

THE OCTOBER, 1934

RADIO **IN DEX**

THE ALL-WAVE RADIO MAGAZINE



25^c

**A Study of the Short Waves
Sunday's Time on the Air
The A-B-C of the Aerial
The October DX Calendar
with Frequency Checks**

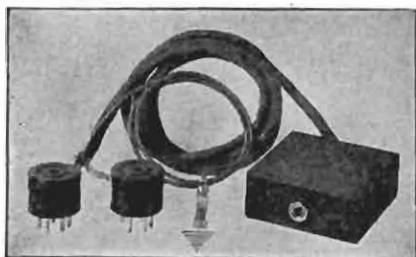
No. 82

THE OCTOBER DX CALENDAR

of frequency checks and special programs for distant listeners arranged by the stations outside of their regular hours. All time is EST so that programs may be arranged in order.

		DAILY							
12:00-12:05	VAS	685	2000	Glacé Bay	5:50-6:10	KFQD	780 250	Anchorage	
12:00-1:00	WFLA	620	1000	Clearwater	6:00-6:20	KSEI	900 250	Pocatello	
	WMC	780	1000	Memphis	6:10-6:30	KVOS	1200 100	Bellingham	
12:00-6:00	KPAC	1300	1000	Los Angeles	6:20-6:40	KIT	1310 100	Yakima	
12:30-8:00	KJBS	1070	100	San Francisco	6:30-6:50	KRSC	1120 100	Seattle	
1:00-7:00	WEDC	1210	100	Chicago	6:40-7:00	KXRO	1310 100	Aberdeen	
5:30-7:00	WSPA	1420	100	Spartanburg	6:50-7:10	KFJO	1120 100	Spokane	
6:00-7:00	KFBI	1050	5000	Abilene	7:00-7:20	KFJI	1210 100	Klamath Falls	
					7:10-7:30	KMED	1310 100	Medford	
					7:20-7:40	KORE	1420 100	Eugene	
Sunday Mornings				October 7				October 8	
1:00-2:00	WWAE	1200	100	Hammond	3:00-3:30	KSO	1320 250	Des Moines	
2:00-3:30	KVOA	1260	500	Tucson	October 15				
3:00-3:20	KLCN	1290	100	Blytheville	1:00-1:30	WDNC	1500 100	Durham	
3:30-3:50	KXYZ	1440	250	Houston	5:00-5:10	KFNF	890 500	Shenandoah	
3:50-4:10	KTUL	1400	250	Tulsa	October 22				
4:00-4:20	KPAC	1260	500	Pt. Arthur	2:00-3:00	VE9EK	1195 10	Montmagny	
4:10-4:30	KG DY	1340	250	Huron	Oct. 1, 8, 15, 22, 29				
4:20-4:40	KRGV	1260	500	Westlaco	12:00-3:00	WCNW	1500 100	Brooklyn	
4:50-5:10	KARK	890	250	Little Rock	12:30-1:00	KDKA	980 50000	Pittsburgh	
5:00-5:20	KGKO	570	500	Wichita Falls	1:00-2:30	XEX	1310 125	Monterrey	
5:20-5:40	WNAD	1010	500	Norman	2:30-4:30	CKMO	1410 100	Vancouver	
5:40-6:00	KUOA	1260	1000	Fayetteville	4:30-5:00	WNBO	1200 100	Washington	
October 14				October 21				Tuesday Mornings	
2:00-5:00	VOGY	840	400	St. John's	October 2				
3:00-4:00	WOS	630	500	Jefferson City	2:00-2:20	WQDX	1210 100	Thomasville	
October 28				October 28				October 2	
2:00-3:00	KGEK	1200	100	Yuma, Colo.	2:10-2:30	WBHS	1200 100	Huntsville	
2:30-4:30	CKBI	1210	100	Pr. Albert	2:20-2:40	WBHQ	1370 100	Memphis	
Oct. 7, 14, 21, 28				October 28				October 2	
1:00-1:15	KOMA	1480	5000	Oklahoma City	2:30-2:50	WEDD	1420 100	Rocky Mount	
3:00-5:00	CKOV	630	100	Kelowna	2:40-3:00	WOPI	1500 100	Bristol	
4:00-5:00	CFJC	880	100	Kamloops	2:50-3:10	WSMB	1320 500	New Orleans	
Monday Mornings				October 1				October 2	
2:00-2:15	WAVE	940	1000	Louisville	3:00-3:20	WMBR	1370 100	Jacksonville	
2:00-2:20	WCNW	1500	100	Brooklyn	3:10-3:30	WNRA	1420 100	Muscle Shoals	
	WJAC	1310	100	Johnstown	3:20-3:40	WSJS	1310 100	Winston-Salem	
2:10-2:30	WFAK	1210	100	White Plains	3:30-3:50	WHEF	1500 100	Kosciusko	
	WRAK	1370	100	Williamsport	3:40-4:00	KMLB	1200 100	Monroe	
2:20-2:40	WBNF	1500	100	Binghamton	3:50-4:10	WAGF	1370 100	Dothan	
	WCHS	580	500	Charleston	4:00-4:20	WKFI	1210 100	Greenwood	
2:30-2:50	WAGM	1420	100	Presque Isle	4:10-4:30	KWJG	1200 100	Stockton	
	WBTM	1370	100	Danville		WTJS	1310 100	Jackson	
2:30-3:30	CHWK	780	100	Chilliwick	4:20-4:40	KPFJ	1500 100	Prescott	
2:50-3:10	WEDL	1420	100	Tupper Lake		WPFB	1370 100	Hattiesburg	
	WHAT	1310	100	Philadelphia	4:30-4:50	KERN	1370 100	Bakersfield	
3:00-3:20	WCAX	1200	100	Burlington		WGPC	1420 100	Albany	
	WLVA	1200	100	Lynchburg	4:40-5:00	KXO	1500 100	El Centro	
3:10-3:30	WSYB	1500	100	Rutland		WBNO	1200 100	New Orleans	
	WTEL	1310	100	Philadelphia	4:50-5:10	KLEM	1210 100	Eureka	
3:20-3:40	WBX	1200	100	Utica		WROL	1310 100	Knoxville	
3:30-3:50	WQDM	1370	100	St. Albans	5:00-5:20	KLS	1440 250	Oakland	
	WKOK	1210	100	Sunbury		WDNC	1500 100	Durham	
3:40-4:00	WMBO	1310	100	Auburn		KGJX	1420 100	Las Vegas	
3:45-4:00	KUJ	1370	100	Walla Walla	5:10-5:30	WJBW	1200 100	New Orleans	
3:50-4:10	WGLC	1370	100	Hudson Falls		KGMB	1320 250	Honolulu	
	WBAX	1210	100	Wilkes-Barre	5:20-5:40	WAML	1310 100	Laurel	
4:00-4:20	WCAD	1220	500	Canton		KRE	1370 100	Berkeley	
	KPQ	1500	100	Wenatchee	5:30-5:50	WSIX	1210 100	Springfield	
4:10-4:30	WBBL	1210	100	Richmond		KGU	750 2500	Honolulu	
	KGBU	900	500	Ketchikan	5:40-6:00	KGAR	1370 100	Tucson	
4:20-4:40	WNBZ	1290	50	Saranac Lake	5:50-6:10	KCRJ	1310 100	Jerome	
	WBRE	1310	100	Wilkes-Barre	6:00-6:20	KGDM	1100 250	Stockton	
	KGVO	1200	100	Missoula	6:10-6:30	KSNL	1200 100	Lowell	
4:30-4:50	WNBO	1200	100	Washington	6:20-6:40	KTRB	740 250	Modesto	
	KOOS	1200	250	Marshallfield	Wednesday Mornings				
4:40-5:00	WRAW	1310	100	Reading	October 3				
	KGY	1210	100	Olympia	1:00-2:00	KFYR	550 1000	Bismarck	
4:50-5:10	WAAT	940	300	Jersey City	1:30-2:00	WBHL	1410 500	Sheboygan	
	KRKO	1370	50	Everett	1:30-2:30	WSUI	880 500	Iowa City	
5:00-5:20	WSYR	570	260	Syracuse	2:00-2:20	WBRB	1310 100	Buffalo	
	KFXD	1200	100	Nampa	2:10-2:30	WPEN	920 100	Philadelphia	
5:10-5:30	KVL	1370	100	Seattle	2:20-2:40	WSAJ	1310 100	Grove City	
5:20-5:40	KGEZ	1310	100	Kalispell	2:30-2:50	WHIS	1410 250	Bluefield	
5:30-5:50	KUJ	1370	100	Walla Walla	2:40-3:00	WFBG	1310 100	Altoona	
5:40-6:00	KGCX	1310	100	Wolf Point	2:50-3:10	WPHR	880 100	Petersburg	
					3:00-3:20	WDAS	1370 100	Philadelphia	
						WKBB	1500 100	East Dubuque	

(Continued on page 49)



Here is the simplest and most effective method yet devised for attaching headphones to all makes of receivers. No change whatever is required in the wiring and the load or balance of the set is not disturbed.

THE PERFECT PHONE ADAPTER

automatically transfers the signals from speaker to phones when the phone plug is inserted in the jack. The little box containing the jack may be placed in back of the set or screwed to the underside of cabinet. The small socket adapters are placed under the power tubes, the little clip goes to the ground and the Adapter is installed.

Use Headphones to reduce the noise level and bring out those faint calls you can't quite hear on the speaker. Don't shut off your radio when others retire; use phones.

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With a few circuits, it is necessary to use a small B battery in the ground lead to provide grid bias. There is no drain on the battery and it should last indefinitely.

We now have a model of the Adapter for midget sets using 5-, 6-, or 7-prong tubes which uses the volume of all the tubes. It is not suitable for power tubes with four prongs.

When ordering give make and model of your receiver and number and type of power tubes. It will help us if you can send diagram of your set.

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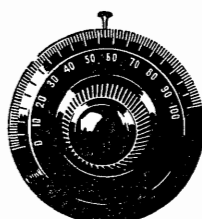
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ELEVENTH YEAR

NUMBER 82

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Songbird with Charles Barnet's Orchestra

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Is Your Antenna 100 Per Cent Effective?

PART ONE

• • • *By* B. FRANCIS DASHIELL

THE antenna or aerial—which ever you choose to call it—leads a rather uneventful existence. It is a simple device, and has only a single purpose in life. The antenna must intercept and collect energy from the radio waves that come its way. But it must perform this duty well, for, when the antenna fails properly to function, it is impossible to get the full measure of usefulness from our radio receivers.

As we glance at the forests of swinging, tangled antennas that top the roofs of every city block, and examine the usual slipshod methods of construction, it seems amazing that they can work as well as they do. But, given even the slightest chance, the antenna will get results, due, most likely, to the fact that any piece of metal in the world becomes a radio antenna when it gets in the path of a passing electro-magnetic wave.

Radio Antennas Everywhere

Attach your radio set to a bed spring, bird cage, window screen, dishpan, wire fence, tin roof or automobile body, and the usual programs will be heard. Neither the nails in our homes are too small, nor miles of railroad track too long or heavy, to intercept radio signals. But there is a happy medium which provides the ideal antenna size, as the reader shall learn.

It is natural, of course, that the reader should wonder why all metallic bodies in the world, when not actually an electrical part of the earth, will swarm constantly with tiny radio currents that can be detected only by a radio receiver. Let us, then, review briefly the simple

phenomena that make electro-magnetic induction possible.

It is commonly known that, if a length of wire be moved quickly across the face of a steel magnet so as to pass through its magnetic field, a surge of electric current will be induced in the wire. This is the simple principle of electro-magnetic induction. Because of it the electric dynamo and magneto can generate an electric current as its armature, wound with many turns of wire, spins rapidly between the magnetic poles of the machine.

This motion, which sends the wires through the magnetic field of force, creates an electrical current. It does not matter, however, whether the magnetic field is stationary with the wires moving, or whether the wires are fixed in one position while the magnetic field moves. The effect of induction is the same in either case. The wire cuts through a magnetic field, or a magnetic field sweeps past the wire—it is the motion that counts.

How The Antenna Works

It is obvious that we cannot rush a radio antenna across the surface of the earth. The antenna is permanently fixed. But it is not necessary that the wires of the antenna move; we know that the radio field of energy moves in all directions away from the broadcasting station. And, as it sweeps outward at a speed of 186,000 miles a second, it cuts across the wires of the receiving antenna and induces a very weak current in them. Every wire and piece of metal, whether used as an antenna or not, is subject to the same phenomenon.

The frequency, or rate of alterna-

tions in the onrushing radio wave, determines the frequency of the current induced in the antenna. The frequency of the alternating-current oscillations in the transmitting station; the frequency of the waves coming through the air; and the frequency of the radio-frequency current induced in the receiving antenna, is, in every case mentioned, always the same.

Thousands of radio stations broadcast simultaneously throughout the world, but most of them are on different wave lengths or frequencies. So, if a hundred different alternating waves swing past, they will induce a hundred different alternating currents in the antenna. Each current has a frequency that is identical to that of its parent wave passing through the air.

Selecting The Signals

The duty of a radio receiver is to select, or tune in, one at a time, the different radio-frequency currents flowing through the antenna. The ability of a set to perform in this manner is determined by its selectivity. A highly selective set will separate the many different antenna currents, tuning out all unwanted signals, and permitting only the selected wave to enter the set for amplification. A non-selective set will make audible many of the different currents flowing in the antenna, and the result is interference and a jumble of meaningless sounds.

The antenna can provide selectivity and sensitivity if it is carefully designed and erected. When an antenna is thoughtlessly constructed of any indefinite length of unsuitably sized wire, supported with little or no insulation between improper hangers, and connected to the receiver by poor contacts, it cannot be expected to give good results. Location, height above ground, length, insulation, arrangement of overhead wires and the design of its lead-in conductor, play important parts in making possible good radio reception on all wave lengths.

The best antenna is never too good. And we must be on guard constantly to prevent energy losses. The amount of local static picked up from nearby sources must be held down to a minimum. Electric machines, light switches, power lines, street cars and automobiles, are the worst offenders in this respect.

"Skin Effect" Resistance

Antennas of unusual length serve no practical purpose. The length of an antenna has a direct relationship to the wave lengths it will pick up. If the antenna is too long it cannot pick up the shorter waves, except on certain harmonics. This tends to weaken or eliminate many of the waves that could otherwise be intercepted. All radio-frequency currents, because of the high rate of their alternations, travel on the surface of a wire. They do not penetrate into the solid interior. Only low-frequency and direct currents flow through the entire cross-section of a wire. A copper tube is as good a conductor of high-frequency currents as a solid wire of the same diameter. In fact, an iron wire with a thin copper-plated surface is just as good for an antenna as a solid copper wire.

If the wire is too long it presents a high surface resistance to the flow of the induced radio currents. This also is known as the "skin effect" of the wire. To overcome this resistance antenna wires that are woven or stranded so as to present a larger area than a solid single wire are used for antennas. It must be remembered that the lead-in wire must also have a surface area equal to the wire or wires in the antenna top; otherwise it will introduce objectionable resistance in the down lead and partially nullify the conductivity of a good antenna top.

Antenna Insulation

Insulation is of prime importance. The very high frequencies at which the induced currents in the antenna alternate back and forth, particularly

on the short waves, permits the electricity accumulated in the antenna to leak off rapidly to the earth. Most readers know that it requires only a very small condenser capacity to pass high-frequency currents. The smallest capacity or condenser effect between the antenna wires and adjacent grounded surfaces carries a portion of these high frequencies off to the earth. Short-wave reception calls for careful consideration of the subject of antenna insulation. The higher the frequency of an electric current the more difficult it is to control and hold in place by means of insulation.

Antenna Height

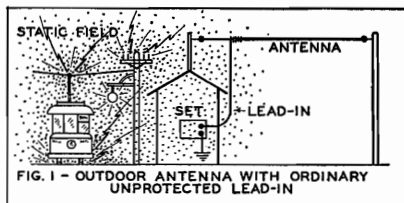
The effective height for the antenna still is a debated subject. There is a mathematical relationship between its natural frequency or wave length, particularly with transmitting antennas. The wire should be far enough above the surface of the earth, or the metal roof of a building (such a roof is considered an earth surface) to prevent condenser effects. The antenna should reach up into the unobstructed sweep of passing radio waves. Adjacent tall buildings, and other nearby obstructions, tend to throw an electrical shadow that prevents an otherwise good antenna from collecting a maximum amount of energy.

Location And Noise

Location of the antenna is important under certain conditions. In the open, far removed from electrical machines, power lines and other local sources of "man-made" static noises, any antenna will work nicely. It is in the city, and congested areas, that we hear the annoying hums, buzzes, clicks, crashes, sputters and howls of local static impulses. Fortunately, however, this form of noisy disturbances does not carry very far, and will not be picked up by the antenna when it is from 50 to 100 feet from the source.

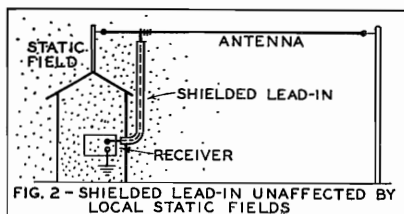
We are forced to accept natural static or "atmospherics." Such static is heard during hot, humid weather,

and during the thunderstorm season. Rains and snows bring static that is annoying but not particularly severe. Lightning static is the worst type of static discharge there is. Clear, cold weather, such as winter nights, is always free of natural static. It is then that DXing is at its best. But a steady increase in static noises foretells the coming of bad weather within about 12 hours. There is no antenna system that can check or prevent natural static. The only solution is to tune to powerful stations so the volume controls are at a minimum. This keeps the ratio of static



noise to signal strength low enough to drown out much of the static.

But there is something we can do about man-made static. Let us look at Figure 1. It shows a standard flat-top "L" antenna of the old Marconi style. The lead-in passes down through a field of local static impulses that do not carry very far. These tiny electric waves impinge on the antenna lead and the static surges are carried into the radio receiver. The antenna itself is removed from

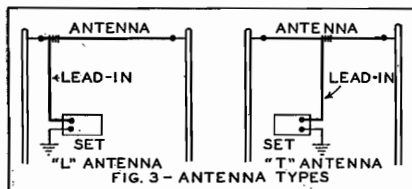


this static field and does not pick up the impulses.

Noise-Reducing Antennas

Now we can place a metallic shield around the lead-in wire. It will pre-

vent the static impulses from reaching the wire. This is shown in Figure 2. The proximity of the shield will cause severe energy losses, however, and the signal strength will be reduced and frequently lost entirely on the shorter waves. This form of shielded lead-in is used on standard antennas, such as the "L" and "T" types shown in Figure 3.



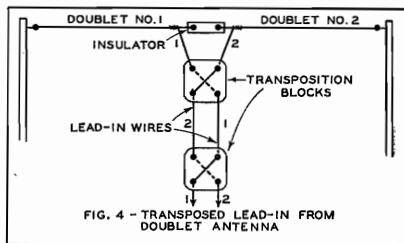
There are a number of noise-reducing antennas available—RCA, Lynch, Philco, Tobe, Akaformer, etc., ready for erection. Or the antenna can be built by any enterprising experimenter. With the coming of interest in the short waves the question of noiseless short-wave, and all-wave, antennas, is being seriously considered. In all cases the noise-reducing antennas operate on the so-called Hertz principle. Hertz was the discoverer of the method of sending and receiving electrical oscillations through the air for short distances. Marconi discovered the practical application of using these waves to send messages over long distances. The Hertz antenna is much older than the Marconi antenna, such as the conventional "L" and "T" antennas shown in Figure 3, which use a ground connection.

The Hertz antenna, simply stated, consists of two antennas or *horizontal* wires, not necessarily *pointing* in the same straight line, with the radio receiver inserted in series in the center. There is no ground connection. This type is useful in short wave reception, but can also be used for broadcast work. Thus it is actually an "all-wave" antenna. The single wire, and grounded, Marconi "L" or "T" top antennas are best only for long and broadcast waves. However,

we cannot place the receiver high up in the antenna, so we insert an insulator between the two halves of the antenna, as shown in Figure 4. So far, this antenna will pick up local static noise, for it really consists of two "L" type antennas. The two sections are called "doublets", and the antenna becomes a doublet antenna. Some change must now be made so the lead-in will not pick up local static in the noise zone close to the ground.

The "Doublet" Antenna

The doublet antenna, which is very effective on short waves, can be turned into a noise-reducing antenna, by preventing its lead-in wires from being affected by the local static field. Some designs favor a twisted-wire transmission line or lead-in; others place the two wires within a metallic, flexible shield. This cable is grounded and tends to prevent local static impulses from reaching the receiver. Some makes of antennas use two lead-in wires, transposed and separated by insulating blocks, as shown in Figure 4. This is called a transposition lead.

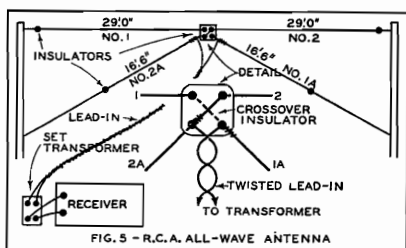


Shielded Leads

When a metallic shield is placed over the lead-in from the antenna, as shown in Figures 1 and 2, there is a loss of signal energy. The shield grounds all the local static impulses before they get into the lead-in wire. That is just what we wish to do, of course, but we must realize, also, that the antenna must be strung high outside the field of local interference. The metal shield should extend only

through the zone of static and not always entirely up to the antenna itself. Do not use more shielding than is necessary to get results. The shielding must be grounded directly, and *not* to the ground terminal of the receiver.

Shielded leads are not satisfactory. Their tendency to absorb energy that is needed by the receiver rules them out. When from 20 to 50 feet of rubber-insulated wire is surrounded by metal it is easy to realize that a condenser exists—the inner wire as one plate and the outer shield as the other plate. The shield is grounded, and naturally there is a large leakage of high frequency radio currents into the earth.



Transposed Leads

In order to bring the lead down from the flat top of the Hertz antenna, with its doublets outside the local static field, and eliminate the signal absorbing effects of a metallic shield, the transposed lead-in or transmission line is used. This type of lead, however, is used only with the doublet antenna. The method of transposing the two leads is shown in Figures 4 and 5.

The two leads are transposed every 15 or so inches by means of the transposition blocks shown in Figure 4. The spacing must be carefully arranged throughout the construction. If a voltage is induced in the lead-in wires, as they pass down through the local static field (shown in Figures 1 and 2), the potential immediately will be canceled out. This cancellation effect is a rather complicated



This comely young singer, Joy Hodges, is one of several heard with Carol Lejner and his Orchestra from San Francisco. The orchestra broadcasts as a sustaining feature over WABC and the Columbia network.

electrical phenomena, but it is sufficient to state that it is caused by the fact that the voltage induced in one wire is not in phase with that induced in the adjoining wire. Transposition brings about effective cancellation, and there is little or no loss of signals because of the very slight capacity, with no grounded surfaces, between the spaced wires. In the antenna lead-in shown in Figure 5, the RCA "World-Wide" system uses a specially twisted pair of wires. Any static pickup in this transmission line as it passes down through the zone of man-made static between the double-doublets and the radio receiver, will be balanced and electrically neutralized.

(Next month the second and concluding installment of this article will deal with the theory and construction of modern all-wave noise-reducing antennas.)

Organized DX in New Zealand

By N. C. Manchester*

THE New Zealand DX Radio Association is the only amateur DX Club in New Zealand, and was formed in January 1933, in response to numerous requests throughout the Dominion. The membership roll now stands at over 500, and DXers from as far afield as England, United States, and Canada have joined up.

The chief object of the Association is to further the DX hobby as much as possible, and all officials, editors, and representatives are experienced DXers who do all the necessary work gratuitously. Per medium of the Association's magazine—"Tune In," DXers are kept advised of the latest station changes, DX programmes, etc. It is the intention of the Association to, as far as it is able, put a stop to fake DXing, and any DXers proved guilty of obtaining verifications by fraudulent methods will be severely dealt with.

Active branches are established throughout New Zealand, and the Association also has representatives in Australia, U. S. A., Canada, Nova Scotia, France and England. Regular meetings are held by the branches, and DXers congregate to discuss their loggings and listen to lectures.

Electrical interference has engaged the close attention of the Association, and it is mainly through its efforts that legislation is now being made to control interference with radio reception.

In keeping with the times, the subscription has been made as small as possible. There is no annual subscription to pay, the 2/6d which a member pays for his badge and certificate constitutes life membership.

We extend a cordial invitation to join up, the only qualification necessary being a genuine interest in the DX hobby. All correspondence should be addressed to the Secretary, 29 Flockton St., St. Albans, Christchurch, New Zealand.

The Association's official organ is its fortnightly DX magazine, "Tune In." This publication is the only magazine in Australasia devoted exclusively to DX. It is something similar to "Radex," but on a necessarily reduced scale. Starting as a modest monthly, it blossomed forth in 1934 into a fortnightly publication, each issue being eagerly sought after by thousands of readers. Great care is taken by the Editors in the compiling of "Tune In," careful checking being made of call signs and data. Special sections are devoted to advanced DX, including DX programmes and tips, beginners loggings, DX competitions for all grades, and a "DX Chat" section where correspondents describe their current loggings. There is plenty of up-to-date information available, and a feature worthy of note is the re-addressing of reports to China, in the Chinese handwriting. This service is given free of charge by the magazine committee, who also, by pre-arrangement, send postcards to members of any important news between issues.

The subscription rates to "Tune In" are as follows: Non-members, 3/— a quarter, 5/9 a half-year, 9/6 a year; members of the Association, 2/9 a quarter, 5/— a half-year, 9/6 a year. Single copies 6d each. All subscriptions include postage.

*Secretary, The New Zealand DX Radio Association, Inc., 29 Flockton St., St. Albans, Christchurch, New Zealand.

To pick up foreign programs you must be able to convert their time into your own. The RADEX Map of the World with Time Converting Dial does this instantly. Price only twenty-five cents.

In the IDA CONTEST

THE IDA contest on overseas reception which has just been concluded, has demonstrated as perhaps never before, the ability of DXers in North America to reach out over the world on the broadcast band. We hope we may be permitted to publish the experiences of a number of those entered in this contest.

"As I was taking part in the recent IDA world-wide b. c. b. contest, I have until now refrained from reporting to RADEX my overseas reception during the last DX season," explains Wm. H. Ansell, 168 Wascana St., N., Regina, Sask. "However, by the time this appears in print, the final standing of the contest will be known. During the contest I had to contend with a howling in my set which persisted on the low and intermediate frequencies when the volume was turned up from two-thirds to full maximum. I corrected this condition only two days ago after several attempts. It was due to a moisture corrosion between the top plate and mica strip of the antenna trimmer condenser.

"I operate a Northern Electric 7-tube t. r. f. 'Lucerne.' I have erected four directional antennae of various lengths up to 100 feet with an overall length of 320 feet, and make use of either or double up as DX conditions required. Have four separate leadins, four ground leads and posts with 100 pounds of rock salt as a base. The verifications received during the past season are as follows:

3YA, 2YA, 3ZR, 5CL, 4BC, 4BH, 4QG, 2CO, 5CK, 3HA, 3AR, 3LO, 4RK, 2BL, 2FC, 2GB, 2SM, 2UE, 2UW, 4TO, LR5, KGU, KGMB, WKAQ, CMJK, CMBD, CMBZ, CMK, CMW, CMGF, CMHI, JOUK, JOCG, JOLK, JOFK, JOJK, JORK, JOSK, JOGK, JOOK, JOBG, JOAG, JOCK-1, JOCK-2, JOQK, JOKK, JOIK, JOHK, JOPK, JOAK-1, JOAK-2 and JFBK. All are OK'd for the IDA contest except 3HA and 2FC which were received outside of the contest period.



Raven-haired Arlene Francis and Fred Utal. You may have heard Arlene as Kay Francis, Jean Harlow, Lupe Velez or Constance Bennett and Fred as Ronald Colman, H. B. Warner, Leslie Howard and Boris Karloff, in their "Forty-five Minutes in Hollywood" on the CBS. These two are frequently cast as hero and heroine in these radio previews. Both are master mimics.

You will note that I have verified three of the four Brisbane stations and six of the eight Sydney stations, and the grand overall total air-line mileage is over 317,000 miles.

"Have a total log of 673 stations, including 183 100-watters: 46 States including D. of C. and 7 Provinces. Total foreign stations logged include 7 New Zealand, 30 Australian, 30 Japan, 1 China, 1 Argentine, 13 Cuban and 28 Mexican.

"In making this record, I was aided materially by the Perfect Phone Adapter which I purchased last fall. It gave splendid service exactly as advertised in RADEX. Station signals were received much more clearly and above normal noise level, being much superior to loud speaker volume when DXing."

POSSIBILITIES in OLD SETS

SOME of the old-time sets are capable of exceedingly good results when they are slightly modernized. For instance William I. Miller, 46 Oak St., Galt, Ont., is using a 4-tube Browning-Drake that he built in 1927 and rebuilt in 1929 adding the then modern refinements such as vernier dials. Says he: "This set covers an unusually large wave band for a set of this class. It covers from 150 to 625 meters (480 to 2000 kcs). When I rebuilt it in 1929, I made two new tapped coils, (antenna coil and regenerative r. f. coils). There are three taps on each coil which lead to contact points inside of set which are controlled by a shaft extending through to the panel with a knob. This switch has three positions to be shifted in covering this band, thus: 625 to 310 m., 350 to 245 m., and 270 to 150 m. This gives a good overlapping of bands.

"I use 201-C tubes (.06 amps.) and only 45 volts B battery on this set. With these tubes I found it much easier to neutralize this set than was possible with the old 201-A and 199 tubes. An 80-amp. storage battery now runs for five months on one charging with the 201-c tubes. I use a 50-foot tinsel cord for an aerial. It is just hung around the room. This tinsel cord gives me positive 9-kc. separation on all stations as well as greater volume and sensitivity than is possible on any outdoor aerial I have tried. It has helped me to almost double my DX log and also to bring in KFI as early as 8:00 p. m. EST. I tried all kinds of wire such as bell-wire, stranded copper, etc., in lengths from 50 to 100 feet, but with no satisfactory results whatever. So I think the tinsel cord has a lot to do with it as it seems to be extremely sensitive to signals. I cannot attain anything like 10-kc. separation on my outdoor antenna.

"For s. w. reception, I built a standard three-circuit regenerative set from

junk material I had on hand. I made it into a one-tube converter so I could plug it into the detector socket of my Browning-Drake to use the audio amplifier. This makes three tubes in use for s. w. reception. The results obtained on this little set were amazing, considering that I use only 45 volts B, and the 50-foot speaker cord as an indoor antenna. Since November last I have heard GSA-B-C-D-E-F, Daventry; DJB-C-D, Germany; EAQ, VK2ME, DOA, G6RX, Pontoise, I2RO, HVJ, PHI, HBP, HBL, YV1BC, YV3BC, HJ1, ABB, VE9HX, VE9GW, CJRX, VE9JR, COC, as well as most of the USA s. w. stations and a number of other foreigners not fully identified.

"All of my DXing, both s. w. and b. c. b., is done before 1:00 p. m. and occasionally 5:00 to 6:00 a. m. The s. w. DX, of course, is best here in the daytime with exceptionally strong signals and distance between 9 and 11 a. m., 3 and 5 p. m. and 8 and 11 p. m. All of my reception was on the magnetic speaker on my Browning-Drake. I will be glad to answer any queries from owners of B-D sets provided a stamped and self-addressed envelope is sent for reply." (Canadian postage of course.)



Here we have a glimpse of the transmitter of VK2ME, "The Voice of Australia." It is located near Sydney, New South Wales. VK2ME is one of the "old reliables" long a favorite with listeners in America.

In the BUSINESS OFFICE

• • • With the EDITOR

IN THIS issue our readers will find the latest time on the air for all of those stations in North America which were kind enough to fill out and return the postal we sent them. The time for Sunday is given in this issue and that for other days of the week will appear in subsequent numbers. In order to save space and avoid the confusing light and dark face type to signify a. m. and p. m., we are adopting the 24-hour clock in this department. At first our readers may find it somewhat puzzling but we are sure if they will bear with us, it will soon be much more convenient than the old method.

As a matter of fact, the 24-hour clock is the only sensible way to designate time. It is folly to have two different ten o'clocks every day while "1:00 a. m." under the old method or "midnight" are often impossible to identify, whether Monday or Tuesday. We have no doubt that sooner or later the 24-hour clock will be universally used and RADEX does not hesitate to take the lead in this reform as it has in many others.

Under the "24-hour clock" midnight is either "24:00" or "0:00"; thus, 23:00-24:00 means from 11:00 p. m. to midnight. 0:00-1:30 means from midnight to 1:30 a. m. Noon is always 12:00. In changing these times to your own clock merely subtract 12. Thus 16:15 is obviously 4:15 p. m., 22:30 is 10:30 p. m.

About the NRC

Luther E. Grim, publicity manager of the National Radio Club, writes the following "piece for the paper." "The Club was organized a year ago by a group of seasoned DX club workers. Through their untiring efforts and the merging of the Atlantic Radio Club, and the Central DX Club, the NRC has grown to a goodly size and en-

joyed a successful season. The weekly bulletins will appear regularly after September first and will contain four pages of red-hot DX gossip, radio news of interest and DX tips. The popular Singleton-Eliminator contest is to be continued. The dues in this hustling club are \$1.25 per year. Robert H. Weaver, 603 W. Market St., York, Pa., is the club president and will handle applications for membership."

Luther adds the following postscript: "While touring the West I stopped at these stations: KDKA, KFBK, KGDM, KWG, KMJ, KRE, KROW, KLS, KFRC, KQW, KGFJ, KPJM, and KGNO. Curiosity led me to KGFJ in Los Angeles. I wanted to see why this station refused to leave the air as so many were complaining of its nightly clogging of the 1210 channel. Miss Kirchner of the station was rather indignant that the DX fraternity should think so harshly of them. She informed me that they have a sponsor for those early morning hours and explained that every morning they missed, due to frequency checks, had to be made up under their contract. KGFJ is by contract duty bound to broadcast all night. It made me wonder how many of us DXers would close down a station if we were in Mr. McGlashen's position."

Those Blurbs and Plugs

The old bugaboo, Advertising, draws the fire of the C. M. Whelan, 2133 South Gilpin St., Denver, Colo. "The radio advertising profession in the USA ought to be ashamed. The quality of their product exhibited over the radio is woefully poor in technique and in verbiage. It is incessantly repetitive. I figure I have had to listen to anywhere from 7,000 to 15,000 advertising 'plugs' in the last thirty months. It's the old railroad notion, 'The public be damned.' Radio can be handled without advertising and Americans

can do it. Canada is doing it. Why not we?" Like so many others, however, Mr. Whelan's pet abomination is the "local advertising plug which cuts off the head and tail of sustaining programs." He would like to send a postal card to each advertiser using these "plugs" somewhat as follows: "Radio listeners like their music whole. Your advertising, thrust in between two programs, violates this liking. Until you shorten your plugs this family will pass up your products. The broadcasting companies are deaf to our appeals; our last resort is not to heed your appeals for custom."

The New CKY

A newsy letter comes to us from Gustave Solomon, 404 Bon Accord Block, Winnipeg, Minn. "CKY will be using 15,000 watts on 960 kcs. around the end of October. The new transmitter, building and equipment, will be located at Headingly, west of Winnipeg, a new location. The tower will be the single vertical type, 200 feet high. The total cost comes to \$100,000. The CRC asked for the improvement. With 5,000 watts at 780 and 910 kcs. CKY wasn't satisfactorily received by listeners outside of Winnipeg which is the reason why CKX, CKY's old 500-watt transmitter, was used to help better service to Manitobans. Now, however, CKX will no longer be required and will leave the air. The new equipment is of the same type as that used by CJRC, Northern Electric, which can be stepped up immediately to practically any greater power desired. CKY's studios are in the building which you give in RADEX as the mail address, one of the Manitoba Telephone System buildings. CJRM is now using its new Northern Electric equipment. New studios have been opened in Regina and Moose Jaw."

And a Bigger WOR

Walter W. Erneman, 108 Seventh Ave., Belmar, N. J., sends us clippings relative to the construction of a new station for WOR, Newark, N. J., which, he says, will easily make WOR New Jersey's best, strongest and most pow-

erful station. It is to cost \$250,000 and will be ready by December first. It is expected that the new transmitter will have three times greater range than the present one. The site is at Carteret, N. J., adjacent to the Rahway River, twelve miles from Newark. In addition to the new transmitter, the building will house the 5000-watt set now in use at Kearny, N. J., an airway radio-beacon and a short-wave transmitter. Two radio towers, each 385 feet high, will hold what is known as a "three-array" antenna system, a new development having its first application in s. w. transmission. The entire plant, including aerial and ground installations, will occupy 34 acres. The network of ground wires alone will cover ten acres and will consist of more than 35 miles of copper, part of which will be laid in the Rahway River.

A New Club

"The Summit Radio Club of this



Jeanie Lang, diminutive singer, finds it difficult to reach both the high notes and the high mike, so gallant Buddy Rogers acts as her supporting cast. You may hear this team of stars in "Family Theatre" program of music and romance. They are assisted by Buddy's Green Stripe Orchestra and the Three Rascals, male harmony trio.

city wishes to be listed as an active, international, all-wave organization," says a letter from that organization, Richard Haskell, Secretary, 49 Overlook Road, Summit, N. J. "For almost two years, the club has existed locally, limited to local members only. Effective August first, however, membership was extended to anyone regardless of location. Our club is about equally divided among bc's and amateurs, although we have several members interested in s. w. DX. A monthly bulletin is issued by the club, tip-sheets when necessary. The club lab is willing to undertake experiments not requiring too much expense and to provide diagrams for members. There are usually two or three contests running of varying natures. A club file is maintained, indexing all stations now on the air, giving full details, slogans, and hours of operation. We have a file of some 400 stations now deleted. For those unable to attend meetings, dues are \$1.50 a year."

Station Notes

"The new Lansing station, WJIM, is on the air," contributes Marion Canniff, 2112 S. Cedar Street, of that city. "I am anxious to see if it is reported from any great distance. I am rather expecting it will be, because, although it uses only 100 watts power, it has the most modern of equipment—in fact they are using as a slogan, 'The most modern broadcasting station in the middle West.' Its antenna is a single tower, 200 feet in height, erected on top of the 15-story building which houses the studios. The station is on from 8:00 a. m. to midnight, EST."

Leslie F. Biebl, Red Bank, N. J., writes us regarding the change in call letters of their station WJBI to WBRB and says that the change in call symbolizes a new management and better programs. WJBI was one of the first broadcast stations to hold a license in New Jersey, originating from the amateur station W2AWL when only WJZ and WOR were operating in that state. Red Bank is situated in the



Here is Rowene Williams, of Chicago, the winner among 20,000 young women who competed in the nationwide auditions conducted by the CBS during the last month for the coveted role of co-star with Dick Powell in "Hollywood Hotel" series which starts on October 5th.

midst of villages peopled by artists and has a wealth of material upon which to draw for radio programs.

Richard W. Watts, 19695 Beach Cliff Blvd., Rocky River, Ohio, writes us from Mexico City through which he is now touring, that he visited XEYZ, and found them planning a short wave transmitter which will be in operation in a few months. Richard will also visit XEB, XEW, XEAL, XETE, and several other stations.

The Mid-Co Exchange, 247 S. Hillside, Wichita, Kans., will give space in their bulletin to DX tips furnished by any club. These tips will also be broadcast on their regular daily period over KFH. The Exchange also presents a DX program the last Thursday of each month from 2:30 to 2:45 a. m. CST. All letters will be verified and all reports acknowledged.

The BEGINNERS'

STORY of RADIO

PART ELEVEN

The Short Waves of Radio

• • • By B. FRANCIS DASHIELL

TO THE experienced student of radio the short waves present an old story. On the other hand, however, to the average broadcast listener or newcomer in the field of radio, the realm of the short waves appears to be a region of mystery. Now that a rapidly multiplying host of enthusiastic short-wave listeners is springing up throughout the land, it will not be amiss to discuss the fascinating and useful short waves of radio.

The average radio listener has confined his tuning to that limited portion of the *wave band* which is the broadcast region. It is embraced between the upper and lower limits of the tuning dial, or 550 meters to 200 meters. Or, speaking in terms of frequencies, these limits are 545 kilocycles and 1,500 kilocycles. For years only commercial radio men were familiar with the vastness of the ether outside of these limits. A great army of amateur radio operators confined their activities to a portion of the wave band. Most of the transmissions outside of the broadcast range were, and still are, in *code*. But there are stations in every country of the world broadcasting programs on short waves, and all of these furnish entertainment and thrills on the short waves.

The Long Waves

Above the 550 meters (or *below* 545 kilocycles) limit of the broadcast band are the *long waves*. They extend upward to more than 20,000 meters (15 kcs.) in length. Great power is needed to send these waves through the air; they are not economical, but commercial code signals are sent this way

to relieve some of the congestion in the more efficient short-wave band.

Below 200 meters (or *above* 1,500 kilocycles) will be found the interesting *short waves* of radio. Immediately below the 200 meters limit the waves really are not of the short variety; most experts contend that the short waves are below 100 meters. The lower practical limit of the short-wave band is about 10 meters (30,000 kilocycles, or 30 megacycles). Below this is an experimental radio band about ten meters wide.

The Short Waves

In the short-wave band (200 to 10 meters, or 1,500 to 30,000 kcs.) will be found both sound broadcasting and code signals, each confined to an individual portion of the band. It should be remembered that *all* of the radio business of the world must be placed in an electrical wave band hemmed in by an upper limit of about 20,000 meters and a lower limit of 10 meters (15 to 30,000 kcs.). In the familiar broadcast band a total of 345 meters separates its upper and lower limits; a difference of but 950 kilocycles. Yet, in the short-wave band, where only 190 meters separates its upper and lower limits, there is a spread of 28,500 kilocycles as compared to the 950 in the broadcast band. But, in the long-wave band, where a difference of 19,455 meters separates the upper and lower limits, there is a frequency difference of only 535 kilocycles.

This means, then, that if radio stations were assigned frequencies which differ by ten kilocycles: In the long-



Ferde Grofe, master of dance rhythms, composer of outstanding American music and noted for his orchestration of George Gershwin's "Rhapsody in Blue." Grofe is a descendant of four generations of musicians; he was a pianist at five and a composer at nine.

wave band, where tuning is not sharp and such a frequency difference too small, only 53 stations could operate; in the broadcast band 95 stations can broadcast nicely without interference; but, in the short-wave band, a total of 2,850 stations can be placed. In the entire electrical wave band a total of 2,998 stations could thus be assigned. Ninety-six per cent of the total, however, would be in the short-wave band. Perhaps this explanation will prove to the reader something of the great value of short waves to radio.

Many Short-Wave Stations

It is a fact, however, that many times 3,000 stations are scattered throughout the world in this wave band. Distance weakens signals, and widely separated stations can be operated on the same frequency without interference. And, in the short waves,

where operation is more economical and efficient, stations are crowded much closer than in our example of an ideal separation of ten kilocycles.

The reader has studied wave motion as well as the characteristics of radio or electrical waves (Chapters 2 and 7). It might be well for the reader to understand that radio transmission on short waves or by high frequencies is the most economical method. The rapid electrical vibrations of the transmitting station carry farther than the slow vibrations or oscillations of the long-wave stations. Of two stations with equal power, one operating on 10,000 meters (30 kcs.) will not carry as far as the station sending out a wave 100 meters in length (3,000 kcs.). The short-wave station will send its wave with only a small fraction of the power needed by a long-wave station to cover the same distance. This is due, in part, to the rapid vibration and penetrating power of the high radio frequencies from the short-wave stations. The same effect is noted with sounds; a shrill, high-pitched whistle can be heard at a greater distance than a deep, low-toned whistle.

Reflected Waves

But this is not the only reason why the short waves are so efficient. We know that heat and light rays can be *reflected*. The short radio waves have high frequencies of vibration but not as high as heat and light. But they are high enough to reflect to some degree.

Now, a radio wave, when it is shot away from its sending antenna, will travel outward by two routes—one, the *ground wave*, and the other, the *sky wave*. The ground wave soon disappears. This is the reason why we can hear nearby stations with only a ground wire and no antenna. The sky wave is a *radiated* wave (see Chapter 7). High above us in the outer air is an electrical region called the *Kennelly-Heaviside Layer*. When radio waves reach this outer atmosphere

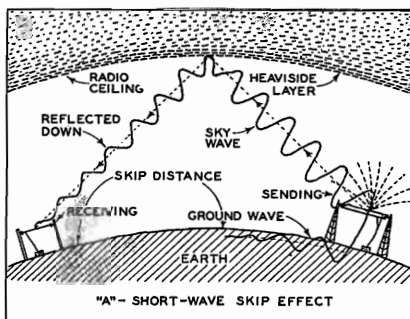
they are turned back toward the earth. Changes in the reflecting surfaces of this distance layer are believed to cause the fading with which we are so familiar.

But reflection of the sky wave results in what is termed a *skip-distance effect*. This phenomenon varies according to the wave lengths used and whether daylight or darkness exists. Darkness always aids radio transmissions, particularly on the longer waves. Certain of the short waves seem just as strong during the day as at night.

Skip-Distance Effect

When the radio wave is reflected from the sky it comes down at an angle, far beyond the limits of the ground wave. Between the vanishing point of the quickly absorbed ground wave and the beginning of the area covered when the reflected wave strikes the earth there will be a wide area not reached by any radiation from this particular wave. Signals cannot be heard, for the receiver is located *within* the skip-distance region. These skip distances are seldom noticed on the broadcast waves, never on the very long waves but are troublesome on most of the short waves. Most likely this effect is the cause for much dissatisfaction when certain short-wave stations cannot be heard on the best receiving sets.

When the reflected sky wave reaches earth it may be many hundreds of miles from its starting point. It will be of full strength when it strikes and then slowly die out over a distance of thousands of miles. This accounts for the reports of long distance reception on short waves. For instance, a 30-meter (10 megacycles) signal can be heard regularly on its ground wave up to about 60 miles from its starting point. Then the ground wave dies out. The reflected sky wave does not strike earth until about 400 miles farther away. Thus there is a dead area, skipped over by



the sky wave, where the skip-effect will be noted. From the point 400 miles away to about 4,500 miles the reflected sky waves cover the surface, and the station can be heard. This is shown by the illustration "A."

Wave Motion

Let us consider wave motion and its four *components*—power, intensity or *amplitude*; speed or *velocity*; *wave length* (distance between successive waves); and *frequency* (number of times waves occur in one unit of time). Amplitude is determined by the power or energy applied at the transmitter. Velocity is a fixed speed; it is that of light, 186,000 miles a second, or 300,000,000 meters (299,820,000 meters to be exact) a second (see Chapters One and Seven). Since velocity is fixed by nature's law, but wave length and frequency are variable by tuning the inductances and capacities of the transmitter, we find there is a direct relationship between the latter two variables. For instance, if a radio signal that measures 100 meters between its waves, passes a fixed point during one second, a total of 3,000,000 waves would appear. This figure, then, is the frequency of the waves, and would be written 3,000 kilocycles.

Amplitude and Attenuation

Water waves may be used to visualize radio waves in a popular way. Radio waves, however, move out in *all* directions, while water waves move only along the surface. On the ocean, if waves travel 1,000 feet a minute

and the distance between crests is 200 feet (a wave length), then five such waves will pass by in one minute. This is the frequency of the waves. The amplitude will be the height of the wave. Great storms stir up high waves of considerable amplitude. Such waves move out far from the center of the storm that creates them. On the other hand, tiny ripples caused by tossing a stone into a pond soon disappear because their amplitude is insignificant. The rate at which the amplitude of waves dies down to a level surface (an absence of all energy) is called the *attenuation* of the waves. The above examples serve to explain wave actions in radio.

Because of the relationship between frequency and wave length it is possible to determine either one of these factors if the other is known. To find the *frequency* in *cycles* divide the fixed speed of 300,000,000 meters (for absolute accuracy use 299,820,000) by the wave length in meters. To find the *wave length* in *meters* divide the same constant by the frequency in *cycles*.

Above 20,000 Meters

The practical limits of the radio wave band lie between 10 meters, for short waves, and 20,000 meters, for very long waves. But what lies beyond these limits? Why stop there? Can radio use wave lengths below 10 meters and above 20,000 meters? The interested student and reader will want to know the answer, so let us take a brief excursion into Nature's laboratory of wave lengths and frequencies and their vibrating sources.

In the region above 20,000 meters (below 15,000 cycles) there is still a small part available for radio. It is neither satisfactory nor efficient. It is the upper limit of the radio frequencies and approaches the audio frequencies (see Chapter Two). When the frequency of vibrations becomes less than 10,000 a second the human ear will respond and hear the waves as *sound*. The lowest vibration frequency

is about 25. Soon all vibration ceases and we have reached the end of the long wave lengths.

Below 10 Meters

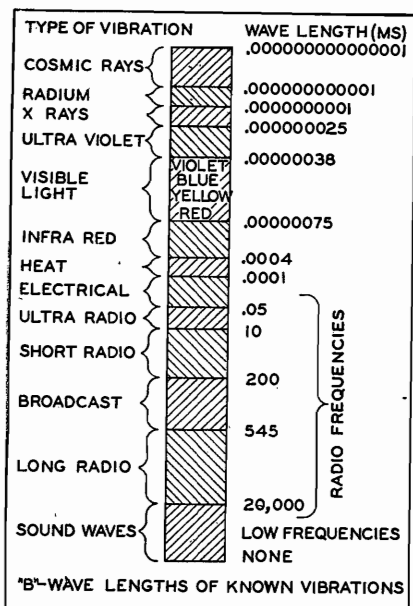
But it is the region below the ten-meter end of the radio band that holds our interest. From ten to one meter (30,000 to 300,000 kilocycles, or 30 to 300 megacycles) is a continuation of the *ultra* short-wave band, and is used principally for experimental purposes. Below one meter we find the end of the radio-wave band just as we found its top up around 25,000 meters.

What lies below one meter of wave length, or a frequency of 300,000 kilocycles? First there is a region where high-frequency electrical vibrations can be created. They are not radio waves. Interesting experiments have been conducted in this band—between one meter and one thousandth of a meter. Such vibrations can burn without heat, create fever, and actually kill. Visions of lethal rays are being pictured by experimenters in this field.

The Realm of Light

Next in the shortening wave band is a region of *heat* waves, closely followed by *infra-red rays*. The latter have wave lengths of less than one millionth of a meter, or frequencies of over 300 billion kilocycles a second! Infra-red vibrations are not visible. They will penetrate fog and smoke and affect certain plates so as to give photographs through fog and haze. There is no known source of infra-red short waves other than Nature so that man can use them to penetrate fog. The discovery of a way to produce such artificial radiation would be as great as radio.

The next wave band is visible *light*. Light is a wave motion; it comes to us in a wave-length band which lies between 75 one-hundred millionths of a meter to 35 one-hundred millionths of a meter. The frequency limits range from 4,000,000,000,000 cycles (4 billion kilocycles) a second to 8 billion kilocycles! Light, as we see it, is white. But all of us are familiar



with the spreading out of a tiny beam of white light by means of a glass prism into the red, orange, yellow, green, blue and violet colors of the *spectrum*. The spectrum spreads out the component colors of white light in the order of their wave lengths, the longest waves being at the red end and the shortest waves at the violet end. It is this effect that has given the name spectrum to the radio wave-length band, as, for instance, *broadcast spectrum*, etc.

Cosmic Rays

Next come the *ultra-violet rays* with waves about 25 billionths of a meter in length—about 6,500,000 waves to one inch! Then appear the *x-rays*, about one ten-billionth of a meter in length. *Radium*, which emits short, penetrating rays, has still even shorter waves. Still unknown and constantly sought after, are the *cosmic rays*. They are believed to have the shortest wave lengths known—the bottom of the wave-motion band of Nature. Scientists have estimated the cosmic ray to vibrate so rapidly that its waves measure

only one one-millionth of a billionth of a meter in length!

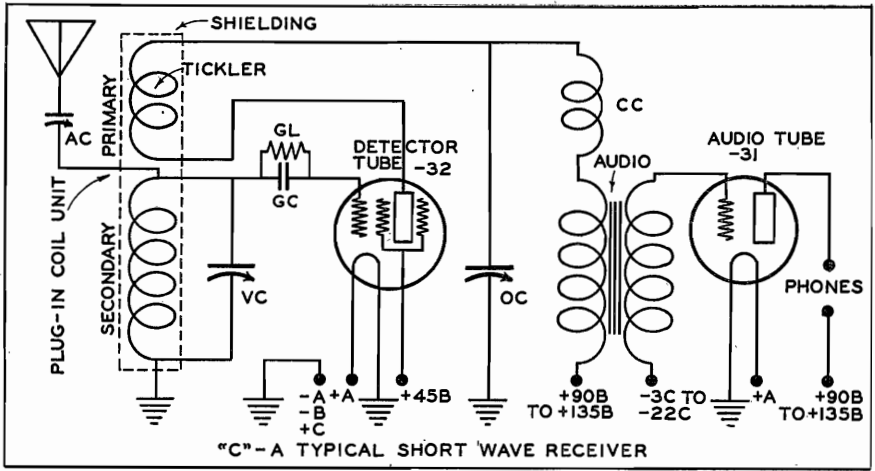
Thus we have seen that the vibrations in Nature's wave-length band appear between limits of .00000000000001 meter up to 30,000 meters. Radio occupies only a small portion of the total. The entire band, with the radio portion, is shown at "B." And, as the short waves control nearly all of the radio spectrum; they are the key to the future of radio.

A Short-Wave Receiver

Because the short-wave spectrum holds nine-tenths of all radio operations, it is natural that most listeners, after their initiation to radio through the regular broadcast channels, turn to the short waves. There happen to be four methods by which we can listen to short waves. First, and the best of all, is by means of specially built *short-wave receivers*; second, with *all-wave receivers*; third, by using a *short-wave converter*, in combination with a broadcast set; and fourth, the plugging in of a *short-wave adapter*.

