louis, Mo.	
WCAL 760	1000	WDAH 1310	100	WEXL 1310	50
Northfield, Minn.		El Paso, Texas		Royal Oak, Mich.	
WCAM 1280	500	WDAN 1500	250	WFAA 800	50000
Camden, N. J.		Danville, Ill.		Dallas, Texas	
WCAO 600	1000	WDAS 1370	100	WFAB 1300	1000
Baltimore, Md.		Philadelphia, Pa.		New York, N. Y.	
WCAP 1280	500	WDAY 940	1000	WFAM 1200	100
Asbury Park, N. J.		Fargo, N. Dak.		South Bend, Ind.	
WCAT 1200	100	WDBJ 930	1000	WFAS 1210	100
Rapid City, S. Dak.		Roanoke, Va.		White Plains, N. Y.	
WCAU 1170	50000	WDBO 580	1000	WFBC 1300	1000
Philadelphia, Pa.		Orlando, Fla.		Greenville, S. C.	
WCAX 1200	100	WDEL 1120	250	WFBG 1310	100
Burlington, Vt.		Wilmington, Del.		Altoona, Pa.	
WCAZ 1070	100	WDEV 550	500	WFBL 1360	1000
Carthage, Ill.		Waterbury, Vt.		Syracuse, N. Y.	
WCBA 1440	500	WDGY 1180	1000	WFEM 1230	1000
Allentown, Pa.		Minneapolis, Minn.		Indianapolis, Ind.	
WCBD 1080	5000	WDNC 1500	100	WFR 1270	500
Chicago, Ill.		Durham, N. C.		Baltimore, Md.	
		WDOD 1280	1000		
		Chattanooga, Tenn.			

NORTH AMERICAN B. C. STATIONS BY CALLS

WDFD 1310	100	WHAM 1150	50000	WIBM 1370	100
Flint, Mich.		Rochester, N. Y.		Jackson, Mich.	
WFEA 1340	500	WHAS 820	50000	WIBU 1210	100
Manchester, N. H.		Louisville, Ky.		Poynette, Wis.	
WFIL 560	1000	WHAT 1310	100	WIBW 580	1000
Philadelphia, Pa.		Philadelphia, Pa.		Topeka, Kans.	
WFLA 620	1000	WHAZ 1300	1000	WIBX 1200	100
Tampa, Fla.		Troy, N. Y.		Utica, N. Y.	
WFMD 900	500	WHB 860	1000	WICA 940	250
Frederick, Md.		Kansas City, Mo.		Ashtabula, Ohio	
WFMJ 1420	100	WHBB 1500	100	WICC 600	500
Youngstown, Ohio		Selma, Ala.		Bridgeport, Conn.	
WFNC 1340	250	WHBC 1200	100	WIL 1200	100
Fayetteville, N. C.		Canton, Ohio		St. Louis, Mo.	
WFOR 1370	100	WHBF 1210	100	WILL 580	1000
Hattiesburg, Miss.		Rock Island, Ill.		Urbana, Ill.	
WFOY 1210	100	WHBI 1250	1000	WILM 1420	100
St. Augustine, Fla.		Newark, N. J.		Wilmington, Del.	
WFTC 1200	100	WHBL 1300	250	WIND 560	1000
Kinston, N. C.		Sheboygan, Wis.		Gary, Ind.	
WGAL 1500	100	WHBQ 1370	100	WINS 1180	1000
Lancaster, Pa.		Memphis, Tenn.		New York, N. Y.	
WGAN 640	500	WHBU 1210	100	WIOD 610	1000
Portland, Me.		Anderson, Ind.		Miami, Fla.	
WGAR 1450	500	WHBY 1200	100	WIP 610	1000
Cleveland, Ohio		Green Bay, Wis.		Philadelphia, Pa.	
WGAU 1310	100	WHDF 1370	100	WIRE 1400	1000
Athens, Ga.		Calumet, Mich.		Indianapolis, Ind.	
WGBB 1210	100	WHDD 830	1000	WIS 560	1000
Freeport, N. Y.		Boston, Mass.		Columbia, S. C.	
WGBF 630	500	WHDL 1400	250	WISN 1120	250
Evansville, Ind.		Olean, N. Y.		Milwaukee, Wis.	
WGBI 880	500	WHEB 740	250	WJAC 1310	100
Scranton, Pa.		Portsmouth, N. H.		Johnstown, Pa.	
WGCM 1210	100	WHEC 1430	500	NJAG 1060	1000
Gulfport, Miss.		Rochester, N. Y.		Norfolk, Neb.	
WGES 1360	500	WHEF 1500	100	WJAR 890	1000
Chicago, Ill.		Kosciusko, Miss.		Providence, R. I.	
WGH 1310	100	WHFC 1420	100	WJAS 1290	1000
Newport News, Va.		Cicero, Ill.		Pittsburgh, Pa.	
WGIL 1500	250	WHIO 1260	1000	WJAX 900	1000
Galesburg, Ill.		Dayton, Ohio		Jacksonville, Fla.	
WGL 1370	100	WHIP 1480	5000	WJBC 1200	100
Fort Wayne, Ind.		Hammond, Ind.		Bloomington, Ill.	
WGKV 1500	100	WHIS 1410	500	WJBK 1500	100
Charleston, W. Va.		Bluefield, W. Va.		Detroit, Mich.	
WGN 720	50000	WHJB 620	250	WJBL 1200	100
Chicago, Ill.		Greensburg, Pa.		Decatur, Ill.	
WGNC 1420	100	WHK 1390	1000	WJBO 1120	500
Castonia, N. C.		Cleveland, Ohio		Baton Rouge, La.	
WGNY 1210	100	WHKC 640	500	WJBW 1200	100
Newburgh, N. Y.		Columbus, Ohio		New Orleans, La.	
WGPC 1420	100	WHLB 1370	100	WJBY 1210	100
Albany, Ga.		Virginia, Minn.		Gadsden, Ala.	
WGR 550	1000	WHLS 1370	250	WJDX 1270	1000
Buffalo, N. Y.		Port Huron, Mich.		Jackson, Miss.	
WGRC 1370	250	WHMA 1420	100	WJEJ 1210	100
New Albany, Ind.		Anniston, Ala.		Hagerstown, Md.	
WGRM 1210	100	WHN 1010	1000	WJHL 1200	100
Grenada, Miss.		New York, N. Y.		Johnson City, Tenn.	
WGST 890	1000	WHO 1000	50000	WJIM 1210	100
Atlanta, Ga.		Des Moines, Iowa		Lansing, Mich.	
WGTM 1310	100	WHOM 1450	250	WJJD 1130	20000
Wilson, N. C.		Jersey City, N. J.		Chicago, Ill.	
WGY 790	50000	WHP 1430	500	WJMC 1210	250
Schenectady, N. Y.		Harrisburg, Pa.		Rice Lake, Wis.	
WHA 940	5000	WIBA 1280	1000	WJMS 1420	100
Madison, Wis.		Madison, Wis.		Ironwood, Mich.	
WHA1 1210	250	WIBC 1050	1000	WJNO 1200	100
Greenfield, Mass.		Indianapolis, Ind.		W. Palm Beach, Fla.	
WHA2 950	500	WIBG 970	100		
Saginaw, Mich.		Glenside, Pa.			

