THE NOVEMBER, 1934

RADIO INDEX

THE ALL-WAVE RADIO MAGAZINE

25c

Reallocation in Cuba
Noise-Reducing Aerials
Saturday's Time on the Air
Tuning Short Waves
on Your Broadcast Set

No. 83

NOW

A PERFECT PHONE ADAPTER

Without "B" Batteries

A new model of this device has been produced which does not require the use of "B" batteries to provide grid bias IF

(a) Your receiver has two power tubes (of any type) in push-pull.

(b) Your receiver has one power tube of the pentrode type (such as 47, 42, 43, 58, 2A5, 59, etc.).

To Install:

The Perfect Phone Adapter requires no change in the wiring of a set and does not affect its load or balance. Simply remove the power tube or tubes, insert the small socket adapter, replace the tube, attach the little clip to a ground and the Adapter is installed.

To Operate:

Insert the two tips of your phone cords in a phone-plug. Push the plug in the jack in the little box; the signals are automatically transferred to the phones and the speaker is silenced. Pull out the plug and the set is back in speaker operation.

PRICES

Perfect Phone Adapter, postpaid .....$ 3.95

Adapter with 2000-ohm Phones and Plug 6.70

Adapter with Plug and 24000 - ohm feather-weight phones (made especially for sensitive work) 12.50

This is the only practical method of using headphones with modern sets. Equip your receiver and enjoy your radio while the rest of the family sleep.

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.

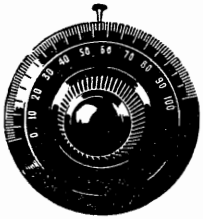
RADIO PARTS CO.

1401 Prospect Ave. **Cleveland, Ohio**

November 1, 1934

RADIO INDEX

Reg. U. S. Patent Office



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ELEVENTH YEAR

NUMBER 83

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Frontispiece—Doris Loraine
Lovely Singer of Ballads

Published Monthly Excepting July and August

See Subscription Blank on Page 96

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THE NOVEMBER 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	Glace Bay
12:00-1:00	WFLA	620	1000	Clearwater
	WMC	780	1000	Memphis
12:00-6:00	KFAC	1300	100	Los Angeles
12:00-8:00	KJBS	1070	10	San Francisco
1:00-7:00	WEDC	1210	100	Chicago
5:30-7:00	WSPA	1420	100	Spartanburg
6:00-7:00	KFBI	1050	5000	Abilene

Sunday Mornings

October 28

3:30-4:30	CJLS	1310	100	Yarmouth

Oct. 28, Nov. 11, 25

2:00-5:00	VOGY	840	400	St. John's

November 4

2:00-3:30	KVOA	1260	500	Tucson
3:00-3:20	KLCN	1290	100	Blytheville
3:30-3:50	KXYZ	1440	250	Houston
3:50-4:10	KTUL	1400	250	Tulsa
4:00-4:20	KPAC	1260	500	Pt. Arthur
4:10-4:30	KGDY	1340	250	Huron
4:20-4:40	KRGV	1260	500	Weslaco
4:50-5:10	KARK	890	250	Little Rock
5:00-5:20	KGKO	570	500	Wichita Falls
5:20-5:40	WNAD	1010	500	Norman
5:40-6:00	KUOA	1260	1000	Fayetteville

November 11

2:00-3:00	KFJZ	1370	100	Ft. Worth
3:00-4:00	WOS	630	500	Jefferson City
	HIX	1270	1000	Santo Domingo
5:30-6:30	4-BC	1145	750	Brisbane

November 18

1:01-1:09	CFCY	630	500	Charlottetown
1:00-6:00	WWAE	1200	100	Hammond
3:00-4:00	KDB	1500	100	Santa Barbara
	KYA	1230	1000	San Francisco
3:00-5:00	WHAZ	1300	500	Troy

November 18, 25

2:00-5:00	WMMN	890	250	Fairmont

November 25

11:00-11:30	XEB	1030	10000	Mexico City
1:00-1:30	WKY	900	1000	Oklahoma City
1:00-2:00	CMJP	1360	75	Moron
2:00-3:00	KGEK	1200	100	Yuma
2:30-4:30	CKBI	1210	100	Prince Albert
5:00-6:00	WMBR	1370	100	Jacksonville