The short-wave receiver is not essentially different from the broadcast sets described in Chapters 7, 9 and 10. Its r. f. coils are smaller and divided into groups, each to cover a particular wave band. One coil will not be sufficient to pass all the alternating current frequencies between 10 and 200 meters. Therefore, it is a common practice to use sets of r.f. transformers, usually interchangeable, but often arranged with switches instead, having windings that are resonant over the 10-20, 20-40, 40-80, and 80-200 meters wave bands. These inductances are tuned in the conventional manner, but the variable condensers are smaller than those used in broadcast sets.

The smaller the coil and the fewer its turns of wire, the less a.c. resistance (reactance) it offers to the fast vibrations of the short wave (see Chapter Three). For the very short waves—10 to 25 meters—the coils of the r.f. transformer consist of about half a dozen turns of wire. Because of the nature of the high frequencies, from 12-



000 to 30,000 kilocycles a second, insulation is difficult. For instance, in Chapter Four we saw that high frequencies will pass through a very tiny condenser or capacity. This is why energy losses with short waves are difficult to control. The least capacity effect causes some energy to leak away. Unless a receiver intended to operate in the short waves is properly constructed it will be next to useless.

Typical Circuit

At "C" is shown the circuit of a typical two-tube short-wave receiver. It closely resembles the average small broadcast receiver. However, in order to obtain the necessary sensitivity these types of sets use the *feed-back* principle, as explained in Chapter Nine.

A set of four *plug-in coils* is required

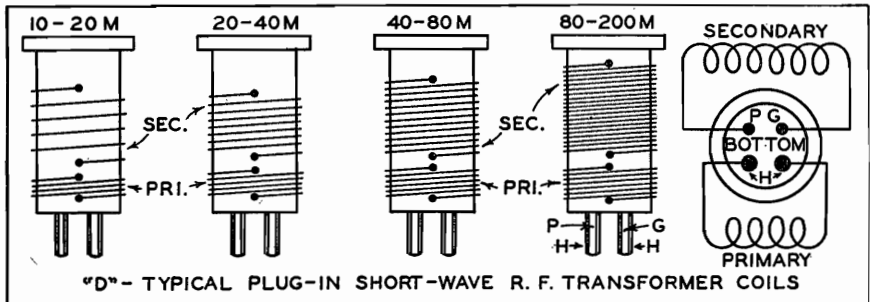
to cover the entire band in this short-wave receiver. They are wound on the forms sold for the purpose, as shown at "D." The forms are standard four-pin bases, about 1¼ inches in diameter and 2½ inches high.

The first coil covers the 10 to 20 meters band. Its secondary is wound with 6 turns of No. 22 enameled wire. The turns are kept about 3/16 inch apart. The primary or *tickler* is closely wound with 4 turns of No. 30 enameled wire. A space of 1/8 inch is left between the primary and secondary windings. All the coils use the same size wire, as above specified.

The r.f. Coils

For the 20 to 40 meters coil place 12 turns on the secondary and wind it in a space one inch long; the prim-

(Continued on page 32)



The PRIVATE LIVES of your Radio Friends

• • • By "BETTY"

JOE COOK, whose hilarious clowning on the Colgate House Party show has won him a firm niche in radio's hall of fame, started life in Chicago under the name of Lopez. Both his parents had been in the show business, but at the time of Joe's arrival his father was specializing in portrait painting on a chain store scale, with studios in Grand Rapids, Chicago and Pierceton, Indiana. His mother died and his father was drowned before Joe had his fourth birthday. He and his brother, Leo, were adopted by the Cook family of Evansville, Indiana.

In his early days Joe learned to juggle and do stunts on a wooden ball. He also practiced on a tight rope and a slack rope even when the family washing was getting a sunning. They put on back-yard shows and charged a nickel admission, when the other children in the neighborhood were afraid to charge more than twelve pins. But the first really professional engagement for young Joe came when he was twelve years old. He was engaged for a dollar a night to appear in Dr. Buckner's Corak Wonder Company show in Evansville. It was a traveling medicine show that played one town each week. When Joe quit the show, the doctor gave him twelve bottles of his wonderful medicine in lieu of the seven dollars coming to him.

When Joe was sixteen, his family moved to New York and he went to St. Francis Xavier Academy. Out of his allowance he bought Indian clubs and stuck doggedly to his juggling practice. After playing in amateur nights, he got a booking

with Juggling Barretts and later did a single in black face.

Wins Fame as Juggler

Soon Cook's "One Man Vaudeville Show" was famous. He walked tight ropes and rolling balls, juggled everything from cannon balls to lighted matches and demonstrated his genius for sharpshooting. Quite incidentally, Joe developed his natural gift for goofy yarn spinning—beginning with an accurate description of an event or predicament and winding up with a rapid, ludicrous ending.

Joe's success in vaudeville netted him a bid to the Vanities. Then fol-



Joe Cook.

lowed three shows of his own—"Rain or Shine," "Fine and Dandy," and "Hold Your Horses." With this mounting fame, Joe's glib, gleeful foolery became a likely prospect for the microphone. But one obstacle intervened. Joe refused to give an audition. Then came the Colgate House Party. Joe acted as guest host three times and proved an uproarious success. He was signed immediately for his first radio series—to head the House Party festivities for the run of the show.

Joe's hobby is his "Sleepless Hollow" estate at Lake Hopatcong. The famous comedian keeps his home a perpetual House Party with a show every minute. His servants are old actors who gleefully put on a show—sometimes to the surprise and discomfort of unwary guests.

Meet Miss Martha Mears

Earning a living as a radio star is already old stuff to Martha Mears, although she has been heard over NBC networks for only a few months. She was graduated from the University of Missouri last June, but she started her radio career before that, paying her way through her senior year with the proceeds from commercial broadcasts. When she was graduated from college she intended to take up teaching as a career, but she stuck to radio on local St. Louis stations until Gus Edwards signed her for his vaudeville troupe. She came to New York and within three weeks was singing on NBC networks.

Martha Marie Mears was born in Mexico, Missouri, on July 18, 1910. She was educated at Moberly Junior College and the University of Missouri. She was awarded a life certificate for teaching in the State of Missouri when she was graduated. But music and radio came along in the meantime to interfere with a teaching career.

A chance audition at a local station in Columbia, Missouri, led to an en-



Martha Mears.

gagement for Martha for a series of programs which before long had a commercial sponsor. That was in March, 1931, and from that time on she has been on the air continuously in one type of program or another. At different times while on the air in St. Louis she was ballad singer, classical singer, director of a kiddies' club, advisor to housewives on recipes, style and beauty expert, imitator and half of a song and patter team.

Martha's musical background included study with some of the most famous vocal teachers in the country and five years of professional church solo and choir work before she ever sang popular tunes. Her sudden success has left her thrilled but otherwise unaffected. She is of Swedish descent and shows it in her light blonde hair and blue eyes. She is five feet two inches tall and weighs 105 pounds. Unmarried, for the usual reason, she says—just hasn't met the right man. One of the biggest influences in her life is numerology. Her last name should really be spelled "Meers" but she insists

on "Mears" because since changing it she has met with success. Well, it might have been the numbers and then again it might have been her smooth contralto voice and engaging radio personality that brought her success. At any rate, a success she is.

A Young Maestro

Richard Himber, who was born on February 20, 1906, in Newark, N. J., made his professional debut at the age of fourteen as a violin soloist in a Newark high school. During the early days of his career he met Ted Fiorito and Rudy Vallee, and it was on one of the Vallee radio programs that Dick made his first appearance before the microphone. The young maestro has been studying music for the past fifteen years and this consistent training led to engagements conducting an orchestra for Sophie Tucker and leading the instrumentalists at Essex House and the Ritz-Carlton Hotel in New York.

Dick takes time off every now and



Richard Himber and Vera Van.

then from conducting bands and composes tunes, one of which, "It Isn't Fair," serves as the theme song for the Champions. His latest composition was for a lyric by Ned Washington, entitled "I'm Living a Lie."

Maestro Himber finds plenty for his never-idle hands to do besides conducting and composing. He's clever with a cue and billiard balls and can sever a cigarette with a rifle shot; transform a quarter into a matchbox, or deal his bridge partner thirteen cards of the same suit.

Dick likes to read the works of Victor Hugo, W. Somerset Maugham, Dumas and Shakespeare . . . hates raw vegetables and high sopranos . . . weighs 175 pounds, is five feet eight inches tall, has red hair and blue eyes . . . used to weigh 210 pounds, but went on a diet, losing a pound a day . . . first job was as a wrapper in a department store, earning six dollars a week. Dick is pictured here with the songstress, Vera Van.

* * *

Jack Benny, whose 26-week contract with General Tire expires early in October, will be back on the air again for that company early in the spring of 1935, with Mary Livingstone, Frank Parker and Don Bestor's orchestra. In the meantime, however, Jack will be on the air for General Foods.

* * *

Wendell Hall, the Red Headed Music Maker, carried off first honors in the official song writing contest conducted by A Century of Progress. Hall's "Meet Me on the Midway" won the contest and a silver loving cup for its composer emblematic of victory over more than 150 entrants, both professional and amateur.

* * *

Buddy Rogers and his orchestra, at present starred on the Ward Family Theatre program with Jeanie Lang over CBS Sunday nights, is reported to have broken Ben Bernie's

(Continued on page 38)

ON *the* RADIO in AUSTRALIA

By Roy W. Arthur*

IT GOES without saying that I am a DXer and a very ardent one as well. DXing here in "Down Under" is only in its infancy so to speak, that is very few evidence any inclination to become enthusiastic over it. As for myself, I have been chasing the elusive overseas signals for more than four years and have met with extraordinary success in logging them. Up to this moment I have played in the proximity of 400 broadcasters located outside this fair land of ours—Australia.

Over 100 have been heard emanating from over your way in America with KFI the best of them all, notwithstanding all the half-million watts of W8XO or WLW. However, WLW is certainly effective. KPO, too, is well up with the above mentioned. The station at Cleveland where you are, WTAM, is one that can be classified outstanding also but is only heard through our summer months, taking the air on their early morning sessions and then on for around an hour subsequent. In Mexico the loquacious doctor's station, XER, leads the way or did so. (They've woke up to him over there too, haven't they?) Anyhow a wonderful station for reception here in this country (even if we didn't believe all that the Doc had to say.) XEPN is also received fine down this way. XENT is not heard very well here.

Other stations worthy of mention are as follows: WABC, WSB, WBBM, KGO, WFAA, WCCO, KOA, WLW, WHO, KRLD, KFBI, KNX, WTIC, KMOX, KSL and WOAI. Even among the lesser-powered brigade many are exceptionally well heard. Conditions here at present time (May 12) are tending towards good reception of an afternoon from stations over in



Presenting the Royal Canadians—Guy Lombardo (upper right). Victor (top left). Liebert (bottom left) and Carmen—all members of the famous dance orchestra which is heard in a series of weekly broadcasts over the NBC Red net.

America. This is brought about by weather heralding the winter season for us folk for the next three months or so.

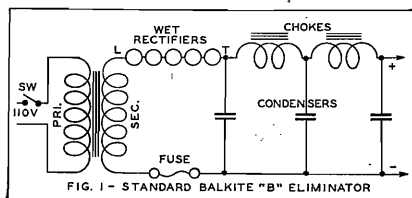
It might be of interest to you if I give you some information relative to this location. Wollongong is right in the midst of the "Garden of Australia," 52 miles south of Sydney in the glorious Illawarra district on the south coast of New South Wales, and within eight miles of the world-famous "Bulli Pass and Sublime Point lookout" and on the shores of the Pacific Ocean. More than 150 miles of the world's best scenery is here—a veritable garden of Eden. All the world tourists visit these parts of the Antipodes.

**10 Kenny Street, Wollongong, New South Wales, Australia.*

A subscription blank is printed on page 96 for your convenience. Won't you use it?

The Department of FIRST AID

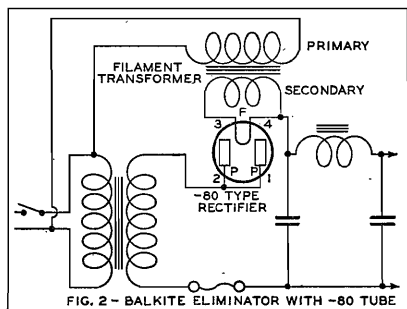
• • • By the TECHNICAL EDITOR



I HAVE a Balkite "B" eliminator and it is giving me much trouble. I have tried replacing the liquid, but the results are not satisfactory. A service man has advised me to get a rectifying tube and place it in the Balkite unit in place of the jars. I believe he said to use the -80 type of tube. Will this work, and if so, will it be noise-free operation? Please show me how to make this alteration in the eliminator.

The Balkite "B" eliminator uses a half-wave electrolytic rectifier, as shown in Fig. 1. It uses a single power transformer and its secondary has no center tap for proper rectifier or tube connections. Also, there is no provision made for heating the filament of the rectifying tube.

A type -80 rectifier tube with its two plates connected together will make a satisfactory substitute for the wet rectifier jars, as shown in Fig. 2. A small filament transformer will



be needed to heat the filament of the tube, and the primary of the transformer is connected as shown. We do not believe it will be necessary to add more capacity to the filter condensers due to the removal of the internal capacity of the wet electrolytic jars.

Crystal vs. Tube

I wish to know whether a fixed type of crystal could be used in the signal booster shown in the April, 1934, issue of RADEX, instead of the tube.

A crystal could not be used because the crystal is primarily a rectifier only, or detector. The tube in the booster is a radio-frequency amplifier and not a detector-rectifier. A combination of tube and crystal in the booster would fail to give results. The current delivered from the booster is a high-frequency type even if of a long-wave characteristic. That delivered from the crystal would be an audio-frequency current, much too low to pass through the tuned i.f. stages of the broadcast receiver.

Two-Volt Adapter

I wish to use a short-wave adapter with a 2-volt battery Crosley receiver. What do you suggest?

You can use the 2-volt tube from the detector of your receiver. You do not say whether this set is a superheterodyne circuit, but if it is, you must use the second detector tube. The tube in question is placed in the adapter socket and the adapter plug is inserted in the empty socket of the receiver. It will not matter if the adapter is made to run on 6 volts, and to use that type of tube in it. Of course, you could not expect any remarkable results and cover great distances. The adapter principle does not admit of great power

or sensitivity, and you lose the radio-frequency amplification features of your broadcast receiver.

Zenith and 2-Volt Tubes

Can the two-volt tubes be used in my battery Zenith No. 10 receiver? This set now utilizes the type -01A tubes.

The two-volt tubes may be used to replace 6-volt tubes in any battery receiver. Replace the -01As with -30s. You must provide a source of *exactly* two volts to the filaments of the -30 tubes. The filament rheostat may inject some resistance and should be turned full on or removed by short circuiting. The "B" and "C" batteries will not require changing.

Band Spread

I would like to add the band spread coils to my Philco 470 receiver. Please tell me how this is done.

We do not recommend the adding of band spread coils to this receiver. It would mean a complete rebuilding of the set with its coils and condensers. Tuning would be changed and the dial might become more or less useless. Such an alteration would call for work by an experienced serviceman, new material, and a general reduction of the present tuning limits of the set.

Automatic Volume Control

Please tell me how the automatic volume control on my receiver works. I am much interested in its actions.

There are a number of types of automatic volume control used in modern receivers, all of which, for obvious reasons, cannot be discussed here. Most of the circuits employ a method by which the negative bias applied to the grids of the radio-frequency tubes and amplifiers of the broadcast receiver is increased as the volume of the incoming signals increases. This increase in grid bias reduces the amplification of the r.f. tubes and holds the signal at a predetermined level, and prevents it from "blasting" forth in a loud



Few radio speakers dare to try to talk extemporaneously before the microphone. H. V. Kaltenborn, the veteran commentator, is said to be the only one. He uses only a page of brief notes in his broadcasts over the Columbia network.

sound. Then, as the volume of the incoming signal decreases, due to fading of the signal waves, the grid bias is automatically reduced and the amplification of the tubes increases. This tends to bring up the strength of the signal to the predetermined level just mentioned. However, this striving to increase a fading signal with high amplification is a source of some distortion and poor tone qualities. The latter feature is one of the difficulties of a.v.c. on very weak and far distant signals that tend to fade badly.

Transformer Output

To settle an argument will you tell me what kind of current is obtained from the secondary of a transformer, I mean all types of transformers; audio, i.f. and r.f. types.

The output of any transformer is a pure form of alternating current. The frequency of its alternations is equal to the frequency of the changes

in voltage-pulsations, alternations or interruptions of the current flowing through the primary coil. The output of an ordinary spark coil that fires the plugs in gasoline motors is an alternating current, although the current that flows in the primary is a direct current that is interrupted quickly by a vibrating contact. It is not necessary to have an alternating current in the primary of a transformer. It is only necessary to vary or change from an even flow the potential of the direct current in the primary. Each tube of a radio receiver gives out a pulsating or rectified current that passes into the primary of the immediately following transformer, either of the radio-frequency, intermediate-frequency or audio-frequency types. These pulsations and changes in voltage will produce perfect alterations of potential in the secondary of the transformer. In this respect we wish to refer you to an article on page 5 of the December, 1933, issue of RADEX.

Signal Booster

Can I use the signal booster described in the April, 1934, RADEX, with my Atwater-Kent 20 receiver? Please give me a few more constructional details.

It will cost very little to build one of these i.f. amplifying units. It consists of an antenna coil of about 60-70 turns of No. 26 or 28 cotton covered wire. This coil is tuned by a .0005 mfd. variable condenser connected between the two ends of the coil. The tube may be a -01A and connected to your present "A" battery source. The .01 mfd. condenser and 700-ohm resistor with cathode resistor connections to the tube can then be removed from the circuit. They were shown in our diagram in the April issue. If you use a -01A tube only 90 volts will be required for the plate instead of 180 as indicated.

Booster Tunes High

Please give me more information about using your signal booster with my Philco converter and a Rogers receiver. I can not get low wave stations at all.

We think likely that the reason you are not getting all signals through the booster is due to the fact that the booster's r.f. coil is too high in value for the lower frequencies of your broadcast receiver. We suggest that you try removing some of the wire from the coil L of the booster, a turn at a time, until the signals passed into the broadcast receiver seem to be of a maximum strength on the wave lengths in question.

Noisy Short Waves

There is a strange noise in my Atwater Kent 711 All-Wave receiver when listening to the short waves. Some people tell me it is static. What do you think?

A "rushing" sound is more or less part of short-wave reception. A set is tuned so sharply and the tubes are working at their utmost to bring in weak short-wave signals. Tube noises, or a characteristic rushing sound, can be heard. Then, too, there is the question of natural static. This annoyance is with us always; science has been unable to eliminate it from radio. It is recognized by its crashing, sputtering, hissing, and frying sounds.

It is possible that the noise is due to a defective electrolytic condenser, or some resistor within the set. These parts can be tested and replaced if necessary. A gassy tube may cause such trouble. If the trouble is in the set a serviceman should be able quickly to locate the cause. Some of the Atwater Kent wire-wound volume controls have caused similar noises.

Silencing the Speaker

In connecting headphones to my Knight 5-tube receiver I find it impos-

sible to silence the speaker by cutting one of the voice coils. Please help me further.

The phone connections can be made only to the -42 power tube. This tube is a standard 6-prong tube, and if an adapter is used beneath the tube to make the contact it must be a 6-hole adapter. The connection is made to the plate of the tube socket. The phones should be connected in series with a large fixed condenser of about 0.1 mfd. capacity, and the chassis.

If you cut the proper wire you can silence the speaker entirely. Examine the parchment cone; at its apex is a small coil of wire that "floats" with the cone between the poles of the large field magnet. There is also a coil of wire—the field—on this field magnet. Its wires should not be touched. Two flexible leads run from the voice coil on the cone to the secondary of the power or output transformer. It is only neces-



A recent portrait of Howard Barlow, Columbia's outstanding conductor of classical and symphonic works.

sary to cut one of the flexible wires in two, and insert a small switch so the cone can be cut on or off, as desired.

Atwater Kent Detector

How can I locate the detector tube in my Atwater Kent No. 70 receiver? Also, is it possible to replace the 485 tubes in a Sparton 69 receiver with the 56 types?

There are three or four designs of the A-K 70, and we have selected the most popular type D-1 chassis since you have indicated only the model number. A row of four tubes extends from the front to the rear of the chassis. The first tube, at the front of the set, is the detector. Other tubes in the row are: 3rd, 2nd and 1st radio-frequency tubes, the latter being the last.

If 485s are being used in the Sparton 69 receiver you will find them similar to type -27s, and the -27 can be replaced with 56s in most cases. All the sockets in your set can be fitted with type 56s when either 484s and 485s are being used.

Overlapping Stations

I have noticed the overlapping of stations in my Westone model 40 receiver. Why is this and what can be done to prevent it?

The overlapping of stations with this circuit cannot easily be avoided as there is only one tuned circuit preceding the first detector. Undesirable signals find their way into the first tube through capacity coupling; through the tuned antenna circuit; or through what is called image relationship.

Undoubtedly the set is sharp in tuning as the "desirable to undesirable signal ratio" is such that the latter will not be detected. Since this ratio reduces as the frequency increases the only remedy is to use a well designed bandpass tuner preceding the first detector. One additional tuned r.f. circuit weakly coupled to the present r.f. tuner will

be satisfactory. A three-gang tuning condenser unit can be used to replace the present two-gang unit if the additional tuned circuit is added. Your serviceman can make this addition without excessive cost.

A Choking Set

There is, at times, a choking-up of my Knight 8-tube set. It seems to go on and off, and I am at a loss to account for it. I hope you can help me by telling what should be done.

Intermittent reception, as you have described it, is the most difficult trouble there is to locate in a radio set. The choking of the signals seems to indicate a defective plate circuit. A defective grid circuit will cause choking but this usually is accompanied by motorboating. A defective bias resistor or condenser in any of the audio stages or the detector will cause intermittent choking.

Bypass condensers give this trouble. However, defective condensers of this type seldom show up on ordinary tests. We believe in the substitution method of shunting each defective condenser temporarily with a new one to see if the trouble again reappears. If the trouble stops when substitution has been made you can be assured that the trouble has been located. However, a good serviceman with testing equipment is better qualified to locate the trouble quickly.

Detrola S-W Converter

Please advise me how to make connections to a Detrola short-wave converter and my radio receiver. There are three wires on the converter—two red and one black. I have tried all kinds of connections but none of them work.

The three wires on the Detrola short wave converter are: Antenna lead-in to the converter; lead from converter to the antenna terminal on the receiver; and the ground connection. Although we cannot identify

the wires by colors, we feel confident the black wire is the ground. A red wire, which should be marked "Antenna," goes to the outdoors antenna, and the remaining red wire goes to the binding post of the receiver, marked "Ant."

The usual trouble with a short-wave converter when connections are correct is the failure of the oscillator to oscillate. If a higher plate voltage is supplied to the converter it might work. Or sometimes replacing the oscillator with a new tube remedies the trouble.

Regulating Tone

How can I regulate the pitch or tone quality of my Model 91B Philco receiver? The set is in good condition but the tone always seems too high in pitch or sharp, especially with voices. Because of this words are not clear. A serviceman made an adjustment very quickly, which did not last, and I would like to know how to make this adjustment myself when required.

This receiver is provided with a tone control and a fixed tone compensator, none of which have any variable components in them. Several tone adjustments can be made with the tone control switch, but these remain fixed after the tone control knob is set. Adjustment of the r.f. and i.f. stages for alignment will have some effect on tone quality but when the proper alignment is made this adjustment should not be changed under any conditions. When the receiver is in proper working order all adjustments should be made with the tone control knob. Therefore, we are at a loss to account for the adjustments quickly made by the serviceman. There is the possibility, of course, of defective condensers in the tone control assembly. Your serviceman can tell you about this.

Day Fan Set

Will you tell me what new tubes to

place in my Day Fan receiver, model 5065?

The -27 tube can be replaced with a 56. The -26s cannot be replaced. The -71A is the best type of tube to use in this particular circuit. No changes, then, are recommended.

Loop Antenna

How can I construct a directional loop antenna that will be satisfactory to use with my Majestic 90 type of receiver? Can it be used indoors or must it be erected outside?

A good loop antenna can be wound on a frame of wood that is about four feet square. About 20 turns of No. 26 cotton covered wire should be used, spacing the turns flat and about $\frac{1}{4}$ inch apart. The frame is hung vertically from the ceiling so it can be rotated about its axis through 360 degrees. The two ends of the winding connect to the antenna and ground posts of the receiver. A ground wire is used as normally. Some receivers may require a small fixed condenser in series with the loop coil and the antenna post of the receiver so as to prevent a short circuit between the antenna and the ground. It is not necessary with your Majestic set

"All" Waves

Please advise me whether I can get better reception with a short-wave receiver than with an all-wave set when listening to the short waves.

Any receiver designed to perform a single purpose is, of course, more effective than combination outfits. Therefore, a specially built short-wave receiver of careful design will give better results than the short-wave portion of an all-wave receiver. If you invest in a good short-wave set, carefully built and shielded, using good plug-in coils, you will be more than pleased with the results. However, good all-wave receivers are so excellent in their design and action that the s. w. reception now being obtained is very satisfactory.

The Canadian DX Relay

By B. L. Ahman, Jr.

THE CDXR will be two years old in December of this year. In these two years it has jumped to second place in size of radio clubs. Organized originally as a Canadian club exclusively it wasn't long before other American DXers began to apply for membership until now about 45 per cent are Canadian, 45 per cent are U. S. and the other ten per cent are from Egypt, Holland, Belgium, Scotland, England, South Africa, Australia, New Zealand, Alaska, Newfoundland, Porto Rico, Cuba and Hawaii.

The Club has a Courtesy Programs Committee of 35 members with a coast-to-coast international tip period broadcast weekly over the best known and most popular radio stations. A list of the stations which have agreed to participate in broadcasting CDXR tips is given below.

The CDXR Bulletin is published weekly. The Club plans for a number of contests to be conducted next year. The CDXR is behind any plan for interclub co-operation and is particularly interested in helping the novices in DX by educating them in the proper way to make radio reports and in identifying foreign stations.

Members may join for one month for 25 cents as a trial. They may then join for a half-year for one dollar or a full year for \$1.75. Further information may be secured from F. H. Bisset, President, Goderich, Ont., or from B. L. Ahman, Jr., Publicity Manager, 3313 Westerwald Ave, Baltimore, Md.

The following stations comprise the international chain which will broadcast a weekly period of DX tips CFCF, Montreal; CFCT, Victoria; CFCY, Charlottetown; CFNB,

Fredericton; CFQC, Saskatoon; CFRB, Toronto; CHAB, Moose Jaw; CHNS, Halifax; CHWC, Regina; CJCA, Edmonton; CJOR, Vancouver; CKBI, Prince Albert; CKCK, Regina; KECA and KFI, Los Angeles; KFYR, Bismarck; KDKA, Pittsburgh (KDKA DX Club program) KUOA, Fayetteville; KIDO, Boise; KOA, Denver; WBBM, Chicago; WBZ, Boston; WCAU, Philadelphia; WCCO, Minneapolis; WCSC, Charleston; WFEA, Manchester; WCSH, Portland; WJSV, Washington; WOWO, Fort Wayne; WQAM, Miami; WSB, Atlanta. All stations will broadcast either on Friday or Saturday nights.

On All Waves In ENGLAND

By Dudley C. Stent*

WHE DXers in England concentrate mostly on reception of stations in North and South America, although one of the British members of the IDA has two Aussies verified. In England we do not count anything as DX unless it is over 2000 miles away, therefore reception of foreign stations in Europe does not interest us.

Reception of American stations in England is seldom possible before 9:30 p.m. GMT and after 6:30 a.m., so most of our DX work is done during the early hours of the morning. Many of the more powerful stations in the USA are regarded by us as 'locals' and in this group are WTIC, WCAU, WIOD, WBZ, etc. These stations can be received regularly at full loudspeaker volume any day between October and April.

It is generally accepted among British DXers that the best medium wave DX reception occurs about a week before the new moon. It is a curious phenomenon that whenever North American stations are inaudible, the South Americans are heard at very good strength.

I am 16 and have been DXing on the medium waves for just over two years and on the short waves for nearly nine months. During that time I have heard on the m. w. about 40 stations in the U. S. and Canada and on the s. w., using a PYE 3-tube receiver with an R. I. superhet converter, France, Germany, Africa, America, Spain, Portugal, Denmark, China, Italy, USSR, Argentine, Holland, Belgium, Canada, and Norway. I have thus heard four continents and only want VK2ME to have heard all continents. My log contains 220 s. w. stations. Some of the m. w. stations I have received on my 3-tube all-mains receiver are WNAC, WPG, WTAM, WBAL, WEA, WGY, WSB, WJZ, KDKA, WABC, WKAQ, WBT, WHAM, WENR, WOR, KSL, WJSV, XER, LR3-4-9.

"Trusting that this report of reception in England will be of interest both to American and English readers of your fine magazine and that any American reader who is interested in radio in England will get in touch with me, I am, yours faithfully."

**Esperance, High Road, Whetstone, London N 20, England.*

DX Troubles in California By Sheridan H. Martin

I BOUGHT my first copy of RADEX in November, 1932, when I got my Eveready Model 52. It was then I became a convert. I dabbled in DX that winter, running up a log of about 60 stations. This included two catches which I have never clearly heard since—KGMB and KGU. Such is DX. In 1933 I went in a little harder for DXing. In 1933 my log grew about 200. In 1934 I began to get RADEX regularly. As a result my log now stands at 635 active stations. This includes seven South Americans, 40

Asiatics and 21 from Oceania. I have all the Japanese stations. This season I intend to begin all over again and start collecting verifications.

"A word about reception conditions here in Pasadena. The Japanese are excellent here from September to December, inclusive. In fact they are so good that they are a nuisance. Last year I used to listen to the English news practically every night at 2 a. m. over JOIK—this in September in summer static that most of the middle-westerners couldn't punch through. The more powerful Japs start coming in as early as 10 p. m. PST on good nights. KZRM, Manila, usually comes in faint but clear about 2 a. m. if the Japs are very good. XGOA is another one heard here almost every night. I find the Alaskans and Hawaiians very hard to tune in, even their carriers being seldom heard. In February the Aussies and New Zealanders start coming in well. They are heard with fair volume until that old demon static rears its ugly head. The most reliable is 2YA which can be heard almost every night in season. On the 'miracle nights' I have heard 2YA, 4YA, 6WF, F31CD, ZBW, XGOD, RW28, YV1BC, YV3BC, CP4, HJN, CX24, CX26, XOST, JOUK, JOCG, JODG, JQAK, 5DN, 4BC, 4BH, 7ZL, 2KY, 2GB and 2UE.

"I want to urge radio stations to give more consideration to the Pacific Coast when making up their DX programs. Do you realize that there are 52 channels occupied by Coast stations until midnight, many of them on until 1 a. m.? This means that from 60 to 85 channels are worthless for DXing according to the selectivity of the receiver. DX programs should *never* start until after midnight PST and 1 a. m. is even better.

"One more thing to get off my soul. May all 24-hour stations blow out their tubes, burn out their mikes and, finally, get caught seven kilo-

cycles off frequency with a raw a. c. note and get their licenses revoked. I am afflicted with nine of them."

New West Coast S. W. Club

By Don H. Townsend

FOR a long time there has been recognized a need for the formation of an organization to foster cooperation between the short-wave fans of the Pacific region in supplying each other with station information. Eastern and middle-Western clubs receive most of their station information on reception in their sections. Stations heard in the West go unnoticed because they are not heard in the other sections and therefore are reported only by a few western fans. Because of the small number of reports on these stations and because they are heard only in the West, little notice is given them.

Stations heard in the other sections of the country are not always heard in the West and the members of this region are therefore confused and try for many stations that are not to be heard in this part of the U. S.

Several prominent short-wave fans of the Pacific Coast region have got together and are organizing the "Pacific States Short Wave Club." This club is primarily designed to supply fans west of the Rockies with an efficient s. w. news service on stations being heard in the Pacific states. It will publish a monthly bulletin containing information on and a list of stations being heard in the West. Special news will be supplied members by tip cards between issues of the bulletin. Other activities will be arranged later.

The membership dues in this organization will be one dollar per year. Active membership is open to all fans interested in the short waves that live in or west of the Rockies. All such fans are asked to advise the

Pacific States Short Wave Club in care of either the business manager, John D. Clark, 752 Contra Costa Ave., Berkeley, Calif., or the president Don H. Townsend, Jr., 208 Stillwater Ave., Fallon, Nevada.



Principals in the coming DX duel—Dick Arlen and Bing Crosby—listening to the short wave receiver manufactured by McMurdo Silver.

Radio Stars are DX Rivals

AS SOON as a pair of super short wave radio sets arrive in Hollywood, Bing Crosby and Dick Arlen are to stage a station-finding battle that will last a week, the loser to write a check for one thousand dollars. The two stars, both enthusiastic dial twirlers, have ordered identical sets from McMurdo Silver, Chicago radio expert, who designed the equipment taken to the Antarctic by Rear Admiral Richard E. Byrd.

The sets are due to arrive in Hollywood soon and the great contest will start. With special doublet antennae raised above their Toluca Lake

homes, Arlen and Crosby will then begin combing the ether for Russia, Germany, Japan, Australia and all countries sending out radio broadcasts. At the end of the week the star having logged the most stations will receive the prize money. Both Crosby and Arlen plan to add the money to a trust fund they are creating for their children.

Since Crosby realizes that the comparatively weak Byrd station, KFZ, will clinch the championship honors, he is erecting an antennae which is tuned to 8,820 kcs. Arlen, on the other hand, plans to concentrate on Skameback, Denmark; Geneva, Switzerland, ZGE in the Malayan States, Rabat, Morocco; Nairobi, Kenya; and Sydney, Australia.

The Beginner's Story

(Continued from page 19)

ary has 6 turns also closely wound, as on the first coil. The 40 to 80 meters coil has 24 turns on the secondary wound so as to average 16 turns to one inch of length; the primary has 7 turns. The 80 to 200 meters coil has 50 turns on the secondary and 15 turns on the primary, all closely wound.

The variable condenser (VC) used to tune the secondaries of the r.f. transformers or plug-in coils, has a maximum capacity of .00014 microfarad. The tiny antenna condenser (AC) is about 35 mmfds. capacity. The choke coil (CC) should have an inductance of 2.7 millihenrys. Regeneration or feed-back is controlled by the oscillation condenser (OC) which has a capacity of 250 mmfds. The detector gridleak (GL) has a resistance of 2 to 5 megohms, and its condenser (GC) has a capacity of 100 mmfds. The audio amplifying stage is the conventional type and is connected to the detector output through a high-ratio (6 to 1) audio-frequency transformer.

(Next month we shall discuss still further the different methods of receiving short waves—converters and all-wave receivers).

The Foreign Station DX CONTEST

AS A demonstration of the ability of present-day receivers to cover the world, the recent contest of the International DXers Alliance of Bloomington, Illinois, was a huge success. Altogether there were 95 entrants in this contest from four continents and a grand total of 1530 verifications were submitted to the Judges. Verifications were entered from 45 countries including all continents.

This contest was for the reception and verification of stations on the broadcast band only and short wave stations did not count. The reception was in the period from October first, 1933, to March 31st, 1934. The fact that in these six months 95 listeners were able to hear and verify 1530 stations, all of them at least 2000 miles distant from their receivers, is ample proof that foreign reception on the b. c. b. is fairly consistent and not too difficult.

Many Different Sets

The variety of sets used by the contestants is interesting. Twelve used sets of their own constructions, nine used Philco, six Majestic, five RCA-Victor, four Scott, four Crosley, three Midwest, three Pilot, two GE, two Kolster, two Lincoln, two Zenith, two Atwater Kent and two Patterson. Other sets represented were Radiotrope, Stromberg-Carlson, Silver-Marshall, Arborphone, Western Electric, Lyric, Jackson-Bell, Balkite, Serenade, Brunswick and several foreign receivers.

D. L. Davis, Jr., with the Fleet Air Base, Pearl Harbor, Hawaii, turned in a total of 114 verifications from stations in Canada, Japan, Mexico, Philippines, Australia, New Zealand and the U. S. His receiver is an RCA-Victor R-24A, 8-tube, a. c.

R. T. Coales, 54-Chelsea Road, Southsea, England, using a home-built 6-valve Superheterodyne, reported 71 verifications from the

U. S., Canada, Mexico, Newfoundland, Cuba, Bolivia and Argentine.

H. Harding Jones, 2531 Rainbow Drive, Honolulu, Hawaii, received 74 verifications from stations in the U. A., Australia, New Zealand, Mexico, Canada and Japan. He does not give the make of his set.

John S. Bohm, Gronland, 105 Malung, Sweden, using a five-valve Telefunken, turned in 70 verifications from Newfoundland, Venezuela, Bolivia, Canada, Algeria, Canada, Argentine, Mexico, Porto Rico, and 59 from the U. S.

Francis Wiseman, 517a Finchley Road, London, using a Scott 1934 12-tube Deluxe, submitted a total of 69 veries from the U. S., Newfoundland, Argentine, Mexico, Canada, and Porto Rico.

Covering the World

Evan B. Roberts, Wenham Street, Danvers, Mass., using a Scott All-Wave, 1933 model, submitted seven verifications from Japan, seven from Australia, five from Italy, and one each from the following cities: Moravska-Ostrava, Bratislava, Brno, Prague, Flensburg, Geilsburg, Koln, Stuttgart, Frankfurt, Hamburg, Leipzig, Munich, Stockholm, Goteborg, Paris, Fecamp, Strasburg, Lyons, Lille, Sottens, Beromunster, Cork, Athlone, Lodz, Lwow, Copenhagen, Alger, Rabat, Belgrade, Zagreb, Modonna, Budapest, Viipuri, Danzig, Bergen, Graz, Wein, Barcelona, Buenos Aires, La Paz and St. Pierre, Miquelon Islands. From his home in Massachusetts, Mr. Roberts covered practically the entire world from Japan and Australia on the west to Russia and Hungary on the east. "The World at his Finger Tips" may well be the slogan of Mr. Roberts.

As this is written the judges have not finished their tabulations and the winners of the contest have not been announced. The results of this contest which was most efficiently

staged by the IDA, may well prove encouraging to DXers everywhere. Excellent logs were submitted from British Columbia and California on the West Coast to Nova Scotia and Florida on the East Coast. The interior was well represented by contestants from Nevada, Michigan, Ohio, Tennessee, Illinois, Montana, and other states.

Where All Radio is DX

A rather remarkable record is that of A. C. Lyell, P. O. Box 4536, Johannesburg, Union of South Africa. Located as he is in the extreme southern part of the African continent, practically all of his reception must come from stations more than 2000 miles distant while the great majority of the stations are more than 6000 miles away. Mr. Lyell did not get into the contest until the latter part of January thus having a three-month handicap. It required two months at the fastest for his reports and verifications to travel even if answered immediately. He was not clear whether s. w. stations were to be counted and wasted much time tuning in s. w. stations. In spite of all these handicaps, however, Mr. Lyell submitted 53 verifications within the time limits of the contest. He was caught with 35 more outstanding which he had to sacrifice. Included in Mr. Lyell's log are KOB, Albuquerque, KZRM in Manila, KNX in Hollywood, KFI in Los Angeles, XEPN in Piedras Negras, WBT in Charlotte, KSL in Salt Lake City and LR-2-4-5 and 9 in Buenos Aires—a remarkable record. On the short waves he brought in VE9GW, Bowmanville, PRADO, LSX, PLV, KWX, J1AA, HJ4ABE and HC2RL among many.

Mr. Lyell uses a Pilot Dragon receiver, A. C. with eight tubes.

Don't miss that program you want to hear. Use the RADEX Program "Slates." Mark down your favorite programs in the spaces provided. See subscription blank on page 96.

As I See the

THE successful rebroadcasting of programs from overseas by the National Broadcasting Company and the Columbia Broadcasting System has caused a tremendous interest in shortwaves. Many persons who have never had an interest in radio reception other than picking up their favorite programs from local stations are contemplating the purchase of short-wave equipment with which they can hear international programs directly from the country of origination. To these prospective high frequency fans many problems present themselves, and the biggest problem, naturally, is the choice of a good receiver.

Buying a Set

We cannot tell anyone what kind of a set he should get because this depends on his previous experience in tuning radios, the type of entertainment he wants, and the amount he can spend on a set. We can, however, point out some things to be avoided.

Because of the fact that RADEX is a DXer's magazine, it is reasonable to assume that 98% of our readers are DXers at heart. They are not as interested in hearing the commonplace stations as they are in hearing the seldom-heard little fellows. Therefore, one must not pay too much attention to what some owners say about their receivers. A friend may recommend an "Oomph 12" because he has had it only two weeks and already logged DJC and EAQ with it; because of this being his first foreign reception he naturally is quite enthusiastic about it. An old timer, trying the same set, is apt to be thoroughly disgusted if it fails to bring in some much closer but harder to get station, such as

SHORT WAVES

• • • By PAGE TAYLOR

VE9HX in Halifax or XETE in Mexico City.

Times Have Changed

A few years ago, a broadcast band DXer, living, let us say, in New York City, certainly would not buy a set on a salesman's recommendation that he would hear WCAU, WBZ, WTAM or even KFI. The same man today, turning to shortwaves, is usually attracted by an advertisement reading: "Log regularly such stations as GSB England! EAQ Spain! Reach out 10,000 miles to bring in VK2ME in Sydney, Australia."

Such stations as GSB, EAQ, VK2ME, DJC and many others are *locals* on a shortwave receiver just as WLW is a local on a conventional set. EAQ in Madrid is even more regularly and satisfactorily received than KFI or WTAM.

Two Tubes or Twelve?

A big radio set with from 10 to 20 tubes, equipped with "static eliminators", multi-pronged tubes and enclosed in the latest style "Console Mcderne" may be the pride of its owner, but it isn't much good if his reception is limited to a few local s.w. stations. The owner of such a set, if a genuine DXer, is usually pained to learn that the kid next door is listening to Java and Nazaki in the mornings and tiny 5 to 10 watt South Americans in the evenings, with a much simpler receiver.

A good s.w. set can be gotten for nearly any price, varying from twenty to a thousand dollars or more. We know of very good receivers selling for as low as \$35 and we know of some very poor ones for \$400. Buyers with a limited budget can get a good radio if they demand a carefully built set using dependable parts and a simple but time-tested circuit, rather than try to get the largest



This vivacious and golden haired contralto, Carolyn Rich, is Ferde Grofe's choice in soloists. She was recruited from vaudeville to radio in 1932 and has been featured as the "Lady of the Cameo" on her own sustaining program.

number of tubes and doo-dads he can for his money.

The Phenomena of Short Waves

There are some salesmen who will try to convince an unknowing customer that a multi-tubed set is necessary to pick up distant stations, and this is an argument that is rather easy to put over because it seems logical. A brief discussion of the propagation of shortwaves will prove the fallacy of this statement.

The one thing that makes long distance reception possible on shortwaves is neither a powerful receiver nor a fancy circuit, but a physical fact, the fact that surrounding the earth at a distance of from 80 to 200 miles is a layer of ionized particles, called the Kennelly-Heaviside layer. Newer theories mention another, the Appleton layer, and it may be possible that shortwave fans owe a vote of thanks to sun spots (or the lack of

them), ultra-violet rays and cosmic rays as well.

The Sky Wave

The generally accepted theory of shortwave transmission is that high frequencies are transmitted out towards space and that they are reflected back to earth by the Kennelly-Heaviside layer. These waves are called sky waves. A ground wave is also emitted but this is soon absorbed by buildings, mountains, or the earth itself. Let us take, as an example, W2XAF in Schenectady, N. Y. W2XAF, like all s.w. stations, emits two waves. The ground wave is strong enough to be heard for some distance but it is completely absorbed before reaching the Pacific Coast. The height of the Kennelly-Heaviside layer at the particular time is such that the sky wave is reflected back to earth in the vicinity of Australia, permitting our friends "down under" to hear the station, while it is inaudible in California.

Skip Distance Varies

As the height of the Kennelly-Heaviside layer is dependent, among many other things, upon the sun, the height varies during the day, and also with the seasons. These ionized layers are at their minimum height when the sun is brightest and at their maximum height at night. As the height of the layer varies, so the angle at which a radio wave is reflected from it varies, a fact which accounts for the variance in signal intensity throughout the day or night from a given station.

We know, from many years experience, that it is not possible for American East Coast listeners to hear VK2ME on its 28.5 meter wavelength at noon-time, although they are on the air daily at that time in telephone communication with London. The best receiver in the world will not receive it because neither the ground wave nor the sky wave is present in Eastern USA at that time.

The Varying Factors

When signals from VK2ME are being reflected towards America (Sunday mornings just before day-break on 31.28 meters), and the height of the layers of ionized particles out in space is right, when the sun spots are behaving, when magnetic storms are still, when local disturbances are quiet and a thousand and one other conditions permit, perfect reception of VK2ME can be obtained. The chap with a two-tube rig and a pair of headphones will have to remove the phones from his head to save his ears, and the fellow with a four tube regenerative outfit will have to hook in the loudspeaker to save his headset. The man with a ten-tube superhet will get louder reception, but will not be able to use the added volume. He will get somewhat clearer reception, but not much more intelligible than the chap with the two-tuber.

When none of the above mentioned conditions prevail, no one will hear VK2ME, regardless of equipment used.

Picking Up KFZ Direct

If the prospective purchaser does much shopping around he will surely hear the old bromide about listeners picking up stations better than Riverhead. "Oh yes," the salesman will say, "one of our men hears Byrd direct from Little America even better than the rebroadcast."

This statement might have been true in 1930 but it is hardly true in 1934. Signals from KFZ are not radiated in all directions, but are concentrated into a beam which is directed towards the central receiving station located at Platanos, Argentina. The signals are then sent over land wires to Buenos Aires, thence to the powerful beam transmitters at Hurlingham. Here 20 kilowatt station LSX relays the signals to Riverhead, Long Island, where they are picked up on highly directional, diversity antennae. It is this diversity array that accounts

for the high quality of reception obtained by Riverhead.

The station on Long Island receives LSX on three separate aerials, and each aerial is connected to a separate receiver, each of which is accurately tuned to LSX. The aerials are separated from each other at a distance of about a thousand feet, an arrangement which tends to minimize fading; it has been found that at the moment a signal is weak on one aerial it is strong on another. The outputs of these three receivers are fed into a control section where they are combined, then "piped" to New York City and out over the networks.

It seems unreasonable to believe that a casual shortwave listener, located in midst of electrical interference, can do better than Riverhead, which is miles away from any kind of electrical device. Riverhead uses directional antennae, pointed accurately towards Hurlingham, while our own aerials are put up more or less haphazardly, as concerns direction, and might even be highly directional towards the North Pole. Our own receivers are usually A. C. operated, while Riverhead uses batteries; our own sets are not always at their best as we cannot constantly work on them nor can we change the tubes too often. The RCA sets are kept constantly at their highest efficiency. And, with our admittedly inferior apparatus, we attempt to reach all the way to Little America, while Riverhead resorts to a relay.

There are, of course, many fortunate tuners who have had KFZ, but surely not as well nor as consistently as Buenos Aires. Mr. Geo. Acker's reception is typical. "On KFZ's 22.64 meter wavelength I came across a *very weak* voice transmission in English," he writes. "This was *evidently* the Byrd Expedition, as LSX was on the air at the time talking to KFZ." Note, however, that Mr. Acker was not *positive* of the identification.



The transmitting studio of VK3ME installed at Braybrook, near Melbourne, Victoria, Australia. This short wave transmitter was designed and manufactured in Australia by Amalgamated Wireless (A'sia) Ltd.

When Sets Are "All-Wave"

Some irresponsible manufacturers describe their radios as "All-Wave Sets," while in reality they are merely duo-wave receivers. An all-wave set should really receive *all waves*, from 15 meters up through the conventional broadcast band. There are too many radios on the market today advertised as all-wave sets which only go down to 100 meters or so. Such sets will receive police calls and amateurs, and very little else. All foreign shortwave broadcasting is done under 70 meters and satisfactory reception is obtained only below 50 meters. To obtain the utmost in results, a receiver, whether all-wave or just straight shortwave, should tune at least as low as 15 meters (20,000 kilocycles or 20 megacycles). We mean, they should *tune* that low; many sets have the dials calibrated to read 15 meters or even less, but will not tune in stations below 19 or 20 meters.

It is probable that an overanxious salesman will say that this is an insignificant difference, because these high frequencies are too much in their infancy for satisfactory reception. This statement would be true if he were speaking of 10 meters or lower, but we have a list of 30 stations using voice between 10 and 15 meters, and there are 131 stations on voice between 15 and 19 meters. The

30 stations below 15 meters are heard once in a while by experienced dial twisters, but a large majority of the 131 stations in the 15 to 19 meter group is regularly heard and enjoyed.

Number of Tubes

For reliable loud speaker reception it is generally agreed that no less than four or five tubes should be used. If four tubes, one radio frequency stage, a regenerative detector, and two audio stages. If five tubes, a radio frequency stage followed by a regenerative detector, an audio stage and a push-pull audio stage. Superheterodynes employing 8 or more tubes are reliable. Super-regenerative and t.r.f. sets are not generally available nor are they recommended, unless one is experimenting in ultra-shortwaves, in which case super-regeneration is used.

Regenerative sets continue to be the favorite of many veteran tuners. When radio was young, regenerative sets were called "bloopers" because they had the disagreeable habit of getting into all the neighbors' radios. This fault no longer exists, however. Regenerative sets are usually straight shortwave, or if they do offer a broadcast band, this band is not very satisfactory except for local stations. All-wave sets are generally superheterodynes. One type is as good as the other. The RCA Receiving Station on Long Island uses both types, although foreign s.w. broadcasts are picked up on superhets. Contrary to popular belief, these receivers are comparatively simple in design, using only three intermediate stages and two audio stages.

Adapters and Converters

Adapters are no longer used and should be avoided. Converters are used if one has a good broadcast band set which he does not care to discard for one of the all-wave type. A converter is employed to convert a broadcast receiver into a shortwave

receiver without any mechanical connection between the two units. Good converters give very nearly as good results as straight shortwave sets but require a little knack in tuning, a knack which is easily acquired, however.

Your Radio Friends

(Continued from page 22)

attendance record at the College Inn in Chicago for the second consecutive year. Rogers has proved to be one of the greatest all-time drawing cards for the young folks of the Windy City.

* * *

The billing of "radio's loveliest lark" by which Jane Froman is known in theatres, grew out of a remark by Dr. Sigmund Spaeth, world-famous music critic, author and commentator. Dr. Spaeth happened to be passing one of the NBC studios and walked in while Jane was singing. After a minute, Dr. Spaeth turned to a companion and said, "There is the loveliest lark radio has." The billing has stuck to her ever since.

* * *

A waiter spilled a cup of coffee in a New York restaurant a few years ago. And two young men at a table, until that moment total strangers, fell into conversation over the incident. When they got up to leave a new black-face team of entertainers had been formed. The diners were Pat Padgett and Pic Malone, now well known to audiences as Pic and Pat and Molasses 'n' January.

* * *

Ralph Kirbery, NBC's Dream Singer, is still single and fancy free. He remains a bachelor, according to his own explanation, because of his love of fishing and other outdoor activities. Says Ralph: "I like the girls too much to play a mean trick and marry one of them. I'd leave her home alone too much while I went fishing, hunting and golfing."

Vital Statistics of the SHORT WAVES

• • • By PAGE TAYLOR

RECEPTION on the conventional broadcast band has always been very nearly impossible in tropical countries because of the severe atmospherics prevalent for about ten months in the year, so it is not strange that these countries have remained several years behind the times as far as radio is concerned.

With the increased reliability of shortwave equipment and the availability of good receivers at a reasonable cost, however, it is pleasing to note how quickly some countries have grasped the opportunities offered by shortwaves. The Netherlands East Indies were first to use shortwaves extensively for local broadcasting, with the Republic of Colombia following a close second. These countries now are veritably teeming with high frequency stations. And now Venezuela is building up a broadcasting system based on shortwaves. We understand that YV3RC in Caracas is the key station of a network which includes YV5RMO in Maracaibo, YV4RV in Caracas, and occasionally YVQ in Maracay on 6.672 megacycles.

A New Venezuelan

We are indebted to the Chicago Shortwave Radio Club for information on a new Venezuelan station which will commence broadcasting at about the time this magazine is mailed to our readers. YV6RV, in the city of Valencia, State of Carabobo, will work simultaneously on 675 and 6030 kilocycles; 6030 kilocycles equals 49.72 meters. YV6RV will be known as "La Voz de Carabobo," and its owners, the Sres. Hermann and Williams Degwitz, will appreciate reports from listeners inter-

cepting programs on either frequency. The Degwitz brothers will honor the Chicago Club by dedicating their inaugural program to its members.

According to information received from H. N. Walker, our Australian reporter, there are two radio networks in Netherlands India, with key stations in Bandoeng and Sourabaya. No information is available at this time concerning the Sourabaya network.

Data From Oceania

The Bandoeng group is owned by the Netherlands India Broadcasting Co., and goes under the name NIROM, a word formed from the initials of the Dutch name of the company, N. V. Nederlandsch In-



Introducing Peter Biljo, baloneer of the Russian Balalaika Orchestra. This is one of Columbia's first features now back on the air after an absence of several years.

dische Radio Omroep Moatschappij. The stations operated by this group are: YDA, Bandoeng, 6,116 kcs., 49.02 meters, 1.5 kilowatts. YDA is now on the air.,

YDA2, Batavia, 4382 kcs., 69.28 meters, 150 watts. YDA2 was formerly known as Tandjong Priok.

YDB, Sourabaya, 6136 kcs., 49.67 meters.

YDB2, Samarang, 4360 kcs., 68.65 meters.

YDB and YDB2 will be on the air before winter, and there is a possibility that the Bandoeng and Sourabaya transmitters will be heard here.

Mr. Walker also contributes the following data on Javanese telephone stations:

PMN, Bandoeng, 10260 kcs., works Sydney.

PLP, Bandoeng, 11000 kcs., works Sumatra and the Celebes.

YBG, Medan, Sumatra, 10425 kcs., works Bandoeng, PLP.

PNI, Macassar, Celebes, 8775 kcs., works PLP and YBZ, Menado, Celebes, 7680 kcs., works PLP and PNI.