NORTH AMERICAN B. C. STATIONS BY CALLS

WJR 750 50000	WLNH 1310 100	WNAD 1010 1000
Detroit, Mich.	Laconia, N. H.	Norman, Okla.
WJRD 1200 250	WLS 870 50000	WNAX 570 1000
Tuscaloosa, Ala.	Chicago, Ill.	Yankton, S. D.
WJSV 1460 10000	WLTH 1400 500	WNBC 1380 250
Washington, D. C.	Brooklyn, N. Y.	New Britain, Conn.
WJTN 1210 100	WLVA 1200 100	WNBK 1500 100
Jamestown, N. Y.	Lynchburg, Va.	Binghamton, N. Y.
WJW 1210 100	WLW 700 500000	WNBH 1310 100
Akron, Ohio	Cincinnati, Ohio	New Bedford, Mass.
WJZ 760 50900	WMAL 630 250	WNBX 1260 500
New York, N. Y.	Washington, D. C.	Springfield, Vt.
WKAQ 1240 1000	WMAQ 670 50000	WNBZ 1290 100
San Juan, P. R.	Chicago, Ill.	Saranac Lake, N. Y.
WKAR 850 1000	WMAS 1420 100	WNEL 1290 1000
East Lansing, Mich.	Springfield, Mass.	San Juan, P. R.
WKAT 1500 100	WMAZ 1180 1000	WNEW 1250 1000
Miami Beach, Fla.	Macon, Ga.	New York, N. Y.
WKBB 1500 100	WMBC 1420 100	WNLC 1500 100
East Dubuque, Ill.	Detroit, Mich.	New London, Conn.
WKBH 1380 1000	WMBD 1440 1000	WNOX 1010 1000
LaCrosse, Wis.	Peoria, Ill.	Knoxville, Tenn.
WKBN 570 500	WMBF 610 1000	WNYC 810 1000
Youngstown, Ohio	Miami, Fla.	New York, N. Y.
WKBO 1200 100	WMBG 1350 500	WOAI 1190 50000
Harrisburg, Pa.	Richmond, Va.	San Antonio, Texas
WKBV 1500 100	WMBH 1420 100	WOC 1370 100
Richmond, Ind.	Joplin, Mo.	Davenport, Iowa
WKBW 1480 5000	WMBI 1080 5000	WOCB 1210 100
Buffalo, N. Y.	Chicago, Ill.	Cape Cod, Mass.
WKBZ 1500 100	WMBO 1310 100	WOI 640 5000
Muskegon, Mich.	Auburn, N. Y.	Ames, Iowa
WKEU 1500 100	WMBR 1370 100	WOKO 1430 500
Griffin, Ga.	Jacksonville, Fla.	Albany, N. Y.
WKOK 1210 100	WMBS 1420 250	WOL 1310 1000
Sunbury, Pa.	Uniontown, Pa.	Washington, D. C.
WKRC 550 1000	WMC 780 1000	WOLS 1200 100
Cincinnati, Ohio	Memphis, Tenn.	Florence, S. C.
WKST 1250 250	WMCA 570 1000	WOMI 1500 100
New Castle, Pa.	New York, N. Y.	Owensboro, Ky.
WKY 900 1000	WMEX 1500 100	WOMT 1210 100
Oklahoma City, Okla.	Boston, Mass.	Manitowoc, Wis.
WKZO 590 1000	WMFD 1370 100	WOOD 1270 500
Kalamazoo, Mich.	Wilmington, N. C.	Grand Rapids, Mich.
WLAC 1470 5000	WMFF 1310 100	WOPI 1500 100
Nashville, Tenn.	Plattsburg, N. Y.	Bristol, Tenn.
WLAK 1310 100	WMFG 1210 100	WOR 710 50000
Lakeland, Fla.	Hibbing, Minn.	Newark, N. J.
WLAP 1420 100	WMFJ 1420 100	WORC 1280 500
Lexington, Ky.	Dayton Beach, Fla.	Worcester, Mass.
WLAW 680 1000	WMFO 1370 100	WORK 1320 1000
Lawrence, Mass.	Decatur, Ala.	York, Pa.
WLB 760 1000	WMFR 1200 100	WORL 920 500
Minneapolis, Minn.	High Point, N. C.	Boston, Mass.
WLBC 1310 100	WMIN 1370 100	WOSU 570 750
Muncie, Ind.	St. Paul, Minn.	Columbus, Ohio
WLBL 900 5000	WMMN 890 500	WOW 1130 1000
Stevens Point, Wis.	Fairmont, W. Va.	New York, N. Y.
WLBZ 620 500	WMPC 1200 100	WOW 590 1000
Rangor, Me.	Lapeer, Mich.	Omaha, Neb.
WLEU 1420 100	WMPS 1430 500	WOWO 1160 10000
Erie, Pa.	Memphis, Tenn.	Fort Wayne, Ind.
WLLH 1370 100	WMRO 1250 250	WPAD 1420 100
Lawrence, Mass.	Aurora, Ill.	Paducah, Ky.
WLLH 1370 100	WMSD 1420 100	WPAR 1420 100
Lowell, Mass.	Muscle Shoals C., Ala.	Parkersburg, W. Va.
	WMT 600 1000	WPAX 1210 100
	Cedar Rapids, Iowa	Thomasville, Ga.
	WNAC 1230 1000	
	Boston, Mass.	