November 4, 11, 18, 25

10:00-1:00	CMBX	1425	250	Havana
12:00-1:00	WGAR	1450	500	Cleveland
12:00-2:00	WGES	1360	500	Chicago
12:00-3:00	CMCD	955	150	Havana
1:00-1:15	KOMA	1480	5000	Oklahoma City
3:00-5:00	CKOV	630	100	Kelowna
	CFCT	1450	50	Victoria
4:00-5:00	CFJC	880	100	Kamloops

Monday Mornings

October 29

2:00-2:15	WAVE	940	1000	Louisville

November 5

1:00-2:00	CMJP	1360	75	Moron
2:00-2:20	WCNW	1500	100	Brooklyn
	WJAC	1310	100	Johnstown
2:10-2:30	WFAS	1210	100	White Plains
	WRAK	1370	100	Williamsport
2:20-2:40	WNBF	1500	100	Binghamton
	WCHS	580	500	Charleston
2:30-2:50	WAGM	1420	100	Presque Isle
	WBTM	1370	100	Danville
2:40-3:00	WLVA	1200	100	Lynchburg
2:50-3:10	WHDL	1420	100	Tupper Lake
	WHAT	1310	100	Philadelphia
3:00-3:20	WCAX	1200	100	Burlington
3:10-3:30	WSYB	1500	100	Rutland
	WTEL	1310	100	Philadelphia
3:20-3:40	WIBX	1200	100	Utica
3:30-3:50	WQDM	1370	100	St. Albans
	WKOK	1210	100	Sunbury
3:40-4:00	WMBO	1310	100	Auburn
3:45-4:00	KUJ	1370	100	Walla Walla
3:50-4:10	WGLC	1370	100	Hudson Falls
	WBAX	1210	100	Wilkes-Barre
4:00-4:20	WCAD	1220	500	Canton
	KPQ	1500	100	Wenatchee
4:10:4:30	WBBL	1210	100	Richmond
	KGBU	900	500	Ketchikan
4:20-4:40	WNBZ	1290	50	Saranac Lake
	WBRE	1310	100	Wilkes-Barre
	KGVO	1200	100	Missoula
4:30-4:50	WNBO	1200	100	Washington
	KOOS	1200	250	Marshfield
4:40-5:00	WRAW	1310	100	Reading
	KGY	1210	100	Olympia
4:50-5:10	WAAT	940	300	Jersey City
	KRKO	1370	50	Everett
5:00-5:20	WSYR	570	250	Syracuse
	KFXD	1200	100	Nampa
5:10-5:30	KVL	1370	100	Seattle
5:20-5:40	KGEZ	1310	100	Kalispell
5:30-5:50	KUJ	1370	100	Walla Walla
5:40-6:00	KGCX	1310	100	Wolf Point
5:50-6:10	KFQD	780	250	Anchorage
6:00-6:20	KSEI	900	250	Pocatello
6:10-6:30	KVOS	1200	100	Bellingham
6:20-6:40	KIT	1310	100	Yakima
6:30-6:50	KRSC	1120	100	Seattle
6:40-7:00	KXRO	1310	100	Aberdeen
6:50-7:10	KFIO	1120	100	Spokane
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

November 19

1:01-1:09	CFCY	630	500	Charlottetown
3:01-3:09	CHSJ	1120	100	St. John
12:00-3:00	WCNW	1500	100	Brooklyn
1:00-2:30	XEX	1310	125	Monterrey
2:30-4:30	CKMO	1410	100	Vancouver
4:30-5:00	WNBO	1200	100	Washington

Tuesday Mornings

November 6

2:00-2:20	WQDX	1210	100	Thomasville
2:10-2:30	WBHS	1200	100	Huntsville
2:20-2:40	WHBQ	1370	100	Memphis
2:30-2:50	WEED	1420	100	Rocky Mount
2:40-3:00	WOPI	1500	100	Bristol
2:50-3:10	WSMB	1320	500	New Orleans
3:00-3:20	WMBR	1370	100	Jacksonville
3:10-3:30	WNRA	1420	100	Muscle Shoals
3:20-3:40	WSJS	1310	100	Winston-Salem
3:30-3:50	WHEF	1500	100	Kosciusko
3:40-4:00	KMLB	1200	100	Monroe
3:50-4:10	WAGF	1370	100	Dothan
4:00-4:20	WKFI	1210	100	Greenwood
	KWG	1200	100	Stockton
4:10-4:30	WTJS	1310	100	Jackson
	KPJM	1500	100	Prescott
4:20-4:40	WPFB	1370	100	Hattiesburg
	KERN	1370	100	Bakersfield
4:30-4:50	WGPC	1420	100	Albany
	KXO	1500	100	El Centro
4:40-5:00	WBNO	1200	100	New Orleans
	KIEM	1210	100	Eureka
4:50-5:10	WROL	1310	100	Knoxville
	KLS	1440	250	Oakland
5:00-5:20	WDNC	1500	100	Durham
	KGIX	1420	100	Las Vegas
5:10-5:30	WJBW	1200	100	New Orleans
	KGMB	1320	250	Honolulu
5:20-5:40	WAML	1310	100	Laurel
	KRE	1370	100	Berkeley
5:30-5:50	WSIX	1210	100	Springfield
	KGU	750	2500	Honolulu