A Change in Names

We have become so used to calling France, France, and Germany, Germany, that it is only with an effort that we remember to call a country by its new name when a change is made. Countries do change their names occasionally. When Russia and Siberia became the Union of Socialist Soviet Republics it took us several years to become reconciled to the change. (After a few letters addressed to "Russia" were returned we remember to address them to the U. S. S. R.). Now another major change has been made. In fact, it occurred a year ago. The Dutch East Indies no longer exist, but are now known as Netherland India. When the world governments were officially notified of the change by The Hague, they were also reminded that the Netherlands is the correct name for Holland. RADEX will try to remember these changes in future listings.

Logs New Peruvian

"I have a Midwest 16-tube radio which offers all the variety one could ask for," writes an enthusiastic user, Volney Blanchard, 7229A St. James St., Wanwatosa, Wisc. "I have been getting JVM, Tokio (Nazaki) regularly around 6 a. m., CST, with fair quality and good volume on 10740 kcs. Last Saturday night I logged a new station, OA4AP, Lima, Peru, which I heard until 11 p. m. They announced in Spanish and English after every selection, and asked for reports on reception. They have practically dispensed with English since. Last night I heard PRADO calling "La Voz del Tropic" in Costa Rica. It was all in Spanish and I didn't get the name of the city and do not believe any call letters were given. This conversation lasted from about 10 o'clock until midnight. I received the Costa Rican on approximately 6700 kcs. I also heard HC2RL calling relatives and friends around New York.

"I have had 11 South Americans, KNRA, IRM, I2RO, VK2 and 3ME, Daventry, Zeesen, CT1AA, COC, etc., etc. My DXing is limited to Sundays and evenings as a rule." No wonder Mr. Blanchard is proud of his radio.

Verifies HJ3ABD

Supplementing the Peruvian data in the paragraph preceding, Robert L. Weber, West McHenry, Ill., thoughtfully mentions the wavelength used, 38.5 meters. He believes the call sign is OA4AB, and gives the address as All American Cables Co., Box 858, Lima. Mr. Weber heard them announce that they were moving up to 51.9 meters but could not hear them on the higher wavelength. "I also received a verification from JYR, from the Chief Engineer, giving their frequency as 7880 kcs., and saying that they relay JOAK," Mr. Weber's letter continues. "One of my prizes is a veri from HJ3ABD, received just five and a half months after writing for it. ORK, Brussels, in their letter of verification, say that they work daily on 29.04 meters from 12:45 to 2:15

p. m., EST. From 12:45 to 1 p. m. there is a daily talk in French, then for the next hour a musical program, followed by a fifteen minute talk in Flemish to conclude the broadcasting. They sign off with the national hymn, Brabanconne."

OA4AB is also reported by O. Ingmar Oleson of Ambrose, N. Dak., who says they are heard almost nightly from 9 until 11:30 p. m. or midnight. He says their programs feature primarily American popular recordings.

Picks Up KNRA

"I note that several fans report Berlin and London the best Europeans on the air," comments D. I. Gross, P. O. Box 6052, W. Asheville, N. Car. "I heartily agree with them as I have had wonderful reception every night all summer, except during electrical storms. DJC and DJD were not on several nights at about the time of the Nazi uprising, however. Here is some news regarding KNRA: I picked them up one night, a Friday, about 9:30 p. m., EST, on about 6.2 megs. Signals was about QSA4, R7 with some QRM, but on the whole, quite good. I now use, almost exclusively for Europeans, an RCA World-Wide antenna. It runs due North and South. I find this far better than any Lynch antenna but believe this may be because it runs N. and S., whereas the Lynch runs Northeast by Southwest. The Lynch works very good for South Americans and brings in less static than a straight aerial.

BBC Verifications

"I see that Mr. A. C. Lyell, Cape Town, reports that the British Broadcasting Corp. does not verify. The chief engineer writes me that this is not due to lack of courtesy, but because they broadcast on two wavelengths, using two transmitters simultaneously, making exact identification difficult. Their programs are published in advance in 'World-Radio.'"

Mr. Gross uses a Scott All-Wave-15 and would like to hear from other users. The BBC does not give explicit verifications because of the fact that



Victor Young, featured with his orchestra on the Chevrolet program every Sunday evening over an NBC-WEAF network, and author of "Sweet Sue" and many other songs. He wrote the basic melody of "Sweet Sue" on the back of an envelope, under a lamp-post, while on the way to a show.

their programs are published in advance all over the world, but they do acknowledge reports, which is all that can be expected of them. The courtesy cards from Daventry can be considered verifications, and all contest judges so far have so accepted them. In the recent Denton Trophy Contest, one card was considered as a QSL from all the Daventry transmitters, GSA through GSG.

Mr. Gross also brought up some important points concerning International Reply Coupons. Coupons should always be sent to stations when requesting a reply, and when purchasing Coupons, care must be exercised that they are properly stamped. A coupon is made void if no postmark appears, or if the postmark is on the wrong side. It must be stamped in the circle on the left side, labelled "Timbre du bureau d'origine."

The "Seth Parker"

The good ship "Seth Parker" has

finally heaved anchor and resumed its "round the world cruise." The split between the NBC and the skipper Phillips Lord has, to all appearances, been patched up. Rocky Point has been heard testing with KNRA, and a program was heard over the networks from Haiti. Probably the "South African" picture, being filmed in Jamaica, is finished, or it may be that the appearance on the scene of RCA engineers for the purpose of dismantling the transmitter caused him to have a change of heart. Anyway, station KNRA has been re-inserted in our lists, and tuners who have not yet logged the station should try to do so, as it is problematical how long the "cruise" will continue.

Home-Made Reception

"I wish to report reception of a few catches during the summer months on my 3-tube Doerle, battery operated set which I built myself," states Leon Papernow, 2204 Cralendon Rd., Brooklyn, N. Y. "In the recent international commercial rebroadcasts on Sundays at 9 p. m., the following phone circuits were heard: GSW, R9, sending the London program; DIQ, R8-9, sending Berlin's portion; GBS, R7, relaying Paris to New York. During the rebroadcasts from Austria and the Swiss phones did all the relaying. HBJ on 20.6 meters returned to the air to send the program to the NBC. Their identifying signal is a beat of a metronome, as is that of most European broadcasting stations. Incidentally, has anyone heard PRADO on the 19 meter band? I heard them on a special program on a Sunday from 5:45 to 6:15 p. m., EST. The announcements were all Spanish: "Allo, allo, Estacion El Prado, Riobamba, Ecuador."

Weak Signals from KFZ

"I am sending in some information which I gleaned during the past week," contributes Geo. W. Acker, 267 N. Lyman St., Wadsworth, Ohio. "On Monday afternoon I came across LSX near 5 p. m. I decided that they were on the air to talk with Little America, so started on a hunt. On KFZ's 22.64

meter wavelength I came across a very weak voice transmission, in English. This was evidently the Byrd Expedition, as I managed to hear must talk concerning KFZ. LSX was coming up in good shape. The next evening they were no doubt at it again, as I caught LSX talking to the Bay of Whales station around 9 p. m. Conditions, however, were so bad that I could not manage KFZ direct. VK3ME and VK3LR were also best around 6 and 6:30 a. m., after which they began to drop out, although they held on until signing off at 7. This morning W1XAZ was extra strong. They come on at 6 a. m. and as they develop strength they almost completely engulf VK3LR, being but a hair-line away. However, when Boston is not so extra strong, which is often enough, 3LR rides in right beside them nicely.

The Egyptian Station

"What time does SUV, Cairo, work? I caught a weak swish on its freq. (10014 kcs.) Sunday morning around 6-7 a. m. I hung onto it for a long time, and came back to it time and again, but could hear no speech. I have had this station several times and one morning could just faintly make out that English was used."

According to our British reporter, Robt. M. Pybus, VUB at Bombay, India, has moved down to 9565 kcs. and is conducting tests on this frequency irregularly between 10 a. m. and 2 p. m., EST. We do not believe it has been heard in North America, but it may be worth trying for.

Schedule of Singapore

Station ZHI, Broadcast House, 2 Orchard Road, Singapore, Straits Settlements, works on 49.8 meters with a power of only 90 watts, which almost precludes any possibility of the station being heard in this country. The schedule, according to information received from the Radio Service Co., operators of the station, is Monday, Wednesday and Thursday from 5:40 to 8:40 a. m., EST. Our readers "down under" who have the good fortune of hearing ZHI should report on

the Wednesday programs only, when requesting a QSL, as these are the only programs of which a log is kept.

Some Queries

"The other morning I logged JVM, 27.9 meters, from 7 a. m. until a quarter to nine, when they signed off," commences a note from Norman F. Kriebel, 116 Bethlehem Pike, Ambler, Pa. "I believe this station is in Nagasaki, Japan, and I would like to have the address so I can write for a confirmation.

"Also, I would like the address of ORK in Belgium, which I find broadcasting daily from 2:45 to 4:15 p. m., EDST, on about 29 meters.

"What boat has the call letters NABD?"

We do not yet have the street address of the new Japanese telephone stations. The stations with the JY- prefix should be addressed to the Chief Engineer, Kemikawa-Cho, Chiba-Ken, Japan, and the stations with the JV- prefix, to the Japan International Telephone Company at Nazaki, Japan.

The address of ORK is, Regie des Telegraphes et des Telephones, Direction des Radiocommunications, Bruxelles, Belgium.

NABD is the call assigned the warship Indianapolis.

Has 65 of 100 Best

Mr. M. Horlick, 22 N. Glenellen Ave., Youngstown, Ohio, is another Midwest 16 booster. His letter follows: "I see where different radio fans were inquiring about the Midwest 16. I have one and can only say that it is OK. I have 65 shortwavers out of the 100 Best as given in your lists. I get Germany, England, France, LSX at Buenos Aires on Monday and Thursday from 9 to 11 p. m., and stations on the broadcast band from all over the country. All my stations are logged between the hours of 8:30 a. m. and 11:30 p. m., on an aerial running east and west, 100 feet long and about 33 feet high."

For Canadian Fans

"I am listing a few shortwave stations that perhaps will be a help to

your Canadian readers," surmises S. H. Watson, 14 Arlington Apt., Edmonton, Alta. "These are sure bets and should not take much finding, even for new fans. These stations were picked up on my Victor 6-tube Globe Trotter. GSA, Daventry, England, 49 meter band, every night, and VK2ME, Sydney, Australia, 31 meter band, Saturday night and Sunday morning, comes in better at night, while a few months ago it was best in the late afternoon. I have not mentioned stations in the States as I can always pick them up, such as Wayne, Schenectady, Chicago, etc."

Verifying EAQ

We have been asked why some persons get QSL cards from EAQ, verifying their reception, while other only get program sheets from the International Broadcasting Co. of London, although reports are sent to Madrid. Transradio Espanola, operators of EAQ, will always verify by QSL card when an International Reply Coupon is enclosed, never otherwise. When no Coupon is sent, the report is turned over to the IBC, a London organization which broadcasts commercial programs over the Madrid station.

A New Serial

Beginning in the November issue, Mr. Dashiell will present a series of articles each dealing with the new radio sets offered by the leading manufacturers. In each issue for several months, Mr. Dashiell will discuss these receivers, their circuits and unusual features so that our readers may have full knowledge regarding the new sets.

This series of articles should be of general interest as well as of particular value to those who desire to purchase new receivers.

Among the makes to appear in early issues are the Midwest, Scott, Atwater Kent, Philco, and General Electric.

Back issues containing The Beginner's Story are available—ten for \$1.75.

The Old DX Season and THE NEW

WHAT spring is to the golf addict, the autumn months are to the radio enthusiast. Before the mud of spring has dried, the golfer gets out his clubs and polishes them up lovingly. This time of the year the DXer gets out his old log, notes the season's changes and prepares to add the new stations to his list. In the September issue we published nearly 200 changes that were made in frequencies, locations, calls and power during the summer vacations. Many of these changes will make it possible for our readers to hear stations they never heard before. When a station changes frequencies, it oftentimes eliminates interference that has theretofore prevented listeners from logging stations on adjacent channels. The scientific DXer consequently studies these changes with great care and notes the effect they will have upon his possible reception of stations he needs. A few copies of the September issue containing these changes, are still available.

From "Old Kentucky"

"I had a very successful season last year," reports James T. Spalding, 2012 Alexander, Louisville, Ky. "A careful check of my log shows the following received from Dec. 22, 1933 to July 15, 1934 using a Philco 16-L part of the time: U. S. s. w., 36; U. S. b. c. b., 206; Foreign s. w. 121; Foreign b. c. b. 29; Police, 91; hams, planes, ships, etc., bring the total up to 854. Up to this time I haven't had any luck with TP's or TA's owing to bad location and indifferent aerial but I have lately moved to a more suitable place and erected a long L aerial for b. c. so watch my smoke. Some of my latest veries include Pontoise on all three frequencies, I2RO, HBP, the German s. w. stations, VE9GW and CJRX, XETE. I also have reports out to HJ1ABB, PRA3, PHI. The latter

comes in on 17,775 early mornings until Boundbrook interferes. I also have H11A, 7½ watts in Dominica and VK2ME. According to information received, COC had a bad fire and is off the air while rebuilding a more powerful station. HVJ is on Saturdays 9:00-9:30 a. m. CST and irregular the rest of the week according to a letter from the station director. A careful check of RADEX for the last six months shows only three reports from Kentucky. Are we lazy down here or what's wrong? Let's have more reports from Kentucky. Would be glad to have letters from any DXers especially foreigners."

Learns Code

"After listening to dozens of code stations which had merely been interference to me, I began to learn code a few months ago," observes Dr. Harold R. Jacobs, 91-05 Boulevard, Rockaway Beach, N. Y. "There are always dozens of code stations on so that the DXer need never lack material for practice. And logging these stations is easier than it would seem. Of course one must memorize the dots and dashes. I find dozens of stations which appear to do nothing all day and night except announce their call letters. For example, OXR or HAS or FXK can be heard at any hour, it seems, sending VVVV de OXR-OXR-OXR or whatever the call may be, over and over, interminably. There is no difficulty in logging them and they are a great help to one trying to learn the code by himself. I think that this field, which represents a step in the logical progression of the DXer, has been largely overlooked. Where these steps lead, I don't know—maybe to delirium! My log now totals 1089, including 607 on the b. c. b. with veries from PP, LR-5, HJN, YV1BC, Radio Normandie. I have 212 on s. w. excluding amateurs which I do not log. I also have 270 code stations. All in

all, I have heard 51 countries." Clement Van Velsor, writes that WCNW, Brooklyn, 1500 kcs., gives lessons in code daily from 4:15 to 4:30 p. m. EST.

"Iowa on the Air"

Robert W. Gorsuch, 431 Main St., Grinnell, Iowa, advises us that the radio stations of that state will join in presenting "Iowa on the Air" on Sunday morning, December 16th. The leading DX clubs are co-operating by not scheduling any program for the morning mentioned. Prizes are to be offered for the most distant reports and the most complete reports. These prizes will cover the reception of each of the stations taking part. The CDXR, the IDA and the NNRC will each offer two one-year memberships as prizes.

The following stations have signified their intention to take part in the "Iowa on the Air" program: WHO, KFNF, KFJB, WOI, KMA, WMT, KSO, KSCJ, KGCA, KWLC, KFGQ, KOIL and KWCR. WHO has purchased a new \$30,000 vertical antenna, 500 feet in height, which it is hoped will be erected in time for this program. DXers everywhere are urged to give this program publicity in their correspondence, bulletins, tip broadcasts, and otherwise and Courtesy Program Committees are asked to keep the morning of December 16th clear.

Further details of the program and the prize awards will appear in later issues of this magazine.

All Continents, 28 Countries

"I find in checking the log I compiled while living in Claremont, N. H., that I have heard 956 stations and have verified 840, the last one being PXI, 1015 kcs., Hilversum, Holland. Can anyone give me the power of this station? I find that my New Hampshire residence brought me 28 countries including every continent and that very little fellow, TJW, Bermuda, with seven and one-half watts." This report comes from Robert R. Rawstron, "The Cordial Granite State DX Fan," who has recently returned to his

former home in Massachusetts and will live at 96 Leeds Street, Worcester. "I have done no DXing in Worcester as yet, but find reception rather poorer than in New Hampshire due to the numerous factories working double shifts. I have no high hopes of Worcester equalling my former home and so I won't be disappointed. Won't some of you fellow DXers in Worcester and vicinity drop me a line? My veries are bound and easy to look at. I still have the B-16 Midwest and feel I bought the best for my money."

The Season's Signal

"I was glad to see the September issue of RADEX in the mail this morning for it means a new DX season is about to start," exclaims Robert Base, 4105 Alto Road, Windsor Hills, Baltimore, Md. "Also it meant the addition of another station to my log without even turning on my radio! This is how—one August 7th, I got up to see how my new Scott, which I recently bought, would work on the frequency checks. I received quite a few stations including KXO, KLS, KGDM, KFAC, KPJM, KWG, WBNO. I also received the Dothan, Ala., station but I could not seem to get the exact call letters although I knew they were not WHET. When my RADEX came this morning, I looked up the call letters and found that they had been changed to WAGF, so I added it to my log. Short wave verifications received this summer were YV4BSG, YV5BMO, HC2RL, IRM and HI1A. I am looking forward to the 1934 DX season with 726 heard and 605 verified. My 2000-mile stations total 90 heard and 71 verified."

Great Luck with TP's

"I want to thank you for getting me started on foreign DX. This was through the February, 1933, copy of RADFX," begins H. H. Diedrich, 2420 Fifth Ave., Moline, Ill. "During the past season, I have logged the following trans-Pacific stations with a good portion verified: 3AR, 4QG, 5CK, 5CL, 2BL, 2CO, 3LO, 2UW, 4RK, 2KY, 4BC, 2GB, 2UE, 2SM, 2HD, 3UZ, 3BO, 4TO,

3DB, 3HA, 2YA, 3YA, 4YA, JOAK-1, JOBK-2, JOHK, JOIK, KZRM, KGU and KGMB. In South America, I have logged and verified LR4, LR5, HJN, YV1BC, and CX26. I have used a small battery set about eight years old, t. r. f., the power of which would equal about two of the modern tubes. I find that the smaller the set, the greater the thrill, the greater the feeling of achievement. I have a total of 850 stations, foreign and domestic. I do not recognize short wave or count any s. w. stations in my total." There's a claim to set the critics wild.

The Port of Entry

Nova Scotia continues to be the American terminus for the foreign signals. Philip H. Robinson, Shelburne, N. S., writes: "My verified include FQN, LR5, YV1BC, OKP, Copenhagen, Lyons, Poste Parisien, Breslau, Frankfurt, Hamburg, Heilsberg, Langenberg (Koln), Leipsig, Hilversum, Budapest, Athlone, Milan, Rome, Trieste, Turin, Barcelona EAJ1, Bero-munster, Sottens, Rabat, Algiers, 4QG, 2UE and 2YA. My best catch was the verified reception of XGOA, Nanking. Letters are out to LR2, LR3, LR6, CP4, ZP1, CX12, CX26, OKB, Fecamp, Bordeaux, Toulouse, Berlin, Nurnberg, Stuttgart, 3YA and 4YA, all positively identified. My receiver is a 1929 eight-tube Balkite using 227s and 245s. I use an 'Ollie Ross' ground and a 300 foot aerial although in the evenings I have to cut this down to fifty feet or less in order to gain selectivity which my set lacks, being a t. r. f."

Uses a 1924 Relic

"I have been a DX fan for several years, but not until the fall of 1932 did I start to go in for verifications," narrates Joe Enz, 97 Morgan Ave., Brooklyn, N. Y. "I was like several other persons writing to radio stations, I did not enclose postage. I have changed now since I have started reading RADEX and up to date I have logged over 500 stations. I use an old 1924 battery set which regenerates, a Grebe five-tube using A battery and 135 volts eliminator. This set is a

wonderful DXer and had brought me KGW, KXL, KGBU, KERN, KXA, KRKD, KMTR among many. I have received one European, Berlin on about 842. I never write to the station unless I am positive and I send a report covering from half to an hour with information concerning selections, volume, fading, static and weather conditions."

Needs New England

L. D. Irvine, Box 652, Abilene, Texas, picked up his first copy of RADEX on an Abilene news stand in August, 1933, and began DXing at once. "To date, I have heard and definitely identified 412 stations," he reports. "On short waves I have heard 48 stations including airport, police and commercial broadcast and phone; the best of these are VE9GW, XETE, HJ1ABB, XEBT, and YV3BC. On the b. c. b. my log now stands at 364, of which 96 are 100 watts or less. I have all states except Maine, Vermont and New Hampshire. Can anyone give me tips on these three states? I have 26 Mexicans, E Porto Rico, 1 Cuban, 2 SA's, 3 Canadians and 1 Alaskan. Not so bad for one year considering the reputation of bad reception here in Texas. My set is an all-wave Emerson."

Need Only 57 More

"And now a little resume of my log," adds Carl Forestieri, "The Bronx Owl," 463 E. 185 St., New York City. "On the b. c. b. I have heard 734 stations and verified 681. Of these 84 were over 200 miles from my location with 82 verified. I have 35 states complete with 31 of them completely verified. According to the midsummer RADEX I have to log 57 more stations in the U. S. with only four W's which, I believe, are not on the air as yet. I started on the short waves only last March and have heard 72 stations in 21 countries. Of these 47 are already verified. My best are VK2-VK3ME, VK3LR, HI1A, Rabat, CT1AA, HCJB, HCRL and YVQ. The best clear foreign station is DJD. A dandy catch was LS2 on June 18th, testing its new

transmitter built entirely in Argentine."

News From West Coast

"After today KQW belongs to Ralph Brunton who also owns KJBS," informs Henri DePaulin, 3366 Pierce St., San Francisco. "He is going to remodel KQW with new equipment and the two stations will now be known as the Northern California Broadcasting System. I have a Majestic Century Six with which I have logged 200 stations with most of them verified. Of these 64 are 500 watts or under with CFCT at Victoria the lowest at 50 watts. A week or so ago I bought a Stewart-Warner converter and an RCA World-wide Antenna. I now have a few more on the log including three of Japan's and GSB at Daventry. GSB came in great out here for four nights and then was heard no more. Would be glad to hear from anyone having the same sets I have."

Uses Umbrella Aerial

"When I wrote you last fall, I had about 450 stations," recalls T. R. Grosvenor, S. Hillside, Wichita, Kans. "Now I have 688. Not having started verifying until about January 1st, 1933, I only have about 275 veries on hand now. Best veri to date is HJN but have a report out to LR5. I now have an umbrella-type aerial 40 feet high with six ribs totaling 200 feet. The east coast monitor tests rip through on that like nobody's business. During the past season, I logged nine of the "big ten" in Japan, 3UZ, 2YA on 570, KGU, CX26, LR5."

Mr. Grosvenor encloses the following in regard to their organization. "The Mid-continent Letter Exchange is something new in the DX field. We are not a DX club in the strict sense. We gather letters from all parts of the world and forward the condensed version to our members. These letters contain queries, station changes, DX experiences, etc. We do not attempt to issue a DX calendar leaving that to the DX clubs and established

publications. Further information may be had by writing to Mid-continent Letter Exchange, 247 S. Hillside, Wichita, Kans. Dues are fifteen cents a month with a joining fee of 25 cents. Will be very glad to hear from all those interested especially those in foreign countries."

KTRB Now on the Air

Warren E. Winkley, P. O. Box 12, Hughson, Calif., wrote under date of April 28th that, in spite of the fact that DXers in various parts of the country were reporting KTRB in Modesto, Calif., those who live within nine miles are unable to secure any information concerning them. He and a friend went to Modesto but found no signs of a transmitter so he concluded that they had not yet started to build. This, of course, was three months ago and the station may now be testing. Mr. Winkley reports that the experimental television station in Bakersfield, W6XE, are broadcasting every Wednesday and Friday night from 8 to 9 PST. In spite of the terrific intermittent static," he says, "I have pushed my log up to 570 but so far have only 130 verified with 25 reports out. My latest veries are from JOJK, KNOW, CHAB, KGCR, JOQK and KGMB. Of the Aussies 2BL is still the most consistent and 3YA of the Zedders. XGOA is very weak with only occasional snatches being heard."

With reference to KTRB at Modesto, Fred W. Hanssen, 220 S. Santa Cruz St., Ventura, Calif., writes that this station came on the air Monday morning, May 21, with their first test program. Their slogan, he says, is "The Voice of Central California." "LR2 in Buenos Aires," says Mr. Janssen, "has been coming through out here fine business on the 910 kc. channel since XEW moved to 890. We are located far enough away from CRCM in Montreal so that we are not bothered by their signals a great deal when looking for LR2. This tip might prove helpful to some of your readers out here on the West Coast.

"Incidentally, I won the first prize for being the farthest listener reporting on the last CMPN DX program," confesses Mr. Janssen, "It was a handsome Cuban police club with my name engraved on it and was donated by the Havana Police department through the kindness of Captain Octavio Soler. I am much enthused about it as it is the first prize I have ever won although I have tuned in and verified nearly 630 broadcasting stations.

More DX News from Britain

"In a former letter I said I would be pleased to correspond with American DXers," writes F. R. Crowder, 12, Belle Vue Place, Belle Vue Road, Leeds 3, Yorkshire, England. "Since writing, however, I have been appointed General European Representative for the IDA. We have about 50 members over here with whom I keep up a regular correspondence. In view of this, I fear I would not be able to answer any of the USA fellows that might write to me. I thought it only fair to let you and them know.

"I myself have just completed a fairly successful DX season, having received 52 verifications from stations on the b. c. b. all more than 2000 miles distant. My best veris is KDB, 100 watts. Other notable veries are KGO, KFI, KGB, KGW, KOH, KSO, WREN, KVOR, etc. Some of the above veries (so I am told by my American friends) are considered quite good catches even in the USA."

The Frequency Checks

The frequency checks last season were manna for our DXers. We have no information as yet as to whether or not these checks are to be continued. A number of the broadcasting stations are listing them, however, instead of regular DX programs so it is probable that they are to be continued for some little time longer. "Last week I received 30 new stations, 29 of them on frequency checks," Frank Wheeler, 406 Eagle Point, Lakeside, Erie, Pa., wrote in



This is Maxine whose deep contralto voice is heard to the accompaniment of Phil Spitalny's girl ensemble. Maxine is nineteen. Spitalny has made a great orchestra out of his girls.

May. These boosted my all time log (192801934) to 568, and my current log (Sept., 1932, to May, 1934) to 464. The frequency checks surely increase a fellow's log. Wouldn't it be great if other countries did the same?"

Fun Logging Amateurs

"I have a Halson 5-tube superhet and a home-made 2-tube receiver," preambles Arthur Phillips, Jr., 720 Linwood Road, Birmingham, Ala. "In January I started logging amateur stations on the 20, 80 and 160 meter bands. I now have 400 amateurs in the U. S., Mexico, Hawaii, Puerto Rico and South America. On the two-tube set I have 25 foreign stations. My best are GSB-GSA, DJC, VK2ME and KNRA. KNRA was logged May 5th at 7:30 p.m. EST coming in Q5R9 on 32 meters. He was talking to WDN. I am fourteen years old and would like to hear from any other SWL's that would like to write."

October DX Calendar

Continued from front cover

Wednesday Morning (Continued)			
3:10-3:30	WRBX 1410	250	Roanoke
	WHBC 1200	100	Canton
	KGFW 1420	100	Alamosa
3:20-3:40	WMBG 1210	100	Richmond
	WTRC 1310	50	Elkhart
	KICA 1370	100	Clovis
3:30-3:50	WBCM 1410	500	Bay City
	KGHI 1200	100	Little Rock
3:40-4:00	WGH 1310	100	Newport News
	WGBF 630	500	Evansville
	KIDW 1420	100	Lamar
3:50-4:10	WOCL 1210	50	Jamesstown
	WROK 1410	500	Rockford
	KBTM 1200	100	Jonesboro
4:00-4:20	WQAN 880	250	Seranton
	WBOW 1310	100	Terre Haute
	KFBB 1280	1000	Great Falls
4:10-4:30	WHEC 1430	500	Rochester
	WOSU 570	750	Columbus
	KGFL 1370	100	Roswell
4:20-4:40	WSAZ 1190	1000	Huntington
	WBEO 1310	100	Marquette
4:30-4:50	WGAL 1500	100	Lancaster
	WKBN 570	500	Youngstown
	WCAL 1250	1000	Northfield
4:40-5:00	WCAZ 1070	100	Carthage
	KFJB 1200	100	Marshalltown
4:50-5:10	WKBF 1400	500	Indianapolis
	WACO 1420	100	Waco
5:00-5:20	WDZ 1070	100	Tuscola
	KGDE 1200	100	Fergus Falls
5:10-5:30	WLBL 900	2500	Stevens Point
	WLB 1250	1000	Minneapolis
5:20-5:40	WBAA 1400	500	W. Lafayette
	WIL 1200	100	St. Louis
5:30-5:50	WTAD 1440	500	Quincy
	KGHF 1320	250	Pueblo
5:40-6:00	WXYZ 1240	1000	Detroit
	October 17		
2:00-2:30	KWTO 560	1000	Springfield
3:00-3:30	KSO 1320	250	Des Moines
3:00-5:00	WOPJ 1500	100	Bristol
	October 24		
3:00-5:00	XED 1160	500	Guadalajara
	October 31		
5:30-5:45	WFBG 1310	100	Altoona
5:30-6:00	WRWA 1310	100	Reading
	October 10, 17, 24, 31		
2:00-2:30	WROK 1410	500	Rockford
	October 3, 10, 17, 24, 31		
10:00-1:00	CMBX 1185	250	Havana
2:30-4:30	CKMO 1410	100	Vancouver
6:00-6:30	WASH 1270	500	Grand Rapids
	Thursday Mornings		
	October 4		
2:00-2:20	WSOC 1210	100	Charlotte
2:10-2:30	WSPA 1420	100	Spartanburg
2:20-2:40	WFBC 1300	250	Greenville
2:30-2:50	WSGN 1310	100	Birmingham
2:40-3:00	WJBO 1420	100	Baton Rouge
2:50-3:10	WGCM 1210	100	Gulfport
3:00-3:15	KREG 1500	100	Santa Ana
3:00-3:20	WRDW 1500	100	Augusta
	WHBY 1200	100	Green Bay
	WDAH 1310	100	El Paso
3:10-3:30	WKAQ 1240	1000	San Juan
	WJMS 1420	100	Ironwood
	KLUF 1370	100	Galveston
3:20-3:40	WCSE 1360	500	Charleston
	WEDC 1210	100	Chicago
	KTSM 1310	100	El Paso
3:30-3:50	WBIG 1440	500	Greensboro
	KGKL 1370	100	San Angelo
3:40-4:00	WCOA 1340	500	Pensacola
	WSBC 1210	100	Chicago
	KFPM 1310	15	Greenville
3:50-4:10	WQBC 1360	500	Vicksburg
	KFIZ 1420	100	Fond du Lac
	KMAC 1370	100	San Antonio

4:00-4:20	WDBO 580	250	Orlando
	WEBQ 1210	100	Harrisburg
	KFYO 1310	100	Lubbock
4:10-4:30	WNBR 1430	500	Memphis
	WMPC 1200	100	Lapeer
	KONO 1370	100	San Antonio
4:20-4:40	WQAM 560	1000	Miami
	WHBF 1210	100	Rock Island
4:30-4:50	WDAE 1220	1000	Tampa
	WKBZ 1500	100	Muskegon
	KFJM 1370	100	Grand Forks
4:40-5:00	WJEM 990	500	Tupelo
	WCBS 1210	100	Springfield
4:50-5:10	WCOC 880	500	Meridian
	WKBV 1500	100	Richmond
	KFGQ 1370	100	Boone
5:00-5:20	WTAX 1210	100	Springfield
	KGBV 1310	100	Springfield
5:10-5:30	WTOC 1260	1000	Savannah
	WHBD 1370	100	Mount Orab
	KCMC 1420	100	Texarkana
5:20-5:40	WHBU 1210	100	Anderson
5:30-5:50	WIBM 1370	100	Jackson
	KGFF 1420	100	Shawnee
5:40-6:00	WOMT 1210	100	Manitowoc
	KNOW 1500	100	Austin
	October 18		
1:01:1:09	CFCY 630	500	Charlottetown
	October 25		
2:00-3:00	CMJP 1360	75	Moron
3:15-3:45	KFH 1300	1000	Wichita
	October 4, 11, 18, 25		
12:00-3:00	WCNW 1500	100	Brooklyn
3:00-4:00	XEFI 720	250	Chihuahua
	Friday Mornings		
	October 5		
2:00-3:00	CMJP 1360	75	Moron
3:00-3:20	WJW 1210	100	Akron
	KRMD 1310	100	Shreveport
3:10-3:30	WPAD 1420	100	Paducah
	KOTN 1500	100	Pine Bluff
3:20-3:40	WSEN 1210	100	Columbus
3:30-3:50	WELL 1420	50	Battle Creek
	KGKE 1200	100	Sterling
3:40-4:00	WALR 1210	100	Zanesville
	KFPL 1310	100	Dublin
3:50-4:10	WMBC 1420	100	Detroit
	WCAT 1200	100	Rapid City
4:00-4:20	WFDF 1310	100	Flint
	KGCU 1240	250	Mandan
4:10-4:30	WFBE 1200	100	Cincinnati
4:20-4:40	WGAR 1450	500	Cleveland
	KLPM 1240	250	Minot
4:30-4:40	WCLO 1200	100	Janesville
	KGFG 1370	100	Okl. City
4:40-5:00	WCLS 1310	100	Joliet
	KABC 1420	100	San Antonio
4:50-5:10	WJBL 1200	100	Decatur
	KFJZ 1370	100	Fort Worth
5:00-5:20	WJBK 1500	100	Detroit
	KWCR 1430	250	Cedar Rapids
5:10-5:30	WIBU 1210	100	Poynette
	KGFI 1500	100	Corpus Christi
5:20-5:40	WHDF 1370	100	Calumet
	WLBV 1420	100	Kansas City
5:30-5:50	WCRW 1210	100	Chicago
	KGKB 1500	100	Tyler
5:40-6:00	WTAQ 1330	1000	Eau Claire
	WMBH 1420	100	Joplin
	October 19		
1:01-1:09	CFCY 630	500	Charlottetown
3:01-3:09	CHSJ 1120	100	St. John
	October 5, 12, 19, 26		
10:00-1:00	CMBX 1185	250	Havana
1:00-2:30	XEX 1310	125	Monterrey
2:30-4:30	CKMO 1410	100	Vancouver
	Saturday Mornings		
	October 6		
2:10-2:30	WBRB 1210	100	Red Bank
2:20-2:40	WWRL 1500	100	Woodside
2:30-2:50	WGNY 1210	100	Chester
2:40-3:00	WMBQ 1500	100	Brooklyn

(Continued on page 62)

THE SHORTWAVE STATIONS OF THE WORLD BY FREQUENCIES

In the list of stations arranged by frequencies, the frequency is given first, in megacycles followed by the wavelength in meters. The location of each station given in the frequency list is given as it is announced over the air.

A complete list of station addresses appears in the May issue of RADEX.

Continued from the September Number

KEY TO SYMBOLS IN PARENTHESES:

Capital letters indicate type of service, as follows:

- A, Point-to-point, Condition A, Inverted modulation.
- B, Point-to-point, Condition B, Intelligible speech.
- E, Experimental.
- F, Forestry service.
- G, Airway ground station.
- P, Police.
- R, Relay (broadcasting).
- SS, Ship to shore, or shore to ship, communication.

Small letters following the hyphen concern verifications, as follows:

- a, verifies for return postage.
- b, verifies only occasionally.
- c, does not verify.
- x, address given alphabetically in address list.
- y, address not given.
- z, no information available.
- 1, 2, 3, figures indicate key numbers in address list.

	10.613 28.25	11.950 25.08
EDN, Madrid, Spain (B-a-28), Phones Canaries		KKQ, Bolinas, Calif. (E-cy)
EDX, Madrid, Spain (B-a-28), Phones Chile		12.000 24.99
	10.630 28.20	RNE, Moscow, USSR. (R-ax)
WED, Rocky Point, N. Y. (E-cy)		12.148 24.68
	10.660 28.12	GBS, Rugby, England (A-a-16)
JVN, Nazaki, Japan (B-z)		12.241 24.41
	10.740 27.92	GBU, Rugby, England (A-a-16)
JVM, Nazaki, Japan (A-z)		12.394 24.19
	10.761 27.86	DAF, Norden, Germany (SS-a-15)
GBP, Rugby, England (A-a-16)		12.660 23.68
	10.840 27.66	CZA, Drummondville, P. Q. (SS-a-6)
KWV, Dixon, Calif. (A-cy)		12.780 23.46
	10.890 27.53	GBC, Rugby, England (SS-a-16)
CMA, Havana, Cuba (B-b-31)		12.785 23.45
	10.962 27.35	IAC, Coltano, Italy (SS-a-19)
OCI, Lima, Peru (B-c-25)		12.820 23.38
	11.187 26.80	CNR, Rabat, Morocco (B-a-same address as "Rabat")
XAM, Merida, Mex. (B-bx), Phones Mexico City		....., Rabat, Morocco (R-ax)
	11.711 25.60	12.830 23.36
Radio Coloniale, Pontoise, France (R-ax)		HJA3, Barranquilla, Colombia (B-cy)
	11.720 25.58	12.840 23.35
CJRX, Winnipeg, Man. (R-a-33)		WOO, Ocean Gate, N. J. (SS-cy)
	11.725 25.57	WOY, Lawrenceville, N. J.
PHI, Huizen, Holland (R-ax)		12.930 23.18
	11.750 25.51	WAW, Hialeah, Fla. (B-cy)
GSD, Daventry, England (R-a-17)		13.074 22.94
	11.760 25.50	JYK, Tokio, Japan
DJD, Zeesen, Germany (R-a-14)		13.185 22.74
	11.790 25.43	KFY, Forward Base, Little America (B-cy)
W1XAL, Boston, Mass. (R-ax), Re- lays WEEI		KFZ, Main Base, Little America (B-cy)
	11.800 25.40	13.200 22.71
I2RO, Rome, Italy (R-ax)		CFU, Rossland, B. C. (Consolidated Mining & Smelting Co. of Canada, Ltd.)
	11.830 25.34	KFY, Forward Base, Little America (B-cy)
W2XE, Wayne, N. J. (R-ax), Relays WABC		KFZ, Main Base, Little America (B-cy)
	11.865 25.27	KNRA, "Seth Parker" (B-a-37)
GSE, Daventry, England (R-a-17)		13.245 22.64
	11.870 25.25	KFY, Forward Base, Little America (B-cy)
W8XK, Pittsburgh, Pa. (R-ax), Re- lays KDKA		KFZ, Main Base, Little America (B-cy)
	11.898 25.20	13.260 22.61
Rdo., Coloniale, Pontoise, France (R-ax)		KFY, Forward Base Little America (B-cy)
		KFZ, Main Base, Little America (B-cy)
10.290 29.14		
HPC, Panama City, Panama (B-cy) Phones Hialeah		
10.296 29.12		
LSL, Buenos Aires, Argentina (A-b-1)		
10.330 29.02		
ORK, Brussels, Belgium (B-bx)		
ORK, Brussels, Belgium (R-ax), Daily at 1 p.m.		
10.335 29.01		
ZFD, Hamilton, Bermuda (A-cy)		
10.350 28.97		
LSX, Buenos Aires, Argentina (B-cy)		
LSX, Buenos Aires, Arg. (R-ax); address letters to LR4)		
10.370 28.91		
WCG, Rocky Point, N. Y. (E-cy)		
10.400 28.83		
KEZ, Bolinas, Calif. (E-cy)		
10.410 28.80		
KES, Bolinas, Calif. (E-cy)		
10.465 28.64		
WKC, Rocky Point, N. Y. (E-cy)		
10.520 28.50		
CFA4, Drummondville, P. Q. (B-a-6)		
VK2ME, Sydney, Australia (A-a-3)		
10.550 28.42		
WOK, Lawrenceville, N. J. (A-cy)		
10.610 28.25		
WEA, Rocky Point, N. Y. (E-cy)		

13.337 22.48	14.815 20.23	15.860 18.90
YVQ, Maracay, Venezuela (B-cy) Phones Hialeah	WQL, Rocky Point, N. Y. (E-cy)	CEC, Santiago, Chile (B-c-7)
13.390 22.39	14.830 20.21	15.863 18.90
WMA, Lawrenceville, N. J. (A-cy)	WKU, Rocky Point, N. Y. (E-cy)	FTK, Ste. Assise, France (B-a-11)
13.435 22.31	14.930 20.08	16.030 18.71
WKD, Rocky Point, N. Y. (E-cy)	HJB, Bogota, Colombia (B-cy)	KKP, Kahuku, Hawaii (A-cy)
13.465 22.26	14.969 20.03	16.150 18.56
WKC, Rocky Point, N. Y. (E-cy)	EDQ, Madrid, Spain (B-a-28)	GBX, Rugby, England (A-a-16)
13.480 22.24	14.980 20.01	16.162 18.55
WAJ, Rocky Point, N. Y. (E-cy)	KAY, Manila, P. I. (A-cy)	PSA, Rio de Janeiro, Brazil (A-b-4)
13.500 22.09	15.040 19.93	16.270 18.48
GBB, Rugby, England (A-a-16)	WQG, Rocky Point, N. Y. (E-cy)	WLK, Lawrenceville, N. J. (A-cy)
13.610 22.03	15.055 19.91	16.380 18.30
JYK, Kemikawa-Cho, Chiba-Ken, Japan (R-z)	WNC, Hialeah, Fla. (B-cy)	XGN, Shanghai, China (B-a-8)
13.671 21.93	15.104 19.85	17.080 17.55
HAS, Budapest, Hungary (E-a-39)	RAU, Tashkent, USSR. (B-cy)	GBC, Rugby, England (SS-a-16)
13.690 21.90	15.120 19.83	17.122 17.51
KKZ, Bolinas, Calif. (E-cy)	HVJ, Vatican City (R-ax)	HAT, Budapest, Hungary (B-a-39)
13.780 21.75	15.140 19.81	17.120 17.51
KKW, Bolinas, Calif. (E-cy)	GSF, Daventry, England (R-a-17)	WOO, Ocean Gate, N. J. (SS-cy)
13.816 21.70	15.200 19.73	WOY, Lawrenceville, N. J.
SUZ, Cairo, Egypt (B-a-10)	DJB, Zeesen, Germany (R-a-14)	17.260 17.37
13.870 21.61	15.210 19.71	CMA1, Havana, Cuba (B-c-31)
WIY, Rocky Point, N. Y. (E-cy)	W8XK, Pittsburgh, Pa. (R-ax), Re- lays KDKA	DAF, Norden, Germany (SS-a-15)
13.900 21.57	15.234 19.68	17.310 17.32
WQP, Rocky Point, N. Y. (E-cy)	Rdo., Coloniale, Pontoise, France (R-ax)	CZA, Drummondville, P. Q. (SS-c-6)
13.984 21.44	15.250 19.66	W3XL, Boundbrook, N. J. (R-a-37)
GBA, Rugby, England (A-a-16)	W1XAL, Boston, Mass. (R-ax), Re- lays WEEI	17.512 17.12
14.000 to 14.400	15.270 19.64	DFB, Nauen, Germany (E-a-13)
(20.82 to 21.42 meters), amateur band. Phones from 14.150 to 14.250 mags.	W2XE, Wayne, N. J. (R-ax), Relays WABC	17.533 17.10
14.450 20.75	15.300 19.70	VWZ, Kirkee, Poona, India (B-z)
GBW, Rugby, England (A-a-16)	CP5, La Paz, Bolivia (R-ax)	17.600 17.04
14.470 20.72	15.340 19.55	KFY, Forward Base, Little America (B-cy)
WMF, Lawrenceville, N. J. (A-cy)	W2XAD, Schenectady, N. Y. (R-ax) Relays WGY	KFZ, Main Base, Little America (B-cy)
14.480 20.70	15.355 19.52	17.620 17.01
LSN, Buenos Aires, Arg. (A-b-1)	KWU, Dixon, Calif. (A-cy)	KFY, Forward Base, Little America (B-cy)
YNA, Managua, Nicaragua (B-cy), Phones	15.415 19.45	KFZ, Main Base, Little America (B-cy)
14.530 20.65	KWO, Dixon, Calif. (A-cy)	17.710 16.93
LSA, Buenos Aires, Arg. (A-b-1)	15.454 19.40	CJAS, Drummondville, P. Q. (A-c-6)
14.545 20.69	Rdo., Coloniale, Pontoise, France (R-ax)	17.720 16.92
HPF, Panama City, Panama (B-cy) Phones Hialeah	15.620 19.19	HSP, Bangkok, Siam (BX-a-27)
TGF, Guatemala City, Guatemala (B-cy) Phones Hialeah	JVS, Nazaki, Japan (A-z)	17.760 16.88
TIN, Cartago, Costa Rica (B-b-9)	15.650 19.16	DJE, Zeesen, Germany (E-a-14)
TIU, Cartago, Costa Rica (B-b-9)	JVE, Nazaki, Japan (A-z)	17.770 16.87
14.590 20.55	15.762 19.02	IAC, Coltano, Italy (SS-a-10)
WMN, Lawrenceville, N. J. (A-cy)	JYT, Kemikawa-Cho, Chiba-Ken, Japan (R-z)	17.775 16.87
14.682 20.42	15.821 18.95	PHI, Huizen, Holland (R-ax)
PSF, Rio de Janeiro, Brazil (A-b-4)	OCJ, Lima, Peru (B-c-25)	17.780 16.86
14.800 20.26		W3XAL, Boundbrook, N. J. (R-a-37)
WQV, Rocky Point, N. Y. (E-cy)		W8XK, Pittsburgh, Pa. (R-ax)
		W9XAA, Chicago, Ill. (R-ax)
		17.790 16.85
		GSG, Daventry, England (R-a-17)

17.830 16.82	18.860 15.89	19.895 15.07
PCV, Kootwijk, Holland (A-b-18)	WKM, Rocky Point, N. Y. (E-cy)	LSG, Buenos Aires, Arg. (A-b-1)
17.860 16.78	18.958 15.82	19.980 15.01
WQC, Rocky Point, N. Y. (E-cy)	LSR, Buenos Aires, Arg. (B-b-1)	KAX, Manila, P. I. (A-cy)
17.880 16.76	18.963 15.81	20.028 14.97
WQI, Rocky Point, N. Y. (E-cy)	GAG, Rugby, England (A-a-16)	DHO, Nauen, Germany (B-a-13)
18.020 16.64	19.121 15.68	OPL, Leopoldville, Belgian Congo (B-ax)
KQJ, Bolinas, California (E-cy)	LSM, Buenos Aires, Arg. (A-b-1)	20.100 14.91
18.116 16.55	19.182 15.63	WQY, Rocky Point, N. Y. (E-cy)
LSY, Buenos Aires, Arg. (B-b-2)	ORG, Brussels, Belgium (B-ax)	20.368 14.72
18.170 16.50	19.220 15.60	GAA, Rugby, England (A-a-16)
PMC, Bandoeng, Java (A-a-22)	WKF, Lawrenceville, N. J. (A-cy)	20.606 14.55
18.180 16.49	19.240 15.58	PMB, Bandoeng, Java (A-a-22)
CGA, Drummondville, P. Q. (A-c-6)	DFA, Nauen, Germany (B-a-13)	20.820 14.40
18.193 16.48	19.270 15.57	LSY, Buenos Aires, Arg. (B-b-2)
GAW, Rugby, England (A-cy)	PPU, Rio de Janeiro, Brazil (A-b-5)	20.849 14.38
18.296 16.39	19.282 15.55	EDM, Madrid, Spain (B-a-28)
YVR, Maracay, Venezuela (B-cy)	FTM, Ste. Assise, France (B-a-11)	EHY, Madrid, Spain (B-a-28)
18.304 16.38	19.418 15.44	21.020 14.27
GAS, Rugby, England (A-a-16)	EDQ, Madrid, Spain (B-a-28)	LSN, Buenos Aires, Arg. (A-b-1)
18.350 16.34	19.500 15.38	21.060 14.24
WLA, Lawrenceville, N. J. (A-cy)	LSQ, Hurlingham, Buenos Aires, Arg.	KWN, Dixon, Calif. (A-cy) Phones Kokohead, Hawaii
18.400 16.29	19.506 15.37	WKA, Lawrenceville, N. J. (A-cy)
PCK, Kootwijk, Holland (A-b-18)	IRW, Rome, Italy (B-a-20)	21.069 14.23
18.444 16.25	19.519 15.36	PSA, Rio de Janeiro, Brazil (A-b-4)
HJY, Bogota, Colombia (B-cy)	EDN, Madrid, Spain (B-a-28)	21.128 14.19
18.611 16.11	Phones Canaries	LSM, Buenos Aires, Arg. (A-b-1)
GAU, Rugby, England (A-a-16)	EDX, Madrid, Spain (B-a-28)	21.410 14.00
18.670 16.06	Phones Chile	WKK, Lawrenceville, N. J. (A-cy)
OCI, Lima, Peru (B-cy)	19.596 15.30	21.460 13.97
18.690 16.04	LSF, Buenos Aires, Arg. (A-b-1)	WIXAL, Boston, Mass. (R-ax)
XGK, Shanghai, China (B-b-8)	19.680 15.24	21.470 13.96
18.820 15.93	CEC, Santiago, Chile (B-c-7)	GSH, Daventry, England (R-a-17)
PLE, Bandoeng, Java (A-a-22)	19.684 15.23	21.540 13.92
18.856 15.90	EAQ, Madrid, Spain (B-a-29)	W8XK, Pittsburgh, Pa. (R-ax)
ZSS, Capetown, Union of S. Africa (A-z)	19.820 15.13	22.291 13.45
	WKN, Lawrenceville, N. J. (A-cy)	GBU, Rugby, England (A-a-16)

The RADEX Short Wave Converter is invaluable for short wave listeners. Just set the dial to the time in your zone and the time for all parts of the world is instantly shown. Complete with a Radio Map of the World.

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Cleveland, Ohio

WHAT'S ON THE AIR TONIGHT

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

COLUMBIA.....(C)	
Call	Dial

NATIONAL, Red (R)	
Call	Dial

NATIONAL, Blue (B)	
Call	Dial

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

RADEX is the only publication listing stations in alphabetical order for your convenience. While these programs are correct at the time of going to press changes are made from time to time.