NORTH AMERICAN B. C. STATIONS BY CALLS

	WPAY 1370	100		WSAL 1200	250		WTAQ 1330	1000
	Portsmouth, Ohio			Salisbury, Md.			Green Bay, Wis.	
	WPEN 920	1000		WSAN 1440	500		WTAR 780	1000
	Philadelphia, Pa.			Allentown, Pa.			Norfolk, Va.	
	WPG 1100	5000		WSAR 1450	1000		WTAW 1120	500
	Atlantic City, N. J.			Fall River, Mass.			College Station, Tex.	
	WPIC 780	250		WSAU 1370	100		WTAX 1210	100
	Sharon, Pa.			Wausau, Wis.			Springfield, Ill.	
X	WPIV 1210	100	X	WSAV 1310	100		WTBO 800	250
	Petersburg, Va.			Savannah, Ga.			Cumberland, Md.	
	WPRA 1370	100		WSAY 1210	100		WTCN 1250	1000
	Mayaguez, P. R.			Rochester, N. Y.			Minneapolis, Minn.	
	WPRO 630	500		WSAZ 1190	1000		WTEL 1310	100
	Providence, R. I.			Huntington, W. Va.			Philadelphia, Pa.	
	WPRP 1420	100		WSB 740	50000		WTHT 1200	100
	Ponce, P. R.			Atlanta, Ga.			Hartford, Conn.	
	WPTF 680	5000		WSBC 1210	100		WTIC 1040	50000
	Raleigh, N. C.			Chicago, Ill.			Hartford, Conn.	
	WQAM 560	1000		WSEB 1360	500		WTJS 1310	100
	Miami, Fla.			South Bend, Ind.			Jackson, Tenn.	
	WQAN 880	500		WSFA 1410	500	X	WTMA 1210	100
	Scranton, Pa.			Montgomery, Ala.			Charleston, S. C.	
	WQBC 1360	1000		WSGN 1310	100		WTMJ 620	1000
	Vicksburg, Miss.			Birmingham, Ala.			Milwaukee, Wis.	
	WQDM 1390	1000		WSIX 1210	100		WTMV 1500	100
	St. Albans, Vt.			Nashville, Tenn.			East St. Louis, Ill.	
	WQXR 1550	1000		WSJS 1310	100		WTNJ 1280	500
	New York, N. Y.			Winston-Salem, N. C.			Trenton, N. J.	
	WRAC 1370	100		WSLI 1420	100		WTOC 1260	1000
	Williamsport, Pa.			Jackson, Miss.			Savannah, Ga.	
X	WRAL 1210	100	X	WSM 650	50000		WTOL 1200	100
	Raleigh, N. C.			Nashville, Tenn.			Toledo, Ohio	
	WRAW 1310	100		WSMB 1320	1000		WTRC 1310	100
	Reading, Pa.			New Orleans, La.		X	Elkhart, Ind.	
	WRAX 920	1000		WSMK 1380	200		WTRY 950	1000
	Philadelphia, Pa.			Dayton, Ohio			Troy, N. Y.	
	WRBL 1200	100		WSNJ 1210	100		WVFW 1400	500
	Columbus, Ga.			Bridgeton, N. J.			Brooklyn, N. Y.	
	WRC 950	1000		WSOC 1210	100		WWAE 1200	100
	Washington, D. C.			Charlotte, N. C.			Hammond, Ind.	
	WRDO 1370	100		WSPA 920	1000		WWJ 920	5000
	Augusta, Me.			Spartanburg, S. C.			Detroit, Mich.	
	WRDW 1500	100		WSPD 1340	1000		WWL 850	10000
	Augusta, Ga.			Toledo, Ohio			New Orleans, La.	
	WREC 600	1000		WSPR 1140	500		WWNC 570	1000
	Memphis, Tenn.			Springfield, Mass.			Asheville, N. C.	
	WREN 1220	1000	X	WSTP 1500	100		WWRL 1500	100
	Lawrence, Kans.			Salisbury, N. C.			Woodside, N. Y.	
	WRGA 1500	100		WSUI 880	500		WWSW 1500	100
	Rome, Ga.			Iowa City, Iowa			Pittsburgh, Pa.	
	WRJN 1370	100		WSUN 620	1000		WWVA 1160	5000
	Racine, Wis.			St. Petersburg, Fla.			Wheeling, W. Va.	
	WRNL 880	500		WSVA 550	500		WXYZ 1240	1000
	Richmond, Va.			Harrisonburg, Va.			Detroit, Mich.	
	WROK 1410	500		WSVS 1370	50		W3XDD ...	5000
	Rockford, Ill.			Buffalo, N. Y.			Whippany, N. J.	
	WROL 1310	100		WSYB 1500	100		W3XJ 1060	100
	Knoxville, Tenn.			Rutland, Vt.			College Park, Md.	
	WRR 1280	500		WSYR 570	1000		XEAA 750	200
	Dallas, Texas			Syracuse, N. Y.			Mexicali, B. C.	
	WRTD 1500	100		WSYU 570	1000		XEAC 980	1000
	Richmond, Va.			Syracuse, N. Y.			Guiana, L. C.	
	WRUF 830	5000		WTAD 900	1000		XEAF 990	750
	Gainesville, Fla.			Quincy, Ill.			Nocales, Son.	
	WRVA 1110	5000		WTAG 580	1000		XEAG 1310	10
	Richmond, Va.			Worcester, Mass.			Cordoba, Ver.	
	WSAI 1330	1000		WTAL 1310	100		XEAI 1250	500
	Cincinnati, Ohio			Tallahassee, Fla.			Mexico City, D. F.	
	WSAJ 1310	100		WTAM 1070	50000		XEAL 660	1000
	Grove City, Pa.			Cleveland, Ohio			Mexico City, D. F.	