(Continued on page 4)

The BEGINNERS' STORY *of* RADIO

PART TWELVE

All-Wave Receivers and S. W. Converters

• • • *By* B. FRANCIS DASHIELL

THE ideal method for reception of short waves, particularly the very shortest, would require one to operate a number of separate short-wave receivers, each tuning between resonant limits of about 30 meters. In this manner it would be possible to use a small radio frequency transformer of limited range without resorting to the plug-in arrangement described in Chapter Eleven. The variable condenser would easily tune such a small coil, and congested signals would be spread out over a wide range on the tuning dial. A better tuning movement could thus be obtained, and many more stations on the short waves would be logged.

The trend, however, except in commercial and amateur stations where efficiency is the watchword, is not to make use of a number of receivers, but to combine every channel of the wave-band spectrum into a single, easily manipulated unit. This is why the *all-wave* receiver has become so popular. It embraces, within its tuning limits, all of the short-wave band and the broadcast band as well. Some receivers tune into the long-wave band in addition to the short and broadcast waves. This tuning is for European reception where many stations broadcast on the higher waves. Sets capable of tuning in waves from 5 to 2,000 meters (60,000 to 150 kilocycles) are now available.

The All-Wave Receiver

The all-wave receiver is simply a standard type of radio set, either of tuned-radio-frequency or superheterodyne principles. The latter is in almost universal use. There is nothing of a mysterious nature about its design and construction. The only real difference is the tuning range, which, in this case, covers a far wider scope than the ordinary broadcast receiver.

In previous discussions we studied a tuned-radio-frequency receiver and a superheterodyne set in Chapters Nine and Ten. But these receivers were capable only of responding to signals in the broadcast band—between 200 and 550 meters. This range was the limit of resonance for the r.f. coils and transformers used in the receivers. A single coil, in this case, was used to cover the entire wave band.

But, as we learned in Chapter Eleven, the short waves, between 200 and 10 meters in length, cannot be received through a single coil or r.f. transformer. That is why the short-wave receiver shown in Chapter Eleven required a number of interchangeable r.f. coils or transformers, each of which covered a definite wave band. The resonant range of a r.f. coil to high-frequency alternating currents becomes more and more limited as the waves become *shorter*.

Several Coils Required

This fact is easily understood by a study of the coils used to cover certain wave lengths and plugged into the short-wave receiver shown in Chapter Eleven. With all the information given in that, and several preceding chapters, concerning resonance, induction, and the tuning of coils carrying radio-frequency currents, the reader should be able readily to understand why a single coil of wire, wound into a radio-frequency transformer, cannot present perfect conductivity to *all* fre-

5:40-6:00	KGAR	1370	100	Tucson
5:50-6:10	KCRJ	1310	100	Jerome
6:00-6:20	KGDM	1100	250	Stockton
6:10-6:30	KSUN	1200	100	Lowell
6:20-6:40	KTRB	740	250	Modesto
		November 13		
4:00-5:00	CJLS	1310	100	Yarmouth
		November 20		
3:01-3:09	CHSJ	1120	100	St. John