MONDAY

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

C — The Shadow

KLRA WABC WBIG WBRC WCAU WDAE WDBJ WDBO WDDO WDSU WGST WHEC WKBN WKBW WLAC WMBG WNOX WQAM WRBC WSFA WSJS WTOC

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

R — Billy Batchelor

WBN WCAE WCSH WCAF WEEI WFBR WFI WGY WJAR WRC WTAG WTAM WTC WJJ

B — Lowell Thomas

CFCE CRCT KDKA WBAL WBZ WBZA WFLA WGAR WHAM WIOD WJAX WJR WJZ WLW WMAL WSYR

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

B — Amos 'n' Andy

CRCT KDKA WBAL WBZ WBZA WENR WFLA WIOD WJZ WLW WMAL WPTF WRVA

C — Myrt and Marge

CKLW KRLL WABC WADC WBT WCAO WCAU WDAE WDBO WDRC WEAN WFBL WGR WHK WJAS WJSV WKRC WNAC WOKO WQAM WSPD WTOC WWVA

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

R — Gene and Glenn

WBN WCAE WCAF WEEI WFBR WFLA WGY WIOD WIS WJAR WJAX WPTF WRC WTAG WWNC

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

C — Silver Dust Seroaders

WABC WCAO WCAU WDRS WFBL WGR WHEC WHP WJAS WJSV WMAS WOKO WRC WWVA

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

C — Boake Carter

CKLW KMBC KMOX WABC WBBM WBT WCAO WCAU WCCO WGR WHAS WHK WJAS WJSV WNAC

R — Frank Buck Adventures

KSD WBN WCAE WCSH WDAF WFAF WGY WLIT WMAQ WOV WRC WSAI WTAM

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

R — Richard Himber and Orchestra
KSD WBN WCAE WCSH WDAF WFAF WGY WLIT WMAQ WOV WRC WSAI WTAM WTC

B — Jan Garber and Orchestra

KDKA KDYL KFI KGO KWG

KHQ KOA KOIL KOMO KSO KWCR KWK WBAL WBZ WBZA WGAR WHAM WJR WJZ WKBF WLS WLW WMAL WREN WSYR

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

C — Edwin C. Hill

CFRB CKAC CKLW KGKO KMBC KMOX KOH KRLL KVOR WABC WADC WBIG WBT WCAU WCCO WDAE WDBJ WDNC WDRS WFBL WGST WHP WICC WJSV WLBZ WMT WNAC WORC WQAM WRC WSFA WTOC WWVA

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

R — Voice of Firestone

CFCE CRCT WBN WCAE WCSH WDAF WFAF WEEI WFBR WGY WJAR WLIT WMAQ WRC WSAI WTAG WTAM WTC WJJ

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

C — Evan Evans, Baritone

CFRB CKAC KDB KERN KFBK KFH KFPY KFRC KGB KGKO KGMB KHJ KLRA KLZ KMJ KMOX KOH KOIN KOL KOMA KRLL KSCJ KSL KTRH KTSB KTUL KVI KWG WABC WACO WADC WALA WBIG WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDDO WDSU WFBZ WFEA WGST WHAS WHEC WHP WIBW WICC WISN WJAS WKBW WKRC WLAC WLWB WLWZ WMAS WMBG WMBR WMT WNAC WNOX WOKO WORC WPG WQAM WRC WSFA WSJS WSPD WTOC

R — A. & P. Gypsies

KSD WBN WCAE WCSH WDAF WFAF WEEI WGY WHO WJAR WLIT WMAQ WOC WOW WTAG WTAM WTC WJJ

B — Sinclair Minstrels

KDKA KFYR KOA KOIL KPRC KSO KSTP KTBS KTHS KVOO KWK WAPI WBAL WBZ WBZA WDAY WECB WFAA WFLA WGAR WHAM WIBA WIOD WIS WJAX WJDX WJR WJZ WKY WLS WLW WMC WOAI WPTF WREN WRVA WSB WSM WSMB WSOE WTMJ WWNC

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

C — Fray and Braggiotti

CFRB CKAC CKLW KFAB KFH KGKO KLRA KLZ KMOX KOH KOMA KRLL KSCJ KSL KTRH KTSB KTUL KVOR WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO

WDAE WDBJ WDBO WDNC WDDO WDRS WDSU WEAN WFBL WFBM WFEA WGST WHAS WHK WHP WIBW WICC WISN WJAS WJSV WKBW WKRC WLAC WLWB WLWZ WMAS WMBG WMBR WMT WNAC WNOX WOKO WORC WPG WQAM WRC WSFA WSJS WSPD WTOC

C — Billy Batchelor

KDB KERN KFBK KFPY KFRC KGB KHJ KOIN KOL KVI KWG

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

C — Lud Gluskin and Orchestra

CKLW KMBC KMOX WABC WADC WBBM WCAO WCAU WDRS WEAN WFBZ WFLB WFBM WHAS WHK WJAS WJSV WKBW WKRC WNAC WOKO WOW WSPD

R — Colgate House Party

KDYL KFI KFYR KGO KWG KHQ KOA KOMO KPRC KSD KSTP KTBS KVOC WBN WCAE WCSH WDAF WDAY WFAF WEEC WEEI WFAA WFBZ WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKY WLIT WLW WMAQ WMC WOAI WOC WOW WPTF WRC WRVA WSAI WBS WSM WSMB WTAG WTAM WTMJ WWJ WWNC

B — Princess Pat Players

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

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

C — Wayne King and Orchestra

CKLW KDB KERN KFAB KFBK KFPY KFRC KGB KEJ KLZ KMBC KMJ KMOX KOIN KOL KRLL KSL KVI KWG WAAB WABC WADC WBBM WBNS WCAO WCAU WCCO WDRS WDSU WEAN WFBZ WFBM WHAS WHK WIBW WJAS WJSV WKBW WKRC WOKO WOW WSPD

R — Contented Program

KDYL KFI KGO KWG KHQ KOA KOMO KSD WBN WCAE WCSH WDAF WFAF WEEI WFAA WFBZ WGY WHO WJAR WLIT WLW WMAQ WOC WOW WRC WTAG WTAM WTC WJJ

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

C — Fats Waller, Songs

CKAC KDB KFH KGKO KLRA KLZ KMBC KOH KOIN KOMA KRLL KTRH KTSB KTUL KVOR WAAB WABC WACO WALA WBIG

MONDAY (Continued)

WBRC WBT WCAO WADC WDAE
WDBJ WDBO WDNC WDDO WDSU
WFBL WFBM WGST WHAS WHEC
WHP WIBW WIP WJAS WJSV
WKBN WKBW WLAC WLBW
WMBG WNOX WOKO WPG WQAM
WREC WSBT WSFA WSJS WSPD
WTOC

C — Myrt and Marge

KDB KERN KFBK KFPY KFRC
KGB KHJ KLRA KLZ KMBC KMJ
KMOX KOIN KOL KOMA KSL KVI
KWG WBBM WBRC WCCO WDSU
WFBM WGST WHAS WLAC WREC

B — Amos 'n' Andy

KOIL KPRC KSTP KTHS KWK
WBAP WCKY WDAF WENR WFAA
WGAR WHAM WJR WKY WMC
WOAI WREN WSB WSM WSMB
WTMJ

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

C — Glen Gray and Orchestra

CFRB CKAC CKLW KDB KFH
KGKO KLRA KLZ KMBC KMOX
KOH KOMA KRLD KSL KTRH
KTSR KTVR WABC WACO WADC
WALA WBIG WBNS WBRW WBT
WCAO WCAU WDAE WDBJ WDBO
WDNC WDDO WDRS WDSU WEAN
WFBL WFBM WFEA WGST WHAS
WHEC WHK WICG WISN WJAS
WJSV WKBN WKBW WLAC WLBW
WLBZ WMAS WMBG WNAO WNOX
WOKO WORC WPG WQAM WREC
WSBT WSFA WSJS WSPD WTOC

R — Gene and Glenn

KDLY KFI KFSD KGO KGW KHQ
KOA KOMO KPRC KSD KSTP
KTAR KTBS KTHS WAVE WCAE
WDAF WECB WFAA WHO WIBA
WJDX WKBW WKY WMAQ WMC
WOAI WOC WOW WSAI WSB WSM
WSMB WTAM WWJ

C — Edwin C. Hill

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

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

R — Voice of Firestone

KDYL KFI KFSD KFYR KGH
KGIR KGO KGU KGW KHQ KOA
KOMO KSD KSTP KTAR WDAF
WDAY WECB WHO WIBA WKBW
WOC WOW WTMJ

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

C — Enoch Light and Orchestra

CFRB CKAC CKLW KDB KFH
KGKO KLRA KLZ KMBC KOH
KOH KOMA KRLD KTRH KTSR
KTUL KTVR WABC WACO WADC
WALA WBIG WBNS WBRW WBT
WCAO WCAU WDAE WDBJ WDBO
WDNC WDDO WDSU WEAN WFBL
WFBM WFEA WHEC WHK WHP
WJAS WJSV WKBW WLAC WLBW
WLBZ WMAS WMBG WNAO WNOX
WPG WQAM WREC WSBT WSFA
WSJ WSPD WTOC

TUESDAY

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

C — Edward Wurtzebach's Orchestra
CFRW KFAB KFH KGKO KLRA
KLZ KOH KOMA KRLD KSCJ
KTRH KTSR KTUL KTVR WBBM
WBGJ WBRW WCAO WCCO WDAE
WDBJ WDBO WDDO WHP WIBW

WISN WJSV WKRC WMT WNAO
WNOX WSFA WSJS WSPD WTOC

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

C — Modern Mountaineers

CKLW KGKO KLRA KLZ KMBC
KMOX KOH KOMA KRLD KSCJ
KSL KTRH KTSR KTUL KTVR
WAAB WABC WBIG WBRW WCAU
WDAE WDBJ WDBO WDNC WDDO
WDRS WDSU WEAN WFEA WGST
WHAS WHEC WHK WHP WISN
WJAS WJSV WKBW WLAC WLBW
WLBZ WMAS WMT WNAO WNOX
WOKO WORC WQAM WREC WSFA
WSJS WSPD WTOC WWVA

R — Billy Batchelor, See Monday

B — Lowell Thomas, See Monday

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

C — Myrt and Marge, See Monday

B — Amos 'n' Andy, See Monday

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

C — Peter Biljo and Orchestra

CFRB CKLW KFAB KFH KGKO
KLRA KLZ KOH KOMA KRLD
KSCJ KSL KTRH KTSR KTUL
KTVR WABC WACO WALA WBIG
WBRW WBT WCAO WCAU WDBO
WDAE WDBJ WDBO WDNC WDDO
WDRS WDSU WFEA WGR WGST
WHEC WHP WICG WISN WJAS
WKBW WLAC WLBW WLBZ WNAO
WNAO WNOX WOKO WORC WQAM
WREC WSFA WSJS WSPD WTOC

R — Gene and Glenn, See Monday

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

C — Whispering Jack Smith

WABC WCAO WCAU WDRS WEAN
WFBL WGR WJAS WJSV WNAO
WOKO WORC

B — Household Musical Memories

KDKA KOIL KSO KWCR KWK
WBAL WBZ WBZA WENR WJZ
WMAL WREN

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

R — Frank Buck, See Monday

C — Boake Carter, See Monday

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

C — Frank Munn; Muriel Wilson

CKLW KMBC KMOX WABC WADC
WBBM WCAO WCAU WDRS WEAN
WFBL WFBM WGR WHAS WHK
WJAS WJSV WKRC WNAO WOKO
WOW WSPD

R — Leo Reisman and Orchestra

WBEN WCAE WCSH WDAF WEEI
WFER WFI WGY WJAR WKBW
WMAQ WRC WTAG WTAM WTIC
WWJ

B — Eno Crime Clues

KDKA KOIL KSO KWCR KWK
WBAL WBZ WBZA WGR WJR
WJZ WLS WLW WMAL WREN
WSYR

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

B — Lawrence Tibbett

CFRC CRCT KDKA KOIL KSO
KWCR WBAL WBZ WBZA WGR
WHAM WJZ WLS WMAL WREN
WSYR

C — Abe Lyman; Vivienne Segal

CFRB CKLW KMBC KMOX WABC
WBBM WCAO WCAU WCCO WDRS
WEAN WFBL WFBM WGR WHEC
WHK WJSV WKRC WNAO WOKO

R — Wayne King and Orchestra

KPRC KSD KSTP WBEN WCAE
WCSH WDAF WDAF WEEI WFAA
WFI WGY WHO WJAR WKBW
WKY WMAQ WMC WOAI WOC
WOW WRC WSAT WSB WSM WSMB
WTAG WTAM WTIC WTAM WWJ

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

C — Billy Batchelor

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

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

C — Bing Crosby; Boswell Sisters

CKLW KDB KERN KFBK KFPY
KFRC KGB KHJ KLZ KMBC KMJ
KMOX KOIN KOL KRLD KSL
KTUL KVI KWG WABC WADC
WBBM WBT WCAO WCAU WCCO
WDSU WEAN WFBL WFBM WHAS
WHK WJAS WJSV WKBW WKRC
WNAO WOKO WORC WOWO WREC
WSPD

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

B — Mrs. Franklin D. Roosevelt

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

R — Seconyland Sketches

WBEN WCSH WDAF WEEI WGY
WJAR WTAG WTIC

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

C — Glen Gray; Walter O'Keefe

CFRB CKAC CKLW KDB KERN
KFAB KFBK KFPY KFRC KGB
KGKO KOMB KHJ KLO KLRA
KLZ KMBC KMJ KMOX KOH
KOH KOL KOMA KRLD KSCJ
KSL KTRH KTSR KTUL KVI KTVR
KWG WABC WACO WADC WALA
WBBM WBIG WBNS WBRW WBT
WCAO WCAU WCCO WDAE WDBJ
WDBO WDNC WDDO WDRS WDSU
WEAN WFBL WFBM WFEA WGR
WGST WHAS WHEC WHK WHP
WIBW WICG WIP WISN WJAS
WJSV WKBN WKRC WLAC WLBW
WLBZ WMAS WMBD WMBG
WMBR WMT WNAO WNAO WNOX
WOKO WORC WOWO WPG WQAM
WREC WSBT WSFA WSJS WSPD
WTOC WWVA

R — Palmolive Beauty Box Theatre

CFRC CRCT KDYL KFI KFSD
KFYR KGHG KGIR KGO KGW
KHQ KOA KOMO KPRC KSD KSTP
KTAR KTBS KVOO WAVE WBAP
WBEN WCAE WCSH WDAF WDAY
WDAF WECB WEEI WFER WFLA
WGY WHO WIDW WIS WJAR WJAX
WJDX WKBW WKY WLW WMAQ
WMC WOAI WOC WOW WPTF
WRC WRVA WSB WSM WSMB
WSOC WTAG WTAM WTMJ WWJ
WWNC

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

C — Melodic Strings

KDB KGKO KOIN KSL KTRH
WABC WADC WBBM WBIG WBNS
WCAO WDBJ WDDO WDSU WFBM
WHEC WHK WHP WICG WMT
WNAO WSBT WSFA

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

C — Al Kaevelin and Orchestra

KLRA WAAB WABC WBIG WBRW
WBT WCAO WDAE WDBJ WDBO
WDNC WDDO WDRS WDSU WGST

TUESDAY (Continued)

WJSV WLAC WMBG WNOX WQAM
WREC WSFA WSJS

B — Amos 'n' Andy, See Monday

C — Myrt and Marge, See Monday

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

Frank Dailley and Orchestra
CKAC CKLW KDB KFAB KFH
KGKO KLRA KLZ KMBC KOH
KOMA KSCJ KTRH KTSK KTUL
KVOR WABC WACO WADC WALA
WBBM WBNS WBRC WBT WCAO
WCAU WCCO WDAE WDBJ WDBO
WDNC WDDO WDRC WDSU WEAN
WFBL WFBM WFEA WGST WHAS
WHCC WHP WICC WISN WJAS
WJSV WKBW WLAC WLWB WLWZ
WMAS WMBD WMBG WMOA
WNAK WNOX WOKO WORC WQAM
WREC WSBT WSFA WSJS WSPD

R — Gene and Glenn, See Monday

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

R — Leo Reisman and Orchestra
KDYL KFI KGO KGW KHQ KOA
KOMO KSD WDAF WHO WLW
WOC WOW WSB WSM WSMB
WTMJ

WEDNESDAY

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

C — Edw. Wurtzbech, See Tuesday

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

C — The Shadow, See Monday

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

R — Billy Batchelor, See Monday

B — Lowell Thomas, See Monday

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

B — Amos 'n' Andy, See Monday

C — Myrt and Marge, See Monday

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

C — Vera Van, Songs
CFRB CKAC CKLW KFAB KFH
KGKO KLRA KLZ KOH KOMA
KRLD KSCJ KSL KTRH KTSK
KTUL KVOR WABC WACO WADC
WALA WBIG WBRC WBT WCAO
WCAU WCCO WDAE WDBJ WDBO
WDNC WDDO WDRC WDSU WEAN
WFEA WGR WGST WHCC WHK
WHP WJAS WKBN WLAC WLWB
WLWZ WMBG WNAK WNOX WNOX
WOKO WORC WQAM WREC WSFA
WSJS WSPD WTOC

R — Gene and Glenn, See Monday

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

B — Irene Rich for Welch
KDKA KOIL KSO KWCR WAVE
WBAL WBZ WBZA WCKY WENR
WJM WMAL WMC WREN WSB
WSM WSYR

C — Silver Dust, See Monday

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

R — Frank Buck, See Monday

C — Boake Carter, See Monday

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

CFRB CKLW KMBC KMOX WAAB
WABC WBBM WCAO WCAU WCCO
WFBL WFBM WGR WHAS WHK
WJAS WKRC WOKO WOWO WSPD

B — Eno Crime, See Tuesday

R — Jack Pearl with Cliff Hall

CFCF CRCT KDYL KFI KFYY

KGW KGW KHQ KOA KOMO KPRC
KSD KTAR KTBS KTHS KVOO
WAVE WBAP WBEN WCAE WCKY
WCBS WDAF WDAY WFAE WEBC
WEHI WFBW WFLA WGY WHO
WIBA WIOD WIS WJAR WJAX
WJDX WKY WLIT WMAQ WMC
WOAI WOC WOW WPTF WRC
WRVA WSAI WSB WSM WSMB
WTAG WTAM WTIC WWJ WWNC

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

C — Edwin C. Hill, See Monday

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

C — Everett Marshall and Vanities
CFRB CKAC CKLW KDB KERN
KFBK KFPY KFRC KGB KHJ
KLZ KMBC KMJ KMOX KOIN
KOL KOMA KRLD KSL KVI KWG
WABC WBBM WBT WCAO WCAU
WCCO WDSU WGR WHAS WHK
WIBW WJAS WJSV WKRC WLAC
WNAK

R — Wayne King, See Tuesday

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

C — Mickey Cochrane, Baseball
CKLW KMBC KMOX WABC WADC
WBBM WCAO WCAU WDRC WEAN
WFBL WFBM WHAS WHK WJAS
WJSV WKBW WKRC WNAK WSPD

B — Warden Lawes in Sing Sing

KDKA KDYL KFI KGO KGW KHQ
KOA KOIL KOMO KSO KWCR
WKW WBAL WBZ WBZA WGAR
WJZ WKBF WLS WMAL WREN
WSYR

R — Fred Allen; Lennie Hayton

KPRC KSD KSTP KTBS KVOO
WBEN WCAE WCSH WDAF WFAE
WEBC WEHI WFAA WFBW WGY
WHO WIOD WIS WJAR WJAX WKY
WLIT WLW WMAQ WMC WOAI
WOC WOW WPTF WRC WRVA
WSB WSM WSMB WTAG WTAM
WTIC WTMJ WWJ

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

C — Emery Deutsch and Orchestra
CFRB CKAC CKLW KFAB KFH
KGKO KLRA KLZ KMBC KMOX
KOH KOMA KRLD KSCJ KSL
KTRH KTSK KTUL KVI WABC
WACO WADC WALA WBBM WBIG
WBNS WBRC WBT WCAO WCAU
WCCO WDAE WDBJ WDBO WDNC
WDDO WDRC WDSU WEAN WFBL
WFBM WFEA WGST WHCC WHK
WHP WIBW WICC WISN WJAS
WJSV WKBW WKRC WLAC WLWB
WLWZ WMAS WMBG WMBR WMT
WNAK WNAK WNOX WOKO WORC
WPG WQAM WREC WSFA WSJS
WSPD WTOC

C — Billy Batchelor, See Monday

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

C — Burns and Allen

CKLW KMBC KMOX KOMA KRLD
KSCJ KTRH KTSK WABC WADC
WBBM WBIG WBT WCAO WCAU
WCCO WDRC WDSU WEAN WFBL
WFBM WHK WJAS WJSV WKBW
WKRC WNAK WOKO WORC WOWO
WSPD

B — John McCormack, Tenor

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

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

C — Byrd Expedition Broadcast
CKLW KDB KERN KFAB KFBK
KPH KFPY KFRC KGB KHJ KLRA
KLZ KMBC KMJ KMOX KOIN KOL
KOMA KRLD KSL KTRH KTSK
KVI KWG WABC WACO WADC
WBBM WBNS WBT WCAO WCAU
WCCO WDAE WDRC WDSU WEAN
WFBL WFBM WGST WHAS WHCC
WHK WHP WIBW WJAS WJSV
WKBW WKRC WLAC WLWZ WMBG
WMT WNAK WNAK WOKO WORC
WOWO WQAM WREC

R — Guy Lombardo and Orchestra
KPRC KSD KTBS KTHS KVOO
WAVE WBEN WCAE WCSH WDAF
WFAE WEHI WFAA WFBW WFLA
WGY WHO WIOD WIS WJAR WJAX
WJDX WKBW WKY WLIT WLW
WMAQ WMC WOAI WOC WOW
WPTF WRC WRVA WSB WSM
WSMB WTAG WTAM WTIC WWJ
WWNC

B — Dennis King; Louis Katzman

KDKA KDYL KFI KFYY KGO KGW
KHQ KOA KOIL KOMO KSO KSTP
KWCR KWK WBAL WBS WBZA
WCKY WDAY WEBC WENR WGAR
WHAM WHIA WJR WJZ WMAL
WREN WSYR WTMJ

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

B — Harry Richman; Jack Denny

KDYL KFYY KOA KOIL KPRC
KSO KVOO KWCR KWK WBAL
WCKY WDAY WEBC WENR WFAA
WGAR WHAM WJR WJZ WKY
WMAL WREN WRVA WSYR WTMJ

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

C — Nick Lucas, Songs

CKAC CKLW KFH KGKO KLRA
KLZ KMBC KOH KOIN KOMA
KRLD KSL KTRH KTSK KTUL
KVOR WAAB WABC WACO WADC
WALA WBIG WBRC WBT WDAE
WDBJ WDBO WDNC WDDO WDRC
WDSU WFBL WFBM WGST WHCC
WHP WIBW WIP WJAS WJSV
WKBW WLAC WLWB WMBG
WNOX WOKO WQAM WREC WSBT
WSFA WSJS WSPD WTOC

C — Myrt and Marge, See Monday

B — Amos 'n' Andy, See Monday

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

C — Edwin C. Hill, See Monday

R — Gene and Glenn, See Monday

E-12:00 p.m., C-11:00, M-10:00, P-9:00

R — Fred Allen; Lennie Hayton
KDYL KFI KGO KGW KHQ KOA
KOMO

THURSDAY

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

C — Edw. Wurtzbech, See Tuesday

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

C — Eddie Dooley, Football Talks
WABC WBIG WBT WCAU WDBJ
WDRC WEAN WFBL WFEA WHCC
WHP WIBX WICC WJAS WKBW
WLWZ WMAS WMBG WNAK WOKO
WORC WSJS

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

C — Fats Waller's Rhythm Club

CKLW KFH KGKO KLRA KMBC
KMOX KOH KOMA KRLD KSCJ
KSL KTRH KTSK KTUL KVOR
WLBZ WBRG WCAO WDAE WDBJ

THURSDAY (Continued)

WDBO WDNC WDDO WDSU WFBL
WGLC WHAS WHEC WHK WHP
WISN WJAS WKWB WLAC WLWB
WMA5 WMT WNA3 WNOX WOKO
WQAM WREC WSFA WSJS WSPD
WTOC

R — Billy Batchelor, See Monday

B — Lowell Thomas, See Monday

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

C — Myrt and Marge, See Monday

B — Amos 'n' Andy, See Monday

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

R — Gene and Glenn, See Monday

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

C — Jack Smith, See Tuesday

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

R — Frank Buck, See Monday

C — Boake Carter, See Monday

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

C — Kate Smith

CFRB CKAC CKLW KDB KFAB
KFH KGKO KLRA KLZ KMBC
KOH KSCJ KTRH KTSa KTUL
KVOR WABC WACO WADC WALA
WBIG WBNS WBRB WBT WCAO
WCAU WCCO WDAE WDBJ WDBO
WDNC WDOD WDRC WDSU WEAN
WFBL WFBM WFEA WGLC WGR
WGST WHEC WHK WHP WICC
WISN WJAS WLAC WLWB WLZ
WMA5 WMBG WMT WNA3 WNOX
WOKO WORC WPG WQAM WREC
WSFA WSJS WSMK WSPD WVVa

R — Rudy Vallee and Orchestra

CFPC CRCT KDYL KFYR KHQ
KPRC KSD KSTP KTAR KTHS
KVoo WAPI WABP WBEN WCAE
WCSH WDAF WDAY WEAF WECB
WEEL WFER WFI WFLA WGY
WHO WIOD WIS WJAR WJAX
WDXK WYU WMAQ WMC WOAI
WOC WOW WPTF WRC WRVA
WSM WSMB WTAG WTAM WTMJ
WTMJ WWJ WNNC

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

C — Glen Gray; Walter O'Keefe

CFRB CKAC CKLW KDB KERN
KFAB KFBK KFPY KFCB KGB
KGKO KGMB KHJ KLO KLRA KLZ
KMBC KMJ KMOX KOH KOIN
KOL KOMA KRLD KSCJ KSL
KTRH KTSa KTUL KVI KVOR
KWG WABC WACO WADC WALA
WBMM WBIG WBNS WBRB WBT
WCAO WCAU WCCO WDAE WDBJ
WDBO WDNC WDOD WDRC WDSU
WEAN WFBL WFBM WFEA WGR
WGST WHAS WHEC WHK WHP
WIBW WICC WIP WISN WJAS
WJSV WKBN WKRC WLAC WLWB
WLZ WMAS WMBD WMBG
WMBR WMT WNA3 WNA5 WNOX
WOKO WORC WOVO WPG WQAM
WREC WSBT WSFA WSJS WSPD
WTOC WVVa

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

C — Bar X Days and Nights

CKLW KMBC KMOX WABC WBBM
WCAO WCAU WDRC WEAN WFBL
WFBM WHAS WHK WJAS WJSV
WKBW WKRC WNA3

R — Maxwell House Show Boat

KDYL KFI KFSB KGHK KGIR
KGO KGW KHQ KOA KOMO KPRC
KSD KSTP KTAR KTHS WAPI

WAVE WBAP WBEN WCAE WCSH
WDAF WEAF WEEL WFER WFI
WFLA WGY WHO WIOD WIS WJAR
WJAX WJDX WKBF WKY WLW
WMAQ WMC WOAI WOC WOW
WRC WRVA WSAI WSB WSM
WSMB WTAG WTAM WTMJ WTMJ
WWJ WNNC

B — Death Valley Days

KDKA KOIL KSO KWOC KWK
WBAL WBZ WBZA WGAR WHAM
WJZ WJZ WLS WLW WMAL WREN
WSXR

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

C — Billy Batchelor, See Monday

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

C — Fred Waring's Pennsylvanians

CKLW KDB KERN KFAB KFBK
KFI KFPY KFCR KGB KHJ KLRA
KLZ KMBC KMJ KMOX KOH
KOIN KOL KOMA KRLD KSCJ
KSL KTRH KTSa KTUL KVI KVOR
KWG WABC WACO WADC WALA
WBMM WBIG WBNS WBRB WBT
WCAO WCAU WCCO WDAE WDBJ
WDBO WDNC WDOD WDRC WDSU
WEAN WFBL WFBM WFEA WGLC
WGST WHAS WHEC WHK WHP
WIBW WICC WISN WJAS WJSV
WKBN WKBW WKRC WLAC
WLWB WLBZ WMA5 WMBG
WMBR WMT WNA3 WNA5 WNOX
WOKO WORC WOVO WPG WQAM
WREC WSFA WSJS WSPD WTOC

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

C — 45 Minutes in Hollywood

CFRB CKAC CKLW KLZ KMBC
KMOX KOMA KRLD KSL KTRH
KTSa KTUL WABC WACO WBBM
WBNS WBT WCAO WCAU WCCO
WDAE WDBO WDRC WDSU WEAN
WFBL WGST WHEC WHK WJAS
WJSV WKRC WLAC WMBR WNA3
WOKO WQAM WSPD

R — Paul Whiteman; Al Jolson

CFPC CRCT KDYL KFI KFYR
KGO KGW KHQ KOA KOMO KPRC
KSD KSTP KTAR KTHS KTHS
WBAP WBEN WCAE WCSH WDAF
WDAY WEAF WECB WEEL WFER
WFI WGY WHO WIBA WJAR WJZ
WLW WMAQ WOAI WOC WOW
WRC WTAG WTAM WTMJ WWJ

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

B — Archer Gibson, Organist

KDKA KSO KWOC KYW WBAL
WBZ WBZA WCKY WGAR WHAM
WJZ WMAL WREN

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

C — Tito Guizar

CFRB CKLW KFAB KFH KLRA
KLZ KMBC KMOX KOH KOMA
KRLD KSCJ KSL KTRH KTSa
KTUL KVOR WAAB WABC WACO
WADC WALA WBBM WBIG WBNS
WBRB WBT WCAO WCAU WCCO
WDAE WDBJ WDBO WDNC WDOD
WDRC WDSU WEAN WFBL WFBM
WFEA WGLC WGST WHP WIBW
WICC WISN WJAS WJSV WKBN
WKBW WLAC WLWB WLZ WMAS
WMBD WMBG WMT WNA3 WNOX
WOKO WORC WPG WQAM WREC
WSBT WSFA WSJS WSMK WSPD
WTOC

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

C — Myrt and Marge, See Monday

B — Amos 'n' Andy, See Monday

C — Vera Van, Songs

CKLW KDB KFH KGKO KLRA
KLZ KMBC KOH KOIN KOMA
KRLD KTRH KTSa WAAB WABC
WACO WADC WALA WBIG WBRB
WBT WCAO WDAE WDBJ WDBO
WDNC WDOD WDRC WDSU WFBL
WFBM WGST WHAS WHEC WHP
WIBW WIP WJAS WJSV WKBW
WLAC WLWB WMBG WNOX
WOKO WQAM WREC WSBT WSFA
WSJS WSPD WTOC

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

Joe Haymes and Orchestra

CFRB CKLW KDB KFAB KFH
KGKO KLRA KLZ KMBC KOH
KOM KRLD KSCJ KSL KTSa
KTUL KVOR WABC WACO WBBM
WBIG WBNS WBRB WBT WCAO
WCCO WDBJ WDBO WDNC WDOD
WDRC WDSU WEAN WFBL WFEA
WGST WHAS WHEC WHK WIBW
WICC WIP WJAS WJSV WKBN
WKBW WLAC WLWB WLZ WMAS
WMBD WMBG WMT WNA3 WNA5
WNOX WOKO WORC WPG WQAM
WREC WSBT WSFA WSJS WSPD
WTOC

R — Gene and Glenn, See Monday

FRIDAY

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

C — H. V. Kaltenborn

CFRB CKLW KFAB KFH KGKO
KLRA KLZ KMOX KOH KOMA
KSCJ KSL KTRH KTSa KTUL
KVOR WAAB WABC WADC WBBM
WBIG WBNS WBRB WBT WCAO
WCAU WDAE WDBJ WDBO WDNC
WDOD WDRC WDSU WFBL WGLC
WGST WHAS WHEC WHP WIBW
WISN WJSV WKBW WLAC WLWB
WMBG WMT WNA3 WOKO WORC
WQAM WREC WSFA WSJS WSMK
WSPD WTOC WVVa

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

C — Edw. Wurtzbech, See Tuesday

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

C — Eddie Dooley, See Thursday

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

C — Esther Velas and Orchestra

CKLW KFH KGKO KLRA KLZ
KMBC KMOX KOH KOMA KRLD
KSCJ KSL KTRH KTSa KTUL
KVOR WABC WADC WBBM WBIG
WBNS WBRB WCAU WDAE WDBJ
WDBO WDNC WDOD WDRC WDSU
WEAN WFBL WFEA WGST WHAS
WHEC WHP WISN WJAS WKBW
WLAC WLBU WLZ WMAS WMT
WNA3 WNOX WOKO WORC WQAM
WREC WSFA WSJS WSPD WTOC
WVVa

B — Lowell Thomas, See Monday

R — Billy Batchelor, See Monday

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

C — Myrt and Marge, See Monday

B — Amos 'n' Andy, See Monday

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

R — Gene and Glenn, See Monday

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

C — Silver Dust, See Monday

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

R — Frank Buck, See Monday

C — Boake Carter, See Monday

FRIDAY (Continued)

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

R — Cities Service Concert
CRCT KDYL KOA KPCR KSD
KSTP KTBS KTHS KVOO KYW
WBAP WBEN WCAE WCSH WDAF
WEAF WEBC WEEI WFAA WFRB
WGY WHO WJAR WKY WLIT
WQAI WOC WOW WRC WRVA
WSAI WTAG WTAM WTIC WTMJ
WWJ

C — Easy Aces, See Wednesday

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

C — Edwin C. Hill, See Monday

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

C — True Story Court
CKLW KMBC WABC WADC WBBM
WCAO WCAU WCCO WDRS WEAN
WFBL WHEK WJAS WJSV WKWB
WKRK WNAC WOKO

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

C — March of Time
CKLW KDB KERN KFBK KFPY
KPCR KGB KHJ KLZ KMBC KMJ
KMOX KOIN KOL KSL KTRH KVI
KWG WABC WCAO WCAU WCCO
WDRS WDSU WEAN WFBL WFBM
WGN WGR WGST WHAS WHK
WJAS WJSV WKRC WNAC WOKO
WSPD

R — Frank Munns; Abe Lyman

KSD WBEN WCAE WCSH WDAF
WEAF WEEI WFRB WGY WJAR
WLIT WLW WMAQ WOW WRC
WTAG WTAM WWJ

B — Phil Harris and Orchestra

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

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

C — Billy Batchelor, See Monday

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

C — Hollywood Hotel
CFRB CKAC CKLW KALE KDB
KERN KFAB KFBK KFH KFPY
KPCR KGB KGKO KMBC KHJ
KLO KLRA KLZ KMBC KMJ
KMOX KOH KOIN KOL KOMA
KRLD KSCJ KSL KTRH KTSK
KTUL KVI KVOR KWG WABC
WCAO WADC WALA WBBM WBIG
WBNS WBT WCAO WCAU WCCO
WDAE WDBJ WDBO WDNC WDDO
WDRS WDSU WEAN WFBL WFBM
WFEA WFR WGST WHAS WHEC
WHEK WHP WIBW WICC WIP WISV
WJSV WKBN WKRC WLAC WLWB
WLWB WMAS WMBD WMBG WMBR
WMT WNAC WNAX WNOX WOKO
WORC WOWO WPG WQAM WREC
WSBT WSFA WSJS WSPD WTOC
WWVA

R — Pick and Pat

KSD WBEN WCAE WCSH WDAF
WEAF WFRB WGY WHO WJAR
WLIT WMAQ WOC WOW WRC
WSAI WTAG WTAM WTIC WWJ

B — Armour Program

KDKA KDYL KFI KGO KGW KHQ
KOA KOIL KOMO KPCR KSO KSTP
KTAR KWK WAPI WAVE WBAL
WBZ WBZA WEBC WENR WFAA
WFLA WGAR WHAM WIOD WJAX
WJR WJZ WKY WMC WOAI WREN

WRVA WSB WSM WSMB WTMJ
WWNC

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

R — First Nighter, Drama
KDYL KFI KGO KGW KHQ KOA
KOMO KPCR KSD KSTP WBEN
WCAE WCSH WDAF WEAF WEBC
WEEI WFAA WFRB WGY WHO
WJAR WKY WLIT WMAQ WMC
WOAI WOC WOW WRC WSAI WVC
WSM WSMB WTAG WTAM WTIC
WTMJ WWJ

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

C — Carille, London, Warwick Sisters
CFRB CKAC CKLW KDB KFH
KGKO KLRA KLZ KMBC KMOX
KOH KOMA KRLD KSCJ KSL
KTRH KTSK KTUL WAAB WABC
WACO WADC WALA WBIG WBNS
WBRC WCAO WCAU WCCO WDAE
WDBJ WDBO WDNC WDDO WDRS
WDSU WEAN WFBM WFEA WGR
WGST WHAS WHEK WHP WIBW
WICC WJAS WJSV WLAC WLWB
WLWB WMAS WMBD WMBG WMT
WNAX WNOX WOKO WORC WQAM
WREC WSFA WSJS WSPD WTOC

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

C — Cliff Edwards, Ukolele Ike
CKAC CKLW KFH KGKO KLRA
KLZ KMBC KOH KOMA KRLD
KSL KTRH KTSK KTUL KVOR
WAAB WABC WACO WADC WALA
WBBM WBIG WBRC WBT WCAO
WDAE WDBJ WDBO WDNC WDDO
WDRS WDSU WFBL WFBM WGLC
WGST WHAS WHK WHP WIBW
WJAS WJSV WKWB WLAC WLWB
WMBG WNOX WOKO WQAM WREC
WSFA WSJS WSPD WTOC

C — Myrt and Marge, See Monday

B — Amos 'n' Andy, See Monday

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

C — Edwin C. Hill, See Monday

R — Gene and Glenn, See Monday

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

C — True Story Court
KDB KERN KFBK KFPY KPCR
KGB KHJ KLZ KMBC KMJ KMOX
KOIN KOL KSL KVI KWG WHAS
WOKO

SATURDAY

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

C — Eddie Dooley, See Thursday

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

B — John Herrick, Baritone
KDKA KOIL KSO KWCR KWK
WBAL WCKY WGAR WJZ WKBF
WMAL WMAQ

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

C — Jerry Cooper, Baritone
CFRB CKAC CKLW KFAB KFH
KGKO KLRA KLZ KOH KOIN
KOM A KRLD KSCJ KTRH KTSK
KTUL KVOR WABC WACO WADC
WALA WBIG WBNS WBRC WBT
WCAO WCAU WCCO WDAE WDBJ
WDBO WDNC WDDO WDRS WDSU
WFEA WGLC WGR WGST WHAS
WHEC WHEK WHP WIBW WICC
WISN WJAS WJSV WLAC WLWB
WLWB WMAS WMBG WMT WNAX
WNOX WOKO WORC WQAM WREC
WSFA WSJS WSMK WSPD WTOC

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

C — Jack Smith, See Tuesday

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

C — Mary Eastman, Soprano
CFRB CKLW KFAB KGKO KLRA
KLZ KMBC KMOX KOH KOMA
KRLD KSCJ KTRH KTSK KTUL
KVOR WABC WACO WADC WALA
WBBM WBNS WBRC WBT WCAO
WCCO WDAE WDBJ WDBO WDNC
WDDO WDRS WDSU WEAN WFBL
WFBM WFEA WGLC WGR WGST
WHEC WHEK WICC WJAS WJSV
WLAC WLWB WLWB WMAS WMBG
WMT WNAC WNAX WNOX WOKO
WORC WQAM WREC WSFA WSJS
WSMK WSPD WWVA

R — Floyd Gibbons; Nat Shilkret

KPCR KSTP WAPI WBAP WBEN
WCSH WEAF WFI WFLA WGY
WHO WIOD WJAR WKY WLW
WMAQ WMC WOW WRC WRVA
WSB WSMB WTAG WTAM WTIC
WWJ

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

C — Roxy Revue

CFRB CKAC KLRA KLZ KMBC
KMOX KOMA KRLD KSL KTRH
KTSK WABC WBBM WBRC WCAO
WCAU WCCO WDDO WDRS WDSU
WEAN WFBL WFBM WGR WGST
WHAS WHK WIBW WJAS WJSV
WKRC WLAC WMT WNAC WOKO
WORC WOWO WREC

R — Swift Program

KDYL KFI KGO KGW KHQ KOA
KOMO KPCR KSD KSTP KTBS
WBAP WBEN WCAE WCSH WDAF
WEAF WEBC WEEI WFAA WFRB
WFI WGY WHO WIBA WJAR WKY
WLIT WLW WMAQ WOAI WOC
WOW WRC WTAG WTAM WTIC
WTMJ WWJ

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

C — Fats Waller's Rhythm Club

CKAC CKLW KFH KGKO KLRA
KLZ KMBC KMOX KOH KOMA
KRLD KSCJ KSL KTRH KTSK
KVOR WABC WADC WALA WBBM
WBIG WBNS WBRC WBT WCAO
WCAU WCCO WDAE WDBJ WDBO
WDNC WDDO WDRS WDSU WEAN
WFBL WFBM WFEA WGLC WGR
WGST WHEC WHEK WHP WICC
WISN WJAS WJSV WLAC WLWB
WLWB WMBD WMBG WMT WNAC
WNOX WOKO WORC WPG WQAM
WREC WSFA WSJS WSMK WSPD
WTOC WWVA

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

C — Leith Stevens and Orchestra
CFRB CKLW KFH KGKO KLRA
KLZ KMBC KOH KOMA KRLD
KSCJ KTRH KTSK KTUL KVOR
WAAB WABC WACO WADC WALA
WBIG WBNS WBRC WBT WCAO
WCAU WCCO WDAE WDBJ WDBO
WDNC WDDO WDRS WDSU WFBL
WFBM WFEA WGLC WGR WGST
WHEC WHEK WHP WIBW WICC
WJAS WJSV WLAC WLWB WLWB
WMAS WMBD WMBG WMT WNOX
WOKO WORC WQAM WREC WSFA
WSJS WSMK WSPD WTOC WWVA

B — Frank Black; John B. Kennedy

KDKA KDYL KFI KGO KGW KHQ
KOA KOIL KOMO KSO KWCR KWK
WBAL WBZ WEBC WENR WFAA
WFLA WGAR WHAM WIOD WJAX
WJR WJZ WKY WMC WOAI WREN

SATURDAY (Continued)

R — One Man's Family

CFCE KDYL KFYR KOA KPO
KPRC KSD KSTP KTSB KTHS
KVOO WBEW WCAE WDAF WDAY
WEAF WFBF WFI WFLA WGY
WHO WIBA WIOD WIS WJAR
WJAX WDXK WXY WMAQ WMC
WOAI WOC WOW WRC WRVA
WSAI WSB WSMB WTAG WTAM
WWJ WWNC

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

R — Gibson Family Musical

KDYL KFI KFYR KGO KGW KHQ
KOA KOMO KSD WBEW WCAE
WCBS WDAF WDAY WEAF WEBC
WEEI WFBF WFI WGY WIBA
WJAR WLW WMAQ WOW WRC
WTAG WTAM WVIC WTMJ WWJ

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

C — Manhattan Sorenaders

CFRB CKLW KFH KGKO KLRA
KLZ KMBC KOH KOMA KRLD
KSCJ KTRH KTSB KTUL KVOR
WAAB WABC WACO WADC WALA
WBIG WBNS WBRC WBT WCAO
WCAU WCCO WDAE WDBJ WDBO
WDNC WDDO WDRS WDSU WFBL
WFBM WFEA WGL WGLC WGR
WGST WHEC WHK WHP WIBW
WICC WJAS WJSV WLAC WLWB
WLWB WMAS WMBD WMBG WMT
WNOX WOKO WORC WQAM WREC
WSFA WSJS WSMK WSPD WTCC
WWVA

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

C — Elder Michaux and Congregation
CFRB CKLW KDB KFH KGKO
KLRA KLZ KMBC KOH KOIN
KOMA KRLD KSCJ KTRH KTSB
KTUL KVOR WAAB WABC WACO
WADC WALA WBIG WBNS WBRC
WBT WCAO WCAU WCCO WDAE
WDBJ WDBO WDNC WDDO WDRS
WDSU WFBL WFBM WFEA WGR
WGST WHEC WHK WHP WIBW
WICC WJAS WJSV WLAC WLWB
WLWB WMAS WMBD WMBG WMT
WNOX WOKO WORC WQAM WREC
WSFA WSJS WSMK WSPD WTCC
WWVA

B — National Barn Dance

KDKA KDYL KFI KGO KGW KHQ
KOA KOIL KOMO KSO KWCR KWK
WBAL WBZ WBZA WQAR WHAM
WJR WJZ WLS WLW WMAL WREN
WSYR

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

C — Sylvia Froos, Songs

CFRB CKAC CKLW KDB KFH
KGKO KLRA KLZ KOH KOIN
KOMA KRLD KSL KTRH KTSB
KTUL WAAB WABC WADC WALA
WBRC WBT WDAE WDBJ WDBO
WDNC WDDO WDRS WDSU WFBL
WFBM WFEA WGST WHAS WHP
WIBW WIP WJAS WJSV WLAC
WLWB WMBG WNOX WOKO
WQAM WREC WSFA WSJS WSPD
WTCC

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

C — Joe Haymes and Orchestra

CFRB CKAC CKLW KDB KFH
KFH KGKO KLZ KMBC KMOX
KOH KOIN KRLD KSCJ KSL KTRH
KTSB KTUL KVOR WABC WACO
WADC WALA WBBM WBRC WBT
WCAO WCAU WCCO WDAE WDBJ
WDBO WDNC WDDO WDRS WDSU
WEAN WFBL WFBM WFEA WGST

WHEC WHP WIBW WICC WISN
WJAS WJSV WKBW WLAC WLWB
WLWB WMAS WMBD WMBG WMT
WMAC WNAX WNOX WOKO WORC
WQAM WREC WSFA WSJS WSPD

E-12:00 p.m., C-11:00, M-10:00, P-9:00

R — Floyd Gibbons; Nat Shilkret
KDYL KFI KFSD KGO KGW KHQ
KOA KOMO

SUNDAY

E-11:30 a.m., C-10:30, M-9:30, P-8:30

C — Salt Lake Tabernacle Choir

CKLW KFAB KFH KGKO KLRA
KLZ KMBC KOMA KRLD KSCJ
KSL KTRH KTUL WACO WADC
WALA WBBM WBIG WBNS WBT
WCAO WCCO WDAE WDBJ WDBO
WDOD WDSU WFBL WFEA WGST
WHAS WHEC WHK WHP WIBW
WICC WISN WJAS WJSV WKBW
WLAC WLWB WLWB WMAS WMBD
WMT WNAX WNOX WOKO WORC
WPG WQAM WREC WSFA WSJS
WSPD WTCC

R — Major Bowes' Family

KDYL KFYR KOA KPRC KSTP
KTSB KVOO WAPI WCAE WDAF
WDAY WEAF WEBC WFAA WFBF
WFLA WGY WHO WIOD WJAR
WJAX WKY WMAQ WMC WOAI
WOC WRC WRVA WSAI WSMB
WTAG WTAM WWNC

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

C — Tito Guizar

CKLW KMBC KMOX WABC WADC
WBBM WCAO WCAU WDRS WEAN
WFBL WFBM WGR WHAS WHK
WJAS WJSV WKRC WMAS WNAC
WOKO WORC WOWO WSPD

R — Chicago Round Table

WBEW WCBS WDAF WEAF WEEI
WFBF WFI WGY WHO WJAR
WOC WOW WRC WSAI WTAG
WTAM WWJ

B — Radio City Symphony

CFCE CRCT KDKA KDYL KFI
KFYR KGO KGW KHQ KOA KOIL
KOMO KPRC KSO KVOO WAPI
WBAL WBZ WBZA WCKY WDAY
WEEB WGAR WHAM WIS WDXK
WJR WJZ WKY WMAL WOAI
WREN WSMK WSYR WWNC

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

C — Church of the Air

CFRB CKLW KFH KLRA KLZ
KMBC KOH KOMA KRLD KSCJ
KSL KTRH KTUL KVOR WAAB
WABC WACO WALA WBBM WBIG
WBNS WBRC WBT WCAO WCAU
WCCO WDAE WDBJ WDBO WDNC
WDOD WDRS WDSU WFBL WGR
WGST WHAS WHEC WHP WISN
WJAS WJSV WKBW WLAC WLWB
WMBD WMT WNAX WOKO WORC
WPG WQAM WREC WRES WTCC WSJS
WSPD WWVA

R — Dale Carnegie, Talks

WBEW WCAE WEAF WEEI WFBF
WFI WGY WJAR WRC WSAI
WTAG WTAM WVIC WWJ

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

C — Compinsky Trio

CFRB CKAC CKLW KDB KFH
KGKO KLRA KLZ KMBC KOH
KOIN KOMA KRLD KSCJ KSL
KTRH KTUL KVOR WABC WACO
WADC WALA WBBM WBIG WBNS
WBRC WBT WCAO WCAU WCCO

WDAE WDBJ WDBO WDNC WDOD
WDRS WDSU WFBL WGR WGST
WHEC WHK WHP WJAS WJSV
WKBW WLAC WLWB WMBD
WMT WNAX WOKO WORC WPG
WQAM WREC WSBT WSFA WSJS
WSPD WTCC WWVA

R — Miss Bab-o's Surprise

WBEW WCAE WCBS WDAF WEAF
WEEI WFBF WFI WGY WHO
WJAR WMAQ WOW WRC WSAI
WTAG WTAM WWJ

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

C — Manhattan Moods

CFRB CKLW KFH KGKO KLRA
KLZ KMBC KMOX KOH KOMA
KRLD KSCJ KSL KTRH KTSB
KTUL WABC WACO WADC WALA
WBBM WBRC WBT WCAO WCAU
WCCO WDAE WDBJ WDBO WDNC
WDOD WDRS WDSU WEAN WFBL
WFEA WGST WHAS WHEC WHP
WIBW WICC WJAS WKBW WKBW
WLAC WLWB WLWB WMAS WMT
WNAC WNOX WOKO WORC WPG
WQAM WREC WRES WSFA WSJS
WSPD WWVA

R — Mohawk Treasure Chest

KDYL KFI KGO KGW KHQ KOA
KOMO WBEW WCAE WCBS WEA
WEEI WFBF WGY WHO WJAR
WLIT WLW WMAQ WOC WWR
WRC WTAG WTAM WVIC WWJ

E-2:15 p.m., C-1:15, M-12:15, P-11:15

C — Abram Chasins, Piano Pointers

CFRB CKLW KFH KGKO KLRA
KLZ KMBC KMOX KOH KOMA
KRLD KSCJ KSL KTRH KTSB
KTUL WABC WACO WADC WALA
WBRC WBT WCAO WCAU WCCO
WDAE WDBJ WDBO WDNC WDDO
WDRS WDSU WEAN WFBL WFEA
WGST WHAS WHEC WHP WIBW
WICC WJAS WJSV WKBW WKBW
WLAC WLWB WLWB WMAS WMT
WNAC WNOX WOKO WORC WPG
WQAM WREC WRES WSFA WSJS
WSPD WWVA

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

C — Lazy Dan, Minstrel Man

CKLW KMBC KMOX KRLD WABC
WBBM WCAO WCAU WCCO WHAS
WHK WJAS WJSV WKBW WKRC
WMBG

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

C — Symphonic Hour

CFRB CKAC CKLW KFAB KFH
KGKO KLRA KLZ KMBC KMOX
KOH KOIN KOMA KRLD KSCJ
KSL KTRH KTSB KTUL KVOR
WABC WADC WALA WBIG WBNS
WBRC WCAO WCAU WCCO WDAE
WDBJ WDBO WDNC WDDO WDRS
WDSU WEAN WFBL WFBM WFEA
WGR WGST WHAS WHEC WHK
WHP WIBW WICC WISN WJAS
WJSV WKBW WLAC WLWB WLWB
WMAS WMBG WMT WNAC WNOX
WOKO WORC WQAM WREC WRES
WSJS WSPD WTCC

R — Talkie Picture Time

WAPI WBEW WCAE WCBS WDAF
WEAF WEEI WFBF WGY WHO
WJAR WDXK WLIT WMAQ WMC
WOC WOW WRC WSAI WSB WSMB
WSMB WTAG WTAM WWJ

E-3:30 p.m., C-2:30, M-1:30, P-12:30

R — Maybelline Musical Romance

KDYL KFI KGO KGW KHQ KOA

SUNDAY (Continued)

KOMO WBN WCAE WCSH WDAF
WEAF WEEI WFBR WGY WJAR
WLIT WLW WMAQ WOV WRC
WTAG WTAM WTIC WWJ

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

C — Buffalo Variety Workshop
CFRB CKAC CKLW KDB KFH
KLRA KLZ KMBC KMOX KOH
KOH KOIN KOMA KRLD KSCJ
KSL KTRH KTUL KVR WABC WADC
WALA WBNS WBRC WBT WCAO
WCAU WCOO WDAE WDBJ WDRC
WDNC WDOO WDRC WDSU WEAN
WFBL WFBM WFEA WGR WGST
WHBC WHF WIBW WIC WISN
WJAS WJSV WLBW WLCB WMAS
WMBD WMT WNAC WNOX WOKO
WQAM WREC WSBT WSFA WSJS
WSPD WTOC

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

R — Tony Wons
KDYL KFI KFSB KFYR KGO KGW
KHQ KOA KOMO KSTP KTAR
WAPI WIBC WJDX WMC WSB
WSM WSMB

C — Oregon on Parade

CFRB CKAC CKLW KDB KFH
KGKO KLRA KLZ KMBC KMOX
KOH KOIN KOMA KRLD KSCJ
KSL KTRH KTUL KVR WABC
WADC WALA WBIG WBNS WBRC
WBT WCAO WCAU WCCO WDAE
WDBJ WDRC WDOO WDOO WDSU
WEAN WFBL WFBM WFEA WGR
WGST WHAS WHEC WHK WHP
WIBW WICC WISN WJAS WKBN
WLAC WLWB WLWB WMAS WMBD
WMT WNAC WNOX WOKO WORC
WPG WQAM WREC WSFA WSJS
WSPD WTOC

E-4:45 p.m., C-3:45, M-2:45, P-1:45

R — Big Ben Dream Drama
WBN WCAE WCSH WDAF WEAF
WEEI WFBR WFI WGY WJAR
WMAQ WOC WOV WRC WSAI
WTAG WTAM WTIC

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

C — Freddie Martin and Orchestra
CKLW KDB KERN KFBC KFH
KFPY KFRC KGB KHJ KLRA KLZ
KMBC KMJ KMOX KOIN KOL
KOMA KRLD KSL KTRH KTSA
KTUL KVI KWG WABC WADC
WBMM WBIG WBNS WBRC WBT
WCAO WCAU WCCO WDOO WDRC
WDSU WEAN WFBL WFBM WGR
WGST WHAS WHEC WHK WIBW
WJAS WJSV WKBN WKRC WLAC
WLWB WMAS WMBG WNAC WOKO
WORC WOVO WREC WSPD

B — Roses and Drums

KDKA KOIL KPRC KSO KTHS
KWCR KWK WBAL WBAP WBZ
WBZA WENR WGAR WEAM WJZ
WKY WLW WMAL WOAI WREN
WSYR

R — Sentinels Serenade

WBN WCAE WCSH WDAF WEAF
WEEI WFBR WFI WGY WJAR
WMAQ WOV WRC WSAI WTAG
WTAM WTIC WWJ

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

C — Poets' Gold; David Ross
CFRB CKAC KDB KFH KGKO
KLRA KLZ KMBC KMOX KOH
KOH KOIN KOMA KRLD KSCJ KTRH
KTSA KTUL KVR WAAB WABC
WADC WBIG WBNS WBRC WBT

WCAO WCAU WCCO WDAE WDBJ
WDBO WDNC WDOO WDRC WDSU
WEAN WFBL WFBM WFEA WGR
WGST WHAS WHEC WHK WHP
WIBW WICC WISN WJAS WJSV
WKRC WLAC WLWB WLWB WMBD
WNOX WOKO WORC WOVO WPG
WQAM WREC WSBT WSFA WSJS
WSPD WTOC

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

R — Tony Wons
CFRC CRCT KPRC KTHS KVOO
WBAP WBN WCAE WCSH WDAF
WEAF WEEI WFI WGY WHO
WIS WJAR WKY WLW WMAQ
WOAI WOV WPTF WRC WRVA
WSOC WTAM WTIC WWJ WWNC

C — Frank Crumit; Julia Sanderson

CKLW KFH KMBC KMOX KOMA
KTUL WAAB WABC WADC WBNS
WCAO WCAU WDRC WDSU WEAN
WFBL WFBM WGR WHAS WHEC
WHK WICC WJSV WMAS WOKO
WORC WSPD WWVA

B — American Bosch Explorers Club

KDKA KDYL KFI KFYR KGO
KGW KHQ KOA KOIL KOMO
KSO KSTP KWCR KWK WAPI
WAVE WBAL WBZ WBZA WKY
WDAY WEBC WENR WGAR
WHAM WIBA WJDX WJR WJZ
WKBF WMAL WMC WREN WSB
WSM WSYR

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

C — Nick Lucas, Songs
CFRB CKAC CKLW KDB KFAB
KGKO KLRA KLZ KMBC KMOX
KOH KOIN KOMA KRLD KSCJ
KSL KTRH KTSA KTUL KVR
WABC WADC WBMM WBIG WBRC
WBT WCAO WCAU WCCO WDAE
WDBJ WDRC WDOO WDOO WDRC
WDSU WFBL WHK WHP WIBW
WJAS WJSV WKBN WKBW WLAC
WMT WNOX WOKO WORC WPG
WQAM WREC WSBT WSFA WSJS
WSPD WTOC WWVA