NORTH AMERICAN B. C. STATIONS BY CALLS

XEAM 750 25	XEDP 1080 500	XENC 860 50
Matamoros, Tams.	Mexico City, D. F.	Mexico City, D. F.
XEAO 660 250	XEDR 1490 100	XENT 910 150000
Mexicali, B. C.	Guaymas, Son.	Nuevo Laredo, Tams.
XEAP 1340 50	XEDW 1150 20	XEOJ
Oregon, Son.	Minatitlan, Ver.	
XEAS 1160 100	XEE 1210 50	XEOK 760 2500
Saltillo, Coah.	Durango, Dgo.	Tijuana, L. C.
XEAT 1210 250	XEF 1450 100	XEP 1160 500
Parral, Chih.	Juarez, Chih.	Juarez, Chih.
XEAW 960 100000	XEFB 870 200	XEPN 730 100000
Reynosa, Tams.	Monterrey, N. L.	Piedras Negras, Coah.
XEB 1030 10000	XEFC 1340 100	XEQ 710 50000
Mexico City, D. F.	Merida, Yuc.	Tijuana, L. C.
XEBA 1080 20	XEFE 980 250	XERA 840 250000
Guzman, Jal.	Nuevo Laredo, Tams.	Villa Acuna, Coah.
XEBG 820 1000	XEFI 1440 250	XERB 730 100000
Tijuana, B. Cfa.	Chihuahua, Chih.	Rosarito Beach, B. Cfa.
XEBH 930 500	XEFO 940 5000	XES 990 250
Hermosillo, Sonora	Mexico City, D. F.	Tampico, Tams.
XEBI 1000 25	XEFQ 1010 50	XET 690 5000
Aguascalientes, Ags.	Cananea, Son.	Monterrey, N. L.
XEBK 1080 100	XEFV 1210 100	XETB 1310 125
Neuvo Laredo, Tams.	Juarez, Chih.	Torreón, Coah.
XEBL 1220 50	XEFW 1310 300	XETH 1210 100
Mazatlan, Sin.	Tampico, Tams.	Puebla, Pue.
XEBO 1310 25	XEG 1230 250	XEU 1010 250
Irapuato, Guan.	Monterrey, N. L.	Veracruz, Ver.
XEBP 1150 250	XEH 720 250	XEW 890 50000
Durango, Dgo.	Monterrey, N. L.	Mexico City, D. F.
XEBS 1340 200	XEI 1370 125	XEX 1310 125
Mexico City, D. F.	Morelia, Mich.	Monterrey, N. L.
XEBU 1240 50	XEJ 1020 1000	XEXB 1270 250
Chihuahua, Chih.	Juarez, Chih.	Jalapa, Ver.
XEBX 640 250	XEJP 1130 100	XEXD 1340 350
Sabinas, Coah.	Mexico City, D. F.	Jalapa, Ver.
XEBZ 810 100	XEK 990 100	XEXE 1270 17
Mexico City, D. F.	Mexico City, D. F.	Texcoco, D. F.
XEC 1150 100	XEKL 1240 500	XEXH 1250 250
Tijuana, L. C.	Leon, Guan.	San Luis Potosi, S. L. P.
XECA 1230 250	XEL 1100 250	XEXM 610 500
Tampico, Tam.	Mexico City, D. F.	Mexico City, D. F.
XECL 1230 250	XEW 890 100000	XEXS 1310 100
Tampico, Tam.	Tijuana, B. Cfa.	Mexico City, D. F.
XECZ 1370 100	XELZ 1370 100	XEXX 1170 1000
San Luis Potosi, S. L. P.	Mexico City, D. F.	Mexico City, D. F.
XED 1160 2500	XEME 1240 50	XEYO 610 500
Guadalajara, Jal.	Merida, Yuc.	Mexico City, D. F.
XEDA 1220 200	XEMO 860 5000	XEZ 630 500
Gral. Anava, D. F.	Tijuana, L. C.	Merida, Yuc.
XEDF 810 100	XEMU 580 250	YSS 640 500
Nuevo Laredo, Tams.	Piedras Negras, Coah.	San Salvador, E. S.
XEDH 1340 200	XEMX 1280 100	ZNS 540 400
Villa Acuna, Coah.	Mexico City, D. F.	Nassau, Bahamas
	XEN 780 1000	
	Mexico City, D. F.	

NEXT MONTH IN RADEX—We are very pleased to announce that we have arranged to have a Twenty Meter Amateur column written for us each month, commencing with the January issue. We are sorry that the writer prefers to remain anonymous, but we assure our readers that he is an experienced shortwave listener, and has had unusual success on

the amateur bands. We are sure that all our readers who enjoy listening to 14 megacycles, will enjoy reading this instructive and well-written column. There will be pictures of amateur cards, and of well-known "ham" stations, as well as the regular "Amateur Calls Heard" column.

BROADCASTING STATIONS OF NORTH AMERICA

Compiled from RADEX records, with the assistance of Ed M. Vickers.

This supplementary call letter index began in the September, 1938 issue of RADEX, and will appear on these pages every month until completed.

The abbreviations used throughout this list are familiar to all our readers, except perhaps "CP" for Construction Permit, "LS" for Local Sunset, and "ss" for sunset.