Wednesday Mornings

		November 7		
1:00-2:00	KFYR	550	1000	Bismarck
1:30-2:00	WHBL	1410	500	Sheboygan
1:30-2:30	WSUI	880	500	Iowa City
2:00-2:20	WEBR	1310	100	Buffalo
2:10-2:30	WPEN	920	100	Philadelphia
2:20-2:40	WSAJ	1310	100	Grove City
2:30-2:50	WHIS	1410	250	Bluefield
2:40-3:00	WFBG	1310	100	Altoona
2:50-3:10	WPHR	880	100	Petersburg
3:00-3:20	WDAS	1370	100	Philadelphia
	WKBB	1500	100	East Dubuque
3:10-3:30	WRBX	1410	250	Roanoke
	WHBC	1200	100	Canton
	KGIW	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
	WSVS	1370	50	Buffalo
3:40-4:00	WGH	1310	100	Newport News
	WGBF	630	500	Evansville
	KIDW	1420	100	Lamar
3:50-4:10	WOCL	1210	50	Jamestown
	WROK	1410	500	Rockford
	KBTM	1200	100	Jonesboro
4:00-4:20	WQAN	880	250	Scranton
	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
		November 21		
2:00-2:30	KWTO	560	1000	Springfield
3:00-3:30	KSO	1320	250	Des Moines
3:00-5:00	WOPI	1500	100	Bristol
		November 28		
5:30-5:45	WFBG	1310	100	Altoona
		November 14, 21, 28		
2:00-2:30	WROK	1410	500	Rockford
		November 7, 14, 21, 28		
10:00-1:00	CMBX	1425	250	Havana
2:30-4:30	CKMO	1410	100	Vancouver
6:00-6:30	WASH	1270	500	Grand Rapids

Thursday Mornings

		November 1		
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
2:30-3:30	CHWK	780	100	Chilliwack
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	WCSF	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
	KGBX	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
		November 8		
3:00-3:30	KSO	1320	250	Des Moines
		November 15		
1:00-1:30	WDNC	1500	100	Durham
5:00-5:10	KFNF	890	500	Shenandoah
		November 22		
2:00-3:00	VE9EK	1195	10	Montmagny
		November 29		
12:00-6:00	WNRH	1310	100	New Bedford
3:15-3:45	KFH	1300	1000	Wichita
5:30-6:00	WRAW	1310	100	Reading
		November 1, 8, 15, 22, 29		
12:00-3:00	WCNW	1500	100	Brooklyn
3:00-4:00	XEFI	720	250	Chihuahua

Friday Mornings

		November 2		
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
	KGEK	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
	KWYO	1370	100	Sheridan
4:20-4:40	WGAR	1450	500	Cleveland
	KLPM	1240	250	Minot
4:30-4:40	WCLO	1200	100	Janesville
	KGFG	1370	100	Okla. 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

(Continued on page 51)

quencies of alternating currents between 30,000 and 545 kilocycles—the range of the standard all-wave radio receiver.

For that reason the plug-in system was originated, using coils similar to the types described in Chapter Eleven. If a larger coil is added to the series required to cover the short-wave band, then the broadcast band, too, can be covered. This was the beginning of the all-wave idea. There is no limit to the number and sizes of the additional coil or coils that can be plugged into the set so that signals of *any* wave length can be heard. But, in this type of construction, the outstanding drawback is that, while the r.f. coils are interchangeable, the variable condensers used for tuning are fixed capacity limits.

Thus the two important features of a tuned-radio-frequency circuit (capacity and inductance) are not maintained with a balanced ratio when the coils are shifted for the reception of signals over the different wave bands. To make this scientifically correct it would be necessary also to change the condensers in size.

Small Tuning Condensers

To make this a little more clear, perhaps, we should remember that a variable condenser of small size and capacity calls for a greater interleaving of the plates in order to increase its total capacity. On the other hand a large condenser calls for a very slight movement of its rotor plates in order to reach the capacity obtained by the larger movement of a small condenser.

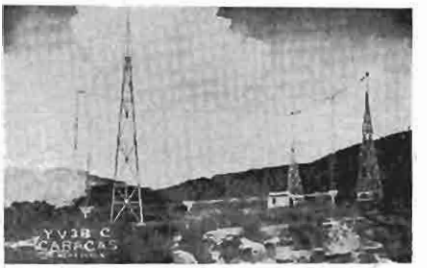
When short waves are tuned in, a small coil and a small variable condenser are necessary. But, as the waves become longer, larger coils and larger condenser capacities are needed. Now, if a large tuning condenser is used, a very slight movement is required to tune a small coil. And a greater movement is required to reach the larger capacities needed to tune a larger coil to a longer wave length.

But if we use a small tuning condenser for a small r.f. coil, so as to obtain fine shades of tuning or capacity adjustment needed for separating the short waves, the condenser capacity would be far too small to tune the large coils used for reception of the longer waves in the broadcast band.