R — Catholic Hour

KDYL KFYR KGHL KGIR KGW
KOA KOMO KPO KPRC KSTP
KTAR KTHS KVOO WAPI WBAP
WBN WCAE WCSH WDAF WDAY
WEAF WEBC WEEI WENR WFBM
WFLA WGY WHO WIBA WIOD
WIS WJAR WJAX WJDX WKY
WLIT WMC WOAI WOC WOV
WRC WRVA WSAI WSB WSM
WSMB WTAG WTAM WWJ WWNC

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

C — Summer Musicales
CFRB CKAC CKLW KDB KFAB
KFBH KGKO KLRA KLZ KMBC
KMOX KOH KOIN KOMA KRLD
KSCJ KSL KTRH KTSA KTUL
KVR WABC WADC WBMM WBIG
WBNS WBRC WBT WCAO WCAU
WCCO WDBJ WDRC WDOO WDRC
WDRS WDSU WEAN WFBL WFBM
WFEA WGST WHAS WHP WIBW
WICC WJAS WJSV WKBN WKBW
WLAC WLWB WLWB WMAS WMT
WNAC WNAX WNOX WOKO WORC
WQAM WREC WSBT WSFA WSJS
WSPD WTOC WWVA

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

C — Smiling Ed McConnell
CKLW KMBC KMOX WABC WBMM
WBNS WCAU WCCO WDRC WEAN
WFBL WFBM WFEA WHAS WHK

WHP WISN WJAS WJSV WKBW
WKRC WNAC WWVA

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

C — Voice of Experience
CKLW KMBC KMOX WAAB WABC
WBMM WBT WCAO WCAU WCCO
WDRS WEAN WFBL WGR WHAS
WHK WJAS WJSV WKBW WKRC
WNAC WOVO WWVA

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

C — Richard Himber and Orchestra
CKLW KFH KMBC KMOX KOMA
KRLD KTUL WABC WADC WBMM
WBNS WBT WCAO WCAU WCCO
WDRS WDSU WEAN WFBL WFBM
WHK WJAS WJSV WKBN WKBW
WKRC WNAC WOKO WSBT WSPD

R — Jack Benny

KDYL KFYR KGO KGW KHQ
KOA KOMO KPRC KSD KTBS
KTHS WAVE WBN WCAE WCSH
WDAF WDAY WEAF WEBC WEEI
WFAA WFBM WFI WFLA WGY
WHO WIBA WIOD WIS WJAR
WJAX WJDX WKY WLIT WLW
WMAQ WMC WOAI WOC WOV
WPTF WRC WRVA WSB WSM
WSMB WTAG WTAM WTAR WTIC
WTMJ WWJ WWNC

B — Charles Previn and Orchestra

KDKA KDYL KFI KGO KGW KHQ
KOA KOIL KOMO KPRC KSO
KSTP KWCR KWK WBAL WBAP
WBZ WBZA WEBC WGAR WHAM
WIBA WJDX WJR WJZ WKY WLS
WLW WMAL WMC WOAI WREN
WSB WSM WSMB WSYR WTMJ

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

C — Buddy Rogers; Jeanie Lang
CKLW KMOX WABC WADC WBMM
WBNS WBRC WCAO WCAU WDRC
WEAN WFBL WFEA WHK WICC
WJAS WKBN WLWB WMAS WMBR
WNAC WOKO WORC WSBT WSFA
WWVA

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

R — Fitch Program; Wendell Hall
CFRC KSD WBN WCAE WCSH
WEAF WEBC WGY WHO WJAR
WKBF WLIT WMAQ WOC WOV
WRC WSAI WTAG WTAM WTIC
WWJ

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

C — Columbia Variety Hour
CFRB CKLW KDB KFAB KFH
KGKO KLRA KLZ KMBC KMOX
KOH KOIN KOMA KRLD KSCJ
KSL KTRH KTSA KTUL KVR
WABC WADC WALA WBIG WBNS
WBRC WBT WCAO WCAU WCCO
WDBJ WDNC WDOO WDRC WDSU
WEAN WFBL WFBM WFEA WGR
WGST WHAS WHEC WHK WHP
WIBW WICC WISN WJAS WKBN
WLAC WLWB WLWB WMAS WMT
WNAC WNAX WNOX WOKO WORC
WREC WSBT WSFA WSJS WTOC
WWVA

R — Chase and Sanborn Hour

CFRC CRCT KDYL KFI KFYR
KGO KGW KHQ KOA KOMO KPRC
KSD KSTP KTAR KTHS KVOO
WAPI WAVE WBN WBZ WBZA
WCAE WCSH WDAF WDAY WEAF
WEBC WFAA WFBM WFLA WGY
WHO WIOD WIS WJAR WJAX
WJDX WKY WLIT WLW WMAQ
WMC WOAI WOC WOV WPTF
WRC WRVA WSB WSM WSMB

SUNDAY (Continued)

WTAG WTAM WTIC WTMJ WWJ
WWNC

E-9:00 p.m., C-8:00, M-7:00, P-6:00
R — Manhattan Merry-Go-Round
CFBC KDYL KFI KGO KGW KHQ
KOA KOMO KSD KSTP WDAF
WEAF WEBC WFBR WFI WGY
WHO WJAR WMAQ WOC WOW
WRV WSAI WTAG WTAM WTIC
WTMJ WWJ

B — Gulf Headliners
KDKA KPRC KTBS WAVE WBAL
WBZ WBZA WFAA WFLA WGAR
WHAM WIOD WIS WJAX WJDX
WJR WJZ WLW WMAL WQAI
WRVA WSM WSMB WSYR WWNC

E-9:30 p.m., C-8:30, M-7:30, P-6:30
C — Fred Waring's Pennsylvanians
CFRB CKAC CKLW KDB KERN
KFAB KFBK KFH KFPY KFRC
KGB KHJ KLRA KLZ KMBC KMJ
KMOX KOH KOIN KOL KOMA
KRLD KSCJ KSL KTRH K TSA
KTUL KVI KVOR KWG WABC
WACO WADC WALA WBBM WBNS
WBRC WBT WCAU WCCO WDAE
WDBJ WDBO WDNC WDDC WDRC
WDSU WEAN WFBL WFBM WFEA
WGR WGST WHAS WHEC WHK
WHP WLBW WICC WISN WJAS
WJSV WKBN WKRC WLAC WLBW
WLBZ WMAS WMBR WMT WNAC
WNAX WNOX WOKO WORC WOWO
WPG WQAM WREC WSFA WSJS
WSPD WTOC

R — Album of Familiar Music
CFBC CRCT KDYL KFI KGO KGW
KHQ KOA KOMO KPRC KSD KSTP

KVOO WBEN WCAE WCSH WDAF
WEAF WEEL WEA WFBR WFI
WFLA WGY WHO WIOD WISWJAR
WJAX WJDX WKY WMAQ WMC
WOAI WOC WOW WPTF WRC
WRVA WSAI WSB WSMB WTAG
WTAM WTMJ WWJ WWNC

B — Walter Winchell
KDKA KOIL KSO KWCR KWK
WBAL WBZ WBZA WENR WGAR
WHAM WJZ WLW WMAL WREN
WSYR

E-9:45 p.m., C-8:45, M-7:45, P-6:45
B — Tastyest Theatre
KDKA KOIL KSO KWCR KWK
WBAL WBZ WBZA WCKY WENR
WGAR WHAM WJR WJZ WMAL
WREN WSYR

E-10:00 p.m., C-9:00, M-8:00, P-7:00
R — Hall of Fame
CFBC CRCT KDYL KFI KGO KGW
KHQ KOA KOMO KPRC KSD KSTP
KTBS KTBS WBEN WCAE WCSH
WDAF WEAF WEEL WFAA WFBR
WFI WGY WHO WJAR WJDX
WKBF WKY WLW WMAQ WMC
WOAI WOC WOW WRC WSB WSM
WSMB WTAG WTAM WTIC WWJ

B — Mme. Schumann-Heink
KDKA KOIL KSO KWCR KWK
WBAL WBZ WBZA WCKY WENR
WGAR WHAM WJR WJZ WMAL
WREN WSYR

C — Wayne King, See Monday

E-10:30 p.m., C-9:30, M-8:30, P-7:30
C — Howard Barlow; Mary Eastman
CFRB CKAC CKLW KFH KGKO
KLZ KMBC KMOX KOMA KRLD
KSL KTRH K TSA KTUL KVOR

WAAB WABC WACO WADC WBBM
WBIG WBNS WBT WCAO WCAU
WCCO WDAE WDBJ WDBO WDNC
WDDO WDRC WDSU WEAN WFBL
WGR WGST WHEC WHK WHP
WJAS WJSV WKRC WLAC WMBR
WMT WMO WPG WQAM WREC
WSJS WSPD WTOC

E-11:00 p.m., C-10:00, M-9:00, P-8:00
R — Fitch Program; Wendell Hall
KDYL KFI KFJR KGO KGW KHQ
KOA KOMO KPRC KSTP KTBS
WAVE WBAF WDAF WDAY WEBC
WIBA WKY WQAI WTMJ

E-11:15 p.m., C-10:15, M-9:15, P-8:15
B — Mme. Schumann-Heink
KDYL KFI KGO KGW KHQ KOA
KOMO KPRC WBAP WKY WQAI

E-11:30 p.m., C-10:30, P-8:30
C — Glen Gray and Orchestra
CFRB CKAC CKLW KFAB KFH
KGKO KLRA KLZ KMBC KOH
KRLD KSCJ KTRH K TSA KTUL
KVOR WABC WACO WADC WALA
WBBM WBNS WBRC WBT WCAO
WCAU WCCO WDAE WDBJ WDBO
WDNC WDDC WDRC WDSU WEAN
WFBL WFBM WFEA WGR WGST
WHAS WHEC WHK WHP WLBW
WICC WISN WJAS WJSV WKBN
WLAC WLBW WLBZ WMAS WMBD
WMT WNAC WNAX WOKO WPG
WQAM WREC WSBT WSFA WSJS
WSPD WTOC

C — Richard Himber and Orchestra
KDB KERN KFBK KFPY KFRC
KGB KHJ KLZ KMJ KOIN KOL
KSL KVI KWG

CLASSIFIED INDEX TO CHAIN PROGRAMS

Time in Eastern Standard

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

CONCERTS

Compinsky Trio, 1:30 p.m. Sunday, C
Emery Deutsch, 9:15 p.m. Wednesday, C
Radio City Symphony, 12:30 p.m. Sunday, B
Symphonic Hour, 3:00 p.m. Sunday, C

DANCE BANDS

Victor Arden, 8:30 p.m. Wednesday, C
Frank Black, 9:00 p.m. Saturday, B
Frank Dailey, 11:15 p.m. Tuesday, C
Jack Denny, 10:30 p.m. Wednesday, B
Jan Garber, 8:00 p.m. Monday, B
Lud Gluskin, 9:30 p.m. Monday, C
Glen Gray, 10:00 p.m. Tues.; 9:00 p.m. Thurs., C
Phil Harris, 9:00 p.m. Friday, B
Joe Haymes, 11:15 p.m. Thurs.; 11:45 p.m. Sat., C
Lennie Hayton, 9:00 and 12:00 p.m. Wednesday, R
Richard Himber, 8:00 p.m. Monday, R; 7:00 and
11:30 p.m. Sunday, C
Al Kaveiin, 11:00 p.m. Tuesday, C
Wayne King, 8:30 p.m. Tues. and Wed., R; 10:00 p.m.
Sunday and Monday, C
Enoch Light, 11:45 p.m. Monday, C
Guy Lombardo, 10:00 p.m. Wednesday, R
Abe Lyman, 9:00 p.m. Friday, R; 8:30 p.m. Tuesday, C
Freddie Martin, 5:00 p.m. Sunday, C
Charles Previn, 7:00 p.m. Sunday, B
Leo Reisman, 8:00 and 11:30 p.m. Tuesday, R
Buddy Rogers, 7:30 p.m. Sunday, C
Leith Stevens, 9:00 p.m. Saturday, C

Rudy Vallee, 8:00 p.m. Thursday, R
Esther Velas, 6:45 p.m. Friday, C
Fred Waring, 9:30 p.m. Sunday and Thursday, C
Paul Whiteman, 10:00 p.m. Thursday, R

DIALOG

Fred Allen, 9:00 and 12:00 p.m. Wednesday, R
Amos 'n' Andy, 7:00 and 11:00 p.m. daily, except
Sat. and Sun., B
Jack Benny, 7:00 p.m. Sunday, R
Burns and Allen, 9:30 p.m. Wednesday, C
Joe Cook, 9:30 p.m. Monday, R
Easy Aces, 8:00 p.m. Wed., Thurs. and Fri., C
Jake and Lena, 7:15 and 11:15 p.m. daily, except Sat.
and Sun., R
Walter O'Keefe, 10:00 p.m. Tues.; 9:00 p.m. Thurs., C
Jack Pearl, 8:00 p.m. Wednesday, R
Pick and Pat, 9:30 p.m. Friday, R

DRAMA

Bar X Days, 9:00 p.m. Thursday, C
Big Ben Dream, 4:45 p.m. Sunday, R
Billy Batchelor, 6:45 p.m. daily, except Sat. and Sun.,
R; 9:15 p.m. daily, except Sat. and Sun., C
Frank Buck, 7:45 p.m. daily, except Sat. and Sun., R
Death Valley Days, 9:00 p.m. Thursday, B
Eno Crime Clues, 8:00 p.m. Tues. and Wed., B
First Nighter, 10:00 p.m. Friday, R
Warden Lawes, 9:00 p.m. Wednesday, B

Myrt and Marge, 7:00 and 11:00 p.m. daily, except Sat. and Sun., C
 One Man's Family, 9:00 p.m. Saturday, R
 Princess Pat Players, 9:30 p.m. Monday, B
 Irene Rich, 7:30 p.m. Wednesday, B
 Roses and Drums, 5:00 p.m. Sunday, B
 The Shadow, 6:30 p.m. Mon. and Wed., C
 Soconyland Sketches, 9:30 p.m. Tuesday, R
 Talkie Picture Time, 3:00 p.m. Sunday, R
 Tastyest Theatre, 9:45 p.m. Sunday, B
 True Story Court, 8:30 and 11:30 p.m. Friday, C

PIANO AND ORGAN

Abram Chasins, 2:15 p.m. Sunday, C
 Carlile and London, 10:45 p.m. Friday, C
 Fray and Braggiotti, 9:15 p.m. Monday, C
 Archer Gibson, 10:30 p.m. Thursday, B
 Ohman and Arden, 9:30 p.m. Sunday, R

POPULAR PROGRAMS

Album Familiar Music, 9:30 p.m. Sunday, R
 A & P Gypsies, 9:00 p.m. Sunday, R
 Miss Babo's Surprise, 1:30 p.m. Sunday, R
 Major Bowes' Family, 11:30 a.m. Sunday, R
 Buffalo Variety, 4:00 p.m. Sunday, C
 Byrd Expedition, 10:00 p.m. Wednesday, C
 Camel Program, 10:00 p.m. Tues.; 9:00 p.m. Thurs., C
 Chase and Sanborn, 8:00 p.m. Sunday, R
 Cities Service, 8:00 p.m. Friday, R
 Columbia Variety, 8:00 p.m. Sunday, C
 Contented Program, 10:00 p.m. Monday, R
 Colgate House Party, 9:30 p.m. Monday, R
 Fleischmann Variety, 8:00 p.m. Thursday, R
 Forty-Five Minutes in Hollywood, 10:00 p.m. Thursday, C
 Gibson Family Musical, 9:30 p.m. Saturday, R
 Gulf Headliners, 9:00 p.m. Sunday, B
 Hall of Fame, 10:00 p.m. Sunday, R
 Hollywood Hotel, 9:30 p.m. Friday, C
 Household Musical, 7:30 p.m. Tuesday, B
 Manhattan Merry-Go-Round, 9:00 p.m. Sunday, R
 Manhattan Moods, 2:00 p.m. Sunday, C
 Manhattan Serenaders, 10:00 p.m. Saturday, C
 March of Time, 9:00 p.m. Friday, C
 Maxwell House Show Boat, 9:00 p.m. Thursday, R
 Maybelline Musical, 3:30 p.m. Sunday, R
 Mohawk Treasure Chest, 2:00 p.m. Sunday, R
 National Barn Dance, 10:30 p.m. Saturday, B
 Oregon on Parade, 4:30 p.m. Sunday, C
 Palmolive Beauty Box, 10:00 p.m. Tuesday, R
 Poet's Gold, 5:15 p.m. Sunday, C
 Radio City Party, 9:00 p.m. Saturday, B
 Roxy Revue, 8:00 p.m. Saturday, C
 Silken Strings, 7:00 p.m. Sunday, B
 Silver Dust Serenaders, 7:30 p.m. Mon., Wed., and Fri., C
 Sindoair Minstrels, 9:00 p.m. Monday, B
 Sentinels Serenade, 5:00 p.m. Sunday, R
 Swift Program, 8:00 p.m. Saturday, R
 Tony Wons, 4:30 and 5:30 p.m. Sunday, R
 Voice of Firestone, 8:30 and 11:30 p.m. Monday, R
 Ward's Family Theatre, 7:30 p.m. Sunday, C

RELIGIOUS

Catholic Hour, 6:00 p.m. Sunday, R
 Church of the Air, 1:00 p.m. Sunday, C
 Elder Michaux, 10:30 p.m. Saturday, C
 Salt Lake Choir, 11:30 a.m. Sunday, C

SINGERS

Irene Beasley, 9:30 p.m. Friday, B
 Boswell Sisters, 9:00 p.m. Tuesday, C
 Jerry Cooper, 7:00 p.m. Saturday, C
 Bing Crosby, 9:00 p.m. Tuesday, C
 Jessica Dragonette, 8:00 p.m. Friday, R
 Mary Eastman, 10:30 p.m. Sunday; 7:45 p.m. Saturday, C
 Cliff Edwards, 11:00 p.m. Friday, C
 Evan Evans, 9:00 p.m. Monday, C
 Sylvia Froos, 11:00 p.m. Saturday, C

Gene and Glenn, 7:15 and 11:15 p.m. daily, except Sat. and Sun., R
 Tito Guizar, 12:30 p.m. Sunday, C
 Wendell Hall, 7:45 and 11:00 p.m. Sunday, R
 Annette Hanshaw, 9:00 p.m. Thursday, R
 John Herrick, 6:45 p.m. Saturday, B
 Dennis King, 10:00 p.m. Wednesday, B
 Jeanie Lang, 7:30 p.m. Sunday, C
 Frances Langford, 9:30 p.m. Monday, R
 Lazy Dan, 2:30 p.m. Sunday, C
 Elizabeth Lennox, 8:30 p.m. Wednesday, C
 Nick Lucas, 6:00 p.m. Sunday; 11:00 p.m. Wednesday, C

Smiling Ed McConnell, 6:30 p.m. Sunday, C
 John McCormack, 9:30 p.m. Wednesday, B
 Everett Marshall, 8:30 p.m. Wednesday, C
 Martha Mears, 7:30 p.m. Saturday, R
 James Melton, 9:00 and 12:00 p.m. Wednesday, R
 Modern Mountaineers, 6:45 p.m. Tuesday, C
 Frank Munn, 9:30 p.m. Sunday; 9:00 p.m. Friday, R; 8:00 p.m. Tuesday, C
 Gertrude Niesen, 9:30 p.m. Monday, C
 Donald Novis, 9:30 p.m. Monday, R
 Virginia Rea, 9:30 p.m. Sunday, R
 Harry Richman, 10:30 p.m. Wednesday, B
 Carson Robison, 9:00 p.m. Thursday, C
 Lanny Ross, 9:00 p.m. Thursday, R
 Sanderson-Crumit, 5:30 p.m. Sunday, C
 Mme. Schumann-Heink, 10:00 and 11:15 p.m. Sunday, B
 Vivienne Segal, 9:00 p.m. Friday, R; 8:30 p.m. Tuesday, C
 Mary Small, 1:30 p.m. Sunday, R
 Whispering Jack Smith, 7:30 p.m. Tues., Thurs. and Sat., C
 Kate Smith, 8:00 p.m. Thursday, C
 Gladys Swarthout, 8:30 and 11:30 p.m. Sunday; 10:00 p.m. Tuesday, R
 Tamara, 9:00 p.m. Sunday, R
 Conrad Thibault, 9:00 p.m. Thursday, R
 Lawrence Tibbett, 8:30 p.m. Tuesday, B
 Vera Van, 7:15 p.m. Wednesday; 11:00 p.m. Thursday, C
 Fats Waller, 11:00 p.m. Monday; 6:45 p.m. Thurs.; 8:45 p.m. Sat., C
 Muriel Wilson, 8:00 p.m. Tuesday, C

TALKS

American-Bosch Explorers, 5:30 p.m. Sunday, B
 Boake Carter, 7:45 p.m. daily, except Sat. and Sun., C
 Chicago Round Table, 12:30 p.m. Sunday, R
 Mickey Cochrane, 9:00 p.m. Wednesday, C
 Eddie Dooley, 6:30 p.m. Thurs., Fri. and Sat., C
 Floyd Gibbons, 7:45 and 12:00 p.m. Saturday, R; 9:30 p.m. Friday, B
 Edwin C. Hill, 8:15 and 11:15 p.m. Mon., Wed. and Fri., C
 H. V. Kaltenborn, 6:00 p.m. Friday, C
 John B. Kennedy, 8:30 p.m. Tuesday; 10:30 p.m. Wednesday; 9:00 p.m. Saturday, B
 Mrs. Franklin D. Roosevelt, 9:30 p.m. Tuesday, B
 Lowell Thomas, 6:45 p.m. daily, except Sat. and Sun., B
 Voice of Experience, 6:45 p.m. Sunday, C
 Walter Winchell, 9:30 p.m. Sunday, B

Don Bestor's romance with his wife started when she bandaged his hurt thumb; she was a dancer in the Terrace Garden chorus in Chicago and he the band-leader It cost Dan Landt \$500 to marry Lois Benson because the Landt Trio (all brothers) had agreed that the first to succumb to Cupid would pay that forfeit. . . . Fred Allen observed his 39th birthday on May 31.

October DX Calendar

(Continued from page 49)

2:50-3:10	WGBB	1210	100	Freeport
3:00-3:20	WOKO	1430	500	Albany
	WTNJ	1280	500	Trenton
	KTRH	1330	1000	Houston
3:10-3:30	WGL	1370	100	Fort Wayne
	KFPW	1210	100	Fort Smith
3:20-3:40	KFXR	1310	100	Okla. City
	WNYC	810	500	New York
	WWAE	1200	100	Hammond
	WTAW	1120	500	College Station
3:30-3:50	WOV	1130	1000	New York
	WLBC	1310	100	Muncie
	KASA	1210	100	Elk City
3:40-4:00	WINS	1180	1000	New York
	WFAM	1200	100	South Bend
	KWLC	1270	100	Decorah
3:50-4:10	WCAP	1280	500	Asbury Park
	KWKC	1370	100	Kansas City
4:00-4:20	WJAY	610	500	Cleveland
	KGCA	1270	100	Decorah
4:10-4:30	WBNS	1430	500	Columbus
	KFVS	1210	100	Cape Girardeau
4:20-4:40	WWJ	920	1000	Detroit
	KGHL	780	1000	Billings
4:30-4:50	KQV	1380	500	Pittsburgh
	KDLR	1210	100	Devils Lake
4:50-5:10	WSMK	1380	200	Dayton
	KFXJ	1200	100	Grand Junction
5:00-5:20	WAVE	940	1000	Louisville
	KFDM	960	500	Beaumont
5:10-5:30	WADC	1320	1000	Akron
	KWTN	1210	100	Watertown
5:15-6:15	WSUI	880	500	Iowa City
5:20-5:40	WSPD	1340	1000	Toledo
	WEW	760	1000	St. Louis
5:30-5:50	KWEA	1210	100	Shreveport
5:40-6:00	WLAP	1420	100	Lexington
5:50-6:10	KGGM	1230	250	Albuquerque
				October 20
3:01-3:09	CHSJ	1120	100	St. John

October 27			
October 6, 13, 20, 27			
12:00-8:00	KGIR	1360 1000	Butte
12:00-12:30	WGAR	1450 500	Cleveland
12:00-3:00	WGES	1360 500	Chicago
1:00-3:00	TGX	1400 150	Guatemala

The Revelers, who are real veterans in the radio game, will celebrate their thirteenth anniversary on the air this October. The famous quartette began broadcasting from the old Westinghouse studio in Newark in the days when it was a triumph if their program was picked up by a workman stationed on the roof with a crystal set.

* * *

Wilfred Glenn, the Reveler's famous basso, entertains his weekend guests with plenty of good fishing. Glenn goes out in his sloop Halcyon every morning and any of his guests who care to join him are always welcome.

* * *

If you like dude ranches, you'd enjoy yourself at Carson Robison's Pleasant Valley Farm. For the famous radio hillbilly wears the big hat, flannel shirt and leather chaps of the cowpuncher and conducts his farm just like a ranch.

KEY TO SYMBOLS

As Shown In the Index by Frequencies and Dial Numbers

Frequency is given in kilocycles; wavelength in meters. Night power is shown in watts in third column. Daytime power is shown in parenthesis in fourth column in kilowatts, thus (25) indicating 250 watts. Some stations outside the United States use a "split frequency." Their exact frequency is shown in fourth column. Time Zones: A—Atlantic, E—Eastern, C—Central, M—Mountain, P—Pacific, L—Local. A.M. time is shown in light face type.

Second Column Symbols

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

Fourth Column Symbols

- B National "Blue" network.

- C Columbia network.
- D Daytime only.
- Dn Daytime with occasional evening hours.
- F Canadian Radio Brdsg. Commission.
- N National "Red" and "Blue" networks.
- P Has construction permit only.
- R National "Red" network.
- S Sunday only.
- Sy Synchronized.
- X Has permit to increase power.
- Y Has permit to change location.
- Z Has permit to change frequency.

a-b-c. Small letters show stations using same transmitter.

1-2-3. Figures denote stations sharing time.

..... No information.

Time on the Air

The time is given in accordance with the "24-hour clock." Noon is always 12:00, but midnight may be either 0:00 or 24:00. To change to time of your own clock, subtract twelve. Thus, 18:00-24:00 is 6:00 p. m. to midnight. 23:00-0:30 is 11:00 p. m. to 12:30 a.m. A signifies Atlantic Standard Time (AST). E is Eastern Standard Time (EST). C is Central Standard Time (CST). P is Pacific Standard Time (PST).

INDEX BY FREQUENCIES AND DIAL NUMBERS

With Sunday's Time on the Air

KCY5
600
DIAL

540 kilocycles 555.2 meters

CJRM ak 1000 F Moose Jaw, Sask.

M-10:30-22

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550 kilocycles 545.1 meters

CFNB ak 500 F Fredericton, N. B.
 KFUF ae 500 2 (1) St. Louis, Mo.
 KFYZ ae 1000 N (2.5) Bismarck, N. D.
 KOAC ak 1000 Corvallis, Ore.
 KSD ak 500 2R (1) St. Louis, Mo.
 KTSA ak 1000 C San Antonio, Texas
 TISO ak 250 San Jose, C. R.
 WDEV ae 500 D Waterbury, Vt.
 WGR ae 1000 C Buffalo, N. Y.
 WKRC ak 1000 C (2.5) Cincinnati, Ohio

A-11-24
 C-8:30-12:30; 15-16:30; 21:15-22:15
 C-8-24
 P-Silent
 C-12:30-15; 16:30-21:15
 C-7-14; 15-23:30
 C-.....
 E-10:45-12
 E-9-1
 E-7-1

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560 kilocycles 535.4 meters

KFDM ak 500 (1) Beaumont, Texas
 KLZ ae 1000 C (2.5) Denver, Colo.
 KTAB ak 1000 San Francisco, Calif.
 KWTO ak 1000 D Springfield, Mo.
 TGW ak 10000 565 Guatemala City
 WFI ae 500 1R (1) Philadelphia, Pa.
 WIND ak 1000 (2.5) Gary, Ind.
 WLIT ak 500 1R (1) Philadelphia, Pa.
 WNOX ak 1000 C (2) Knoxville, Tenn.
 WQAM ae 1000 C Miami, Fla.
 XEAO ak 250 (.15) Mexicali, B. C.

C-8:30-15; 18-22
 M-8-23:30
 P-8:30-1
 C-7:45-17:45
 C-12-14:30
 E-10:20-14; 16:30-18; 21-24
 C-8-1
 E-6-13; 14-16:30; 18-21; 24-1
 C-8-24
 E-8-23
 P-7-23

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570 kilocycles 526.0 meters

FON z 250 574 St. Pierre, Miquelon
 KGKO ak 250 C (1) Wichita Falls, Texas
 KMTR ak 500 Hollywood, Calif.
 KVI ak 1000 Tacoma, Wash.
 WKBN ae 500 1C Youngstown, Ohio
 WMCA ak 500 New York, N. Y.
 WNAX ak 1000 C (2.5) Yankton, S. D.
 WOSU ak 750 1 (1) Columbus, Ohio
 WSYR ak 250 B Syracuse, N. Y.
 WWNC ae 1000 N Asheville, N. C.

L-.....
 C-8-23:30
 P-8-23
 P-7:45-24
 E-9-24
 E-9-1
 C-8-24
 E-Silent
 E-8-24
 E-7:30-0:30

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580 kilocycles 516.9 meters

CHRC ak 100 F Quebec, Que.
 CKCL ae 100 F Toronto, Ont.
 CKUA ak 500 Edmonton, Alta.
 KMJ ak 500 C Fresno, Calif.
 KSAC ak 500 2 (1) Manhattan, Kans.
 WCHS ak 500 (1) Charleston, W. Va.
 WDBO ae 250 C (1) Orlando, Fla.
 WIBW ak 1000 C2 Topeka, Kans.
 WTAG ae 500 R (1) Worcester, Mass.

E-12-23:30
 E-11-14; 16-20:30
 M-Silent
 P-8:30-23
 C-Silent
 E-12-18
 E-8-24
 E-8-24
 E-10-24

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590 kilocycles 508.2 meters

CMW ae 1400 595 Havana, Cuba
 KHQ ak 1000 N (2.5) Spokane, Wash.
 WEEI ak 1000 R Boston, Mass.
 WKZO ae 1000 D Kalamazoo, Mich.
 WQW ae 1000 R (2.5) Omaha, Neb.
 XEPN ak 50000 PiedrasNegras, Coah.

E-10-15
 P-9-24
 E-10-23:30
 E-9-18
 C-6:30-0:30
 C-5-24

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600 kilocycles 499.7 meters

CFCF ae 500 Montreal, Que.
 CFCO ak 100 F Chatham, Ont.
 CJOR ak 500 Vancouver, B. C.
 KFSD ae 1000 N San Diego, Calif.
 WCAK ak 500 2 Storrs, Conn.
 WCAO ae 500 C Baltimore, Md.
 WICC ae 250 2 C (1) Bridgeport, Conn.
 WMT af 1000 C (2.5) Waterloo, Iowa
 WREC ak 1000 C (2.5) Memphis, Tenn.

E-12:30-23
 E-9:30-12:15; 13:30-15; 19-20:15
 P-10:30-21
 P-8-24
 E-Silent
 E-9-24
 E-8-1
 C-8-24
 C-7-24

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CUT OUT ON DOTTED LINES

INDEX BY FREQUENCIES AND DIAL NUMBERS

With Sunday's Time on the Air

610 kilocycles 491.5 meters

KFRC	ak	1000	C (2.5)	San Francisco, Calif.	P-8-24
KZRM	ak	50000	618.5	Manila, P. I.	L-10:30-13:15; 15-22:30
TIXA	z	7.5	614	San Jose, C. R.	C-.....
WDAF	ak	1000	R (2.5)	Kansas City, Mo.	C-8-23
WIP	ae	500	C (1)	Philadelphia, Pa.	E-8-1
WJAY	ae	500	D	Cleveland, Ohio	E-8-17:45
XFX	ak	500	.....	Mexico City, D. F.	C-.....

620 kilocycles 483.6 meters

KGW	ak	1000	N (2.5)	Portland, Ore.	P-8-24
KTAR	ae	1000	N	Phoenix, Ariz.	M-8-23
WFLA	ae	1000	Na (2.5)	Clearwater, Fla.	E-8-24
WHJB	z	250	P	Greensburg, Pa.	E-9-Sunset
WLBZ	ak	500	C	Bangor, Maine	E-8:45-24
WSUN	ae	1000	Na (2.5)	St. Petersburg, Fla.	E-8-24
WTMJ	ae	1000	N (2.5)	Milwaukee, Wis.	C-7:30-0:30
.....	z	250	P	Pittsburgh, Pa.	E-.....

630 kilocycles 475.9 meters

CFCY	ae	500	F	Char't'w'n, P.E.I.	A-8:30-23:30
CJGX	ck	500	F	Yorkton, Sask.	C-7-21:30
CKOV	ak	100	F	Kelowna, B. C.	P-0-2; 11-16; 17:30-22
KFRU	ak	500	1	Columbia, Mo.	C-7:30-21
KGFX	ak	200	D	Pierre, S. D.	C-.....
WGBF	ae	500	1	Evansville, Ind.	C-8:30-19
WMAL	ak	250	B (.5)	Washington, D. C.	E-8-24
WOS	ak	500	1D	Jefferson City, Mo.	C-Silent
WPRO	ak	250	.....	Providence, R. I.	E-9-24

640 kilocycles 468.5 meters

CMQ	z	340	645	Havana, Cuba	E-.....
KFI	ak	50000	N	Los Angeles, Calif.	P-9-23
WAIU	ae	500	.....	Columbus, Ohio	E-6:15-18
WOI	ae	5000	D	Ames, Iowa	C-Irregular
XEOX	ak	250	Saltito, Coah.	C-.....

650 kilocycles 461.3 meters

WSM	ae	50000	N	Nashville, Tenn.	C-8-23:30
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660 kilocycles 454.3 meters

WAAW	ak	500	D	Omaha, Neb.	C-8-17
WEAF	ak	50000	R	New York, N. Y.	E-8-1
XEAL	z	1000	Mexico City, D. F.	C-.....

670 kilocycles 447.5 meters

WMAQ	ck	50000	N	Chicago, Ill.	C-8-1
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680 kilocycles 440.9 meters

CMAF	ak	1000	Havana, Cuba	E-12:30-15; 19-23
CMCQ	z	1000	Havana, Cuba	E-.....
HJN	ak	500	681	Bogota, Colombia	L-.....
KFEQ	ae	2500	D	St. Joseph, Mo.	C-8-17:45
KPO	ak	50000	N	San Francisco, Calif.	P-8-24
RDN	z	500	.....	San Salvador, E. S.	L-.....
VAS	ak	2000	685	Glac Bay, N. S.	A-23-23:10; 0-0:10
VOWR	ck	500	681	St. John's, Nfld.	L-11-18:30
WPTF	ae	1000	DnN	Raleigh, N. C.	E-10-Sunset

690 kilocycles 434.5 meters

CFRB	ae	10000	C	Toronto, Ont.	E-10-0:30
CJGJ	ak	100	F	Calgary, Alta.	M-9:30-10:45; 18-19:15
NAA	ak	1000	.....	Arlington, Va.	E-10:10-10:15; 11:15-12; 21:55-22
XET	ck	500	Monterrey, N. L.	C-9-15

700 kilocycles 428.3 meters

WLW	ak	500000	N	Cincinnati, Ohio	E-8-1:30
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With Sunday's Time on the Air

710 kilocycles 422.3 meters

KMPC ae 500 Dn Beverly Hills, Calif.
 KPCB ae 250 Seattle, Wash.
 TIFB z 30 714 San Jose, C. R.
 WOR ak 5000 Newark, N. J.
 XEN ak 1000 711 Mexico City, D. F.

P-6:30-17:15; 20-1
 P-5:30-Sunset; 22-4
 C-.....
 E-10-0:30
 C-9-10; 13-16; 19-24

720 kilocycles 416.4 meters

KZEG ak 1000 Manila, P. I.
 WGN ck 50000 Chicago, Ill.
 XEFT ae 250 Chihuahua, Chih.

L-9-10:30; 13:15-15
 C-9-1:30
 C-11-15; 20-22:30

730 kilocycles 410.7 meters

CFPL ak 100 F London, Ont.
 CJCA ah 500 F Edmonton, Alta.
 CKAC ak 5000 C Montreal, Que.
 CME ak 3150 Havana, Cuba

E-11-12:30; 18:30-23:30
 M-10:45-16; 17-22:30
 E-10:30-1
 E-10-12; 18-24

740 kilocycles 405.2 meters

KMMJ ae 1000 D Clay Center, Neb.
 KTRB ak 250 D Modesto, Calif.
 WHEB ak 250 D Portsmouth, N. H.
 WSB ah 5000 N Atlanta, Ga.

C-8-9:30; 13-16:30
 P-.....
 E-8-12; 14-17:30
 C-6:55-24

750 kilocycles 399.8 meters

KGU aj 2500 N Honolulu, T. H.
 WJR ak 10000 B Detroit, Mich.
 XEAM z 50 Nuevo Laredo, Tams.

L-8:45-22:30
 E-8-24
 C-.....

760 kilocycles 394.5 meters

CMCQ z 1000 767 Havana, Cuba
 KXA ae 250 (.5) Seattle, Wash.
 WBAL ae 10000 BSy Baltimore, Md.
 WEW ae 1000 D St. Louis, Mo.
 WJZ ck 50000 BSy New York, N. Y.
 XEBC ak 5000 Agua Caliente, L. C.

E-.....
 P-7-Sunset; 21-22
 E-21-24
 C-9-30-17
 E-8-1
 P-.....

770 kilocycles 389.4 meters

KFAB ae 5000 CSy Lincoln, Neb.
 WBBM ae 25000 CSy Chicago, Ill.

C-9-17:45; 20:30-21:30; 22-24
 C-8-2:15

780 kilocycles 384.4 meters

CHWK ak 100 F Chilliwack, B. C.
 CMBS ak 150 Havana, Cuba
 CMCF ak 250 Havana, Cuba
 KELW ae 500 2 Burbank, Calif.
 KFDY ae 1000 D Brookings, S. D.
 KFOD ck 250 Anchorage, Alaska
 KGHL ak 1000 N (2.5) Billings, Mont.
 KTM ak 500 2 (1) Los Angeles, Calif.
 WEAN ae 500 C (.25) Providence, R. I.
 WMC aj 1000 N (2.5) Memphis, Tenn.
 WTAR ae 500 N Norfolk, Va.
 KEYZ z 10000 Mexico City, D. F.

P-17:55-22
 E-Silent
 E-12-14
 P-10-13; 17-20; 4-6
 C-Silent
 L-17-19
 M-9-16; 19-23
 P-6-10; 13-17; 20-4
 E-8-1
 C-8-24
 E-9-24
 C-10-23

790 kilocycles 379.5 meters

CMJK ak 150 Camaguey, Cuba
 KGO ak 7500 N San Francisco, Calif.
 WGY ak 50000 R Schenectady, N. Y.

E-10-12:30; 16-23
 P-8-24
 E-9-0:30

800 kilocycles 374.8 meters

TIGP z 75 San Jose, C. R.
 WBAP ak 50000 Na Fort Worth, Tex.
 WFAA ak 50000 Na Dallas, Tex.
 WTBO ae 250 Cumberland, Md.

C-.....
 C-10-12; 15-18; 21-24
 C-8-10:30; 12-15; 18-21
 E-Silent

KCYS.
 800
 DIAL

CUT OUT ON DOTTED LINES

INDEX BY FREQUENCIES AND DIAL NUMBERS

With Sunday's Time on the Air

810 kilocycles 370.2 meters

WCCO	ae	5000	C	Minneapolis, Minn.	C-8-24
WNYC	ak	500	N	New York, N. Y.	E-10-19:30
XFC	z	350	.....	Aguascalientes, Ags.	C-.....

820 kilocycles 365.6 meters

WHAS	aj	5000	C	Louisville, Ky.	C-8-24
XEP	z	500	.....	Mexico City, D. F.	C-.....
XETW	dk	500	.....	Mexico City, D. F.	C-.....

830 kilocycles 361.2 meters

CMC	ae	500	835	Havana, Cuba	E-8-23
KOA	ak	5000	N	Denver, Colo.	M-8-24
TIEA	z	7.5	833	San Jose, C. R.	C-.....
TIVL	z	30	835	San Jose, C. R.	A-10-11; 15-16
WEEU	ak	1000	D	Reading, Pa.	E-8-17:30
WHDH	ae	1000	Dn	Boston, Mass.	E-7-21
WRUF	ae	5000	Dn	Gainesville, Fla.	E-8:30-19:15

840 kilocycles 356.9 meters

CFQC	z	1000	F	Saskatoon, Sask.	M-11-23
CRCT	ak	5000	F	Toronto, Ont.	E-11-24
VOGY	ak	400	.....	St. John's, Nfld.	L-Silent

850 kilocycles 352.7 meters

KIEV	aj	250	D	Glendale, Calif.	P-6-17:15
WWL	ae	10000	.....	New Orleans, La.	C-10-19:45
XEXX	z	500	.....	Mexico City, D. F.	C-.....

860 kilocycles 348.6 meters

WABC	ae	5000	C	New York, N. Y.	E-8-1
WHB	ae	500	D	Kansas City, Mo.	C-7-17:45
XEMO	ak	2000	865	Tijuana, B. C.	P-.....

870 kilocycles 344.6 meters

WENR	ak	5000	Na	Chicago, Ill.	C-8-12:30; 15:30-18; 20-1
WLS	ae	5000	Na	Chicago, Ill.	C-12:30-15:30; 18-20

880 kilocycles 340.7 meters

CFJC	ak	100	F	Kamloops, B. C.	P-18-19:30
CRCO	ak	1000	F	Ottawa, Ont.	E-17-24
KFKA	ak	500	2 (1)	Greeley, Colo.	M-Silent
KLX	ae	1000	.....	Oakland, Calif.	P-12-23
KPOF	ak	500	2	Denver, Colo.	M-7:30-9; 15-16; 19:30-21
KSEI	ck	250	(.5)	Pocatello, Idaho	M-10-23
WCOC	ae	500	(1)	Meridian, Miss.	C-7:30-14
WGBI	ae	500	1	Scranton, Pa.	E-13-22:30
WPHR	z	500	.....	Petersburg, Va.	E-.....
WQAN	ae	250	1	Scranton, Pa.	E-Silent
WSUI	ae	500	.....	Iowa City, Iowa	C-16-17; 18-22
YV2RC	z	100	882	Caracas, Venez.	L-.....

890 kilocycles 336.9 meters

CJIC	z	100	D	S. Ste. Marie, Ont.	E-Irregular
CMX	ae	1000	.....	Havana, Cuba	E-Silent
COA	z	500	.....	Havana, Cuba	E-.....
KARK	ak	250	(.5)	Little Rock, Ark.	C-8-9:45; 11-12; 16:30-18; 19:45-21
KFNF	ak	500	2 (1)	Shenandoah, Iowa	C-8-9:30; 14-16; 17-18:45
KUSD	ae	500	2	Vermillion, S. D.	C-Silent
WGST	ae	250	C (1)	Atlanta, Ga.	C-7-24
WILL	ak	250	2 (1)	Urbana, Ill.	C-Silent
WJAR	ae	500	R	Providence, R. I.	E-9-1
WMMN	ae	250	(.5)	Fairmont, W. Va.	E-10:40-21
XEW	ak	5000	Mexico City, D. F.	C-10-24

900 kilocycles 333.1 meters

KGA	ak	5000	N	Spokane, Wash.	P-8-24
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INDEX BY FREQUENCIES AND DIAL NUMBERS
With Sunday's Time on the Air

KGBU ak 500 Ketchikan, Alaska
KEJ ae 1000 C (2.5) Los Angeles, Calif.
WBEN ae 1000 R Buffalo, N. Y.
WJAX aeh 1000 N Jacksonville, Fla.
WKY ae 1000 N Oklahoma City, Ok.
WLBL ak 2500 D Stevens Point, Wis.

L-10-24
 P-8-24
 E-9-24
 E-9-24
 C-8-24
 C-Silent

910 kilocycles 329.6 meters

CJAT ak 250 F Trail, B. C.
CMHW z 100 Cienfuegos, Cuba
CRGM ak 5000 F Montreal, Que.
TICR z 75 911 San Jose, C. R.

P-10:30-13:30; 17:30-22
 E-18:30-21:30
 E-.....
 C-.....

920 kilocycles 325.9 meters

CMCD ah 500 925 Havana, Cuba
HHK ae 1000 Port-au-Prince, Haiti
KOMO ak 1000 N Seattle, Wash.
KPRC ae 1000 N (2.5) Houston, Texas
KVOD ae 500 Denver, Colo.
WAAF ak 500 D Chicago, Ill.
WBSO ae 500 D Babson Park, Mass.
WPEN ak 100 (.25) Philadelphia, Pa.
WRAX ak 250 D Philadelphia, Pa.
WWJ ak 1000 R Detroit, Mich.
XEAA z 200 Mexicali, B. C.
XEKL z 500 Leon, Guan.
XEOK z 2500 Tijuana, B. C.

E-12-23:30; 1-3
 E-Silent
 P-8-23
 C-7-24
 M-8-1
 C-6-Sunset
 E-8-16:30
 E-8-22
 E-8-22
 E-8-24
 P-12-14; 17-19
 C-13-16
 P-.....

KCY5
 970
 DIAL

930 kilocycles 322.4 meters

CFAC ak 100 F Calgary, Alta.
CFCH ak 100 F North Bay, Ont.
CFLC ae 100 Prescott, Ont.
CHNS ae 500 F Halifax, N. S.
CKPC ae 100 F Brantford, Ont.
CKPR ak 50 F Fort William, Ont.
CMJF z 200 Camaguey, Cuba
KGBZ ak 1000 2 (2.5) York, Neb.
KMA ak 1000 2 (2.5) Shenandoah, Iowa
KROW ak 500 (1) Oakland, Calif.
WBRC ak 1000 C Birmingham, Ala.
WDBJ ae 1000 C Roanoke, Va.

M-9-11; 13-17; 18:30-20:30
 E-11-12:15; 18:30-23
 E-19-20:30
 A-18-24
 E-9:30-23
 E-17-22
 E-.....
 C-9:15-11; 13:30-16; 16:30-18; 19-20:30
 C-8-9:15; 11:15-13:30; 15-16:30; 18-19; 20:30-23
 P-8-1
 C-8:30-23
 E-8-24

940 kilocycles 319.0 meters

CMKM z 100 Manzanillo, Cuba
KOIN ak 1000 C (2.5) Portland, Ore.
VOAS ak 100 St. John's, Nfld.
WAAT ae 500 D Jersey City, N. J.
WAVE ak 1000 N Louisville, Ky.
WCSH ae 1000 R (2.5) Portland, Maine
WDAY ae 1000 N (2.5) Fargo, N. D.
WHA ak 1000 D (2.5) Madison, Wis.
XEFO ak 5000 Mexico City, D. F.

E-.....
 P-8-24
 L-Silent
 E-6:30-18
 C-8-24
 E-9-24
 C-8-24
 C-Silent
 C-11-15; 18-24

950 kilocycles 315.6 meters

CMHD dk 250 Caibarien, Cuba
GRCS z 100 F Chicoutimi, Que.
KFWB ak 1000 (2.5) Hollywood, Calif.
KMBC ae 1000 C (2.5) Kansas City, Mo.
WRC ae 500 R (1) Washington, D. C.
XEAW ak 10000 Reynosa, Tams.

E-8-21
 E-.....
 P-8-23:30
 C-8-24
 E-8-24
 C-17-1

960 kilocycles 312.3 meters

CKY ak 15000 F Winnipeg, Man.
CMBY z 250 Havana, Cuba
CMCW dk 150 965 Havana, Cuba
CMJL z 50 Camaguey, Cuba
YVIRC ak 5000 Caracas, Venez.

C-11-13:30; 18:30-22:30
 E-.....
 E-15-22
 E-.....
 L-9:30-12; 15-16; 20-23

970 kilocycles 309.1 meters

KJR z 5000 N Seattle, Wash.
WCFL ae 1500 B Chicago, Ill.

P-8-24
 C-8-24

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<p>WIBG ak 100 D XES dk 250</p>	<p>Glenside, Pa. Tampico, Tams.</p>	<p>E-9:30-Sunset C-11-15</p>	
<p>980 kilocycles 303.9 meters</p>			
<p>CMGF ak 100 987 KDKA bk 50000 B XEAE ak 200</p>	<p>Matanzas, Cuba Pittsburgh, Pa. Mexicala, B. C. Veracruz, Ver.</p>	<p>E-..... E-9-1 P-12-24 C-7-8; 12-16; 18-23</p>	
<p>990 kilocycles 302.8 meters</p>			
<p>TITV z 7.5 999 WBZ ak 50000 BSy WBZA ak 1000 BSy WJEM z 500 DP XEK ak 100</p>	<p>San Jose, C. R. Boston, Mass. Springfield, Mass. Tupelo, Miss. Mexico City, D. F.</p>	<p>C-..... E-7-1 E-7-1 C-..... C-.....</p>	
<p>1000 kilocycles 299.8 meters</p>			
<p>KFVD ak 250 Dn WHO ak 50000 R</p>	<p>Los Angeles, Calif. Des Moines, Iowa</p>	<p>P-8-18:30; 21:15-24 C-9-24</p>	
<p>1010 kilocycles 296.9 meters</p>			
<p>CHML ael 50 F CHWC ak 500 3F CKCD ak 100</p>	<p>Hamilton, Ont. Regina, Sask. Vancouver, B. C. Regina, Sask. Ottawa, Ont. Wolfville, N. S. Vancouver, B. C. Ciego de Avila, Cuba Havana, Cuba Ciego de Avila, Cuba Coffeyville, Kans. San Jose, Calif. Cartago, C. R. New York, N. Y. Columbia, S. C. Norman, Okla.</p>	<p>E-11-21 M-16:30-21:30 P-20:45-21 M-11-16:30; 21-23 E-..... A-Irregular P-7-24 E-..... E-12-18 E-9-13; 18-22 C-13:30-17 P-9-22 C-..... E-8-1 E-9-24 C-Silent</p>	
<p>CKCK ak 500 3F CKCO z 100</p>	<p>CKIC ak 50</p>	<p>CKWX ak 100</p>	
<p>CMBD z 150</p>	<p>CMBZ ak 100</p>	<p>CMJO ak 50</p>	
<p>KGGF ak 1000 2 KOW ae 1000</p>	<p>TIGA z 30 1014</p>	<p>WHN ae 1000</p>	
<p>WIS ae 1000 N (2.5) WNAD ae 500 2</p>			
<p>1020 kilocycles 293.9 meters</p>			
<p>KYW ak 10000 NY XEJ ak 250</p>	<p>Chicago, Ill. Juarez, Chih.</p>	<p>C-8-1 C-10-14; 17-23:30</p>	
<p>1030 kilocycles 291.1 meters</p>			
<p>CFCN ak 10000 F CKLW ae 5000 C CMHI ak 150 1037 CMKC z 150 1034 XEB ak 10000</p>	<p>Calgary, Alta. Windsor, Ont. Santa Clara, Cuba Santiago, Cuba Mexico City, D. F.</p>	<p>M-11-22:30 E-8-1 E-10-12; 16-17; 21-22 E-..... C-9-23</p>	
<p>1040 kilocycles 288.3 meters</p>			
<p>CMGH ak 15</p>	<p>KRLD ae 10000 C KWJ ak 500</p>	<p>WKAR ak 1000 D WTIC ak 50000 R</p>	
<p>Matanzas, Cuba Dallas, Texas Portland, Ore. East Lansing, Mich. Hartford, Conn.</p>	<p>E-..... C-8-24 P-7-Sunset; 21-3:15 E-Silent E-9-24</p>		
<p>1050 kilocycles 285.5 meters</p>			
<p>CMJG z 50</p>	<p>CRCK z 1000</p>	<p>KFBI ak 5000 Dn KNX ak 50000</p>	
<p>Camaguey, Cuba Quebec, Que. Abilene, Kans. Hollywood, Calif.</p>	<p>E-..... E-..... C-8-19:15 P-7-22:30</p>		
<p>1060 kilocycles 282.8 meters</p>			
<p>CMBG z 225</p>	<p>CMGB ak 150</p>	<p>KTHS ae 10000 N WBAL ae 10000 B WJAG ak 1000 D XEA ak 125</p>	
<p>Havana, Cuba Havana, Cuba Hot Springs, Ark. Baltimore, Md. Norfolk, Neb. Guadalajara, Jal.</p>	<p>E-..... E-11-13; 21-24 C-7-24 E-7-21 C-9:30-Sunset C-8:30-9; 20-23</p>		

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1070 kilocycles

KJBS ak 100 Dn
WCAZ dk 100 D
WDZ ak 100 D
WTAM ck 50000 R

280.2 meters

San Francisco, Calif.
Carthage, Ill.
Tuscola, Ill.
Cleveland, Ohio

P-O-Sunset
C-Silent
C-9:30-16
E-7-1

1080 kilocycles

VOKW z 30 1085
WBT ae 50000 C
WCBM ak 5000 1Dn
WMBI ae 5000 1Dn
XEAF z 750
XEMA z 50

277.6 meters

St. John's Nfld.
Charlotte, N. C.
Zion, Ill.
Chicago, Ill.
Nogales, Son.
Tampico, Tams.

L-.....
E-10-24
C-8:30-11:30; 15-Sunset
C-11-15:30
C-.....
C-.....

1090 kilocycles

CMGI z 30 1094
KMOX ak 50000 C
WESG ak 1000

275.1 meters

Colon, Cuba
St. Louis, Mo.
Elmira, N. Y.

E-.....
C-8-24
E-10-18:15

1100 kilocycles

CMCU ak 150
CMHA z 50 1103
COX z 200
CRCV ak 1000 F
KGDM ak 250 D
KWKH ae 10000 C
TIRCA ak 500
WLWL ae 5000 i
WPG ak 5000 1C
XEFG ak 250 1105

272.6 meters

Havana, Cuba
Sagua la Grande, C.
Havana, Cuba
Vancouver, B. C.
Stockton, Calif.
Shreveport, La.
San Jose, C. R.
New York, N. Y.
Atlantic City, N. J.
Mexico City, D. F.