- KGGO, San Francisco, Calif., 790 kcs., 7500 w. unlt'd. *Network:* NBC Blue. *Transmitter:* 54th Ave. and E. 18th St., Oakland. *Aerial:* 2 towers, 150 ft. *Manager:* Lloyd E. Yoder. *Owner:* National Broadcasting Co., 111 Sutter St.
- KGU, Honolulu, Hawaii, 750 kcs., 2500 w., Ltd. *Network:* NBC. *Aerial:* 2 towers, 160 ft. *Manager:* Marion A. Mulrony. *Owner:* Advertiser Publishing Co., Ltd., Advertiser Square.
- KGVL, Greenville, Texas, 1200 kcs., 100 w. to LS. *Transmitter:* 2610 Washington St. *Aerial:* vertical, 205 ft. *Owner:* Fred Horton. *Licensee:* Huat broadcasting Association.
- KGVO, Missoula, Mont., 1260 kcs., 1 kw nights, 5 kw to LS, unlt'd. *Network:* CBS. *Aerial:* vertical, 220 ft. *Manager:* A. J. Mosby. *Licensee:* Mosby's, Inc., 240 N. Higgins Ave.
- KGW, Portland, Ore., 620 kcs., 1000 w. nights, 5 kw to LS, unlt'd. *Networks:* NBC Red and Northwest Triangle. *Transmitter:* North Portland. *Aerial:* vertical, 625 ft. *Manager:* W. Carey Jennings. *Licensee:* Oregonian Publishing Co., 325 Adler St.
- KGY, Olympia, Wash., 1210 kcs., 100 w. ltd. *Network:* Mutual. *Aerial:* 2 towers, 75 ft. *Manager:* W. R. Taft. *Licensee:* KGY, Inc., 11th and Capitol Way.
- KHBC, HILO, Hawaii, 1400 kcs., 250 w. unlt'd. *Networks:* CBS and MBS. *Transmitter:* 1283 Kalaniana'ole St. *Aerial:* vertical, 179 ft. *Manager:* Webley Edwards. *Licensee:* Honolulu Broadcasting Co., Ltd., Box 595.
- KHBG, Okmulgee, Okla., 1210 kcs., 100 w. to LS. *Aerial:* vertical, 204 ft. *Manager:* Thomas R. Putnam. *Licensee:* Okmulgee Broadcasting Corp., Parkinson Hotel.
- KHJ, Los Angeles, Calif., 900 kcs., 1000 w. nights, 5 kw to LS, unlt'd. *Network:* MBS. *Transmitter:* 1076 W. Seventh St. *Aerial:* 2 towers, 125 ft. *Manager:* Lewis Allen Weiss. *Licensee:* Don Lee Brdcastg. System, 7th and Bixel Sts.
- KHQ, Spokane, Wash., 590 kcs., 1 kw nights, 5 kw to LS, unlt'd. *Network:* NBC Red and Northwest Triangle. *Aerial:* vertical, 893 ft. *Manager:* Harvey Wixson. *Licensee:* Louis Wasmer, Inc., Sprague and Post.
- KHSL, Chico, Calif., 1260 kcs., 250 w. unlt'd. *Trans:* Hooker, Oak, and Madrone Ave. *Aerial:* vertical 270 ft. *Manager:* Harold Smithson. *Licensee:* Golden Empire Brdcastg. Co.
- KHUB, Watsonville, Calif., 1310 kcs., 250 w. to LS. *Aerial:* vertical, 185 ft. *Manager:* John H. Bennett. *Licensee:* John P. Scripps.
- KICA, Clovis, N. Mex., 1370 kcs., 100 w. Specified Hours, Shares with KGFL. *Aerial:* vertical, 179 ft. *Manager:* Chas. C. Alsup. *Licensee:* Western Broadcasters, Inc., 412 Pile St. (P. O. Box 111).
- KID, Idaho Falls, Idaho, 1320 kcs., 500 w. nights, 1 kw to LS, unlt'd. *Aerial:* vertical, 330 ft. *Permit:* for 5 kw to LS. *Manager:* Jack W. Duckworth. *Licensee:* KID Brdcastg. Co., B. W. & M. Bldg. (P. O. Box 487).
- KIDO, Boise, Idaho, 1350 kcs., 1 kw nights, 2500 w. to LS, unlt'd. *Network:* NBC. *Trans:* 4½ miles west of Boise. *Aerial:* vertical, 235 ft. *Permit:* for 5 kw to LS. *Manager:* C. G. Phillips. *Licensee:* Boise Brdcastg. Station, Hotel Boise.
- KIDW, Lamar, Colo., 1420 kcs., 100 w., Specified Hours, Shares with KGIW. *Aerial:* 2 towers, 60 ft. *Manager:* Sherrill Ellsworth. *Licensee:* Southwest Brdcastg. Co., 129 W. Elm St.
- KIEM, Eureka, Calif., 1450 kcs., 500 w. night, 1 kw to LS, unlt'd. *Network:* MBS. *Trans:* Humboldt Bay. *Aerial:* vertical, 168 ft. *Manager:* Wm. B. Smullin. *Licensee:* Redwood Brdcastg. Co., Inc., Vance Hotel.
- KIEV, Glendale, Calif., 850 kcs., 250 w. to LS. *Aerial:* 2 towers, 137 ft. *Owner:* David H. Cannon. *Licensee:* Cannon System, Ltd., 701 E. Broadway.
- KINY, Juneau, Alaska, 1310 kcs., 100 w. unlt'd. *Trans:* A-J Rock Dump. *Aerial:* vertical, 145 ft. *Permits:* 1430 kcs, 250 w. unlt'd. *Manager:* C. B. Arnold. *Licensee:* Edwin A. Kraft, Goldstein Bldg.
- KIRO, Seattle, Wash., 710 kcs., 1000 w. unlt'd. (This power and frequency under Special Authorization—assigned 650 kcs., 250 w. ltd.) *Network:* CBS. *Aerial:* 2 towers, 120 ft. *Manager:* H. J. Quilliam. *Licensee:* Queen City Brdcastg. Co., 66 Cobb Bldg.
- KIT, Yakima, Wash., 1250 kcs., 250 w. nights, 500 w. to LS, unlt'd. *Network:* MBS. *Aerial:* vertical, 195 ft. *Permit:* for 500 w. nights, 1 kw to LS. *Manager:* James A. Murphy. *Licensee:* Carl E. Haymond, 109½ E. Yakima Ave.
- KITE, Kansas City, Mo., 1530 kcs., 1 kw. unlt'd. *Trans:* 86 Terrace and Summit. *Aerial:* vertical, 142 ft. and 3 reflectors, 120 ft. *Manager:* Sidney Q. Noel. *Licensee:* First National Television, Inc., 106 W. 14th St., Power & Light Bldg.
- KIUL, Garden City, Kans., 1210 kcs., 100 w. unlt'd. *Trans:* Warren Terrace, Garden City. *Aerial:* 2 towers, 100 ft. *Manager:* F. D. Conard. *Licensee:* Garden City Brdcastg. Co., 440 N. Main St.
- KIUN, Pecos, Texas, 1420 kcs., 100 w. unlt'd. *Aerial:* vertical, 164 ft. *Manager:* Jack Hawkins. *Licensee:* Jack W. Hawkins and B. H. Tubbs, KIUN Bldg.
- KIUP, Durango, Colo., 1370 kcs., 100 w. unlt'd. *Aerial:* vertical, 180 ft. *Manager:* Ray M. Beckner. *Licensee:* San Juan Brdcastg. Co., 2800 Main St.
- KJBS, San Francisco, Calif., 1070 kcs., 500 w. Ltd. *Network:* Northern California. *Trans:* 1470 Pine St. *Aerial:* vertical, 250 ft. *Manager:* Ralph R. Brunton. *Licensee:* Julius Brunton & Sons Co., 1380 Bush St.