E-10-12; 13-16; 18-21
E-.....
E-.....
P-11-15:15
P-O-Sunset
C-19:45-24
C-.....
E-15-15-16; 20-21:15
E-9-15:15; 16:30-19:30; 21:15-1
C-.....

1110 kilocycles

KSOO ak 1000 Dn (2.5)
WRWA ae 5000 N

270.1 meters

St. Louis, S. D.
Richmond, Va.

C-9:30-18:30
E-10-23

1120 kilocycles

CHLP z 100
CHSJ ae 100 F
CKOC ae 500 F (1)
CMHJ ae 40 1125
KFIO ak 100 D
KFSG ag 500 a
KRKD ae 500 a
KRSC ck 100 D
WDEL ak 250 (.5)
WISN ak 250 (1)
WTAW ae 500
XENT ck 50000

267.7 meters

Montreal, Que.
St. John, N. B.
Hamilton, Ont.
Cienfuegos, Cuba
Spokane, Wash.
Los Angeles, Calif.
Los Angeles, Calif.
Seattle, Wash.
Wilmington, Del.
Milwaukee, Wis.
College Station, Tex.
Nuevo Laredo, Tams.

E-17-23
A-.....
E-10:30-23
E-11-14; 18-22
P-8-17
P-10:30-12:45; 14:30-16:30; 18:30-24
P-7:45-10:30; 12:30-19
P-7-Sunset
E-10:30-22
C-8-30-16; 17-24
C-Silent
C-7:30-24

1130 kilocycles

KSL ae 50000 C
WJJD ak 20000 Dn
WVOV ag 1000 D

265.3 meters

Salt Lake City, Utah
Chicago, Ill.
New York, N. Y.

M-7:30-24
C-7-18:45
E-8-15:15; 16:30-18

1140 kilocycles

CMCG z 150
CMCO z 150 1145
KVOO ak 25000 1N
WAPI ae 5000 1N

263.0 meters

Havana, Cuba
Havana, Cuba
Tulsa, Okla.
Birmingham, Ala.

E-.....
E-.....
C-7:30-20:15
C-8:30-Sunset; 20:15-23:30

1150 kilocycles

CMJH ak 50
WHAM ae 50000 B
XEH ak 250
XEWZ z 100

260.7 meters

Ciego de Avila, Cuba
Rochester, N. Y.
Monterrey, N. L.
Mexico City, D. F.

E-8-8:30; 10-15; 17:30-22:30
E-9-1
C-Silent
C-.....

1160 kilocycles

WOWO ae 10000 1C
WVVA ak 5000 1C
XED ck 500

258.5 meters

Fort Wayne, Ind.
Wheeling, W. Va.
Guadalajara, Jal.

C-7:30-18:45; 19:30-24
E-7:30-20:30
C-8-9; 12-15:30; 19-23

KCYS.
1160
DIAL

CUT OUT ON DOTTED LINES

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1170 kilocycles

CMJE z 50
WCAU ae 5000 C

256.3 meters

Camaguey, Cuba E.....
Philadelphia, Pa. E-9-1

1180 kilocycles

CMBX ak 150 1185
CMCJ ak 400 1185
KEX ak 5000 2N
KOB ae 10000 2
WDGY ak 1000 D (2.5)
WINS ae 1000
WMAZ ak 1000
XEFA z 500

254.1 meters

Havana, Cuba E.....
Havana, Cuba E.....
Portland, Ore. P-8-17:30; 20-24
Albuquerque, N. M. M-Silent
Minneapolis, Minn. C-6:30-20:15
New York, N. Y. E-7-19:30
Macon, Ga. E-10-16:30
Mexico City, D. F. C.....

1190 kilocycles

HIJ z 15 1195
VE9EK ak 10 1195
VONF ak 5000 1195
WATR ak 100 D
WOAI ak 5000 N
WSAZ ak 1000

252.0 meters

Santo Domingo, D. R. E.....
Montmagny, Que. E.....
St. John's Nfld. L-12:30-14; 20-21
Waterbury, Conn. E-10-17:15
San Antonio, Texas. C-8-23:30
Huntington, W. Va. E-13-18:30

1200 kilocycles

CHAB ak 100
CKTB ak 100 F
KADA z 100 PD
KBTM ak 100 D
KFBJ ak 100 (.25)
KFJD ae 100
KFJX ak 100
KGDE ak 100 (.25)
KGEK ak 100
KGFJ ae 100
KGHI ak 100 (.25)
KGVO ak 100
KMLB ak 100
KOOS ae 100
KSUN ck 100 D
KVOS ak 100
KWG ak 100 C
WABI ak 100
WBZB ak 100
WBHS z 100
WBNO ck 100 1
WCAT ak 100 D
WCAX ak 100
WCLO ak 100
WFAM ak 100 8
WFBE ak 100 (.25)
WHBC ak 100 2
WHBY ak 100
WIBX ak 100 (.3)
WIL ak 100 (.25)
WJBC ak 100 6
WJBL ae 100 6
WJBW ak 100 1
WKBO ak 100 3
WKJC ae 100 3 (.25)
WLVA ck 100
WMPG ak 100
WNBO ae 100 2
WRBL ak 100
WWAE ae 100 8
YV3BC ak 1000
10-AK ak 15
10-BP ak 25
10-BQ ak 15
10-BU ak 50

249.9 meters

Moose Jaw, Sask. M-8:45-22
St. Catharines, Ont. E-13-23:30
Ada, Okla. C.....
Jonesboro, Ark. C-7:30-17
Marshalltown, Iowa C-8-9; 12-15; 18-21
Nampa, Idaho M-11-16:30
Grand Junction, Col. M-9-21
Fergus Falls, Minn. C-9-21
Sterling, Colo. M-11-12:15
Los Angeles, Calif. P-24 hours
Little Rock, Ark. C-11-14
Missoula, Mont. M-10-18:15
Monroe, La. C-9-13; 18-22
Marshfield, Ore. P-Irregular
Lowell, Ariz. M.....
Bellingham, Wash. P-9-21
Stockton, Calif. P-8-24
Bangor, Maine E-9-14; 18-22
Ponca City, Okla. C-8-15
Huntsville, Ala. C.....
New Orleans, La. C-17-19:30
Rapid City, S. D. C-Silent
Burlington, Vt. E-Silent
Janesville, Wis. C-Silent
South Bend, Ind. C-8-24
Cincinnati, Ohio E-8-23
Canton, Ohio E-12-15; 18-21
Green Bay, Wis. C-10-22
Utica, N. Y. E-9:30-24
St. Louis, Mo. C-9-22:30
LaSalle, Ill. C-9-10:30; 14-18
Decatur, Ill. C-10-12; 18-22
New Orleans, La. C-8-10; 13-17; 21-24
Harrisburg, Pa. E-12-18
Lancaster, Pa. E-Silent
Lynchburg, Va. E-9-15
Lapeer, Mich. E-10-14; 15:30-18; 19:30-23
Washington, Pa. E-9-12; 15-18; 21-24
Columbus, Ga. C-8-15; 18-21
Hammond, Ind. C-11-14:15; 16-24
Caracas, Venez. L-9-13; 20-23
Stratford, Ont. E-17-18
Wingham, Ont. E-11-12; 16-17; 19-20
Brantford, Ont. E-11-19
Canora, Sask. C.....

1210 kilocycles

CHNC ak 100 F
CKBI ak 100 F
CKCH ak 100 F
CKMC ak 50
CMJI ak 150

247.8 meters

New Carlisle, Que. A-12:30-13:30; 15-24
Prince Albert, Sask. M.....
Hull, Que. E-12:30-13:30; 19:30-22:30
Cobalt, Ont. E-15-19
Ciego de Avila, Cuba E-10-13:30; 18-22

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KASA	ck	100	Elk City, Okla.	C-8:45-12; 13-17
KDLR	ak	100	Devils Lake, N. D.	C-Silent
KFJI	ak	100	Klamath Falls, Ore.	P-Silent
KFOR	ak	100	(.25)C	Lincoln, Neb.	C-8-22
KFPW	ak	100	.....	Fort Smith, Ark.	C-11-14; 17-21
KFVS	ae	100	6 (.25)	Cape Girardeau, Mo.	C-9-16; 21:30-24
KFXM	ak	100	9	San Bernardino, Cal.	P-15-18; 21-24
KGY	ak	100	.....	Olympia, Wash.	P-Silent
KIEM	ak	100	.....	Eureka, Calif.	P-10-21
KPPC	ak	50	9	Pasadena, Calif.	P-9:30-12:30; 19:30-21
KWEA	z	100	.....	Shreveport, La.	C-.....
KWFW	z	100	.....	Hilo, Hawaii	L-.....
KWTN	ak	100	.....	Watertown, S. D.	C-9-15
WALR	ak	100	.....	Zanesville, Ohio	E-10-22
WBAX	ae	100	1	Wilkes Barre, Pa.	E-13-24
WBBL	ak	100	7S	Richmond, Va.	E-10:55-12:15; 19:45-21
WBRB	ak	100	3	Red Bank, N. J.	E-Silent
WCBS	ak	100	2	Springfield, Ill.	C-10:45-14; 19-19:30
WCRW	ae	100	4	Chicago, Ill.	C-11-14; 17-19
WEBQ	ae	100	6 (.25)	Harrisburg, Ill.	C-6-9; 16-21:30
WEDC	ae	100	4	Chicago, Ill.	C-8:30-10; 15:30-17; 19-20; 22-23
WFAS	ak	100	3	White Plains, N. Y.	E-18-21
WGBB	ae	100	3	Freeport, N. Y.	E-9-18
WGCM	ae	100	(.25)	Gulfport, Miss.	C-9:45-13
WGNV	ak	100	3	Chester, N. Y.	E-21-22:30
WHBF	ak	100	.....	Rock Island, Ill.	C-12-23
WHBU	ak	100	.....	Anderson, Ind.	C-10:30-17
WIBU	ak	100	.....	Poyntette, Wis.	C-8:30-17
WJBY	ak	100	.....	Gadsden, Ala.	C-6-12:10
WJBJ	ah	100	D	Hagerstown, Md.	E-9-17:45
WJIM	z	100	P	Lansing, Mich.	E-8-24
WJW	ak	100	.....	Akron, Ohio	E-9-23:30
WKFI	ak	100	Y	Greenwood, Miss.	C-10-14
WKOK	ak	100	1P	Sunbury, Pa.	E-6-13
WMBG	ak	100	7C	Richmond, Va.	E-13:30-17
WOCL	ak	50	.....	Jamestown, N. Y.	E-9-9:45; 11-13
WOMT	ae	100	.....	Manitowoc, Wis.	C-Silent
WQDX	ae	100	.....	Thomasville, Ga.	E-10:45-12:30; 19:45-21:30
WSBC	ae	100	4	Chicago, Ill.	C-6-8:30; 10-11; 14-15:30; 20-22; 23-24
WSEN	ak	100	.....	Columbus, Ohio	E-10-22
WSIX	ak	100	.....	Springfield, Tenn.	C-11-12
WSOC	ak	100	N (.25)	Charlotte, N. C.	E-9-24
WTAX	ak	100	2	Springfield, Ill.	C-8-10:45; 15-19; 19:30-22:15
XEC	z	50	.....	Toluca, D. F.	C-.....
XEE	z	50	.....	Durango, Dgo.	C-.....
XEFJ	ak	100	.....	Monterrey, N. L.	C-Silent
XEFV	ae	100	.....	Juarez, Chih.	M-9-15; 17-22
XEMZ	z	30	.....	Tijuana, B. C.	P-.....
XETH	ak	100	.....	Puebla, Pue.	C-8:30-11; 13-15; 19-23

**KCYS.
1240
DIAL**

1220 kilocycles

CMHK	z	50	1225
KFKU	ae	1000	a
KTW	ak	1000	S2
KWSC	ae	1000	2 (2)
WCAD	ak	500	D
WCAE	ak	1000	R
WDAE	ae	1000	C (2.5)
WREN	ak	1000	Ba

245.8 meters

Cruces, Cuba	E-9:30-12; 13-15:30
Lawrence, Kas.	C-16-17
Seattle, Wash.	P-11-12:30; 14-22
Pullman, Wash.	P-Silent
Canton, N. Y.	E-Irregular
Pittsburgh, Pa.	E-10:30-1
Tampa, Fla.	E-9-24
Lawrence, Kas.	C-8-24

1230 kilocycles

CJOC	ak	100	F
CMCA	z	150	2
COK	z	250	.....
KGGM	ak	250	(.5)
KYA	ae	1000	N
WFBM	ae	1000	1C
WNAC	ak	1000	C (2.5)

243.8 meters

Lethbridge, Alta.	M-12-22
Havana, Cuba	E-11-14; 21-22
Havana, Cuba	E-.....
Albuquerque, N. M.	M-10-14
San Francisco, Calif.	P-8:15-23
Indianapolis, Ind.	C-6:30-24
Boston, Mass.	E-8-1

1240 kilocycles

CJCB	ak	1000	F
CMHB	z	30	1245
KGCU	ak	250	1
KLPM	ak	250	1
KTAT	ak	1000	C
KTFI	ae	1000	(1.5)

241.8 meters

Sydney, N. S.	A-12-14:30; 17:30-23:30
San Spiritus, Cuba	E-.....
Mandan, N. D.	M-10:45-12:30; 13:30-16; 19-21
Minot, N. D.	C-9-11:45; 13:30-14:30; 17:30-20
Fort Worth, Texas	C-7-23:30
Twin Falls, Idaho	M-10-23:15

CUT OUT ON DOTTED LINES

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WKAQ	ae	1000	San Juan, P. R.	E-11-17
WXYZ	ak	1000	Detroit, Mich.	E-9-24
XEAI	z	100	Mexico City, D. F.	C-.....

1250 kilocycles 239.9 meters

KFOX	ae	1000	.....	Long Beach, Calif.	P-6-24
WCAL	ah	1000	2 (2.5)	Northfield, Minn.	C-8:15-9:30; 15-16
WDSU	ak	1000	C	New Orleans, La.	C-8-24
WHBI	ak	1000	1 (2.5)	Newark, N. J.	E-7-10; 12:30-18:30; 21-24
WLB	ak	1000	2	Minneapolis, Minn.	C-Silent
WNEW	ae	1000	1 (2.5)	Newark, N. J.	E-10-12; 18:30-20; 0-4
WTCN	ak	1000	2	Minneapolis, Minn.	C-9:30-15; 16-19; 20-24

1260 kilocycles 238.0 meters

CFTP	ak	100	.....	Edmonton, Alta.	M-.....
KOIL	ak	1000	B (2.5)	Council Bluffs, Iowa	C-8-1
KPAC	z	500	D	Port Arthur, Texas	C-.....
KRGV	ak	500	.....	Weslaco, Texas	C-12-15
KUOA	ak	1000	D	Fayetteville, Ark.	C-11-13; 16-17:30
KVOA	ak	500	.....	Tucson, Ariz.	M-7-9; 11-15; 18-21
WLBW	ae	1000	C	Erie, Pa.	E-7-1
WNBX	ak	500	D	Springfield, Vt.	E-10:30-12
WTOC	ae	1000	C	Savannah, Ga.	E-8-24

1270 kilocycles 236.1 meters

CMBC	ae	150	1	Havana, Cuba	E-14-23
CMCP	z	150	1	Havana, Cuba	E-.....
HIX	ak	1000	.....	Santo Domingo, D.R.	E-.....
KGCA	ak	100	2D	Decorah, Iowa	C-10:45-24
KOL	ae	1000	C (2.5)	Seattle, Wash.	P-8-24
KVOR	ae	1000	C	Colorado Spgs., Colo.	M-8-23
KWLC	ak	100	2D	Decorah, Iowa	C-Silent
WASH	ak	500	a	Grand Rapids, Mich.	E-9-24
WFBR	ae	500	R	Baltimore, Md.	E-8-1
WJDX	ae	1000	N (2.5)	Jackson, Miss.	C-10:30-23
WOOD	ak	500	a	Grand Rapids, Mich.	E-9-24
XFB	ak	1000	.....	Jalapa, Ver.	C-.....

1280 kilocycles 234.2 meters

KFBB	ae	1000	(2.5)	Great Falls, Mont.	M-9-21
WCAM	ae	500	1	Camden, N. J.	E-10:15-12:30; 15-17
WCAP	ae	500	1	Asbury Park, N. J.	E-6-10:15; 12:30-15; 20-21
WDOD	ae	1000	C (2.5)	Chattanooga, Tenn.	C-7-23:30
WIBA	ae	500	N (1)	Madison, Wis.	C-7:30-24
WORC	ak	500	C	Worcester, Mass.	E-9-23:30
WRR	ak	500	.....	Dallas, Texas	C-7:30-23
WTNJ	ak	500	1	Trenton, N. J.	E-17-20; 21-24

1290 kilocycles 232.4 meters

KDYL	ak	1000	N	Salt Lake City, Utah	M-6:30-1
KLCN	z	100	D	Blytheville, Ark.	C-10:30-16:30
WEBC	ae	1000	N (2.5)	Superior, Wis.	C-7-23
WJAS	ak	1000	C (2.5)	Pittsburgh, Pa.	E-9-24
WNBZ	z	50	D	Saranac Lake, N. Y.	E-.....
WNEL	z	500	P	San Juan, P. R.	A-.....

1300 kilocycles 230.6 meters

GMKJ	z	20	.....	Guantanamo, Cuba	E-.....
HIZ	z	10	.....	Santo Domingo, D.R.	E-.....
KALE	ak	500	3G	Portland, Ore.	P-9-22:30
KFAC	ak	1000	.....	Los Angeles, Calif.	P-8-23
KFH	ak	1000	C2	Wichita, Kans.	C-8-24
KFJR	ag	500	3	Portland, Ore.	P-Silent
VOAC	z	40	.....	St. John's, Nfld.	L-.....
WBRR	ae	1000	1	Brooklyn, N. Y.	E-8-11; 15-20
WEVD	ak	1000	1	New York, N. Y.	E-11-15; 20-21; 22-23; 0-1
WFAB	ae	1000	1	New York, N. Y.	E-21-22; 23-24
WFBC	ak	250	(1)	Greenville, S. C.	E-8:30-14; 18-22:15
WHAZ	ae	500	1	Troy, N. Y.	E-Silent
WIOD	ae	1000	N	Miami, Fla.	E-8-24

1310 kilocycles 228.9 meters

CHCK	ak	50	Charlottetown, P.E.I.	A-11-13:30; 16-17; 19-20:30
CJKL	z	100	Kirkland Lake, Ont.	E-.....

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CJLS	z	100	Yarmouth, N. S.	A—.....
CKCV	ak	50	Quebec, Que.	E—Silent
CMCY	ak	500	1316	Havana, Cuba	E—20:30-22:30
KCRJ	ak	100	D	Jerome, Ariz.	M—Silent
KFBK	ak	100	C	Sacramento, Calif.	P—8-24
KFPL	dkh	100	.....	Dublin, Texas	C—Silent
KFPF	ae	15	.....	Greenville, Texas	C—Silent
KFXR	ak	100	(.25)	Oklahoma City, Ok.	C—9:30-21:30
KFYO	ak	100	(.25)	Lubbock, Texas	C—8-12; 16-18
KGBX	ak	100	.....	Springfield, Mo.	C—17:45-22
KGCX	ak	100	(.25)	Wolf Point, Mont.	M—11-12:30
KGEZ	aj	100	.....	Kalispell, Mont.	M—9-14
KGFV	ak	100	.....	Kearney, Neb.	C—8:30-13
KIT	ak	100	.....	Yakima, Wash.	P—9-17; 19:30-21:30
KMED	ck	100	(.25)	Medford, Ore.	P—10-12
KRMD	ak	100	.....	Shreveport, La.	C—7-21
KTSM	ak	100	.....	El Paso, Texas	M—8-9:15; 13-16
KXRO	ak	100	.....	Aberdeen, Wash.	P—10-19
WAML	ak	100	.....	Laurel, Miss.	C—12-19
WBEO	ae	100	.....	Marquette, Mich.	C—9-13:30
WBOW	ak	100	.....	Terre Haute, Ind.	C—9-22:30
WBRE	ak	100	.....	Wilkes Barre, Pa.	E—10:30-21:30
WCLS	ae	100	.....	Joliet, Ill.	C—9-14; 18-20
WDAH	ak	100	S	El Paso, Texas	M—9:30-12; 19:30-20:30
WEBR	ae	500	.....	Buffalo, N. Y.	E—9-24
WEXL	ak	50	.....	Royal Oak, Mich.	E—8-24
WFBG	ae	100	3	Altoona, Pa.	E—10:45-12:45; 15:30-16:30; 18:15-22
WFDL	am	100	.....	Flint, Mich.	E—9-24
WGH	ae	100	.....	Newport News, Va.	E—9-15:30; 18-22:30
WHAT	ak	100	4	Philadelphia, Pa.	E—9-10:15; 20-24
WJAC	ae	100	3	Johnstown, Pa.	E—16:30-22:15
WLBC	ak	50	6 (.1)	Muncie, Ind.	C—10-16:30
WLNH	ak	100	.....	Laconia, N. H.	E—.....
WMBO	ak	100	.....	Auburn, N. Y.	E—17-19
WNBH	ae	100	(.25)	New Bedford, Mass.	E—11:45-23:20
WOL	ae	100	(.25)	Washington, D. C.	E—12-18
WRWA	ak	100	.....	Reading, Pa.	E—18:30-20:30
WROL	ak	100	.....	Knoxville, Tenn.	C—8:30-23
WSAJ	ae	100	.....	Grove City, Pa.	E—16:30-17:30
WSGN	ak	100	(2.5)	Birmingham, Ala.	C—9-21
WSJS	ak	100	C	Winston-Salem, N. C.	E—8-24
WTGL	ah	100	4	Philadelphia, Pa.	E—11:30-14; 16-19
WTJS	ak	100	(.25)	Jackson, Tenn.	C—10-15:30
WTRC	ak	50	6 (.1)	Elkhart, Ind.	C—11-12; 17-21
XECW	z	10	.....	Mexico City, D. F.	C—.....
XEFC	ak	100	.....	Merida, Yuc.	C—12-18
XEFW	ak	250	.....	Tampico, Tams.	C—11-14
XETB	z	125	.....	Torreón, Coah.	C—.....
XEX	ak	125	Monterrey, N. L.	C—.....
XFA	z	5	Aguascalientes, Ags.	C—.....

1320 kilocycles 227.1 meters

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KGHF	ak	500	Pueblo, Colo.	M—10-16
KGMB	ak	250	C	Honolulu, T. H.	L—8:30-22
KID	ae	250	(.5)	Idaho Falls, Idaho	M—6-23
KSO	ak	250	B	Des Moines, Iowa	C—7-1
WADC	ae	1000	C (2.5)	Akron, Ohio	E—8-24
WORK	ak	1000	.....	York, Pa.	E—10:45-18
WSMB	ak	500	N	New Orleans, La.	C—7-24

KCY.S.
1340
DIAL

1330 kilocycles 225.4 meters

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KGB	ag	1000	C (2.5)	San Diego, Calif.	P—8-24
KMO	ak	250	Tacoma, Wash.	P—6:45-23
KSCJ	aj	1000	1C (2.5)	Sioux City, Iowa	C—8-23
KTRH	z	500	C (2.5)	Houston, Texas	C—8-24
WDRC	ae	1000	C	Hartford, Conn.	E—10-24
WSAI	ak	1000	R (2.5)	Cincinnati, Ohio	E—8-24
WTAQ	ae	1000	1	Eau Claire, Wis.	C—8-17:45

1340 kilocycles 223.7 meters

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KFPY	ak	1000	C	Spokane, Wash.	P—9-24
KGDY	ak	250	D	Huron, S. D.	C—.....
KGNO	ak	250	Dodge City, Kans.	C—10:30-19
WCOA	ak	500	Pensacola, Fla.	C—10:30-15

CUT OUT ON
DOTTED LINES

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WFEA	ae	500	C	Manchester, N. H.	E-8:45-23
WSPD	ae	1000	C (2.5)	Toledo, Ohio	E-9-24
XFD	z	250	Orizaba, Ver.	C-.....

1350 kilocycles 222.1 meters

KIDO	ak	1000	(2.5)	Boise, Idaho	M-10:30-16:30
KWK	ae	1000	B (2.5)	St. Louis, Mo.	C-7-24
WAWZ	ae	250	1	Zarephath, N. J.	E-6-9; 11-12:30; 15-16:30; 19-20:30
WBXN	ae	250	1	New York, N. Y.	E-12:30-15; 16:30-18
WEHC	ae	500	D	Charlottesville, Va.	E-10-12

1360 kilocycles 220.4 meters

CMJP	ak	75	.....	Moron, Cuba	E-10-12; 20:22
CMKF	z	30	1363	Holquin, Cuba	E-.....
KGER	ak	1000	.....	Long Beach, Calif.	P-7-23
KGIR	ak	1000	N	Butte, Mont.	M-9-23:15
WCSC	ae	500	(1)	Charleston, S. C.	E-9-14; 19-21
WFBL	ak	1000	C (2.5)	Syracuse, N. Y.	E-9-1
WGES	ak	500	.....	Chicago, Ill.	C-8-17; 23-1
WQBC	ak	500	(1)	Vicksburg, Miss.	C-10-21
WSBT	ak	500	.....	South Bend, Ind.	C-8-24

1370 kilocycles 218.8 meters

CKCW	z	100	.....	Moncton, N. B.	A-.....
CMCN	z	250	1375	Havana, Cuba	E-.....
CMCR	z	150	1375	Havana, Cuba	E-9-23
CMGE	z	30	1375	Cardenas, Cuba	E-.....
KCRC	ak	100	2 (.25)	Enid, Okla.	C-11-15
KERN	ak	100	.....	Bakersfield, Calif.	P-8-24
KFGQ	ak	100	.....	Boone, Iowa	C-8:30-9; 14:30-16; 19:30-21; 23-24
KFJM	ak	100	.....	Grand Forks, N. D.	C-7-21
KFJZ	ae	100	.....	Fort Worth, Texas	C-8-23
KGAR	ae	100	(.25)	Tucson, Ariz.	M-9:30-21
KGFG	bk	100	2	Oklahoma City, Ok.	C-8-11; 15-18; 19-24
KGFL	ak	100	4	Roswell, N. M.	M-15-17:30
KGKL	ak	100	(.25)	San Angelo, Texas	C-8:15-14
KICA	ak	100	4	Clovis, N. M.	M-9:30-14
KLUF	z	100	(.25)	Galveston, Texas	C-.....
KMAC	ak	100	5	San Antonio, Texas	C-7-9; 11-12:30; 14-16; 18-20; 22-0:30
KONO	ak	100	5	San Antonio, Texas	C-9-11; 12:30-14; 16-18; 20-22
KRE	ak	100	.....	Berkeley, Calif.	P-10-22
KRKO	ak	50	.....	Everett, Wash.	P-12-14
KSLM	z	100	.....	Salem, Ore.	P-.....
KUJ	ak	100	.....	Walla Walla, Wash.	P-7:45-22
KVL	ak	100	.....	Seattle, Wash.	P-16:30-19; 21:30-24
KWKW	z	100	.....	Kansas City, Mo.	C-.....
KWYO	z	100	.....	Sheridan, Wyo.	M-10-23
WAGF	ak	100	D	Dothan, Ala.	C-8-17:15; 19-21
WBTM	ak	100	.....	Danville, Va.	E-10-1
WCBM	ae	100	(.25)	Baltimore, Md.	E-.....
WDAS	ae	100	(.25)	Philadelphia, Pa.	E-9-23
WGL	ak	100	C	Fort Wayne, Ind.	C-14-24
WGLC	ak	100	.....	Hudson Falls, N. Y.	E-9-24
WHBD	ak	100	.....	Mount Orab, Ohio	E-10-19
WHBQ	ak	100	.....	Memphis, Tenn.	C-10:30-21
WHDF	ak	100	(.25)	Calumet, Mich.	E-10-14; 16:30-20:30
WIBM	ak	100	.....	Jackson, Mich.	E-9-24
WJTL	ae	100	.....	Atlanta, Ga.	E-11-17:30; 19:45-21:30
WLLH	ak	100	(.25)	Lowell, Mass.	E-13:30-15
WMBR	ak	100	C	Jacksonville, Fla.	E-7-24
WPFB	ak	100	.....	Hattiesburg, Miss.	C-11-12; 13:30-16:30; 19-20:30
WQDM	ae	100	D	St. Albans, Vt.	E-10-14
WRAK	ak	100	.....	Williamsport, Pa.	E-18-22
WRDO	ae	100	.....	Augusta, Maine	E-10:30-13:30
WRJN	ak	100	.....	Racine, Wis.	C-10:30-14:30; 17-22:30
WSVS	ak	50	D	Buffalo, N. Y.	E-Silent
XEFE	z	100	.....	Nuevo Laredo, Tams.	C-.....
XEFZ	ae	100	.....	Mexico City, D. F.	C-20-22
XEI	ak	125	.....	Morelia, Mch.	C-19-21
XEZZ	z	100	.....	San Luis Potosi, SLP	C-9:30-15; 17-22

1380 kilocycles 217.3 meters

CMJC	z	150	1382	Camaguey, Cuba	E-.....
KOH	ak	500	C	Reno, Nev.	P-8-24
KQV	ak	500	2C	Pittsburgh, Pa.	E-9-24

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WALA	ae	50	0	C	Mobile, Ala.	C—9-22
WKBB	ak	1000		LaCrosse, Wis.	C—10-12:15
WSMK	ak	200	2C		Dayton, Ohio	E—8-24

1390 kilocycles 215.7 meters

CJRC	ck	100	.....		Winnipeg, Man.	C—.....
HIH	ak	15			1395 San Ped. de Macoris, DR	E—12:30-14:30; 18:30-20:30
KLRA	ae	1000	C (2.5)		Little Rock, Ark.	C—7-23
KOY	ae	500	(1)		Phoenix, Ariz.	M—.....
WHK	ae	1000	C (2.5)		Cleveland, Ohio	E—8:30-24

1400 kilocycles 214.2 meters

KLO	ae	500	C		Ogden, Utah	M—9-24
KTUL	ak	250	(.5) C		Tulsa, Okla.	C—6:30-24
TGX	ak	150	.....		Guatemala City, Gt.	C—.....
WARD	ak	500	2		Brooklyn, N. Y.	E—10:30-11:30; 19-20:30
WBAA	z	500			W. Lafayette, Ind.	C—Silent
WBBC	ae	500	2 (1)		Brooklyn, N. Y.	E—7-10:30; 15-16:30; 21-22:30
WKBF	ak	500	N (1)		Indianapolis, Ind.	C—8-24
WLTH	ak	500	2		Brooklyn, N. Y.	E—13:30-16:30; 22:30-0:30
WVFW	ak	500	2		Brooklyn, N. Y.	E—12-13:30; 16:30-18

1410 kilocycles 212.6 meters

CKFC	ak	50	5		Vancouver, B. C.	P—10:45-18; 19:30-21
CKMO	ag	100	5		Vancouver, B. C.	P—.....
KGRS	ae	1000	1		Amarillo, Texas	C—6:10; 11-15; 17-19:30; 22-24
WAAB	ak	500	C		Boston, Mass.	E—9-23
WBCM	ae	500	.....		Bay City, Mich.	E—9-24
WDAG	ae	1000	1 (2.5)		Amarillo, Texas	C—10-11; 15-17; 19:30-22
WHBL	ae	500	4		Sheboygan, Wis.	C—13-16:30; 18-19:30
WHIS	ak	250	2		Bluefield, W. Va.	E—9-17
WRBX	ae	250	2 (.5)		Roanoke, Va.	E—17-23
WROK	ak	500	4		Rockford, Ill.	C—10-13; 16:30-18; 19:30-22:30
WSFA	ak	500	C		Montgomery, Ala.	C—7-22:30

1420 kilocycles 211.1 meters

CKGB	ak	100	.....		Timmins, Ont.	E—.....
CKNC	ak	100	F		Toronto, Ont.	E—11-23:15
KABC	ak	100	.....		San Antonio, Texas	C—8:30-21:30
KBPS	aj	100	4		Portland, Ore.	P—Silent
KCMC	ak	100	.....		Texarkana, Ark.	C—11-14; 18-20
KFIZ	ak	100	.....		Fond du Lac, Wis.	C—Silent
KGFF	ak	100	.....		Shawnee, Okla.	C—10:15-21
KGGC	ak	100	.....		San Francisco, Cal.	P—9-12:30
KGIW	ak	100	i		Alamosa, Colo.	M—Silent
KGIX	ak	100	P		Las Vegas, Nev.	M—Silent
KICK	z	100	.....		Carter Lake, Iowa	C—.....
KIDW	z	100	i		Lamar, Colo.	M—6-10; 12:30-15:30; 18-21
KORE	ae	100	.....		Eugene, Ore.	P—10-15; 18-21
KUMA	ak	100	.....		Yuma, Ariz.	M—11-12; 18-21
KXL	ae	100	4 (.25)		Portland, Ore.	P—8-24
WACO	ak	100	C		Waco, Texas	C—8-14; 17-22:30
WAGM	ae	100	.....		Presque Isle, Maine	E—10:30-0:30
WAZL	ak	100	2		Hazleton, Pa.	E—11-20
WEED	ak	100	D		Rocky Mount, N. C.	E—9-14
WEHS	ak	100	a		Cicero, Ill.	C—16-20
WELL	ak	50	.....		Battle Creek, Mich.	E—10-23
WGPC	ak	100	D		Albany, Ga.	C—8-14
WHDL	ak	100	D		Tupper Lake, N. Y.	E—11:15-14:15
WHFC	ae	100	a		Cicero, Ill.	C—7-16; 20-1
WJLM	aj	100	2		Wilmington, Del.	E—Silent
WJBO	z	100	D		Baton Rouge, La.	C—.....
WJMS	ak	100	.....		Ironwood, Mich.	C—10-19
WKBI	ak	100	a		Cicero, Ill.	C—Silent
WLAP	ak	100	(.25)		Lexington, Ky.	C—9-23
WLBK	ak	100	.....		Kansas City, Kans.	C—9-23
WLEU	z	100	DP		Erie, Pa.	E—.....
WMAS	ak	100	C (.25)		Springfield, Mass.	E—8-24
WMBC	ae	100	(.25)		Detroit, Mich.	E—9:30-24
WMBH	ak	100	(.25)		Joplin, Mo.	C—10-15:30; 19:30-21:30
WNRA	ak	100	D		Muscle Shoals, Ala.	C—9-13; 16-21
WPAD	ak	100		Paducah, Ky.	C—7-9; 10-14; 15-22:30
WSPA	ae	100	(.25)		Spartanburg, S. C.	E—10-22

KCY
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1430 kilocycles 209.7 meters

KECA ak 1000 (2.5)	Los Angeles, Calif.	P-7-23
KGNF ak 500 D	North Platte, Neb.	C-Silent
KWCR ak 250 B (.5)	Cedar Rapids, Iowa	C-8-24
WBNS ae 500 C (1)	Columbus, Ohio	E-8-24
WHEC ae 500 C (1)	Rochester, N. Y.	E-8-24
WHP ak 500 C (1)	Harrisburg, Pa.	E-9-1
WNBR ae 500	Memphis, Tenn.	C-9:30-12; 17-21
WOKO ae 500 C (1)	Albany, N. Y.	E-9-1

1440 kilocycles 208.2 meters

KDFN ak 500	Casper, Wyo.	M-10-11
KLS ae 250 D	Oakland, Calif.	P-10-16:30
KXYZ ak 500	Houston, Texas	C-8:15-13; 14:30-22
TIFS z 7.5 1441	Cartago, C. R.	C-.....
WBIG ae 500 C (1)	Greensboro, N. C.	E-8-23
WCBA aj 250 a	Allentown, Pa.	E-12-13:30; 18-23
WMBD ae 500 3C (1)	Peoria, Ill.	C-8-12; 20:30-24
WSAN aj 250 a	Allentown, Pa.	E-Silent
WTAD ak 500 3	Quincy, Ill.	C-12-13:30; 15:30-20:30

1450 kilocycles 206.8 meters

CFCT ae 50	Victoria, B. C.	P-11-12:30; 18:30-21
CKX ak 500 F	Brandon, Man.	C-18:45-20:30
KTBS ck 1000 N	Shreveport, La.	C-8-24
TIEP z 7.5	San Jose, C. R.	C-.....
WGAR ak 500 B (1)	Cleveland, Ohio	E-7-1
WHOM ae 250	Jersey City, N. J.	E-8-24
WSAR ae 250	Fall River, Mass.	E-Silent
WTFI ak 500	Athens, Ga.	E-9-14:30; 20-21:30

1460 kilocycles 205.4 meters

KSTP ae 10000 N (25)	St. Paul, Minn.	C-8-24
WJSV ak 10000 C	Washington, D. C.	E-8-1

1470 kilocycles 204.0 meters

WLAC ak 5000 C	Nashville, Tenn.	C-8-23:30
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1480 kilocycles 202.6 meters

KOMA ak 5000 C	Oklahoma City, Ok.	C-8-24
WKBW ae 5000 C	Buffalo, N. Y.	E-9:30-24

1490 kilocycles 201.2 meters

WCKY ae 5000 B	Covington, Ky.	E-8-24
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1500 kilocycles 199.9 meters

CHGS ae 50 F	Summerside, P.E.I.	A-11-13; 15-23
KDB ak 100 C	Santa Barbara, Calif.	P-8-24
KGFI ak 100 (.25)	Corpus Christi, Tex.	C-7-15; 18-22
KGFK ak 100	Moorhead, Minn.	C-9-21
KGKB ak 100	Tyler, Texas	C-9:15-13; 18:30-20
KGKY ck 100	Scottsbluff, Neb.	M-10-24
KNOW ak 100	Austin, Texas	C-9-14:30; 18-22
KOTN ak 100 D	Pine Bluff, Ark.	C-11-17:30
KPJM ak 100	Prescott, Ariz.	M-17:30-19
KPO ak 100	Wenatchee, Wash.	P-8:30-20:30
KREG ak 100	Santa Ana, Calif.	P-11-12:45; 19-23
KXO ae 100	El Centro, Calif.	P-9-15
WCNW ak 100 i (.25)	Brooklyn, N. Y.	E-9-11; 23-3
WDNC ak 100 C	Durham, N. C.	E-7:30-24
WGAL ae 100	Lancaster, Pa.	E-11-20
WHEF z 100 (.25)	Kosciusko, Miss.	C-6-24
WJBK ae 100	Detroit, Mich.	E-9-Sunset; 21-24
WKBW ae 100	E. Dubuque, Ill.	C-9-14
WKBV ak 100	Richmond, Ind.	C-Silent
WKBZ ak 100	Muskegon, Mich.	E-Silent
WKEU ak 100	LaGrange, Ga.	C-15-18
WMBQ ae 100 1	Brooklyn, N. Y.	E-7-23
WMEX z 100 P (.25)	Chelsea, Mass.	E-.....

INDEX BY LOCATIONS

WNBF	ae	100	.....	Binghamton, N. Y.	E-10:30-12; 13:30-21:30
WOPJ	ae	100	.....	Bristol, Tenn.	E-10:30-14; 16-21:15
WRDW	ak	100	.....	Augusta, Ga.	E-9:45-21:30
WRGA	ak	100	.....	Rome, Ga.	C-9:15; 18-21
WSYB	ak	100	.....	Rutland, Vt.	E-10-12
WWRL	ak	100	1 (.25)	Woodside, N. Y.	E-8-9; 11-19
WWSW	ae	100	(.25)	Pittsburgh, Pa.	E-10:30-23

1510 kilocycles 198.6 meters

CFRC	ak	100	.....	Kingston, Ont.	E-Silent
CKCR	ak	100	.....	Waterloo, Ont.	E-10-13; 17-22

1530 kilocycles 196.0 meters

WIXBS	z	1000	.....	Waterbury, Conn.	E-.....
W9XBZ	z	1000	.....	Kansas City, Mo.	C-8-1

1550 kilocycles 193.4 meters

W2XR	z	1000	Long Isl. City, N. Y.	E-Silent
W6XAI	z	1000	Bakersfield, Calif.	P-.....

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

<p>ALABAMA</p> <p>Birmingham</p> <p>WAPI 1140 1000 N</p> <p>WBRC 930 1000 C</p> <p>WSGN 1310 100</p> <p>Dothan</p> <p>WAGF 1370 100</p> <p>Gadsden</p> <p>WBJY 1210 100</p> <p>Huntsville</p> <p>WBHS 1200 100</p> <p>Mobile</p> <p>WALA 1380 500 C</p> <p>Montgomery</p> <p>WSFA 1410 500 C</p> <p>Muscle Shoals</p> <p>WNRA 1420 100</p> <p>ALASKA</p> <p>Anchorage</p> <p>KFQD 780 250</p> <p>Ketchikan</p> <p>KGBU 900 500</p> <p>ARIZONA</p> <p>Jerome</p> <p>KCRJ 1310 100</p> <p>Lowell</p> <p>KSUN 1200 100</p> <p>Phoenix</p> <p>KOY 1390 500</p> <p>KTAR 620 1000 N</p> <p>Prescott</p> <p>KPJM 1500 100</p> <p>Tucson</p> <p>KGAR 1370 100</p> <p>KVOA 1260 500</p> <p>Yuma</p> <p>KUMA 1420 100</p> <p>ARKANSAS</p> <p>Blytheville</p> <p>KLCN 1290 100</p> <p>Fayetteville</p> <p>KUOA 1260 1000</p> <p>Fort Smith</p> <p>KFPW 1210 100</p> <p>Hot Springs</p> <p>KTHS 1060 1000 N</p>	<p>Jonesboro</p> <p>KBTM 1200 100</p> <p>Little Rock</p> <p>KARK 890 250</p> <p>KGHI 1200 100</p> <p>KLRA 1390 1000 C</p> <p>Pine Bluff</p> <p>KOTN 1500 100</p> <p>Texarkana</p> <p>KCMC 1420 100</p> <p>CALIFORNIA</p> <p>Bakersfield</p> <p>KERN 1370 100 C</p> <p>W6XAI 1550 1000</p> <p>Berkeley</p> <p>KRE 1370 100</p> <p>Beverly Hills</p> <p>KMPC 710 500</p> <p>Burbank</p> <p>KELW 780 500</p> <p>El Centro</p> <p>KXO 1500 100</p> <p>Eureka</p> <p>KIEM 1210 100</p> <p>Fresno</p> <p>KMJJ 580 500 C</p> <p>Glendale</p> <p>KIEV 850 250</p> <p>Hollywood</p> <p>KFWB 950 1000</p> <p>KMTR 570 1000</p> <p>KNX 1050 50000</p> <p>Long Beach</p> <p>KFOX 1250 1000</p> <p>KGER 1360 1000</p> <p>Los Angeles</p> <p>KECA 1430 1000</p> <p>KFCF 1300 1000</p> <p>KFI 640 50000 N</p> <p>KFSG 1120 500</p> <p>KFVD 1000 250</p> <p>KGFJ 1200 100</p> <p>KHJ 900 1000 C</p> <p>KRDK 1120 500</p> <p>KTM 780 500</p> <p>Modesto</p> <p>KTRB 740 250</p> <p>Oakland</p> <p>KLS 1440 250</p>	<p>KLX 880 1000</p> <p>KROW 930 1000</p> <p>Pasadena</p> <p>KPPC 1210 50</p> <p>Sacramento</p> <p>KFBK 1310 100 C</p> <p>San Bernardino</p> <p>KFXM 1210 100</p> <p>San Diego</p> <p>KFSD 600 1000 N</p> <p>KGB 1330 1000 C</p> <p>San Francisco</p> <p>KFRC 610 1000 C</p> <p>KGCC 1420 100</p> <p>KGO 790 7500 N</p> <p>KJBS 1070 100</p> <p>KPO 680 50000 N</p> <p>KTAB 560 1000</p> <p>KYA 1230 1000 N</p> <p>San Jose</p> <p>KQW 1010 1000</p> <p>Santa Ana</p> <p>KREG 1500 100</p> <p>Santa Barbara</p> <p>KDB 1500 100 C</p> <p>Stockton</p> <p>KGDM 1100 250</p> <p>KWG 1200 100 C</p> <p>COLORADO</p> <p>Alamosa</p> <p>KGIW 1420 100</p> <p>Colorado Springs</p> <p>KVOR 1270 1000 C</p> <p>Denver</p> <p>KLZ 560 1000 C</p> <p>KOA 830 50000 N</p> <p>KPOF 880 500</p> <p>KVOD 920 500</p> <p>Grand Junction</p> <p>KFXJ 1200 100</p> <p>Greeley</p> <p>KFEA 880 500</p> <p>Lamar</p> <p>KIDW 1420 100</p> <p>Pueblo</p> <p>KGHF 1320 500</p> <p>Sterling</p> <p>KGEK 1200 100</p>	<p>CONNECTICUT</p> <p>Bridgeport</p> <p>WICC 600 250 C</p> <p>Hartford</p> <p>WDRG 1330 1000 C</p> <p>WTIC 1040 50000 R</p> <p>Storrs</p> <p>WCAC 600 500</p> <p>Waterbury</p> <p>WATR 1190 100</p> <p>WIXBS 1530 1000</p> <p>DELAWARE</p> <p>Wilmington</p> <p>WDEL 1120 250</p> <p>WILM 1420 100</p> <p>DISTRICT OF COLUMBIA</p> <p>Washington</p> <p>WJSV 1460 10000 C</p> <p>WMAL 630 250 B</p> <p>WOL 1310 100</p> <p>WRC 950 500 R</p> <p>FLORIDA</p> <p>Clearwater</p> <p>WFLA 620 1000 N</p> <p>Gainesville</p> <p>WRUF 830 5000</p> <p>Jacksonville</p> <p>WJAX 900 1000 N</p> <p>WMBR 1370 100 C</p> <p>Miami</p> <p>WIOD 1300 1000 N</p> <p>WQAM 560 1000 C</p> <p>Orlando</p> <p>WDBO 580 250 C</p> <p>Pensacola</p> <p>WCOA 1340 500</p> <p>St. Petersburg</p> <p>WSUN 620 1000 N</p> <p>Tampa</p> <p>WDAE 1220 1000 C</p> <p>GEORGIA</p> <p>Albany</p> <p>WGPC 1420 100</p> <p>Athens</p> <p>WTFI 1450 500</p>
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Atlanta	Tuscola	Wichita	Calumet		
WGST 890 500 C	WDZ 1070 100	KFH 1300 1000 C	WHDF 1370 100		
WJTL 1370 100	Urbana	KENTUCKY			
WSB 740 50000 N	WILL 890 250	Covington	WJBK 1500 100		
Augusta	Zion	WCKY 1490 5000 B	WJR 750 10000 B		
WRDW 1500 100	WCBD 1080 5000	Lexington	WMBC 1420 100		
Columbus	INDIANA				
WRBL 1200 100	Anderson	WLAP 1420 100	WWJ 920 1000 R		
LaGrange	WBHU 1210 100	Louisville	WXYZ 1240 1000		
WKEU 1500 100	Elkhart	WAVE 940 1000 N	East Lansing		
Mason	WTRC 1310 50	WHAS 820 50000 C	WKAR 1040 1000		
WMAZ 1180 1000	Evansville	WPAD 1420 100	Flint		
Rome	WGBF 630 500	LOUISIANA			
WRGA 1500 100	Fort Wayne	Baton Rouge	WFDF 1310 100		
Savannah	WGL 1370 100 C	WJBO 1420 100	Grand Rapids		
WTOC 1260 1000 C	WOWO 1160 10000 C	Monroe	WASH 1270 500		
Thomasville	Gary	KMLB 1200 100	WOOD 1270 500		
WQDX 1210 100	WIND 560 1000	New Orleans	Ironwood		
HAWAII					
Hilo	Hammond	WBNO 1200 100	WJMS 1420 100		
KWVF 1210 100	Indianapolis	WDSU 1250 1000 C	Jackson		
Honolulu	WFBM 1230 1000 C	WJBW 1200 100	WBIM 1370 100		
KGMB 1320 250 C	WKBF 1400 500 N	WSMB 1320 500 N	Kalamazoo		
KGU 750 2500 N	Muncie	WWL 850 10000	WKZO 590 1000		
IDAHO					
Boise	WLBC 1310 100	Shreveport	Lansing		
KIDO 1350 1000	Richmond	KRMD 1310 100	WJIM 1210 100		
Idaho Falls	WKBV 1500 100	KTBS 1450 1000 N	Lapeer		
KID 1320 250	South Bend	KWEA 1210 100	WMPC 1200 100		
Nampa	WFAM 1200 100	KWKH 1100 10000 C	Marquette		
KFXD 1200 100	WSBT 1360 500 C	MAINE			
Pocatello	Terre Haute	Augusta	WRDO 1370 100		
KSEI 900 250	WBOW 1310 100	Bangor	MINNESOTA		
Twln Falls	West Lafayette	WABI 1200 100	Fergus Falls		
KTFI 1240 500	WBAA 1400 500	WLBZ 620 500 C	KGDE 1200 100		
ILLINOIS					
Bloomington	IOWA	Portland	Minneapolis		
WJBC 1200 100	Ames	WCSH 940 1000 R	WCCO 810 50000 C		
Carthage	WOI 640 5000	Presque Isle	WDGY 1180 1000		
WCZA 1070 100	Boone	WAGM 1420 100	WLB 1250 1000		
Chicago	KFGQ 1370 100	MARYLAND			
KYW 1020 10000 N	Carter Lake	Baltimore	WTCN 1250 1000		
WAAF 920 500	KICK 1420 100	WBAL 1060 10000 B	Moorhead		
WBMM 770 25000 C	Cedar Rapids	WCAO 600 500 C	KGFK 1500 100		
WCFL 970 1500 B	KWCR 1430 250 B	WCBM 1370 100	Northfield		
WCRW 1210 100	Council Bluffs	WFBR 1270 500 R	WCAL 1250 2500		
WEDG 1210 100	KOIL 1260 1000 B	Cumberland	St. Paul		
WENR 870 50000 N	Decorah	WTBO 800 250	KSTP 1460 10000 N		
WGES 1360 500	KGCA 1270 100	Hagerstown	MISSISSIPPI		
WGN 720 50000	KWLK 1270 100	WJEJ 1210 100	Greenwood	WKFI 1210 100	
WJJD 1130 20000	Des Moines	MASSACHUSETTS		Gulfport	
WLS 870 50000 N	KSO 1320 250 B	Babson Park	WGCM 1210 100	Hattiesburg	
WMAQ 670 50000 N	WHO 1000 50000 R	WBSO 920 500	WPFB 1370 100	Jackson	
WMBI 1080 5000	Iowa City	Boston	WJDX 1270 1000 N	Kosciusko	
WSBC 1210 100	WSUI 880 500	WAAB 1410 500 C	WHEF 1500 100	Laurel	
Cicero	Marshalltown	WBZ 990 50000 B	WAML 1310 100	Meridian	
WEHS 1420 100	KFJB 1200 100	WEI 590 1000 R	WCOC 880 500	Tupelo	
WHFC 1420 100	Shenandoah	WHDH 830 1000	WJEM 990 500	Vicksburg	
WKBI 1420 100	KFNE 890 500	WNAC 1230 1000 C	WQBC 1360 500	MISSOURI	
Decatur	KMA 930 1000	Chelsea	Cape Girardeau	KEFS 1210 100	
WJBL 1200 100	Sloux City	WMEX 1500 100	Columbia	KFRU 630 500	
East Dubuque	KSCJ 1330 1000 C	Fall River	Jefferson City	WOS 630 500	
WKBB 1500 100	Waterloo	WSAR 1450 250	WJoplin	WMBH 1420 100	
Harrisburg	WMT 600 1000 C	Lowell	Kansas City	KMBC 950 1000 C	
WEBQ 1210 100	KANSAS			KWKC 1370 100	
Joliet	Abilene	WLLH 1370 100	WDAF 610 1000 R		
WCLS 1310 100	KFBI 1050 5000	New Bedford			
Peoria	Coffeyville	WNBH 1310 100			
WMBD 1440 500 C	KGGF 1010 1000	Springfield			
Quincy	Dodge City	WBZA 990 1000 B			
WTAD 1440 500	KGNO 1340 250	WMAS 1420 100 C			
Rockford	Kansas City	Worcester			
WROK 1410 500	WLBF 1420 100	WORC 1280 500 C			
Rock Island	Lawrence	WTAG 580 500 R			
WHBF 1210 100	KFKU 1220 1000	MICHIGAN			
Springfield	WREN 1220 1000 B	Battle Creek			
WCBS 1210 100	Manhattan	WELL 1420 50			
WTAX 1210 100	KSAC 580 500	Bay City			
	Topoka	WBCM 1410 500			
	WIBW 580 1000 C				

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KFEQ 680 2500	Albuquerque	Charlotte	OREGON
St. Louis	KGGM 1230 250	WBT 1080 5000 C	Corvallis
KFUO 550 500	KOB 1180 10000	WSOC 1210 100 N	KOAC 550 1000
KMOX 1090 50000 C	Clovis	Durham	Eugene
KSD 550 500 R	KICA 1370 100	WDNC 1500 100 C	KORE 1420 100
KWK 1350 1000 B	Roswell	Greensboro	Klamath Falls
WEW 760 1000	KGFL 1370 100	WBG 1440 500 C	KFJI 1210 100
WIL 1200 100	NEW YORK	Raleigh	Marshfield
Springfield	Albany	WPTF 680 5000 N	KOOS 1200 250
KGBX 1310 100	WOKO 1430 500 C	Rocky Mount	Medford
KWTO 560 1000	Auburn	WEED 1420 100	KMED 1310 100
MONTANA	Winston-Salem	WSJS 1310 100 C	Portland
Billings	WMB0 1310 100	NORTH DAKOTA	KALE 1300 500 C
KGHL 780 1000 N	Binghamton	Bismarck	KBPS 1420 100
Butte	WNBE 1500 100	KFYR 550 1000 N	KEX 1180 5000 N
KGIR 1360 1000 N	Brooklyn	Devils Lake	KFJR 1300 500
Great Falls	WARD 1400 500	KDLR 1210 100	KGW 620 1000 N
KFBF 1280 1000	WBBC 1400 500	Fargo	KOIN 940 1000 C
Kallspell	WBRR 1300 1000	WDAY 940 1000 N	KWJJ 1040 500
KGEZ 1310 100	WCNW 1500 100	Grand Forks	KXL 1420 100
Missoula	WLTH 1400 500	KFJM 1370 100	Salem
KGVO 1200 100	WMBO 1500 100	Mandan	KSLM 1370 100
Wolf Point	WFWF 1400 500	KGCU 1240 250	PENNSYLVANIA
KGCX 1310 100	Buffalo	Minot	Allentown
NEBRASKA	WBN 900 1000 R	KLPM 1240 250	WCBA 1440 250
Clay Center	WGR 1310 500	OHIO	WSAN 1440 250
KMMJ 740 1000	WKBW 1480 5000 C	Akron	Altoona
Kearney	WSVS 1370 50	WADC 1320 1000 C	WFBG 1310 100
KGFW 1310 100	Canton	WJW 1210 100	Erie
Lincoln	WCAD 1220 500	Canton	WLBW 1260 1000 C
KFAB 770 5000 C	Chester	WBHC 1200 100	WLEU 1420 100
KFOR 1210 109 C	WGNY 1210 100	Cincinnati	Glenside
Norfolk	WESG 1090 1000	WBE 1200 100	WIBG 970 100
WJAG 1060 1000	Freeport	WKRC 550 1000 C	Greensburg
North Platte	WGBB 1210 100	WLV 700 500000 N	WLJB 620 250
KGNE 1430 500	Hudson Falls	WSAI 1330 1000 R	Grove City
Omaha	WGLC 1370 100	Cleveland	WSAJ 1310 100
WAAW 660 500	Jamestown	WGAR 1450 500 B	Harrisburg
WOW 590 1000 R	WOCL 1210 50	WHK 1390 1000 C	WHP 1430 500 C
Scottsbluff	Long Island City	WJAY 610 500	WKBO 1200 100
KGKY 1500 100	W2XR 1550 1000	WTAM 1070 50000 R	Hazleton
York	New York	Columbus	WAZL 1420 100
KGBZ 930 1000	WABC 860 50000 C	WAIU 640 500	Johnstown
NEVADA	WBNX 1350 250	WBNS 1430 500 C	WJAC 1310 100
Las Vegas	WBOQ 860 50000	WOSU 570 750	Lancaster
KGIX 1420 100	WEAF 660 50000 R	WSEN 1210 100	WGAL 1500 100
Reno	WEVD 1300 1000	Dayton	WKJC 1200 100
KOH 1380 500 C	WFAB 1300 1000	WSMK 1380 200 C	Philadelphia
NEW HAMPSHIRE	WHN 1010 1000	Mount Orab	WCAU 1170 50000 C
Laconia	WINS 1180 1000	WBHD 1370 100	WDAS 1370 100
WLNH 1310 100	WJZ 760 50000 B	Toledo	WFI 560 500 R
Manchester	WLWL 1100 5000	WSPD 1340 1000 C	WHAT 1310 100
WFEA 1340 500 C	WMCA 570 500	Youngstown	WIP 610 500 C
Portsmouth	WNYC 810 500	WKBN 570 500 C	WLIT 560 500 R
WHBB 740 250	WOV 1130 1000	Zanesville	WPEN 920 500
NEW JERSEY	Rochester	WALR 1210 100	WRAX 920 500
Asbury Park	WHAM 1150 50000 B	OKLAHOMA	WTEL 1310 100
WCAP 1280 500	WHFC 1430 500 C	Ada	Pittsburgh
Atlantic City	Saranac Lake	KADA 1200 100	KDKA 980 50000 B
WPG 1100 5000 C	WNBZ 1290 50	Elk City	KQV 1380 500 C
Camden	Schenectady	KASA 1210 100	WCAE 1220 1000 R
WCAM 1280 500	WGY 790 50000 R	Enid	WJAS 1290 1000 C
Jersey City	Syracuse	KCRC 1370 100	WWSW 1500 100
WAAT 940 500	WFBL 1360 1000 C	Norman	..... 620 250
WHOM 1450 250	WSYR 570 250 B	WNAD 1010 500	Reading
Newark	Troy	Oklahoma City	WEU 830 1000
WHBI 1250 250	WHAZ 1300 500	KFXR 1310 100	WRAW 1310 100
WNEW 1250 1000	Thupper Lake	KGFG 1370 100	Scranton
WOR 710 5000	WHDL 1420 100	KOMA 1480 5000 C	WGBI 880 500
Red Bank	Utica	WKY 900 1000 N	WQAN 880 250
WRRB 1210 100	WIBX 1200 100	Ponca City	Sunbury
Trenton	White Plains	WBBZ 1200 100	WKOK 1210 100
WTNJ 1280 500	WFAS 1210 100	Shawnee	Washington
	Woodside	KGFF 1420 100	WNBO 1200 100
	WWRL 1500 100		

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Wilkes-Barre WBAX 1210 100 WBRE 1310 100 Williamsport WRAX 1370 100 York WORK 1320 1000	College Station WTAW 1120 500 Corpus Christi KGFI 1500 100 Dallas KRLD 1040 10000 C WFAA 800 50000 N WRR 1280 500 Dublin KFPL 1310 100 El Paso KTSM 1310 100 WDAH 1310 100 Fort Worth KFJZ 1370 100 KTAT 1240 1000 C WBAP 800 50000 N Galveston KLUF 1370 100 Greenville KFPM 1310 15 Houston KPRC 920 1000 N KTRH 1330 1000 C KXYZ 1440 500 Lubbock KPYO 1310 100 Port Arthur KPAC 1260 500 San Angelo KGKL 1370 100 San Antonio KABC 1420 100 KMAC 1370 100 KONO 1370 100 KOTSA 550 1000 C WOAI 1190 50000 N Tyler KGGK 1500 100 Waco WACO 1420 100 C Weslaco KRGV 1260 500 Wichita Falls KGGK 570 500 C	Richmond WBBL 1210 100 WMBG 1210 100 C WRVA 1110 5000 N Ronsoko WDBJ 930 1000 C WRBX 1410 250	Shohoygan WEHL 1410 500 Stevens Point WLBL 900 2500 Superior WEBC 1290 1000 N
PHILIPPINES Manila KZEG 720 1000 KZRM 618.5 50000		WASHINGTON Aberdeen KXRO 1310 100 Bellingham KVOS 1200 100 Everett KRKO 1370 50 Olympia KGY 1210 100 Pullman KWSC 1220 1000 Seattle KJR 970 5000 N KOL 1270 1000 C KOMO 920 1000 N KPCB 710 250 KRSC 1120 100 KTW 1220 1000 KVL 1370 100 KXA 760 250 Spokane KFIO 1120 100 KFPY 1340 1000 C KGA 900 1000 N KHQ 590 1000 N Tacoma KMO 1330 250 KVI 570 1000 C Walla Walla KUJ 1370 100 Wenatchee KPQ 1500 100 Yakima KIT 1310 100	WYOMING Casper KDFN 1440 500 Sheridan KWYO 1370 100
PORTO RICO San Juan WKAQ 1240 1000 WNEL 1290 500			CANADA
RHODE ISLAND Providence WEAN 780 500 C WJAR 890 500 R WPRO 630 250			ALBERTA
SOUTH CAROLINA Charleston WCSC 1360 500 Columbia WIS 1010 1000 N Greenville WFBC 1300 250 Spartanburg WSPA 1420 100			Calgary CFAC 930 100 F CFCN 1030 1000 F CJGJ 690 100 F Edmonton CFTF 1260 100 CJCA 730 500 F CKUA 580 500 Lethridge CJOC 1230 100 F
SOUTH DAKOTA Brookings KFDY 780 1000 Huron KGDY 1340 250 Pierre KGFY 630 200 Rapid City WCAT 1200 100 Sioux Falls KSOO 1110 1000 Vermillion KUSD 890 500 Watertown KWTN 1210 100 Yankton WNAX 570 1000 C			BRITISH COLUMBIA
TENNESSEE Bristol WOPI 1500 100 Chattanooga WDOD 1280 1000 C Jackson WTJS 1310 100 Knoxville WNOX 560 1000 C WROL 1310 100 Memphis WHBQ 1370 100 WMC 780 1000 N WNR 1430 500 WREC 600 1000 C Nashville WLAC 1470 5000 C WSM 650 50000 N Springfield WSIX 1210 100	UTAH Ogden KLO 1400 500 C Salt Lake City KDYL 1290 1000 N KSL 1130 50000 C		Chilliwack CHWK 780 100 F Kamloops CFJC 880 100 F Kelowna CKOV 630 100 F Trail CJAT 910 250 F Vancouver CJOR 600 500 CKCD 1010 100 CKFC 1410 50 CKMO 1410 100 CKWX 1010 100 CRCV 1100 1000 F Victoria CFCT 1450 50
TEXAS Amarillo KGRS 1410 1000 WDAG 1410 1000 Austin KNOW 1500 100 Beaumont KFDM 560 500	VERMONT Burlington WCAX 1200 100 Rutland WSYB 1500 100 St. Albans WODM 1370 100 Springfield WNBX 1260 500 Waterbury WDEV 550 500	WEST VIRGINIA Bluefield WHIS 1410 250 Charleston WCHS 580 500 Fairmont WMMN 890 250 Huntington WSAZ 1190 1000 Wheeling WWVA 1160 5000 C	MANITOBA Brandon CKX 1450 500 F Winnipeg CJRC 1390 100 CKY 960 15000 F
	VIRGINIA Arlington NAA 690 1000 Charlottesville WEHC 1350 500 Danville WBTM 1370 100 Lynchburg WLVA 1200 100 Newport News WGH 1310 100 Norfolk WTAR 780 500 N Petersburg WPHR 880 500	WISCONSIN Eau Claire WTAQ 1330 1000 Fond du Lac KFIZ 1420 100 Green Bay WBHY 1200 100 Janesville WCLO 1200 100 LaCrosse WKBH 1380 1000 Madison WHA 940 2500 WIBA 1280 1000 N Manitowoc WOMT 1210 100 Milwaukee WISN 1120 250 C WTMJ 620 1000 N Poynette WIBU 1210 100 Racine WRJN 1370 100	NOVA SCOTIA Glace Bay VAS 685 2000 Halifax CHNS 930 500 F Sydney CJCB 1240 1000 F Wolfville CKIC 1010 50 Yarmouth CJLS 1310 100
			ONTARIO Brantford CKPC 930 100 F 10-BQ 1200 15 Chatham CFCO 600 100 F Cobalt CKMC 1210 50

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Fort William		
CKPR 930	50	F
Hamilton		
CHML 1010	50	F
CKOC 1120	500	F
Kingston		
CFRC 1510	100	
Kirkland Lake		
CJKL 1310	100	
London		
CFPL 730	100	F
North Bay		
CFCH 930	100	F
Ottawa		
CKCO 1010	100	
CRCO 880	1000	F
Prescott		
CFLC 930	100	
St. Catharines		
CKTB 1200	100	F
Sault Ste. Marie		
CJIC 890	100	
Stratford		
10-AK 1200	15	
Timmins		
CKGB 1420	100	
Toronto		
CFRB 690	10000	C
CKCL 580	100	F
CKNC 1420	100	F
CRCT 840	5000	N
Waterloo		
CKCR 1510	100	
Windsor		
CKLW 1030	5000	C
Wingham		
10-BP 1200	25	
PRINCE EDWARD ISLAND		
Charlottetown		
CFCY 630	500	F
CHCK 1310	50	
Summerside		
CHGS 1500	50	F
QUEBEC		
Chicoutimi		
CRCS 950	100	F
Hull		
CKCH 1210	100	F
Montmagny		
VE9EK 1195	10	
Montreal		
CFCF 600	500	N
CHLP 1120	100	
CKAC 730	5000	C
CRGM 910	5000	F
New Carlisle		
CHNC 1210	100	F
Quebec		
CHRC 580	100	F
CKCV 1310	50	
CRCK 1050	1000	
SASKATCHEWAN		
Canora		
10-BU 1200	50	
Moose Jaw		
CHAB 1200	100	
CJRM 540	1000	F
Prince Albert		
CKBI 1210	100	F
Regina		
CHWC 1010	500	F
CKKC 1010	500	F
Saskatoon		
CFQC 840	1000	F
Yorkton		
CJGX 630	500	F

NEWFOUNDLAND		
St. John's		
VOAC 1300	40	
VOAS 940	100	
VOGY 840	400	
VOKW 1085	30	
VONF 1195	5000	
VOWR 681	500	
MIQUELON		
St. Pierre		
FQN 574	250	
CENTRAL AMERICA		
COSTA RICA		
Cartago		
TIFS 1441	7.5	
TIGA 1014	30	
San Jose		
TIGR 912	75	
TIEA 833	-7.5	
TIEP 1450	7.5	
TIFB 714	30	
TIGP 800	75	
TIRCA 1100	500	
TISO 550	250	
TITV 999	7.5	
TIVL 835	30	
TIXA 614	7.5	
GUATEMALA		
Guatemala City		
TGW 565	10000	
TGX 1400	150	
EL SALVADOR		
San Salvador		
RDN 680	500	
MEXICO		
AGUASCALIENTES		
Aguascalientes		
XFA 1310	5	
XFC 810	350	
BAJA CALIFORNIA		
Agua Caliente		
XEBC 760	5000	
Mexicali		
XEAA 920	200	
XEAO 560	250	
Tijuana		
XEAE 980	250	
XEMO 860	2000	
XEMZ 1210	30	
XEOK 920	2500	
CHIHUAHUA		
Chihuahua		
XEFI 720	250	
Juarez		
XEFV 1210	100	
XEJ 1020	250	
COAHUILA		
Piedras Negras		
XEPN 590	50000	
Saltillo		
XEOX 640	250	
Torreon		
XETB 1310	125	
D. F.		
Mexico City		
XEAI 1240	100	
XEAL 660	1000	
XEB 1030	10000	
XECW 1310	10	
XEFA 1180	500	
XEFG 1100	250	

XEFO 940	5000	
XEFZ 1370	100	
XEK 990	100	
XEN 710	1000	
XEO 940	5000	
XEP 820	500	
XETW 820	500	
XEW 890	50000	
XEWX 1150	100	
XEXX 850	500	
XEYZ 780	10000	
XFX 610	1000	
DURANGO		
Durango		
XEE 1210	50	
GUANAJUATO		
Leon		
XEAZ 1420	7	
XEKL 920	500	
JALISCO		
Guadalajara		
XEA 1060	125	
XED 1160	500	
MICHOACAN		
Morelia		
XEI 1370	125	
NUEVO LEON		
Monterrey		
XEFB 1420	100	
XEFJ 1210	100	
XEH 1150	250	
XET 690	500	
XEX 1310	125	
PUEBLA		
Puebla		
XETH 1210	100	
SAN LUIS POTOSI		
San Luis Potosi		
XEZZ 1370	100	
SONORA		
Nogales		
XEAF 1080	250	
TAMAULIPAS		
Nuevo Laredo		
XEAM 750	50	
XEFE 1370	100	
XENT 1120	50000	
Reynosa		
XEAW 950	10000	
Tampico		
XEFW 1310	250	
XEMA 1080	50	
XES 970	250	
VERACRUZ		
Jalapa		
XFB 1270	250	
Orizaba		
XFD 1340	350	
Veracruz		
XEU 980	250	
YUCATAN		
Merida		
XEFC 1310	100	
WEST INDIES		
CUBA		
Calbarion		
CMHD 950	250	
Camaguey		
CMJC 1382	150	
CMJE 1170	50	
CMJF 930	200	
CMJG 1050	50	
CMJK 790	150	
CMJL 960	50	

Cardenas		
CMGE 1375	30	
Ciego de Avila		
CMJH 1150	50	
CMJI 1210	150	
CMJO 1010	50	
Cienfuegos		
CMHJ 1125	40	
CMHW 910	100	
Colon		
CMGI 1094	30	
Cruces		
CMHK 1225	50	
Guantanamo		
CMKJ 1300	20	
Havana		
CMAF 680	1000	
CMBC 1270	150	
CMBD 1010	150	
CMBG 1060	225	
CMBS 780	150	
CMBX 1185	150	
CMBY 965	250	
CMBZ 1010	100	
CMC 835	500	
CMCA 1230	150	
CMCB 1060	150	
CMCD 925	250	
CMCF 780	250	
CMCG 1140	150	
CMCJ 1185	400	
CMCN 1375	250	
CMCO 1145	150	
CMCP 1270	150	
CMCQ 680	1000	
CMCR 1375	150	
CMCU 1100	150	
CMCV 965	150	
CMCY 1316	500	
CMK 730	3150	
CMQ 645	340	
CMW 595	1400	
CMX 890	1000	
COA 890	500	
COK 1230	250	
COX 1100	200	
Holguin		
CMKF 1363	30	
Manzanillo		
CMKM 940	100	
Matanzas		
CMGF 987	100	
CMGH 1040	15	
Moron		
CMJP 1360	75	
Sagua la Grande		
CMHA 1103	50	
San Spiritus		
CMHB 1245	30	
Santa Clara		
CMHI 1037	150	
Santiago		
CMKC 1034	150	
DOMINICAN REPUBLIC		
San Pedro de Marcoris		
HIH 1395	15	
Santo Domingo		
HIJ 1195	15	
HIX 1270	1000	
HIZ 1300	10	
HAITI		
Port-au-Prince		
HHK 920	1000	

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CFAC 930 100	Calgary, Alta. Calgary Herald, Southam Bldg.	CJRC 1390 100	Winnipeg, Man. Royal Alexandra Hotel
CFCF 600 500	Montreal, Que. Mt. Royal Hotel	CJRM 540 1000	Moose Jaw, Sask. 311 Main St. No.
CFCH 930 100	North Bay, Ont. Capitol Theatre Bldg.	CKAC 730 5000	Montreal, Que. 980 St. Catherine St. W.
CFCN 1030 10000	Calgary, Alta. Toronto Gen. Trust Bldg.	CKBI 1210 100	Prince Albert, Sask. Canada Bldg.
CFCO 600 100	Chatham, Ont. Wm. Pitt Hotel	CKCD 1010 100	Vancouver, B. C. 142 Hastings St. W.
CFCT 1450 50	Victoria, B. C. 620 View St.	CKCH 1210 100	Hull, Que. Standish Hall Hotel
CFCY 630 500	Charlottetown, P.E.I. 143 Great George St.	CKCK 1010 500	Regina, Sask. 1853 Hamilton St.
CFJC 880 100	Kamloops, B. C. Wilcox-Hall Bldg.	CKCL 580 100	Toronto, Ont. 444 University Ave.
CFLC 930 100	Prescott, Ont. Victoria Hall	CKCO 1010 100	Ottawa, Ont. 272 Somerset St. W.
CFNB 550 500	Fredericton, N. B. York St.	CKCR 1510 100	Waterloo, Ont. 24 King St. So.
CFPL 730 100	London, Ont. Richmond St.	CKCV 1310 50	Quebec, Que. 254 Ave. Marguerite
CFQC 840 1000	Saskatoon, Sask. 216 First Ave., No.	CKCW 1370 100	Moncton, N. B. Moncton Brdcastg. Co., Ltd.
CFRB 690 10000	Toronto, Ont. 37 Bloor St. W.	CKFC 1410 50	Vancouver, B. C. Hemlock & 12th Ave.
CFRC 1510 100	Kingston, Ont. Queens University	CKGB 1420 100	Timmins, Ont. R. H. Thompson, Press Bldg.
CFTP 1260 100	Edmonton, Alta. Birks Bldg.	CKIC 1010 50	Wolfville, N. S. Acadia University
CHAB 1200 100	Moose Jaw, Sask. Grant Hall Hotel	CKLW 1030 5000	Windsor, Ont. Guaranty Trust Bldg.
CHCK 1310 50	Charlottetown, P.E.I. 36 Upper Hillsboro St.	CKMC 1210 50	Cobalt, Ont. R. L. MacAdam
CHGS 1500 50	Summerside, P. E. I. 190 Water St.	CKMO 1410 100	Vancouver, B. C. 1604 Bekins Bldg.
CHLP 1120 100	Montreal, Que. Sun Life Bldg.	CKNC 1420 100	Toronto, Ont. 805 Davenport Road
CHML 1010 50	Hamilton, Ont. 47 Main St. E.	CKOC 1120 500	Hamilton, Ont. Wentworth Bldg.
CHNC 1210 100	New Carlisle, Que. Dr. Charles Houde	CKOV 630 100	Kelowna, B. C. Okanagan Broadcasters, Ltd., Box 243
CHNS 930 500	Halifax, N. S. Lord Nelson Hotel	CKPC 930 100	Brantford, Ont. Arcade Bldg.
CHRC 580 100	Quebec, Que. CHRC, Ltd., Victoria Hotel	CKPR 930 50	Fort William, Ont. Royal Edward Hotel
CHSJ 1120 100	St. John, N. B. Admlral Beatty Hotel	CKTB 1200 100	St. Catharines, Ont. E. T. Sandell, Welland House
CHWC 1010 500	Regina, Sask. Kitchener Hotel	CKUA 580 500	Edmonton, Alta. University of Alberta.
CHWK 780 100	Chilliwack, B. C. Wellington Ave.	CKWX 1010 100	Vancouver, B. C. Hotel Georgia
CJAT 910 250	Trail, B. C. Trail Amateur Radio Assn.	CKX 1450 500	Brandon, Man. Rosser Ave.
CJCA 730 500	Edmonton, Alta. 10122—100A St.	CKY 960 15000	Winnipeg, Man. Sherbrooke St.
CJCB 1240 1000	Sydney, N. S. 318 Charlotte St.	CMAF 680 1000	Havana, Cuba 1 y 8 Rept. Miramar
CJCJ 690 100	Calgary, Alta. New Albertan Bldg.	CMBC 1270 150	Havana, Cuba Domingo Fernandez, Maximo Gomez No. 139.
CJGX 630 500	Yorkton, Sask. 188 Grain Exchange Bldg.	CMBD 1010 150	Havana, Cuba Luis Perez Garcia, Centre Gallego
CJIC 890 100	S. Ste. Marie, Ont. 72 Pine St.	CMBG 1060 225	Havana, Cuba John L. Stowers, Hospital No. 100
CJKL 1310 100	Kirkland Lake, Ont. O. J. Thorpe	CMBS 780 150	Havana, Cuba Calzada y H. St., Vedado
CJLS 1310 100	Yarmouth, N. S. Laurie L. Smith, Grand Hotel	CMBX 1185 150	Havana, Cuba Alberto Alvarez, Belascoain No. 32
CJOC 1230 100	Lethbridge, Alta. Marquis Hotel	CMBY 965 250	Havana, Cuba Infanta 132 esq-Jevellar
CJOR 600 500	Vancouver, B. C. G. C. Chandler, Hotel Grosvenor	CMBZ 1010 100	Havana, Cuba Manuel y G. Salas, San Rafael No. 14

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CMC 835 500 Havana, Cuba Agulla y Dragones
CMCA 1230 150 Havana, Cuba J. M. Gonzales, Gallano No. 102
CMCB 1060 150 Havana, Cuba Metropolitan Bldg.
CMCD 925 250 Havana, Cuba Calle G y 25, Vedado
CMCF 780 250 Havana, Cuba Raoul Karman, P. O. Box 647
CMCG 1140 150 Havana, Cuba Emilie Perera, San Miguel No. 62
CMCJ 1185 400 Havana, Cuba Rafael Rodriguez, Estevez No. 4
CMCN 1375 250 Havana, Cuba Reina y Ave. Buen Ritiro, Marianao
CMCO 1145 150 Havana, Cuba Ass. Detes. del Comercio
CMCP 1270 150 Havana, Cuba Calzada de Luyane No. 132
CMCQ 680 1000 Havana, Cuba Vista Alegre No. 80, Vibora
CMCR 1375 150 Havana, Cuba Milagros No. 35, Vibora
CMCU 1100 150 Havana, Cuba San Francisco No. 13, Vibora
CMCW 965 150 Havana, Cuba Gallano y San Lazaro Sts.
CMCY 1316 500 Havana, Cuba Manuel D. Autran, Calle G 215, Vedado
CMGE 1375 30 Cardenas, Cuba Genaro Sebatier, Cespedes No. 180
CMGF 987 100 Matanzas, Cuba G. Betancourt No. 51
CMGH 1040 15 Matanzas, Cuba B. Byrne No. 113
CMGI 1094 30 Colon, Cuba Armando Llanza, Marti No. 35
CMHA 1103 50 Sagua Grande, Cuba Abelardo Menocal, Carrillo No. 1
CMHB 1245 30 San Spiritus, Cuba Independencia No. 33
CMHD 950 250 Calbarien, Cuba Manuel Alvarez, M. Escobar 17
CMHI 1037 150 Santa Clara, Cuba Lavis y Paz, Independencia No. 34
CMHJ 1125 40 Cienfuegos, Cuba Romualde Ugalde, Hotel Bristol
CMHK 1225 50 Cruces, Cuba Heredia No. 61
CMHW 910 100 Cienfuegos, Cuba Arguelles No. 200
CMJC 1382 150 Camaguey, Cuba Feliciano Isaac, Cisneros y G. Gomez
CMJE 1170 50 Camaguey, Cuba Manuel Fernandez, Hnos. Aguerre No. 2
CMJF 930 200 Camaguey, Cuba John L. Stowers, Republica No. 88
CMJG 1050 50 Camaguey, Cuba Jose Antonio Lefran, Maceo No. 1
CMJH 1150 50 Ciego de Avila, Cuba Luis Maraurel, Vista Hermosa
CMJI 1210 150 Ciego de Avila, Cuba Gilberto Gessa Lopez, Independencia 95
CMJK 790 150 Camaguey, Cuba Cia. Nacional de Radio, Finlay
CMJL 960 50 Camaguey, Cuba Enrique Artime, Cuba No. 27
CMJO 1010 50 Ciego de Avila, Cuba Jose M. Rey, C. Centra l & Maceo
CMJP 1360 75 Moron, Cuba Cesar Canall, Callejas No. 28

CMK 730 3150 Havana, Cuba Hotel Plaza
CMKC 1034 150 Santiago, Cuba J. A. Saco, Alta 23
CMKF 1363 30 Holguin, Cuba Libertad esq. Arlas
CMKJ 1300 20 Guantanamo, Cuba Luis Morlote, East Giro 11
CMKM 940 100 Manzanillo, Cuba Jesus Armeste, Merchant y P. Figuerado
CMQ 645 340 Havana, Cuba 25 Numero 445, Vedado
CMW 595 1400 Havana, Cuba Troncoso y Gil, Apdo. 1010
CMX 890 1000 Havana, Cuba Casa "Lavin," Ave. de la Republica 99A
COA 890 500 Havana, Cuba Juan Fernandez, Aguilar 126, Altes
COK 1230 250 Havana, Cuba Rafael Valdez, Marques Gonzales 52
COX 1100 200 Havana, Cuba 10 entre 17 y 19, Vedado
CRCK 1050 1000 Quebec, Que. Chateau Frontenac Hotel
CRCM 910 5000 Montreal, Que. 1231 St. Catherine St. W.
CRCO 880 1000 Ottawa, Ont. Chateau Laurier Hotel
CRCS 950 100 Chicoutimi, Que. 4 Rue Larouche
CRCT 840 5000 Toronto, Ont. 805 Davenport Road
CRCV 1100 1000 Vancouver, B. C. C. N. R. Station Bldg.
FQN 574 250 St. Pierre, Miq.
HHK 920 1000 Port-au-Prince, Haiti Haitian Government
HIH 1395 15 San Pedro de M., D.R. Domingo Dominguez
HIJ 1195 15 Santo Domingo, D. R. Tuto Baez, Hostos 34
HIX 1270 1000 Santo Domingo, D. R. J. R. Saladin, Director General
HIZ 1300 10 Santo Domingo, D. R. Abbes and Garcia
KABC 1420 100 San Antonio, Texas Texas Theatre Bldg.
KADA 1200 100 Ada, Okla. C. C. Morris
KALE 1300 500 Portland, Ore. Kale, Inc., New Heathman Hotel
KARK 890 250 Little Rock, Ark. N. S. L. Bldg.
KASA 1210 100 Eik City, Okla. E. M. Woody, Casa Grande Hotel
KBPS 1420 100 Portland, Ore. E. 12th & Hoyt Sts.
KBTM 1200 100 Jonesboro, Ark. Jay P. Beard
KCMC 1420 100 Texarkana, Ark. M. P. Mims, Box 865
KCRC 1370 100 Enid, Okla. Enid Radlophone Co., Oxford Hotel
KCRJ 1310 100 Jerome, Ariz. Chas. C. Robinson, Drawer D.
KDB 1500 100 Santa Barbara, Calif. 15-17 E. Haley St.
KDFN 1440 500 Casper, Wyo. Donald Lewis Hathaway
KDKA 980 5000 Pittsburgh, Pa. Hotel Wm. Penn

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KDLR 1210 100 Devils Lake, N. D. KDLR, Inc., 1025 3rd Street	KFSD 600 1000 San Diego, Calif. U. S. Grant Hotel
KDYL 1290 1000 Salt Lake City, Utah Ezra Thompson Bldg.	KFSG 1120 500 Los Angeles, Calif. 1100 Glendale Blvd.
KECA 1430 1000 Los Angeles, Calif. 1000 S. Hope St.	KFUO 550 500 St. Louis, Mo. 801 De Mun St.
KLW 780 500 Burbank, Calif. 3702 Magnolia Park Blvd.	KFVD 1000 250 Los Angeles, Calif. E. L. Cord, 645 S. Mariposa
KERN 1370 100 Bakersfield, Calif. Elk's Club	KFVS 1210 100 Cape Girardeau, Mo. Oscar C. Hirsch, Box 275
KEX 1180 5000 Portland, Ore. Oregonian Bldg.	KFWB 950 1000 Hollywood, Calif. Warner Bros. Motion Pictures, Inc.
KFAB 770 5000 Lincoln, Neb. Cornhusker Hotel	KFXD 1200 100 Nampa, Idaho Frank E. Hurt, 1024 12th Ave., S.
KFAC 1300 1000 Los Angeles, Calif. E. L. Cord, 645 So. Mariposa	KFXJ 1200 100 Grand Jct., Colo. Hillcrest Manor
KFBB 1280 1000 Great Falls, Mont. Buttrey Broadcast., Inc.	KFXM 1210 100 San Bernardino, Calif. California Hotel
KFBI 1050 5000 Abilene, Kans. Box 345	KFXR 1310 100 Oklahoma City, Okla. 541 Hightower Bldg.
KFBK 1310 100 Sacramento, Calif. Sacramento Bee	KFYO 1310 100 Lubbock, Texas Kirksey Bros., Hotel Lubbock
KFDM 560 500 Beaumont, Texas Beaumont Hotel, P. O. Box 2950	KFYR 550 1000 Bismarck, N. D. 320 Broadway
KFDY 780 1000 Brookings, S. D. South Dakota State College	KGA 900 1000 Spokane, Wash. 1023 W. Riverside Ave.
KFEQ 680 2500 St. Joseph, Mo. Schneider Bldg.	KGAR 1370 100 Tucson, Ariz. 142 S. 6th Ave.
KFGQ 1370 100 Boone, Iowa 924 W. 2nd St.	KGB 1330 1000 San Diego, Calif. 1012—1st St.
KFH 1300 1000 Wichita, Kans. 124 1/2 S. Market St.	KGBU 900 500 Ketchikan, Alaska Mile 5, Wards Cove Rd.
KFI 640 50000 Los Angeles, Calif. 1000 S. Hope St.	KGBX 1310 100 Springfield, Mo. KGBX, Inc., C. of C. Bldg.
KFIO 1120 100 Spokane, Wash. 213 Riverside Ave.	KGBZ 930 1000 York, Neb. KGBZ Broadcasting Co., 715 Grant Ave.
KFIZ 1420 100 Fond du Lac, Wis. 18 W. 1st St.	KGCA 1270 100 Decorah, Iowa Charles W. Greenley, 201 Water St.
KFJB 1200 100 Marshalltown, Iowa 1603 W. Main St.	KGCU 1240 250 Mandan, N. D. 404 W. Main St.
KFJI 1210 100 Klamath Falls, Ore. KFJI Broadcasters, Inc., Willard Hotel	KGCX 1310 100 Wolf Point, Mont. E. E. Krebsbach.
KFJM 1370 100 Grand Forks, N. D. University of North Dakota	KGDE 1200 100 Fergus Falls, Minn. C. L. Jaren
KFJR 1300 500 Portland, Ore. 622 Lumbermen's Bldg.	KGDM 1100 250 Stockton, Calif. E. F. Pepper, 42 S. Calif. St.
KFJZ 1370 100 Fort Worth, Texas Texas Hotel	KGDY 1340 250 Huron, S. D. Voice of S. D., Inc., 347 Dakota Ave.
KFKA 880 500 Greeley, Colo. Box 735	KGEK 1200 100 Sterling, Colo. Elmer G. Beehler, 109 W. 2nd St.
KFKU 1220 1000 Lawrence, Kans. University of Kansas	KGER 1360 1000 Long Beach, Calif. 435 Pine Ave.
KFNF 890 500 Shenandoah, Iowa 407 Sycamore St.	KGEZ 1310 100 Kalispell, Mont. Donald C. Treloar, Box 1
KFOR 1210 100 Lincoln, Neb. Howard Shuman, Hotel Lincoln	KGFF 1420 100 Shawnee, Okla. 9th & Bell Sts.
KFOX 1250 1000 Long Beach, Calif. 220 E. Anaheim St.	KGFG 1370 100 Oklahoma City, Okla. Okla. Broadcasting Co., 1113 N. Broadway
KFPL 1310 100 Dublin, Texas C. C. Baxter, Box 176	KGFI 1500 100 Corpus Christi, Texas Eagle Broadcasting Co., Inc., P. O. Box 1508
KFPM 1310 15 Greenville, Texas New Furniture Co.	KGfJ 1200 100 Los Angeles, Calif. Ben S. McGlashan, 1417 S. Figueroa.
KFPW 1210 100 Fort Smith, Ark. Goldman Hotel	KGFK 1500 100 Moorhead, Minn. 722 Center Ave.
KFPY 1340 1000 Spokane, Wash. Symons Bldg.	KGFL 1370 100 Roswell, N. M. KGFL, Inc., 507 N. Main St.
KFQD 780 250 Anchorage, Alaska 411—4th Ave.	KGFW 1310 100 Kearney, Neb. Midway Hotel
KFRC 610 1000 San Francisco, Calif. 1000 Van Ness Ave.	KGFX 630 200 Pierre, S. D. Dana McNell, 510 Summit Ave.
KFRU 630 500 Columbia, Mo. KFRU, Inc., 9th and Elm Sts.	KGGC 1420 100 San Francisco, Calif. 230 Eddy St.

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KGGF 1010 1000 Coffeyville, Kans. Coffeyville Journal Bldg.	KLRA 1390 1000 Little Rock, Ark. Arkansas Broadcasting Co., Box 550
KGGM 1230 250 Albuquerque, N. M. Franciscan Hotel	KLS 1440 250 Oakland, Calif. Warner Bros., 2201 Telegraph Ave.
KGHF 1320 250 Pueblo, Colo. C. P. Ritchie, 113 Broadway	KLUF 1370 100 Galveston, Texas Geo. R. Clough, 3327 Ave. P.
KGHI 1200 100 Little Rock, Ark. Lloyd Judd Co., Marion Hotel	KLX 880 1000 Oakland, Calif. Tribune Tower
KGHL 780 1000 Billings, Mont. 5th & N. Broadway	KLZ 560 1000 Denver, Colo. Shirley-Savoy Hotel
KGIR 1360 1000 Butte, Mont. KGIR, Inc., 121 W. Broadway	KMA 930 500 Shenandoah, Iowa Earl E. May Seed & Nursery Co.
KGIW 1420 100 Alamosa, Colo. Leonard E. Wilson, 328 N. Commercial	KMAC 1370 190 San Antonio, Texas W. W. McAllister, Blue Bonnet Hotel
KGIX 1420 100 Las Vegas, Nev. J. M. Heaton, Box 656	KMBC 950 1000 Kansas City, Mo. Plekwick Hotel
KGKB 1500 100 Tyler, Texas 115 S. College	KMED 1310 100 Medford, Ore. Mrs. W. J. Virgin, Sparta Bldg.
KGKL 1370 100 San Angelo, Texas KGKL, Inc., St. Angelus Hotel	KMJ 580 500 Fresno, Calif. Van Ness & Calaveras Sts.
KGKO 570 500 Wichita Falls, Texas 9th St. & Indiana Ave.	KMLB 1200 100 Monroe, La. Francis Hotel
KGKY 1500 100 Scottsbluff, Neb. Hilliard Co., Inc., 1517 1/2 Broadway	KMMJ 740 1000 Clay Center, Neb. The M. M. Johnson Co.
KGMB 1320 250 Honolulu, T. H. Honolulu Broadcasting Co., Box 2663	KMO 1330 250 Tacoma, Wash. KMO, Inc., Hotel Winthrop
KGNF 1430 500 North Platte, Neb. Great Plains Broadcasting Co., W. 12th St.	KMOX 1090 50000 St. Louis, Mo. 401 S. 12th St.
KGNO 1340 250 Dodge City, Kans. First Natl. Bank Bldg.	KMPC 710 500 Beverly Hills, Calif. 9631 Wilshire Blvd.
KGO 790 7500 San Francisco, Calif. 111 Sutter St.	KMTR 570 500 Hollywood, Calif. KMTR Radio Corp., 915 N. Formosa Ave.
KGRS 1410 1000 Amarillo, Texas E. B. Gish, Bellaire Park	KNOW 1500 100 Austin, Texas Driskill Hotel
KGU 750 2500 Honolulu, T. H. Kaplolan at South St.	KNX 1050 25000 Hollywood, Calif. West. Broadcast Co., Inc., 1558 N. Vine St.
KGVO 1200 100 Missoula, Mont. Mosbys, Inc., 240 N. Higgins	KOA 830 50000 Denver, Colo. General Electric Co., 1370 Krameria St.
KGW 620 1000 Portland, Ore. 325 Adler St.	KOAC 550 1000 Corvallis, Ore. Oregon State Agricultural College
KGY 1210 100 Olympia, Wash. KGY, Inc., 11th and Capitol Way	KOB 1180 10000 Albuquerque, N. M. Albuquerque Journal, Box 667
KHJ 900 1000 Los Angeles, Calif. 7th at Bixel	KOH 1380 500 Reno, Nev. 440 N. Virginia St.
KHQ 590 1000 Spokane, Wash. Sprague Ave. & Post St.	KOIL 1260 1000 Council Bluffs, Iowa Mona Motor Oil Co.
KICA 1370 100 Clovis, N. M. Southwest Broadcasting Co.	KOIN 940 1000 Portland, Ore. KOIN, Inc., New Heathman Hotel
KICK 1420 100 Carter Lake, Iowa Red Oak Radio Corp.	KOL 1270 1000 Seattle, Wash. Northern Life Tower
KID 1320 250 Idaho Falls, Idaho Park Ave. & Broadway	KOMA 1480 5000 Oklahoma City, Okla. Biltmore Hotel
KIDO 1350 1000 Boise, Idaho Hotel Boise	KOMO 920 1000 Seattle, Wash. Skinner Bldg.
KIDW 1420 100 Lamar, Colo. Lamar Broadcasting Co., Box 688	KONO 1370 100 San Antonio, Texas Mission Broadcast. Co., St. Anthony Hotel
KIEM 1210 100 Eureka, Calif. Redwood Bdestg. Co., Vance Hotel	KOOS 1200 250 Marshfield, Ore. H. H. Hanseth, Hall Bldg.
KIEV 850 250 Glendale, Calif. Cannon System, Ltd., Glendale Hotel	KORE 1420 100 Eugene, Ore. 733 Willamette St.
KIT 1310 100 Yakima, Wash. 109 1/2 E. Yakima Ave.	KOTN 1500 100 Pine Bluff, Ark. William H. Chaplin, Hotel Pines
KJBS 1070 100 San Francisco, Calif. 1380 Bush St.	KPAC 1260 500 Port Arthur, Texas Port Arthur College
KJR 970 5000 Seattle, Wash. Skinner Bldg.	KOY 1390 500 Phoenix, Ariz. 621 N. Central Ave.
KLCN 1290 100 Blytheville, Ark. C. L. Lintzenich, Main and Division St.	KPCB 710 100 Seattle, Wash. Tower Bldg.
KLO 1400 500 Ogden, Utah 405—25th St.	KPJM 1500 100 Prescott, Ariz. Scott & Sturm, P. O. Box 782
KLPM 1240 250 Minot, N. D. John B. Cooley, Box 707	KPO 680 50000 San Francisco, Calif. 111 Sutter St.

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KPOF 880 500 Denver, Colo. Pillar Of Fire, 1845 Champa St.	KTUL 1400 250 Tulsa, Okla. National Bank of Tulsa Bldg.
KPPC 1210 50 Pasadena, Calif. 585 E. Colorado St.	KTW 1220 1000 Seattle, Wash. 77th Ave. & Spring St.
KPQ 1500 100 Wenatchee, Wash. KPQ Bldg.	KUJ 1370 100 Walla Walla, Wash. KUJ, Inc., Marcus Whitman Hotel
KPRC 920 1000 Houston, Texas 2204 Shell Bldg.	KUMA 1420 100 Yuma, Ariz. Dr. A. H. Sehermann, Box 267
KQV 1380 500 Pittsburgh, Pa. KQV Broadcasting Co., Investment Bldg.	KUOA 1260 1000 Fayetteville, Ark. KUOA, Inc., Washington Hotel
KQW 1010 1000 San Jose, Calif. 87 E. San Antonio St.	KUSD 890 500 Vermillion, S. D. University of South Dakota
KRE 1370 100 Berkeley, Calif. 2345 Channing Way	KVI 570 1000 Tacoma, Wash. W. R. Rust Bldg.
KREG 1500 100 Santa Ana, Calif. 3rd & Sycamore Sts.	KVL 1370 100 Seattle, Wash. KVL, Inc., 5th and Virginia St.
KRGV 1260 500 Weslaco, Texas KRGV, Inc.	KVOA 1260 500 Tucson, Ariz. Cons. Natl. Bank Bldg.
KRKD 1120 500 Los Angeles, Calif. 815 Spring Arcade Bldg.	KVOD 920 500 Denver, Colo. Continental Oil Bldg.
KRKO 1370 50 Everett, Wash. Lee Mudgett, 2814 Rucker Ave.	KVOO 1140 25000 Tulsa, Okla. Wright Bldg.
KRLD 1040 10000 Dallas, Texas KRLD Radio Corp., Adolphus Hotel	KVOR 1270 1000 Colorado Spgs., Colo. Mining Exchange Bldg.
KRMD 1310 100 Shreveport, La. Jefferson Hotel	KVOS 1200 100 Bellingham, Wash. 115 W. Magnolia St.
KROW 930 500 Oakland, Calif. 1803 Franklin St.	KWCR 1430 250 Cedar Rapids, Iowa Hotel Montrose
KRSC 1120 100 Seattle, Wash. Radio Sales Corp., Washington Athletic Club	KWEA 1210 100 Shreveport, La. Spring & Fannin Sts.
KSAC 580 500 Manhattan, Kans. State College of Agriculture	KWFV 1210 100 Hilo, Hawaii Hilo Broadcasting Co., Ltd.
KSCJ 1330 1000 Sioux City, Iowa Perkins Bros. Co., 415 Douglas St.	KWG 1200 100 Stockton, Calif. Medico-Dental Bldg.
KSD 550 500 St. Louis, Mo. 12th & Olive Sts.	KWJJ 1040 500 Portland, Ore. 622 S. W. Salmon St.
KSEI 900 250 Pocatello, Idaho Radio Service Corp., 141 S. 6th Ave.	KWK 1350 1000 St. Louis, Mo. Thomas Patrick, Inc., Hotel Chase
KSL 1130 50000 Salt Lake City, Utah Vermont Bldg.	KWKK 1370 100 Kansas City, Mo. 39th & Main Sts.
KSLM 1370 100 Salem, Ore. Oregon Radio, Inc.	KWKH 1100 10000 Shreveport, La. Spring & Fannin Sts.
KSO 1320 250 Des Moines, Iowa Des Moines Register & Tribune	KWLC 1270 100 Decorah, Iowa Luther College
KSOO 1110 1000 Sioux Falls, S. D. Sioux Falls Brdcast. Assn., Carpenter Hotel	KWSC 1220 1000 Pullman, Wash. State College of Washington
KSTP 1460 10000 St. Paul, Minn. St. Paul Hotel	KWTN 1210 100 Watertown, S. D. Citizens Bank Bldg.
KSUN 1200 100 Lowell, Ariz. Copper Electrical Co., Drawer C	KWTO 560 1000 Springfield, Mo. KGBX Inc.
KTAB 560 1000 San Francisco, Calif. 5th & Mission Sts.	KWYO 1370 100 Sheridan, Wyo. Big Horn Brdcastg. Co.
KTAR 620 1000 Phoenix, Ariz. 116 N. Central Ave.	KXA 760 250 Seattle, Wash. American Radio Tel. Co., 218 Bigelow Bldg.
KTAT 1240 1000 Fort Worth, Texas Ft. Worth Natl. Bank Bldg.	KXL 1420 100 Portland, Ore. KXL Broadcasters, Multnomah Hotel
KTBS 1450 1000 Shreveport, La. Box 1642	KXO 1500 100 El Centro, Calif. F. M. Bowles, Box 140
KTFI 1240 1000 Twin Falls, Idaho Radio Broadcasting Corp., Box 521	KXRO 1310 100 Aberdeen, Wash. KXRO, Inc., Hotel Morek
KTHS 1060 10000 Hot Springs, Ark. Chamber of Commerce, Box 886	KXYZ 1440 250 Houston, Texas Fannin & Rusk Sts.
KTM 780 500 Los Angeles, Calif. 214 S. Vermont St.	KYA 1230 1000 San Francisco, Calif. 988 Market St.
KTRB 740 250 Modesto, Calif. McTammany & Bates	KYW 1020 10000 Chicago, Ill. 310 S. Michigan Ave.
KTRH 1330 1000 Houston, Texas KTRH Broadcasting Co., Rice Hotel	KZEG 720 1000 Manila, P. I. Erlanger & Gallinger, Inc.
KTSA 550 1000 San Antonio, Texas Southwest Broadcasting Co., Plaza Hotel	KZRM 618.5 50000 Manila, P. I. 601 Escolta
KTSM 1310 100 El Paso, Texas P. O. Box 1976	NAA 690 1000 Arlington, Va. United States Navy

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RDN 680 500 San Salvador, E. S. Republic of El Salvador	WAML 1310 100 Laurel, Miss. Southland Radio Corp., Box 26
TGW 565 10000 Guatemala, Gua. Gobierno de Guatemala	WAPI 1140 5000 Birmingham, Ala. Protective Life Bldg.
TGX 1400 150 Guatemala City	WARD 1400 500 Brooklyn, N. Y. 427 Flatbush Ave., Ext.
TICR 912 75 San Jose, C. R. Government of Costa Rica	WASH 1270 500 Grand Rapids, Mich. Grand Rapids Natl. Bank Bldg.
TIEA 833 7.5 San Jose, C. R.	WATR 1190 100 Waterbury, Conn. 47 Grand St.
TIEP 1450 7.5 San Jose, C. R.	WAVE 940 1000 Louisville, Ky. WAVE, Inc., 1525 Brown Hotel
TIFB 714 30 San Jose, C. R.	WAWZ 1350 250 Zarephath, N. J. Pillar of Fire.
TIFS 1441 7.5 Cartago, C. R.	WAZL 1420 100 Hazleton, Pa. Hazleton Broadcasting Service, Inc.
TIGA 1014 30 Cartago, C. R.	WBAA 1400 500 West Lafayette, Ind. Purdue University
TIGP 800 75 San Jose, C. R. Gonzalo Pinto H. Apt. 225	WBAL 1060 10000 Baltimore, Md. Lexington Bldg.
TIRCA 1100 500 San Jose, C. R. Perry Glrton, Apt. 225	WBAP 800 50000 Fort Worth, Texas Blackstone Hotel
TISO 550 250 San Jose, C. R. P. F. Saborlo, Apt. 1354	WBAX 1210 100 Wilkes-Barre, Pa. John H. Stenger, Jr., 70 S. Main St.
TITV 999 7.5 San Jose, C. R.	WBBC 1400 500 Brooklyn, N. Y. 552-54 Atlantic Ave.
TIVL 835 30 San Jose, C. R.	WBBL 1210 100 Richmond, Va. 1627 Monument Ave.
TIAX 614 7.5 San Jose, C. R. Vincent Lines C	WBBM 770 25000 Chicago, Ill. WBBM Broadcasting Corp., Wrigley Bldg.
VAS 685 2000 Glace Bay, N. S. Canadian Marconi Co., Ltd.	WBBR 1300 1000 Brooklyn, N. Y. 124 Columbia Heights
VESEK 1195 10 Montmagny, Que. J. A. Marquils, P. O. Box 52	WBBZ 1200 100 Ponca City, Okla. C. L. Carrell, 407 W. South Ave.
VOAC 1300 40 St. John's, Nfld.	WBGM 1410 500 Bay City, Mich. James E. Davidson, Hotel Wenonah
VOAS 940 100 St. John's N. F. Ayre & Sons, Ltd., Water St.	WBEN 900 1000 Buffalo, N. Y. WBEN, Inc., Hotel Statler
VOGY 840 400 St. John's, N. F. Newfoundland Hotel	WBEO 1310 100 Marquette, Mich. 146 W. Washington St.
VOKW 1085 30 St. John's, N. F. Cyril L. Parkins, Box 5039 East	WBHS 1200 100 Huntsville, Ala. Virgil V. Evans
VONF 1195 5000 St. John's N. F. Dominion Broadcasting Co., Ltd., Box 135	WBIG 1440 500 Greensboro, N. C. Box 408
VOWR 681 500 St. John's, N. F. Wesley United Church, Box 157	WBNO 1200 100 New Orleans, La. Hotel Marbero
WAAB 1410 500 Boston, Mass. 21 Brookline Ave.	WBNS 1430 500 Columbus, O. 33 N. High St.
WAAF 920 500 Chicago, Ill. 836 Exchange Ave.	WBNX 1350 250 New York, N. Y. 260 E. 161st St.
WAAT 940 300 Jersey City, N. J. Bremer Broadcasting Corp., 50 Journal Sq	WBOQ 860 50000 New York, N. Y. Atlantic Broadcasting Corp.
WAAW 660 500 Omaha, Neb. Omaha Grain Exchange	WBOW 1310 100 Torre Haute, Ind. Banks of Wabash, Inc., 19 Beach Block
WABC 860 50000 New York, N. Y. 485 Madison Ave.	WBRB 1210 100 Red Bank, N. J. 63 Broad St.
WABI 1200 100 Bangor, Maine First Universalist Society, Park St.	WBRC 930 1000 Birmingham, Ala. Bankhead Hotel
WACO 1420 100 Waco, Texas Amicable Bldg.	WBRE 1310 100 Wilkes-Barre, Pa. Louis G. Baltimore, 16 N. Main
WADC 1320 1000 Akron, Ohio Allen T. Simmons, P. O. Box 29	WBSO 920 500 Babson Park, Mass. Drawer B
WAGF 1370 100 Dothan, Ala. P. O. Box 25	WBT 1080 50000 Charlotte, N. C. Station WBT, Inc., Wilder Bldg.
WAGM 1420 100 Presque Isle, Me. Aroostook Broadcasting Corp., Main St.	WBTM 1370 100 Danville, Va. Miller Bldg.
WAIU 640 500 Columbus, Ohio Deshler-Wallick Hotel	WBZ 990 50000 Boston, Mass. Hotel Bradford
WALA 1380 500 Mobile, Ala. Battle House	WBZA 990 1000 Springfield, Mass. Hotel Kimball
WALR 1210 100 Zanesville, Ohio First Trust & Savs. Bank Bldg.	WCAC 600 500 Storrs, Conn. Connecticut State College