- KJR, Seattle, Wash., 970 kcs., 5 kw. unlt'd. *Network:* NBC Blue, Northwest Triangle. *Trans:* 2600 26th Ave., S. W. *Aerial:* vertical, 570 ft. *Manager:* Charles A. Bailie. *Licensee:* Fishers Blend Station, Inc., Skinner Bldg.
- KLAH, Carlsbad, N. Mex., 1210 kcs., 100 w. nights, 250 w. to LS, unlt'd. *Aerial:* vertical, 183 ft. *Manager:* Jack Hawkins. *Licensee:* Carlsbad Brdctsg. Co., Crawford Hotel.
- KLBM, La Grande, Ore., 1420 kcs., 100 w. nights, 250 w. to LS, unlt'd. *Aerial:* vertical, 173 ft. *Manager:* Harold M. Finley and Mrs. Eloise Finley.
- KLCN, Blytheville, Ark., 1290 kcs., 100 w. to LS. *Licensee:* Charles Leo Lintzenich, Main and Division Sts.
- KLO, Ogden, Utah, 1400 kcs., 500 w. unlt'd. *Network:* NBC Blue. *Trans:* Riverdale. *Aerial:* vertical, 144 ft. *Manager:* Paul R. Heitmeyer. *Licensee:* Interstate Brdctsg. Corp., Hotel Ben Lomond.
- KLPM, Minot, N. Dak., 1240 kcs., 250 w. Shared with KGCU. *Aerial:* vertical, 180 ft. *Permit:* 1360 kcs., 500 w. night, 1 kw to LS, unlt'd. *Manager:* Richard J. Schmidt. *Licensee:* John P. Cooley, Fair Block (P. O. Box 707).
- KLRA, Little Rock, Ark., 1390 kcs., 1000 w. nights, 5 kw. to LS, Unlt'd. *Network:* CBS. *Trans:* N. Little Rock, P. O. Box 550. *Aerial:* vertical, 300 ft. *Manager:* S. C. Vinsonhaler. *Licensee:* Arkansas Brdctsg. Co., Gazette Bldg.
- KLS, Oakland, Calif., 1280 kcs., 250 w. unlt'd. *Aerial:* vertical, 179 ft. *Manager:* S. W. Warner. *Licensee:* Warner Brothers, 327-21st St.
- KLUF, Galveston, Texas, 1370 kcs., 100 w. unlt'd. *Network:* MBS. *Aerial:* 2 towers, 190 ft. *Manager:* Lawrence D. Yates. *Licensee:* KLUF Brdctsg. Co., Inc., 1225-23rd St.
- KLX, Oakland, Calif., 880 kcs., 1000 w. unlt'd. *Manager:* P. D. Allen. *Licensee:* Tribune Bldg. Co., Tribune Tower.
- KLZ, Denver, Colo., 560 kcs., 1000 w. nights, 5 kw days, unlt'd. *Network:* CBS. *Trans:* Englewood. *Aerial:* vertical, 444 ft. *Manager:* F. W. Meyer. *Licensee:* KLZ Brdctsg. Co., Shirley-Savoy Hotel.
- KMAC, San Antonio, Texas, 1370 kcs., 100 w. nights, 250 w. to LS. Shares KONO. *Trans:* 315 Avenue "A". *Aerial:* vertical, 184 ft. *Manager:* Howard W. Davis. *Licensee:* W. W. McAllister, Smith-Young Tower.
- KMBC, Kansas City, Mo., 950 kcs., 1000 w. nights, 5 kw to LS, unlt'd. *Network:* CBS. *Trans:* Kansas City, Kans. *Aerial:* vertical, 274 ft. *Manager:* Arthur B. Church. *Licensee:* Midland Brdctsg. Co., Pickwick Hotel.
- KMED, Medford, Ore. 1410 kcs., 250 w. unlt'd. *Network:* NBC. *Trans:* Ross Lane R.F.D. *Aerial:* vertical, 179 ft. *Licensee:* Mrs. W. J. Virgin, Sparta Bldg.
- KMJ, Fresno, Calif., 580 kcs., 1000 w. unlt'd. Special Authorization for facsimile from midnight until 6 am, PST. *Network:* NBC. *Aerial:* vertical, 203 ft. *Manager:* Keith Collins. *Licensee:* McClatchey Brdctsg. Co., Van Ness & Calaveras.
- KMLB, Monroe, La., 1200 kcs., 100 w. nights, 250 w. to LS, unlt'd. *Aerial:* vertical, 246 ft. *Manager:* J. C. Liner, Sr. *Licensee:* Liner's Brdctsg. Station, Inc., Frances Hotel.
- KMMJ, Clay Center, Nebr., 740 kcs., 1000 w. to LS, ltd. *Aerial:* 2 towers, 150 ft. *Manager:* Randall Ryan. *Licensee:* KMMJ, Inc.
- KMO, Tacoma, Wash., 1330 kcs., 1 kw. unlt'd. *Network:* MBS. *Aerial:* vertical, 200 ft. *Manager:* Carl E. Haymond. *Licensee:* KMO, Inc., 914½ Broadway.
- KMOX, St. Louis, Mo., 1090 kcs., 50 kw. unlt'd. *Network:* CBS. *Aerial:* 2 towers, 300 ft. *Manager:* Merle S. Jones. *Licensee:* Columbia Brdctsg. System, Mart Bldg.
- KMPC, Beverly Hills, Calif., 710 kcs., 500 w. Ltd. *Aerial:* 2 towers, 130 ft. *Manager:* Leo B. Tyson. *Licensee:* KMPC The Station of the Stars, Inc., 9631 Wilshire.
- KMTR, Los Angeles, Calif., 570 kcs., 1 kw. unlt'd. *Aerial:* 2 towers, 253 ft. *Licensee:* KMTR Radio Corp., 1000 Cahuenga Blvd.
- KNEL, Brady, Texas, 1500 kcs., 250 w. to LS. *Aerial:* vertical, 164 ft. *Licensee:* G. L. Burns, Box 1077.
- KNET, Palestine, Texas, 1420 kcs., 100 w. to LS. *Aerial:* vertical, 175 ft. *Owner:* Bonner Frizzell. *Licensee:* Palestine Brdctsg. Association, Box 467.
- KNOW, Austin, Texas, 1500 kcs., 100 w. unlt'd. *Aerial:* vertical, 135 ft. *Network:* Columbia, Mutual. *Manager:* James W. Pate. *Licensee:* KUT Broadcasting Co., Norwood Bldg.
- KNX, Los Angeles (Hollywood) Calif., 1050 kcs., 50000 w. unlt'd. *Network:* CBS. *Aerial:* vertical, 465 ft. *Transmitter:* Sherman Oaks. *Manager:* Donald W. Thornburgh. *Licensee:* Columbia Broadcasting System, Inc., 5939 Sunset Blvd.
- KOA, Denver, Colo., 830 kcs., 50000 w. unlt'd. *Network:* NBC Red. *Trans:* Colfax Ave. *Aerial:* vertical, 470 ft. *Manager:* Robert H. Owen. *Licensee:* National Broadcasting Co., Inc., NBC Bldg.