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WCAD 1220 500 Canton, N. Y. St. Lawrence University	WDGY 1180 1000 Minneapolis, Minn. Dr. Geo. W. Young, 909 W. Broadway
WCAE 1220 1000 Pittsburgh, Pa. 6th Ave. & Smithfield St.	WDNC 1500 100 Durham, N. C. Washington Duke Hotel
WCAL 1250 1000 Northfield, Minn. St. Olaf College	WDDO 1280 1000 Chattanooga, Tenn. WDDO Broadcasting Corp., Hotel Patten
WCAM 1280 500 Camden, N. J. City of Camden, City Hall	WDRG 1330 1000 Hartford, Conn. WDRG, Inc., Corning Bldg., 11 Asylum St.
WCAO 600 500 Baltimore, Md. 811 W. Lanvale St.	WDSU 1250 1000 New Orleans, La. Jos. H. Uhalt, Hotel Monteleone
WCAP 1280 500 Asbury Park, N. J. Convention Hall	WDZ 1070 100 Tuscola, Ill. James L. Bush, Star Store Bldg.
WCAT 1200 100 Rapid City, S. D. South Dakota State School of Mines	WEAF 660 50000 New York, N. Y. 30 Rockefeller Plaza
WCAU 1170 50000 Philadelphia, Pa. WCAU Broadcasting Co., 1622 Chestnut	WEAN 780 500 Providence, R. I. New Crown Hotel
WCAX 1200 100 Burlington, Vt. 203 College St.	WEBC 1290 1000 Superior, Wis. Spaulding Hotel, Duluth, Minn.
WCAZ 1070 100 Carthage, Ill. 97 1/2 Adams St.	WEBQ 1210 100 Harrisburg, Ill. 100 E. Poplar St.
WCBA 1440 250 Allentown, Pa. B. Bryan Musselman, 39-41 10th St.	WEBR 1310 100 Buffalo, N. Y. Howell Broadcasting Co., Inc., 735 Main
WCBD 1080 5000 Zion, Ill. 75 E. Wacker Drive, Chicago	WEDC 1210 100 Chicago, Ill. Emil Denmark, 3860 Ogden Ave.
WCBM 1370 100 Baltimore, Md. Keth Theatre Bldg.	WEED 1420 100 Rocky Mount, N. C. Wm. Avera Wynne, Box 221
WCBS 1210 100 Springfield, Ill. WCBS, Inc., 208 1/2 S. 5th.	WEEI 590 1000 Boston, Mass. 182 Tremont St.
WCCO 810 50000 Minneapolis, Minn. Nioclet Hotel	WEUU 830 1000 Reading, Pa. Berks Broadcasting Co., 533 Penn.
WCFL 970 1500 Chicago, Ill. 666 Lake Shore Drive	WEHC 1350 500 Charlottesville, Va. 7th & Main Sts.
WCHS 580 500 Charleston, W. Va. WOBV, Inc., Ruffner Hotel	WEHS 1420 100 Cicero, Ill. WEHS, Inc., 6138 W. Cermak Rd.
WCKY 1490 5000 Covington, Ky. 6th & Madison Sts.	WELL 1420 50 Battle Creek, Mich. Enquirer News, 38 W. State St.
WCLO 1200 100 Janesville, Wis. 200 E. Milwaukee St.	WENR 870 50000 Chicago, Ill. 222 N. Bank Drive
WCLS 1310 100 Joliet, Ill. WCLS, Inc., 301 E. Jefferson St.	WESG 1090 1000 Elmira, N. Y. Mark Twain Hotel
WCNW 1500 100 Brooklyn, N. Y. Arthur Fasje, 1525 Pitkin Ave.	WEVD 1300 500 New York, N. Y. Jewish Daily Forward, Hotel Clardige
WCOA 1340 500 Pensacola, Fla. San Carlos Hotel	WEW 760 1000 St. Louis, Mo. St. Louis University, 221 N. Grand Blvd.
WCOC 880 500 Meridian, Miss. Box 603	WEXL 1310 50 Royal Oak, Mich. 212 W. 6th St.
WCRW 1210 100 Chicago, Ill. Clinton R. White, 2756 Pine Grove Ave.	WFAA 800 50000 Dallas, Texas Baker Hotel
WCSC 1360 500 Charleston, S. C. Francis Marion Hotel	WFAB 1300 1000 New York, N. Y. Fifth Avenue Broadcasting Corp.
WCSH 940 1000 Portland, Me. 579 Congress St.	WFAM 1200 100 South Bend, Ind. South Bend Tribune, 225 W. Colfax Ave.
WDAE 1220 1000 Tampa, Fla. Tampa Times Co., Tampa Terrace	WFAS 1210 100 White Plains, N. Y. Hotel Roger Smith
WDAF 610 1000 Kansas City, Mo. 1729 Grand Ave.	WFBC 1300 250 Greenville, S. C. Imperial Hotel
WDAG 1410 1000 Amarillo, Texas Box 306	WFBE 1200 100 Cincinnati, Ohio WFBE, Inc., Hotel Sinton
WDAH 1310 100 El Paso, Texas Box 1976	WFBG 1310 100 Altoona, Pa. Gable Broadcasting Co. 12th Av. & 13th St.
WDAS 1370 100 Philadelphia, Pa. WDAS Brdstg. Co., Inc., Broadwood Hotel	WFBL 1360 1000 Syracuse, N. Y. Onondaga Hotel
WDAY 940 1000 Fargo, N. D. WDAY, Inc., Black Bldg., 118 Broadway	WFBM 1230 1000 Indianapolis, Ind. 48 Monument Circle
WDBJ 930 1000 Roanoke, Va. Times World Corp., P. O. Box 150	WFBR 1270 500 Baltimore, Md. 7 St. Paul St.
WDBO 580 250 Orlando, Fla. 555 N. Orange Ave.	WFDF 1310 100 Flint, Mich. Union Industrial Bldg.
WDEL 1120 250 Wilmington, Del. WDEL, Inc., 10th and King Sts.	WFEA 1340 600 Manchester, N. H. Carpenter Hotel
WDEV 550 500 Waterbury, Vt. Harry C. Whitehill, Stowe St.	WFI 560 500 Philadelphia, Pa. WFI Broadcasting Co., 801 Market

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WFLA 620 1000 Clearwater, Fla. Box 119	WHEF 1500 100 Kosciusko, Miss. 417 W. Adams St.
WGAL 1500 100 Lancaster, Pa. WGAL, Inc., 8 W. King St.	WHFC 1420 100 Cicero, Ill. WHFC, Inc., 6138 W. Cermak Road
WGAR 1450 500 Cleveland, Ohio WGAR Broadcasting Co., Hotel Statler	WHIS 1410 250 Bluefield, W. Va. Bland St.
WGBB 1210 100 Freeport, N. Y. H. H. Carman, 64 S. Grove St.	WHJB 620 250 Greensburg, Pa. Penna. Radio Supply House
WGBF 630 500 Evansville, Ind. 519 Vine St.	WHK 1390 1000 Cleveland, Ohio 1311 Terminal Tower
WGBI 880 500 Scranton, Pa. 116 N. Washington Ave.	WHN 1010 1000 New York, N. Y. 1540 Broadway
WGCM 1210 100 Gulfport, Miss. Great Southern Hotel	WHO 1000 50000 Des Moines, Iowa Central Bldg. Co., 914 Walnut St.
WGES 1360 500 Chicago, Ill. 128 N. Crawford Ave.	WHOM 1450 250 Jersey City, N. J. 2870 Boulevard
WGH 1310 100 Newport News, Va. 2813 Washington Ave.	WHP 1430 500 Harrisburg, Pa. WHP, Inc., 216 Locust St.
WGL 1370 100 Fort Wayne, Ind. F. C. Zieg, 213 W. Main St.	WIBA 1280 1000 Madison, Wis. 111 King St.
WGLC 1370 100 Hudson Falls, N. Y. Colonial Display House	WIBG 970 100 Glenside, Pa. WIBG, Inc., Keswick Bldg.
WGN 720 50000 Chicago, Ill. WGN, Inc., Tribune Tower	WIBM 1370 100 Jackson, Mich. WIBM, Inc., 306 W. Michigan Ave.
WGNY 1210 100 Chester, N. Y. Peter Goelet (Orange County)	WIBU 1210 100 Poynette, Wis. Wm. C. Forrest, R. F. D. No. 3
WGPC 1420 100 Albany, Ga. Rylander Theatre Bldg.	WIEW 580 1000 Topeka, Kans. 11th & Topeka Blvd.
WGR 550 1000 Buffalo, N. Y. Rand Bldg.	WIBX 1200 100 Utica, N. Y. WIBX, Inc., 1st Natl. Bank Bldg.
WGST 890 250 Atlanta, Ga. Ansley Hotel	WICC 600 250 Bridgeport, Conn. Southern Conn. Broadcasting Corp.
WGY 790 50000 Schenectady, N. Y. 1 River Road	WIL 1200 100 St. Louis, Mo. Melbourne Hotel
WHA 940 2500 Madison, Wis. University of Wisconsin	WILL 890 250 Urbana, Ill. University of Illinois
WHAM 1150 50000 Rochester, N. Y. 100 Carlson Road	WILM 1420 100 Wilmington, Del. 920 King St.
WHAS 820 50000 Louisville, Ky. 300 W. Liberty St.	WIND 560 1000 Gary, Ind. 504 Broadway
WHAT 1310 100 Philadelphia, Pa. Public Ledger Bldg.	WINS 1180 1000 New York, N. Y. 110 E. 58th St.
WHAZ 1300 500 Troy, N. Y. 8th St.	WIOD 1300 1000 Miami, Fla. Herald Bldg.
WHB 860 500 Kansas City, Mo. WHB Broadcasting Co., Scarritt Bldg.	WIP 610 500 Philadelphia, Pa. Gimbel Bldg.
WHBC 1200 100 Canton, Ohio Edw. P. Graham, 319 Tusc. St., W.	WIS 1010 1000 Columbia, S. C. Station WIS, Inc., 1811 Main St.
WHBD 1370 100 Mount Orab, Ohio F. P. Moler	WISN 1120 250 Milwaukee, Wis. 123 W. Michigan St.
WHBF 1210 100 Rock Island, Ill. Hotel Harms	WJAC 1310 100 Johnstown, Pa. WJAC, Inc., Locust St.
WHBI 1250 1000 Newark, N. J. 100 Shipman St.	WJAG 1060 1000 Norfolk, Neb. Norfolk Daily News
WHBL 1410 500 Sheboygan, Wis. Press Publishing Co., Press Bldg.	WJAR 890 500 Providence, R. I. Outlet Co., Weybossett St.
WHBQ 1370 100 Memphis, Tenn. Brdstg. Sta. WNBQ, Inc., Hotel Claridge	WJAS 1290 1000 Pittsburgh, Pa. Chamber of Commerce Bldg.
WHBU 1210 100 Anderson, Ind. Anderson Broadcasting Corp., Box 816	WJAX 900 1000 Jacksonville, Fla. City of Jacksonville
WHBY 1200 100 Green Bay, Wis. WHBY, Inc., Bellin Bldg.	WJAY 610 500 Cleveland, Ohio 1224 Huron Road
WHDF 1370 100 Calumet, Mich. Box 643	WJBC 1200 100 Bloomington, Ill. Kaskaskia Broadcasting Co.
WHDH 830 1000 Boston, Mass. Matheson Radio Co., 62 Boylston	WJBK 1500 100 Detroit, Mich. 6569 Hamilton Ave.
WHDL 1420 100 Tupper Lake, N. Y. Iroquois Hotel	WJBL 1200 100 Decatur, Ill. Gushard Bldg.
WHEB 740 250 Portsmouth, N. H. Box 522, 39 Congress St.	WJBO 1420 100 Baton Rouge, La. Baton Rouge Broadcasting Co., Inc.
WHEC 1430 500 Rochester, N. Y. WHEC, Inc., 40 Franklin St.	WJBW 1200 100 New Orleans, La. C. C. Carlson, 2743 Dumaine St.

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WJBY 1210 100	Gadsden, Ala. Gadsden Broadcasting Co., 112 N. 8th St.	WLBW 1260 1000	Erie, Pa. Broadcasters of Pennsylvania, Inc.
WJDX 1270 1000	Jackson, Miss. Lamar Life Bldg.	WLBZ 620 500	Banger, Me. Maine Broadcasting Co., Inc., 100 Main
WJEJ 1210 100	Hagerstown, Md. Lovely Dame Bldg.	WLEU 1420 100	Erie, Pa.
WJEM 990 500	Tupelo, Miss. Britt A. Rogers, Jr.	WLIT 560 500	Philadelphia, Pa. 8th & Market Sts.
WJIM 1210 100	Lansing, Mich. Capital City Brdcastg. Co.	WLLH 1370 100	Lowell, Mass. Albert S. Moffat, Box D
WJJD 1130 20000	Chicago, Ill. WJJD, Inc., 201 N. Wells St.	WLNH 1310 100	Laconia, N. H. 523 Main St.
WJMS 1420 100	Ironwood, Mich. WJMS, Inc., St. James Hotel	WLS 870 50000	Chicago, Ill. 1230 W. Washington Blvd.
WJR 750 10000	Detroit, Mich. WJR, Inc., Fisher Bldg.	WLTH 1400 500	Brooklyn, N. Y. 305 Washington St.
WJSV 1460 10000	Washington, D. C. Shoreham Bldg.	WLVA 1200 100	Lynchburg, Va. 915 Main St.
WJTL 1370 100	Atlanta, Ga. Oglethorpe University	WLW 700 50000	Cincinnati, Ohio 1329 Arlington St.
WJW 1210 100	Akron, Ohio WJW, Inc., 41 S. High St.	WLWL 1100 5000	New York, N. Y. 415 W. 59th St.
WJZ 760 50000	New York, N. Y. 30 Rockefeller Plaza	WMAL 630 250	Washington, D. C. 712—11th St., N. W.
WKAQ 1240 1000	San Juan, P. R. Radio Corp. of Porto Rico, P. O. Box 358	WMAQ 670 5000	Chicago, Ill. Merchandise Mart
WKAR 1040 1000	East Lansing, Mich. Michigan State College	WMAS 1420 100	Springfield, Mass. WMAS, Inc., 70 Chestnut St.
WKBB 1500 100	East Dubuque, Ill. Richard W. Hoffman	WMAZ 1180 1000	Macon, Ga. 211 Cotton Ave.
WKBF 1400 500	Indianapolis, Ind. 540 N. Meridian St.	WNBC 1420 100	Detroit, Mich. 7310 Woodward Ave.
WKBH 1380 1000	LaCrosse, Wis. WKBH, Inc., 409 Main St.	WNBD 1440 500	Peoria, Ill. 114 N. Madison St.
WKBI 1420 100	Cicero, Ill. WKBI Inc., 6138 W. Cermak Road	WNBG 1210 100	Richmond, Va. 914 W. Broad St.
WKBN 570 500	Youngstown, Ohio 17 N. Champlon St.	WNBH 1420 100	Joplin, Mo. 1334 Roosevelt St.
WKBO 1200 100	Harrisburg, Pa. Penn Harris Hotel	WNBI 1080 5000	Chicago, Ill. 153 Institute Place
WKBV 1500 100	Richmond, Ind. Knox Radio Corp., Box 308	WNBO 1310 100	Auburn, N. Y. WNBO, Inc., Metcalf Bldg.
WKBW 1480 5000	Buffalo, N. Y. Rand Bldg.	WNBQ 1500 100	Brooklyn, N. Y. Paul J. Gollhofer, 95 Leonard St.
WKBZ 1500 100	Muskegon, Mich. Karl L. Ashbacher & Sons	WNBK 1370 100	Jacksonville, Fla. F. J. Reynolds, Carling Hotel
WKBU 1500 100	LaGrange, Ga. Radio Station WKEU, 906 Hill St.	WNC 780 1000	Memphis, Tenn. WMC, Inc., Hotel Gayoso
WKFI 1210 100	Greenwood, Miss. J. Pat Scully, Box 302	WMCA 570 500	New York, N. Y. 1697 Broadway
WKJC 1200 100	Lancaster, Pa. 16 W. King St.	WMEX 1500 100	Chelsea, Mass. The Northern Corp.
WKOK 1210 100	Sunbury, Pa. 1150 N. Front St.	WMFN 890 250	Fairmount, W. Va. A. M. Rowe, Inc., 325 Main St.
WKRC 550 1000	Cincinnati, Ohio WKRC, Inc., Hotel Alms	WMPC 1200 100	Lapeer, Mich. 81 Liberty St.
WKY 900 1000	Oklahoma City, Okla. Plaza Court Bldg.	WMT 600 500	Waterloo, Iowa 3rd & Lafayette Sts.
WKZO 590 1000	Kalamazoo, Mich. John E. Fetzer, Burdick Hotel	WNAC 1230 1000	Boston, Mass. 21 Brookline Ave.
WLAC 1470 5000	Nashville, Tenn. 159—4th Ave. No.	WNAD 1010 500	Norman, Okla. University of Oklahoma
WLAP 1420 100	Lexington, Ky. Main & Esplanade	WNAX 570 1000	Yankton, S. D. House of Gurney, Inc., 2nd and Capital St.
WLB 1250 1000	Minneapolis, Minn. University of Minnesota	WNBK 1500 100	Binghamton, N. Y. Arlington Hotel
WLBC 1310 100	Muncie, Ind. D. A. Burton, Anthony Bldg.	WNBH 1310 100	New Bedford, Mass. 251 Union St.
WLBK 1420 100	Kansas City, Kans. WLBK Broadcasting Co., Huron Bldg.	WNBO 1200 100	Washington, Pa. 319 E. Beau St.
WLBL 900 2500	Stevens Point, Wis. Wisconsin Dept. of Agriculture and Markets	WNBK 1430 500	Memphis, Tenn. Memphis Broadcasting Co., Hotel DeVoy

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WNBX 1260	500	Springfield, Vt.	WRAW 1310	100	Reading, Pa.
WNBX Broadcasting Corp., 39 Main St.			Reading Broadcasting Co., 533 Penn St.		
WNBZ 1290	50	Saranac Lake, N. Y.	WRAX 920	250	Philadelphia, Pa.
Smith & Mace, 70 Broadway			WRAX Broadcasting Co., 217 S. Broad St.		
WNEL 1290	500	San Juan, P. R.	WRBL 1200	100	Columbus, Ga.
Box 1252			Royal Theatre Bldg.		
WNEW 1250	1000	Newark, N. J.	WRBX 1410	250	Roanoke, Va.
Wodaam Corp., 1060 Broad			P. O. Box 2389		
WNOX 560	1000	Knoxville, Tenn.	WRC 950	500	Washington, D. C.
WNOX, Inc., Hotel Andrew Johnson			National Press Bldg.		
WNRA 1420	100	Muscle Shoals, Ala.	WRDO 1370	100	Augusta, Me.
Kathryn Jones, P. O. Box 486, Sheffield, Ala.			WRDO, Inc., Augusta House		
WNYC 810	500	New York, N. Y.	WRDW 1500	100	Augusta, Ga.
Centre & Duane Sts.			Virgil V. Evans Co., 309 8th St.		
WOAI 1190	50000	San Antonio, Texas	WREC 600	500	Memphis, Tenn.
Southland Industries, Inc., 1038 Navarro			WREC, Inc., Hotel Peabody		
WOCL 1210	50	Jamestown, N. Y.	WREN 1220	1000	Lawrence, Kans.
A. E. Newton, 840 N. Main St.			Jenny Wren Co., 8th and Vermont St.		
WOI 640	5000	Ames, Iowa	WRGA 1500	100	Rome, Ga.
Iowa State College			10 Thrd Ave.		
WOKO 1430	500	Albany, N. Y.	WRJN 1370	100	Racine, Wis.
WOKO, Inc., Hotel Ten Eyck			Racine Broadcasting Corp., Hotel Racine		
WOL 1310	100	Washington, D. C.	WROK 1410	500	Rockford, Ill.
American Broadcasting Co., Annapolis Hotel			109 So. Water St.		
WOMT 1210	100	Manitowoc, Wis.	WROL 1310	100	Knoxville, Tenn.
Francis M. Kadow, Box 326			Stuart Broadcasting Corp., 524 S. Gay		
WOOD 1270	500	Grand Rapids, Mich.	WRR 1280	500	Dallas, Texas
Grand Rapids Natl. Bank Bldg.			City of Dallas, Hilton Hotel		
WOPI 1500	100	Bristol, Tenn.	WRUF 830	5000	Gainesville, Fla.
22nd & State Sts.			State University		
WOR 710	5000	Newark, N. J.	WRVA 1110	5000	Richmond, Va.
147 Market St.			Larus & Bros Co., Inc., 22nd and Gary St.		
WORC 1280	500	Worcester, Mass.	WSAI 1330	1000	Cincinnati, Ohio
Alfred F. Kleindienst, 60 Franklin St.			Crosley Radio Corp., 1329 Arlington		
WORK 1320	1000	York, Pa.	WSAJ 1310	100	Grove City, Pa.
York Broadcasting Co., 15 S. Beaver St.			Grove City College, 418 Poplar St.		
WOS 630	500	Jefferson City, Mo.	WSAN 1440	250	Allentown, Pa.
State Highway Control, Capitol Bldg.			WSAN, Inc., 39 10th St.		
WOSU 570	750	Columbus, Ohio	WSAR 1450	250	Fall River, Mass.
Ohio State University			Academy of Music Bldg.		
WOV 1130	1000	New York, N. Y.	WSAZ 1190	1000	Huntington, W. Va.
16 E. 42nd St.			WSAZ, Inc., P. O. Box 729		
WOW 590	1000	Omaha, Neb.	WSB 740	50000	Atlanta, Ga.
Woodmen of the World, 4th and Farnam			Atlanta Journal, 7 N. Forsyth St.		
WOWO 1160	10000	Fort Wayne, Ind.	WSBC 1210	100	Chicago, Ill.
Main Auto Supply Co., 213 W. Main			Gene T. Dyer, 1258 S. Michigan Ave.		
WPAD 1420	100	Paducah, Ky.	WSBT 1360	500	South Bend, Ind.
2201 Broadway			South Bend Tribune, 225 W. Colfax Ave.		
WPEN 920	100	Philadelphia, Pa.	WSEN 1210	100	Columbus, Ohio
22nd & Walnut Sts.			Columbus Broadcasting Corp., 144 S. High		
WPFB 1370	100	Hattiesburg, Miss.	WSFA 1410	500	Montgomery, Ala.
Otis P. Eure, Box 530			Jefferson Davis Hotel		
WPG 1100	5000	Atlantic City, N. J.	WSGN 1310	100	Birmingham, Ala.
Convention Hall			R. B. Broyles, Tutwiler Hotel		
WPHR 880	100	Petersburg, Va.	WSIX 1210	100	Springfield, Tenn.
WLBG, Inc., Medical Arts Bldg.			638 Tire & Vulcanizing Co.		
WPRO 630	250	Providence, R. I.	WSJS 1310	100	Winston-Salem, N. C.
Cherry & Webb Brdstrg. Co., 15 Chestnut			Winston-Salem Journal Co., 416 N. Marshall		
WPTF 680	5000	Raleigh, N. C.	WSM 650	50000	Nashville, Tenn.
324 Fayetteville St.			301-7th Ave. No.		
WQAM 560	1000	Miami, Fla.	WSMB 1320	500	New Orleans, La.
Miami Brdstrg. Co., Inc., 327 N. E. 1st Ave.			WSMB, Inc., Malson Blanche Bldg.		
WQAN 880	250	Scranton, Pa.	WSMK 1380	200	Dayton, Ohio
Scranton Times, 149 Penn Ave.			S. M. Krohn, Jr., 4th and Main St.		
WQBC 1360	500	Vicksburg, Miss.	WSOC 1210	100	Charlotte, N. C.
Delta Broadcasting Co., Hotel Vicksburg			WSOC, Inc., Box 730		
WQDM 1370	100	St. Albans, Vt.	WSPA 1420	100	Spartanburg, S. C.
42 N. Main St.			Virgil V. Evans, Ravenel and Avant St.		
WQDX 1210	100	Thomasville, Ga.	WSPD 1340	1000	Toledo, Ohio
Stevens Luke, 135 E. Jackson St.			Toledo Broadcasting Co., 505 Jefferson		
WRAK 1370	100	Williamsport, Pa.	WSUI 880	500	Iowa City, Iowa
WRAX, Inc., 244 W. 4th St.			State University of Iowa		

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WSUN 620 1000 St. Petersburg, Fla. Chamber of Commerce	XEAE 980 250 Tijuana, B. C. Apt. 42
WSVS 1370 50 Buffalo, N. Y. 666 E. Delavan Ave.	XEAF 1080 750 Nogales, Son. Francisco G. Ellas, Hotel Central
WSYB 1500 100 Rutland, Vt. Philip Weiss Music Co., 80 West St.	XEAI 1240 100 Mexico City, D. F. Carlos Gonzales Caballero, Insurgentes 366
WSYR 570 250 Syracuse, N. Y. E. Onondaga & S. Warren Sts.	XEAL 660 1000 Mexico City, D. F. Apdo. 1903
WTAD 1440 500 Quincy, Ill. Illinois Brdcastg. Corp., State and 6th	XEAM 750 50 Nuevo Laredo, Tams. Edificio Banco Longoria
WTAG 580 500 Worcester, Mass. 18 Franklin St.	XEAO 560 250 Mexicali, B. C. Luis L. Castro, C. Altamirano 156
WTAM 1070 50000 Cleveland, Ohio 1367 E. 6th St.	XEAW 950 10000 Reynosa, Tams. Internacional Broadcasting Co., S. A.
WTAQ 1330 1000 Eau Claire, Wis. Gillette Rubber Co., Hotel Eau Claire	XEAZ 1420 7 Leon, Guan. Poctos 47
WTAR 780 500 Norfolk, Va. WTAR Radio Corp., Wainwright Bldg.	XEB 1030 10000 Mexico City, D. F. El Buen Tono, S. A., Apdo. 79-44
WTAW 1120 500 College Station, Tex. Agricultural and Mechanical College	XEBC 760 2500 Agua Caliente, B. C. Agua Caliente Hotel
WTAX 1210 100 Springfield, Ill. WTAX, Inc., 416 E. Capitol Ave.	XECW 1310 10 Mexico City, D. F. Maria Elena Bravo de Cordero Ave. Juarez 104
WTBO 800 250 Cumberland, Md. Associated Brdcastg. Corp., Box 794	XED 1160 500 Guadalupe, Jal. Cla. Radionografica, Apdo. 197
WTCN 1250 1000 Minneapolis, Minn. Wesley Temple Bldg.	XEE 1210 50 Durango, Dgo. 20 de Nov. 112 (Apdo. 148)
WTEL 1310 100 Philadelphia, Pa. Broad & Erie Ave.	XEFA 1180 500 Mexico City, D. F. Eduardo Limon Segui, Meditarraneo 236
WTFI 1450 500 Athens, Ga. 133 E. Washington St.	XEFB 1420 100 Monterrey, N. L. Jesus Quintanilla, P. O. Box 317
WTIC 1040 50000 Hartford, Conn. 26 Grove St.	XEFC 1310 100 Merida, Yuc. J. Molina Font. Calle 59, 617
WTJS 1310 100 Jackson, Tenn. Sun Publishing Co., Sun Bldg.	XEFE 1370 100 Laredo, Tams. R. T. Carranza, Km. 4 Carretera Laredo Mt.
WTMJ 620 1000 Milwaukee, Wis. The Journal Co., 333 W. State St.	XEFG 1100 250 Mexico City, D. F. Ricardo Gonzales Montero, Teple 48
WTNJ 1280 500 Trenton, N. J. Trenton Brdcastg. Co., Stacy Trent Hotel	XEFI 720 250 Chihuahua, Chih. Feliciano Lopez Isles, Ap. 157
WTOC 1260 1000 Savannah, Ga. Savannah Brdcastg. Co., P. O. Box 704	XEFJ 1210 100 Monterrey, N. L. R. Junco de la Vega, P. O. Box 186
WTRC 1310 50 Elkhart, Ind. Truth Radio Corp., Hotel Elkhart	XEFO 940 5000 Mexico City, D. F. Reforma No. 137
WVFW 1400 500 Brooklyn, N. Y. Paramount Brdcastg. Co., 1 Nevins St.	XEFV 1210 100 Jaurez, Chih. J. Onofre Meza Ave., Tlaxcala 1013
WWAE 1200 100 Hammond, Ind. 402 Hammond Bldg.	XEFW 1310 70 Tampico, Tams. J. E. Martinez, Salvador Diaz Miron 6
WWJ 920 1000 Detroit, Mich. Evening News Assn., 616 Lafayette Blvd.	XEFZ 1370 100 Mexico City, D. F. Manuel Zetina, Calzada Nonoalco 481
WWL 850 10000 New Orleans, La. Loyola University, Roosevelt Hotel	XEH 1150 250 Monterrey, N. L. Tarnava y Cia, P. O. Box 147
WWNC 570 1000 Asheville, N. C. Citizen Brdcastg. Co., Inc., Flatiron Bldg.	XEI 1370 125 Morelia, Mich. Carlos Gutierrez M., F. I. Madero 545
WWRL 1500 100 Woodside, N. Y. 4130-58th St.	XEJ 1020 250 Juarez, Chih. Juan G. Buttner, P. O. Box 111
WWSW 1500 100 Pittsburgh, Pa. Hotel Schenley	XEK 990 100 Mexico City, D. F. Arturo Martinez, Jalapa No. 61
WWVA 1160 5000 Wheeling, W. Va. Hawley Bldg.	XEKL 920 500 Leon, Guan. 5 de Mayo 26
WXYZ 1240 1000 Detroit, Mich. Madison Theatre Bldg.	XEMA 1080 50 Tampico, Tams. Manuel M. Pier, Aretsanos 10
WXBS 1530 1000 Waterbury, Conn. 61 Leavenworth St.	XEMO 860 1500 Tijuana, B. C. Savoy Theatre Bldg., San Diego, Calif.
WXR 1550 1000 Long Island City, N. Y. John V. L. Hogan	XEMZ 1210 30 Tijuana, B. C. Adolfo Labastida, Jr., Ave. D, 542
WXAI 1550 1000 Bakersfield, Calif. Pioneer Mercantile Co.	XEN 710 1000 Mexico City, D. F. Cerveceria Modelo Ave. Juarez 77
WSXBY 1530 1000 Kansas City, Mo. First National Television Inc.	XENT 1120 50000 Nuevo Laredo, Tams. Box 410, Laredo, Texas
XEA 1060 125 Guadalupe, Jal. Alberto Palos Souza, Apdo. 197	XEOK 920 2500 Tijuana, B. C. Carlos de la Sierra, Calle 5 & 312
XEAA 920 200 Mexicali, B. C. Apdo. 42	XEOX 640 250 Saltillo, Coah. Victoria No. 4, Altos.

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<p>XEP 820 500 Mexico City, D. F. Cia Difusora de Mexico S. A., Rembrandt 11</p> <p>XEPN 590 50000 Piedras Negras, Coah. Piedras Negras Brcdstg. Co., Madero 53</p> <p>XES 970 250 Tampico, Tams. Fernando Sada, Box 809</p> <p>XET 690 500 Monterrey, N. L. P. O. Box 203, Hidalgo</p> <p>XETB 1310 125 Torreon, Coah. Jose A. Berumen, R. Corona 317</p> <p>XETH 1210 100 Puebla, Pue. Ramon Huerta G., Calle 17, Oriente 11</p> <p>XETW 820 500 Mexico City, D. F. Rafael M. Pena, Ave. 16 de Sep. 83</p> <p>XEU 980 250 Veracruz, Ver. Fernando Pazos Sosa, Independencia 98</p> <p>XEW 890 50000 Mexico City, D. F. P. O. Box 2516</p> <p>XEWZ 1150 100 Mexico City, D. F. Medellin e Insurgentes</p> <p>XEX 1310 125 Monterrey, N. L. L. F. Petit Jean, P. O. Box 10</p> <p>XEXX 850 500 Mexico City, D. F. Av. Pino Suarez 9</p>	<p>KEYZ 780 10000 Mexico City, D. F. Angel M. Diez, Ave. Juarez 48</p> <p>KEZZ 1370 100 San Luis Potosi, SLP Emillo Delgado R. Ave. Chicosen 32</p> <p>XFA 1310 5 Aguascalientes Ags. Apartado Postal 92</p> <p>XFB 1270 1000 Jalapa, Ver. Gobierno del Estado de Veracruz</p> <p>XFC 810 350 Aguascalientes, Ags. Gobierno del Estado de Aguascalientes</p> <p>XFD 1340 350 Orizaba, Ver. Gobierno Estado de Veracruz</p> <p>XFO 940 5000 Mexico City, D. F. Nat. Rev. Party, Ave. Morelos 110</p> <p>XFX 610 1000 Mexico City, D. F. Secretaria de Educacion Publica</p> <p>10-AK 1200 15 Stratford, Ont. M. I. Higgins, 151 Ontario St.</p> <p>10-BP 1200 25 Wingham, Ont. W. T. Cruickshank, Box 65</p> <p>10-BQ 1200 15 Brantford, Ont. 12 Terrace Hill St.</p> <p>10-BU 1200 50 Canora, Sask. Canora Radio Assn.</p>
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THE MONTH'S CHANGES IN STATION DATA

POWER

630	WPRO	Providence, R. I. from 100
645	CMQ	Havana, Cuba, 500 to 340
730	CMK	Havana, Cuba, 2000 to 3150
780	CMBS	Havana, Cuba, 200 to 150
790	CMJK	Camaguey, Cuba, 500 to 150
925	CMCD	Havana, Cuba, 500 to 250
950	CMHD	Caibarien, Cuba, 500 to 250
1005	CMBZ	Havana, Cuba, 150 to 100
1010	CMBD	Ciego de Avila, Cuba, 250 to 150
1087	CMHI	Santa Clara, Cuba, 250 to 150
1100	CMCU	Havana, Cuba, 500 to 150
1103	CMHA	Sagua la Grande, Cuba, 500 to 420
1125	CMHJ	Cienfuegos, Cuba, 60 to 40
1140	CMCG	Havana, Cuba, 500 to 150
1145	CMCO	Havana, Cuba, 500 to 150
1185	CMBX	Havana, Cuba, 250 to 150
1185	CMCJ	Havana, Cuba, 500 to 400
1320	WSMB	New Orleans, La., 1000 to 500

DELETED

550	WSVA	Staunton, Va.
820	CMGC	Matanzas, Cuba
834	CMGA	Colon, Cuba
915	CMDE	Havana, Cuba
1140	CMBW	Havana, Cuba
1147	CMBJ	Havana, Cuba
1185	CMBN	Havana, Cuba
1205	CMGB	Matanzas, Cuba
1240	CMJN	Camaguey, Cuba
1249	CMAB	Pinar del Rio, Cuba
1290	CMHL	Cienfuegos, Cuba
1405	CMCM	Havana, Cuba
1410	CMCH	Havana, Cuba
1445	CMBL	Havana, Cuba
1485	CMBK	Havana, Cuba
1518	KIFS	Klamath Falls, Ore.

NEW

750	XEAM	Nuevo Laredo, Tams.
890	COA	Havana, Cuba
940	CMKM	Manzanillo, Cuba
1094	CMGI	Colon, Cuba
1100	COX	Havana, Cuba
1200	KADA	Ada, Okla.
1230	COK	Havana, Cuba
1245	CMHB	San Spiritus, Cuba
1363	CMKF	Holquin, Cuba

FREQUENCIES

550	KTSA	San Antonio, Texas, from 1290
565	TGW	Guatemala City, Guat., from 1350
720	KZEG	Manila, P. I., from 618.5
835	TIVL	San Jose, C. R., from 869
1320	WORK	York, Pa., from 1000
1340	KFPY	Spokane, Wash., from 890
1340	WFEA	Manchester, N. H., from 1430

CALLS

1210	WBRB	Red Bank, N. J., formerly WJBI
1250	WHBI	Newark, N. J., formerly WGCP
1250	WTCN	Minneapolis, Minn., formerly WRHM
1260	KPAC	Port Arthur, Texas, formerly KWWG
1370	WLLH	Lexington, Mass., formerly WLEY

LOCATIONS

1200	KGEK	Sterling, Colo., from Yuma, Colo.
1370	WLEY	Lowell, Mass., from Lexington, Mass.

CHAINS

1100	KWKH	Shreveport, La., new CBS
1380	WSMK	Dayton, Ohio, new CBS

AROUND *the* CLOCK on the SHORT WAVES

MIDNIGHT TO NOON (EST)

GMT	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00
AST	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00
EST	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
CST	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00
MST	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00
PST	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
	DJB GSB GSD W3XAU W8XK W9XF XETE	DJB GSB VK2ME W9XF	GSB VK2ME	RV15	DJA DJB PK1WK RV15 VK3LR	DJA DJB HVJ RV15 VK2ME VK3LR VK3ME	GSF GSG HSJ RV15 VK2ME VK3LR W1XAZ ZGE ZHI	GSF GSG PHI RV15 Rabat RV15 VK2ME VK3LR W1XAZ ZGE W8XK	DJA DJB GSE GSG PHI Pont. Rabat VE9GW W1XAZ W3XAL W8XK	DJA DJB GSE GSG PHI Pont. VE9GW W1XAZ W3XAL W8XK	DJA DJB GSE GSG PHI Pont. VE9GW W1XAZ W3XAL	DJB GSB GSE I2RO Pont. VE9GW W1XAL W1XAZ W2XE W3XAL W3XL W8XK W9XAA

NOON TO MIDNIGHT (EST)

GMT	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	1:00	2:00	3:00	4:00
AST	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00
EST	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
CST	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00
MST	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00
PST	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
	DJC DJD EAQ GSE GSF I2RO Pont. VE9GW VUB W1XAL W2XE W3XAL W3XAU W3XL W8XK W9XAA	DJC DJD EAQ GSB GSD I2RO ORX VE9GW Pont. W3XAU W1XAZ W3XL W3XAL W8XK W9XAA XEBT XETE	DJC DJD GSB GSD I2RO OXY Rabat VE9GW W1XAZ W3XL W3XAL W8XK W9XAA XEBT XETE	DJC DJD GSB GSD I2RO OXY Rabat RV59 VE9GW W1XAZ W2XE W3XL W3XAL W8XK W9XAA XEBT XETE	CT1AA DJC DJD GSB GSD I2RO OXY Pont. Rabat RV59 VE9GW W1XAZ W2XAD W3XL W3XAL W8XK W9XAF W9XAA XEBT XETE YV3RC	CT1AA DJC DJD EAQ GSB GSD HBL HBP HIZ HJ1ABB I2RO OXY Pont. RV59 VE9GW VE9HX W1XAL W1XAZ W2XE W3XAL W3XAL W8XK W9XAF W9XAA XEBT XETE YV2RC YV3RC	COC CT1AA DJA DJD GSC GSD GSC HJ1ABB HBL HBP HC2RL HJ1ABB VE9GW VE9HX W2XAF W2XE W3XAL W8XK W9XAA W9XAF XEBT XETE YV2RC YV3RC	CJRO CJRX CP5 DJC DJD HCJB HIX HJ1ABB 4ABE Pont. VE9GW VE9CS VE9HX W1XAL W2XAF W2XE W3XAL W3XAU W8XK W9XAA XEBT XETE YV2RC YV3RC	CJRO CJRX DJC DJD HCJB HC2RL HIX HJ3ABD PRADO VE9GW VE9CS VE9GW VE9HX W1XAL W2XAF W2XE W3XAL W3XAU W8XK W9XAA XEBT XETE YV2RC YV3RC	CJRO CJRX DJC DJD HC2RL Pont. PRADO VE9DN VE9GW VE9CS VE9GW VE9HX W1XAL W2XAF W2XE W3XAL W3XAU W8XK W9XAA XEBT XETE YV2RC	CJRO CJRX Pont. VE9DN W1XAZ W3XAL W3XAU W8XK W9XAA XETE	

100 Best Shortwave Stations by Call Letters

Frequencies are given in megacycles and the time is Eastern Standard. In this list, the location of the transmitter is given.

Amateur phones are heard between 1.875 and 2.000 megs. 3.900 and 4.000 megs. 7.000 and 7.300 megs. (Foreign only).	GSD, Daventry, England, 11.760. 12:15-2:15 a.m.; 1-5:30 p.m.; 6-8 p.m.	HPF, Panama City, Panama, 14.545. Phones Hialeah.
14.150 and 14.250 megs.	GSE, Daventry, England, 11.865. 10:45 a.m. to 12:45 p.m.	HSJ, Bangkok, Siam, 7.980.
Broadcast Pickup stations: 1.606; 1.622; 1.646; 2.102; 2.150; 2.190; 2.390.	GSF, Daventry, England, 15.140. 6-8:30 a.m.; 8:45 a.m. to 12:45 p.m.	HVJ, Vatican City, 15.120. 5-5:15 a.m. daily except Sunday. Occasionally from 10-10:30 a.m.
CGA4, Drummondville, P. Q., 9.332. Phones London.	GSG, Daventry, England, 17.790. 6-10:45 a.m.	I2RO, Cecchignola, Italy, 11.30 a.m. to 12:30 p.m.; 1:15 to 6 p.m. "Radio Roma-Napoli."
CJRO, Middlechurch, Man., 6.150. Relays Canadian Radio Com. programs, 8-11 p.m.; and 11:30 to midnight.	GSH, Daventry, England, 21.470.	JVE, Nazaki, Japan, 15.650. Phone.
CJRJ, Middlechurch, Man., 11.720. Same schedule as CJRO, q. v.	HBL, Prangins, Switzerland, 9.595. Sat. 5:30-6:15 p.m.	JVL, Nazaki, Japan, 6.750. Phones California.
COC, Havana, Cuba, 6.010. 4-6 p.m. daily.	HBP, Prangins, Switzerland, 7.797. Sat. 5:30-6:15 p.m.	JVM, Nazaki, Japan, 10.740. Phones California.
CP5, La Paz, Bolivia, 6.080. 8-9 p.m.	HC2RL, Guayaquil, Ecuador, 6.659. Tues. 9:14-11:14 p.m.; Sun. 5:45-7:45 p.m.	JVN, Nazaki, Japan, 10.660. Phones England.
CT1AA, Lisbon, Portugal, 9.600. Tues., Fri., 4:30-7 p.m.	HIX, Santo Domingo, D. R., 5.948. Tues. and Fri., 8-10 p.m.	JVQ, Nazaki, Japan, 7.470. Phone.
DJA, Zeesen, Germany, 9.560. Sun., 4-5:30 a.m.; daily, 8-11 a.m. and 5:15-9:15 p.m.	HILA, Santiago de los Caballeros, D. R., 7:30-9:30 p.m., and Special DX programs at 1 a.m. Sundays.	JVS, Nazaki, Japan, 15.620. Phone.
DJB, Zeesen, Germany, 15.200. 12:15-2 a.m.; 8-11:30 a.m.; and Sunday, 4-5:30 a.m.	HJA2, Bogota, Colombia, 5.825.	JVT, Nazaki, Japan, 6.680. Phone.
DJC, Zeesen, Germany, 6.020. Noon to 4:30 p.m.; 5:30-10:45 p.m.	HJA3, Barranquilla, Colombia, 12.830	JYK, Kemikawa-Cho, Chiba-Ken, Japan, 13.610. 4-8 a.m.
DJD, Zeesen, Germany, 11.760. Noon to 4:30 p.m.; 5:30-10:45 p.m.	HJB, Bogota, Colombia, 14.930.	JYM, Kemikawa-Cho, Chiba-Ken, Japan, 11.660. 4-8 a.m.
DJE, Zeesen, Germany, 17.760. Irregularly, Mornings.	HJ1ABB, Barranquilla, Colombia, 6.447. 5-10 p.m.	JYR, Kemikawa-Cho, Chiba-Ken, Japan, 7.880. 4-8 a.m.
EAQ, Aranjuez, Spain, 9.862. 5:30-7 p.m.; Sat. noon to 2 p.m.	HJ2ABC, Cucuta, Norte de Santander, Colombia, "La Voz de Cucuta," 5.975 megs. 6-9 p.m. daily exc. Sunday.	JYS, Kemikawa-Cho, Chiba-Ken, Japan, 15.620. 4-8 a.m.
GSA, Daventry, England, 6.050.	HJ3ABD, Bogota, Colombia, 7.406. "Colombia Broadcasting." 6-9 p.m. daily.	JYT, Kemikawa-Cho, Chiba-Ken, Japan, 15.762. 4-8 a.m.
GSE, Daventry, England, 9.510. 12:15-2:15 a.m.; 1-5:30 p.m.	HJ3ABF, Bogota, Colombia, 6.200. "La Voz de Bogota." Daily 7-11 p.m.	KAY, Manila, P. I., 14.980. Phones Dixon.
GSC, Daventry, England, 9.585. 6-8 p.m.	HJ4ABE, Medellin, Colombia, 5.900. 7-11 p.m.	KKH, Kahuku, T. H., 7.520. Phones Dixon.
		KFZ, Main Base, Little America, 5.740; 6.650; 6.660; 6.670; 8.820; 8.840; 11.850; 13.185; 13.200; 13.245; 13.260.
		KKP, Kahuku, T. H., 16.030. Phones Dixon.
		KNRA, "Seth Parker", 6.160; 6.660; 6.670; 8.230; 8.820; 8.840; 13.200

POSTSCRIPTS from our READERS' LETTERS

"With the wonderful help of RADEX, your splendid, up-to-the-minute radio publication, I have succeeded in bringing in many broadcasting stations I would not have been able to log otherwise."

Walter W. Erneman, 108 Seventh Ave., Belmar, N. J.

"For the fourth consecutive year, please enter my subscription to the 'One and Only' RADEX. Perhaps you can imagine what a great deal of pleasure I get out of RADEX when I tell you that I have been confined to my bed for nearly five years. My radio is my best pal and without RADEX, it wouldn't be nearly as enjoyable."

R. N. Putnam, 920 12th Ave., N., Fargo N. Dak.

"I have found RADEX to be the most reliable magazine that I have ever used."

L. L. Baker, Elk Ridge, Md.

"Please renew my subscription to RADEX. I could not enjoy my radio without it."

Otto Schmidt, 3811 Bonaventure St., N. S., Pittsburgh, Pa.

"I should like to express my sincere appreciation of your magazine, RADEX. It is unquestionably the only publication which satisfies the needs of the experienced DXer. This is the only magazine I subscribe to but I must have RADEX."

Sheridan H. Martin, 100 W. Washington St., Pasadena, Calif.

"If the end-of-the-month American mail did not bring RADEX, it would be a bigger tragedy than if no American verifications arrived."

A. Merwyn Branks, Winton, Southland, New Zealand.

"As long as I can get it, I never intend to be without RADEX. It certainly is a wonderful magazine."

A. E. Thompson, Windham, N. Y.

"I consider RADEX as a part of my radio. Without it I would be lost. Thanks to such a fine magazine for all of its valuable information."

Merle Leavitt, 57½ North Front St., Richmond, Maine.

KWO, Dixon, Calif., 15.415. Phones Hawaii and Manila.

KWU, Dixon, Calif., 15.355. Phones Japan.

KWX, Dixon, Calif., 7.610. Phones Hawaii.

LSX, Monte Grande, Argentina, 10.350. Broadcasts 3-4 and 8-9 p.m. daily; Phones New York and Byrd.

ORK, Ruyssedele, Belgium, 10.330. Noon to 2 p.m.

PEL, Hilversum, Netherlands, 17.775. 7-10:30 a.m.

Police Stations, on frequencies: 1.596; 1.634; 1.642; 1.658; 1.666; 1.674; 1.682; 1.706; 1.712; 2.382; 2.406; 2.414; 2.416; 2.422; 2.430; 2.442; 2.450; 2.452; 2.458; 2.460; 2.474; 2.482; 2.490.

PRADO, Riobamba, Ecuador, 6.618. Thurs., 9-11:30 p.m.
Also Sundays, 5-6 p.m., about 19 meters.

Radio Coloniale, Pontoise, France, 11.711, 3-6 p.m.; 6:15-9 p.m.; 10 p.m. to midnight.
11.898, 3-6 p.m.;
15.234, 8-11 a.m.

RKI, Moscow, U.S.S.R., 7.520. Phones USA. (Replaces RNE temporarily).

RNE, Moscow, U.S.S.R., 12.000. Temporarily off the air.

RV15, Khabarovsk, U.S.S.R., 4.273. 3-9 a.m.

RV59, Moscow, U.S.S.R., 5.996. 3-6 p.m.

TGW, Guatemala City, Guatemala, 5.940. Supposed to commence tests soon.

VE9BJ, St. John, N. B., 6.090. Irregular.

VE9DN, Drummondville, P. Q., 6.005.

VE9GW, Bowmanville, Ont., 6.095. Fri., Sat., 8-noon; Sun., noon to 9 p.m.; other days, 2-11 p.m.
Relays CRCT and Canadian Radio Commission programs.

VE9HX, Halifax, N. S., 6.110. 5-11 p.m.

VK2ME, Pennant Hills, Australia, 9.585. Mid. to 2 a.m. and 4:30-8:30 a.m., Sundays only.

VK3LR, Melbourne, Australia, 9.580. Daily exc. Sun., 4-8 a.m.

VK3ME, Braybank, Australia, 9.503. Wed., 5-6:30 a.m.; Sat. 5-7 a.m.

VUB, Bombay, India, 9.565. Testing from noon to 1 p.m.

WOO, Ocean Gate, N. J., 4.273; 4.753; 8.560; 12.840. Phones Ships.

WIXAL, Boston, Mass., 11.790. Sat., 5:30-11 p.m.; Sun., 6:30-8:30 p.m.
15.250, Sun., 10 a.m. to 1 p.m.

WIXAZ, Mills, Mass., 9.570. 6 a.m. to midnight.

W2XAD, Schenectady, N. Y., 15.340. Sun., Mon., Wed., Fri., 4-5 p.m.

W2XAF, Schenectady, N. Y., 9.530. 7:40-11 p.m.

W2XE, Wayne, N. J., 6.120. 6-11 p.m.
11.830. 3-5 p.m.
15.270. 11 a.m. to 1 p.m.

W3XAL, Boundbrook, N. J., 6.100. Mon., Wed., Sat., 5 p.m. to midnight.
17.700. Daily exc. Fri., 8 a.m. to 2 p.m.

W3XAU, Newton Sq., Pa., 6.060. 8 p.m. to 1 a.m.
9.590. Noon to 6 p.m.

W3XL, Boundbrook, N. J., 17.310. Fri., 11 a.m. to 5 p.m.

W4XB, Miami, Fla., 6.040. 4 p.m. to 1 a.m.; (Not heard now, probably off the air).

W8XAL, Mason, Ohio, 6.060. Irregular.

W8XK, Saxonburg, Pa., 6.140. 4:30 p.m. to 12:30 a.m.
11.870. 4:30-10 p.m.
15.210. 10 a.m. to 5:15 p.m.
21.540. 7 a.m. to 2 p.m.

W9XAA, Chicago, Ill., 6.080. Sun., 11:30 a.m. to 9 p.m.
Tues., Thur., Sat., 4-12 p.m.
Mon., Wed., Fri., 4:30-7 p.m.

W9XF, Downer's Grove, Ill., 6.100. Daily exc. Sat. and Sun., 4:30-8 p.m.; 9:30 p.m. to 2 a.m. Sunday, 4:30-7 p.m. and 9 p.m. to 2 a.m.

XEBT, Mexico City, D. F., 6.010. Relays XEB, 10 a.m. to 11 p.m.

XETE, Mexico City, D. F., 9.600. 1 p.m. to 1 a.m.

XGL, Shanghai, China, 7.960.

XGN, Shanghai, China, 16.380.

XGO, Shanghai, China, 7.575.

YDA, Bandung, Java, 6.116. A NIROM station.

YNA, Managua, Nicaragua, 14.480. Phones Hialeah.

YVQ, Maracay, Venezuela, 6.672. Relays Caracas BC stations occasionally.

YVR, Maracay, Venezuela, 9.168. Phones Madrid.

YVQ, Maracay, Venezuela, 6.672.

YV2RC, Caracas, Venezuela, 6.112. 5:15-10 p.m.

YV3RC, Caracas, Venezuela, 6.150. 5-10 p.m.

YV4RC, Caracas, Venezuela, 5.990.

YV5RMO, Maracay, Venezuela, 6.070. and 9.600.

YV6RV, Valencia, Venezuela, 6.030. "La Voz de Carabobo."
The Venezuelan Network includes stations YV3RC, YV4RC, YV5RMO and YVQ.

ZFB, St. George, Bermuda, 10.060.

ZFS, Nassau, Bahamas, 4.513.

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Sometimes I think there ought to be a law to make everyone do a little studying every week. I didn't think that a year ago because it looked like all the cards were stacked against me. But I am surely making good money now. Maybe my story will show you the way to larger earnings also.

I Thought Radio Was a Plaything

But Now My Eyes Are Opened, and I'm Making Over \$50.00 a Week!

\$50 a week! Man alive, a year ago I thought anyone making that much was just plain lucky.

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

If you had told me that twelve months later I would be making \$50 a week in my own Radio business—I'd have thought you were crazy.

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

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

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

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

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

That business has since grown to the point where I am clearing an average of \$50 a week. All this took place under the watchful guidance of my friends at the National Radio Institute. They also offered to train me for other lines—in case I wasn't interested in having my own business. Broadcasting stations, Radio Manufacturers, Operating on Board Ship, Servicing Sets, Aviation Radio, Television, Short Wave, Automobile and Police Radio are other fields their

training covers. And to think, until the day I wrote for that book, I'd been wailing, "I have never had a chance—will never have one because I have no pull and have never had the advantage of a good education!"

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

Take my tip—write for their book. It won't cost you anything—except a postage stamp. It shows you a lot of things which I don't believe you know now—a lot of facts and figures on the opportunities in this new, fast-growing field. Where the jobs are, what they pay, how to get ready for one. Beginners as well as experienced men are making as much as \$1,000 to \$2,000 a year more as a result of N. R. I. training. You place yourself under no obligation because the book is free and is gladly sent to anyone who is ambitious and wants to get ahead. Just address J. E. Smith, President National Radio Institute, Dept. 4KO, Washington, D. C.

Mail the coupon in an envelope or paste it on a 1c post card.

**J. E. Smith, President,
National Radio Institute,
Dept. 4KO, Washington, D. C.**

Dear Mr. Smith: Send me your free book, "Rich Rewards in Radio," which points out the opportunities for spare time and full time jobs in Radio and your famous 50-50 method of training men to become Radio Experts through home study. I understand this request places me under no obligation.
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World-Wide Entertainment
 "Only I could I am sure say that I have never thought it possible to bring so much entertainment into my home as I have now. I have never thought it possible to bring so much entertainment into my home as I have now."
 Jean Harlow
 (from Chicago-Magazine)



Amazing All-Wave Performance
 "Hollywood, Calif. 'My Midwest is the best set I have ever tried. It gives me super foreign reception and new radio adventure. Its performance on all five wave bands amazes me."
 RICHARD ARLEN
 (Famous Feature Player)



Thrilling Foreign Reception
 "Hollywood, Calif. 'I can't say I need my Midwest at all. I really appreciate what radio reception was. It is like me in being in distant foreign countries as clearly as here."
 Clary Gable
 (Famous Feature Player)



Better Foreign Reception
 "Hollywood, Calif. 'I am sure I could not say that I have never thought it possible to bring so much entertainment into my home as I have now. I have never thought it possible to bring so much entertainment into my home as I have now."
 Claudette Colbert
 (Famous Feature Player)

Thrill to Unequalled World-Wide Performance with this -

Amazing NEW 1935 SUPER 16-Tube Deluxe ALL-WAVE Radio

9 TO 2400 METERS (12,000 MILE TUNING RANGE)

30 DAYS FREE TRIAL



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the world's most distant stations. Thrill to the chimes of Big Ben from GSB, London, England . . . tune in on the "Marseillaise" from FVA, Pointoise, France . . . hear sparkling music from EAG, Madrid, Spain . . . delight in lively tangos from YVBC, Caracas, Venezuela . . . listen to the call of the Kookaburra bird, from VKZME, Sydney, Australia, etc. Send today for money-saving facts,

WORLD'S GREATEST RADIO VALUE

\$57.50
 with New
Deluxe Auditorium-Type SPEAKER
 . . . LESS TUBES . . .

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