(To be continued next month)

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.

Required by the Acts of Congress of Aug. 24, 1912, and March 3, 1933.

Of Radio Index, published monthly except July and August, at Teaneck, New Jersey for Oct. 1, 1938. State of New Jersey, County of Bergen, ss.:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Page Taylor, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the RADIO INDEX, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, The Radex Publishing Co., 289 Queen Anne Road, Teaneck, N. J., Editor, Page Taylor, 289 Queen Anne Road, Teaneck, N. J.; Managing Editor, None; Business Manager, Page Taylor, 289 Queen Anne Road, Teaneck, N. J.

2. That the owner is: The Radex Publishing Co., 289 Queen Anne Road, Teaneck, N. J. (The following are the names and addresses of stockholders holding 1 per cent or more of the capital stock of The Radex Publishing Co.; L. A. Byrne, 137 E. 38th St., N. Y., N. Y. and L. A. Byrne, 137 E. 38th St., N. Y., N. Y. as trustee for E. H. Carswell, Hospital Pl., Hackensack, N. J., A. F. Wiese, 91 Griggs Ave., Teaneck, N. J. and W. C. Auer, 148 Copley Ave., Teaneck, N. J.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

Page Taylor, Business Manager.
Sworn to and subscribed before me this 26th day of September, 1938.

(Seal.)

William Butterworth.
(My commission expires Sept. 7, 1942.)

New Zealand Stations

The National Commercial Broadcasting Service's station 2ZB is now conducting tests on 6960 and 3480 kcs. irregularly, but it can generally be heard between midnight and 7:30 am EST. A power of 200 watts is used, and they verify readily.

The Commercial Service has opened a new station at Palmerston North with the call sign 2ZA, on 1400 kcs. with 250 watts.

DIALING

(Continued from page 14)

Early reports seem to confirm the predictions of a banner season and who knows but what the watchful DXer will stumble across a morning comparable to that memorable October day five years ago, when there was a veritable invasion of Eastern states by the Japanese and Chinese broadcasters.

TURNER DIAL

(Continued from page 9)

for 6 ohms or one-half of the new speaker and its wire. All right. Solder 'em up to those taps!" concluded Turner.

Turner walked toward the front of the store. "All soldered!" shouted Bill Wood.

"Turn the set on," replied Turner. In a few seconds the new speaker was giving forth perfect music. Turner was elated. "Sounds fine! Come and listen," he called.

Wood hurried up front. "Sounds good as ever back there at the set," he said.

Turner walked back. The tone of the original speaker was the same as always. He turned the set off. "That's all," he called to Bill. "Take off this long wire, and tomorrow morning we'll make the installation out at Mr. West's."

"But what about that baffle business?" inquired Bill Wood. "We'll have to do something about that before we go."

Turner grinned. "Mr. West will be so pleased that I think I'll sell him a nice wall baffle. It hangs up out of the way but inclines downward so as to throw the sound over the room. They cost only a few dollars."

Stanley B. LaRue, president of the Before Breakfast DX Club, announced the winners of the BBDXC SWL card contest, in a recent letter to RADEX. The winners were Theodore Dombay, St. Louis, Mo., Anthony C. Tarr, Seattle, Wash., and J. P. Barnes, Faversham, England. The winner took first place with SWL cards from thirty-five different countries.

As we go to press, we learn that the FCC has authorized the Vancouver Radio Corporation to construct a new station at Vancouver, Wash., to operate on 880 kcs., with 250 watts, daytime only.

Walter H. Koester of the Return Postage Bureau, 85 Francisco Ave., Rutherford, N. J., informs us that two countries have been added to the

list which was published in the November RADEX. Unused stamps to be used when writing to foreign stations are now available from The Netherlands (at 7c each) and from Grenada (at 5c each), in addition to the countries shown in last month's list.

QUICK INDEX TO STATION DATA

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(ADD 50c PER YEAR FOR FOREIGN SUBSCRIPTIONS, EXCEPT CANADA)

Print Name Plainly

Street and Number

City and State

The DX Calendar

EST	STATIONS	PST
Dec. 4, 6, 3-4 am	HJ7ABD, 9630 kcs., Bucaramanga, Colombia (IDA)	Dec. 4, 6, midnt.-1 am
Dec. 9, 1:30-2 am	WJAG, 1060 kcs., Norfolk, Nebr.	Dec. 8, 10:30-11 pm
Dec. 9 and 10, 2-4 am	TIXD, 800 kcs. TIRH, 950 kcs. TI2XD, 11920 kcs., San Jose, Costa Rica (IDA and Joe Lippincott)	Dec. 8 and 9, 11 pm-1 am
Dec. 18, 1-2 am	EAJ7, 1095 kcs., Madrid, Spain (IDA)	Dec. 17, 10-11 pm
Jan. 8, 1-2 am	"Radio Strasbourg," 859 kcs., Strasbourg, France (IDA)	Jan. 7, 10-11 pm
Jan. 8, ?	DJC, 6020 kcs., Berlin, Germany (IDA)	Jan. 8, ?
Jan. 13, 1:30-2 am	WJAG, 1060 kcs., Norfolk, Nebr.	Jan. 12, 10:30-11 pm
Jan. 15, 9-10 pm	OAX4J, 9330 kcs., Lima, Peru (IDA)	Jan. 15, 6-7 pm
Jan. 22, 3-4 am	TG1, 1310 kcs., Guatemala City, Guat. (IDA)	Jan. 22, 12:01-1 am
Jan. 22, 2-3 am	PRF3, 960 kcs., Sao Paulo, Brazil (NRC-NNRC)	Jan. 21, 11 pm-midnt.
Mar. 20, 1-2 am	YSD, 7894 kcs., San Salvador, E. S. (IDA)	Mar. 19, 10-11 pm

Special DX Programs

Special programs arranged since the DX Calendar was put into type, have been announced by Bill Stone of Toronto.

Dec. 4, CJCA, Edmonton, Alta., 3-4 am EST (12:01-1 am PST).

Dec. 10, CFGP, Grande Prairie, Alta., 3-4:30 am EST (12:01-1:30 am PST).

Dec. 11, CJCJ, Calgary, Alta., 3:30-4:30 EST (12:30-1:30 am PST).

Dec. 12, CKCH, Hull, P. Q., 3-4 am EST (12:01-1 am PST). CKCH offers prizes, souvenirs and photographs to DXers who report on this program.

Dec. 12, CFAR, Flin Flon, Man., will transmit all morning, commencing at 2 am, EST, or 11 pm the previous night, PST.

Dec. 17, CJBR, Rimouski, P. Q., 4-5 am EST (1-2 am PST).

Dec. 18, CKWX, Vancouver, B. C., 3-4 am EST (12:01-1 am PST).

Jan. 7, 1939, CKBI, Prince Albert,

Sask., 2-3 am EST, or Jan. 6, 11 pm until midnight, PST.

Jan. 15, CHRC, Quebec, P. Q., 2-3 am EST, or Jan. 14, 11 pm until midnight, PST. CHRC will charge a fee of five cents for verifications.

Harry Gordon announces the following special programs for the National Radio Club:

Nov. 27, WRNL, Richmond, Va., 880 kcs., 1-4 am EST (Nov. 26, 10 pm to 1 am, Nov. 27, PST).

Dec. 1, WPA, Portsmouth, Ohio, 1370 kcs., 4-4:30 am EST (1-1:30 am PST).

Dec. 4, CFRN, Edmonton, Alta., 960 kcs., 3:30-4:30 am EST (12:30-1:30 am PST).

Jan. 7, 1939, CFJC, Kamloops, B. C., 880 kcs., 3-4 am EST (12:01-1 am PST).

Jan. 22, 1939, PRF3, Sao Paulo, Brazil, 960 kcs., 2-3 am EST (Jan. 21, 11 pm to midnight, PST).



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Pays \$300 a
Month

"I now have my own Radio business which shows three hundred dollars a month profit — thanks again to National Radio." FRANK T. REESE, 39 N. Felton St., Philadelphia, Penna.



Get My LESSON on Radio
Servicing Tips FREE

I want to prove my Training is just what you need to master Radio. My sample lesson text, "Radio Receiver Troubles—Their Cause and Remedy" covers a long list of Radio receiver troubles in A. C., D. C. battery, universal, auto., T. R. F., super-heterodyne, all-wave, and other types of sets, cross-indexed for quick reference. Special section on receiver checkup, alignment, balancing, neutralizing, testing. Get this lesson Free. Mail the Coupon.

The world wide use of Radio has made many opportunities for you to have a spare time or full time Radio service business of your own. Four out of every five homes in the United States have Radio sets which regularly need repairs, new tubes, etc. Servicemen can earn good commissions selling new sets to owners of old models. Even if you have no knowledge of Radio or electricity, I will train you at home in your spare time to sell, install, fix, all types of Radio sets to start your own Radio business and build it up on money you make in your spare time while learning. Mail coupon for my 64-page book, It's Free—it shows what I have done for others—what I am ready to do for you.

Many Make \$5, \$10, \$15 a Week Extra
in Spare Time While Learning

The day you enroll I start sending Extra Money Job Sheets; show you how to do Radio repair jobs. Throughout your training I send plans and directions that made good spare time money—\$200 to \$500—for hundreds, while learning. I send you special Radio equipment to conduct experiments and build circuits. This 50-50 method of training makes learning at home interesting, fascinating, practical. I ALSO GIVE YOU A MODERN PROFESSIONAL, ALL-WAVE, ALL-PURPOSE RADIO SET SERVICING INSTRUMENT to help you make good money fixing Radios while learning and equip you for full time jobs after graduation.

Get Ready Now for Your Own Radio
Business and for Jobs Like These

Radio broadcasting stations employ engineers, operators, station managers and

pay up to \$5,000 a year. Fixing Radio sets in spare time pays many \$200 to \$500 a year—full time jobs with Radio Jobbers, manufacturers and dealers as much as \$30, \$50, \$75 a week. Many Radio Experts open full or part time Radio sales and repair businesses. Radio manufacturers and Jobbers employ testers, inspectors, foremen, engineers, servicemen, and pay up to \$6,000 a year. Automobile, police, aviation, commercial Radio, loud speaker systems are newer fields offering good opportunities now and for the future. Television promises to open many good jobs soon. Men I trained have good jobs in these branches of Radio. Read how they got their jobs. Mail Coupon.

Find Out What Radio Offers You

Act Today. Mail the coupon now for Sample Lesson and 64 page book. They're free to any fellow over 16 years old. They point out Radio's spare time and full time opportunities and those coming in Television; tell about my training in Radio and Television; show you letters from men I trained, telling what they are doing and earning. Find out what Radio offers YOU! MAIL COUPON in an envelope, or paste on a postcard—NOW!

J. E. SMITH,
President
Dept. 8N0
National Radio
Institute,
Washington,
D. C.



GOOD FOR BOTH 64 PAGE BOOK FREE SAMPLE LESSON FREE

J. E. SMITH, President, Dept. 8N0
National Radio Institute, Washington, D. C.

Dear Mr. Smith: Without obligating me, send your sample lesson and the book which tells about spare time and full time Radio opportunities, and how I can train for them at home in spare time.
(Please write plainly.)

Name..... Age.....

Address.....

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

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