All-Wave Tuning Difficulties

These things, then, will explain to the reader why inequalities exist in the so-called all-wave tuning circuit. The all-wave receiver, quite naturally, will favor certain wave bands, where the inductances of the coils and the capacities of the condensers blend together in the proper ratio so as to tune in certain stations with perfect resonance. Outside of these favorable portions of the dial the set will not operate as nicely on the remaining wave bands. All this is to be expected, for the best all-wave receiver that can be made will prove unsatisfactory unless its variable condenser and r.f. coil values balance so as to maintain a proper ratio throughout the tuning limits. The proper design and maintenance of these two important circuits is necessary if the all-wave receiver is to work equally as well throughout its short and broad-cast-wave range. This problem has been admirably met in most all-wave radio sets.

Let us, first, return for a moment to the simple short-wave receiver described in Chapter Eleven. If the coils and condensers used should be given less inductance and capacity, then the



Here we have the antenna equipment of Radiodifusora Venezuela, YV3RC, Caracas. which transmits on a frequency of 6.150 magacycles. YV3RC is quite generally received throughout North America.

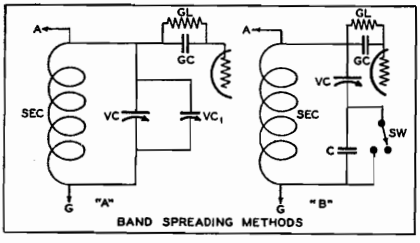
tuning range of each plug-in unit would be lessened, but the tuning and separation of stations would not be so exacting. The dial movement would then be greater between otherwise 'hair-line" separated stations. In other words we would *spread* out the stations farther apart on the dial.

Band Spreading

The average coil or r.f. transformer covers so much of the wave band that extremely slow and careful tuning is required to bring in a station. But it is possible to spread out *any* portion of the short-wave band—some portion, for instance, where far-away stations are congested and hard to separate. The method of spreading out some portion of the wave band is called *band spreading.*

The band-spread method makes it easier to locate and tune distant stations. It does not, of course, add to the sensitivity of the set; it merely makes tuning easier and not so sharp by creating a certain portion of the tuning scale that can be tuned with small units of capacity, just as if the set were built with the small coils and condensers previously mentioned as being the ideal short-wave receiver.

At "A", of this chapter, the secondary winding of the plug-in r.f. coil that was used in the short-wave receiver shown in "C" of Chapter Eleven, will be seen, but the remainder of the circuit is not indicated. The band spreading operation is confined entirely to the tuning coil and its condenser. The tuning condenser (VC) is shown in "A".



BAND SPREADING METHODS

The Additional Condenser

The band-spread method shown at "A" is the most simple arrangement known, and it is quite efficient and satisfactory. A small variable condenser, having one-third the capacity of the larger tuning condenser (VC) is shunted across the latter. The small condenser is shown at VC_1. This is all that is necessary in order to introduce the band spreading operation to the basic short-wave set described in Chapter Eleven.

If VC is set at zero capacity, and the tuning of the secondary coil is accomplished by turning VC_1, then the latter condenser will tune one-third of the wave length limits of VC. Not all the stations tuned in with VC can be heard but those that are picked up will be spaced three times as far apart on the dial of VC_1 as when on the dial of VC. Thus the stations are separated, as that particular wave-band is spread out around the dial.

Now, if VC is set at one-third of its capacity and the short-wave set tuned by VC_1, it will respond to stations usually heard between the one-third and two-thirds capacity setting of VC. They will be spaced three times as far apart on the dial. If VC is set at two-thirds capacity, and the tuning done by VC_1, then the stations usually heard between two-thirds and full capacity of VC will be heard, and again they will be three times as far apart on the dial of VC_1, covering the dial from end to end.

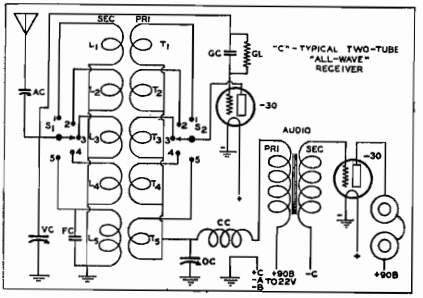
Another Scheme

All tuning, in the band-spread system, is done by the small condenser VC_1, *after* VC has been set stationary so as to select the desired portion of the wave band covered by the particular plug-in coil being used. The principal difficulty is in setting both VC and VC_1 to the proper relationship so that a station which has been previously logged can again be located. There are several schemes for band spreading, but the one shown at "A", is the most widely used.

In order to eliminate the use of the variable condenser VC_1 with its tuning requirements, the method shown at "B" may be used. A small, fixed condenser (C) is connected in *series* with the tuning condenser VC. It is shunted with a switch so it can be cut in or out of the circuit at will. It is known that if two condensers are connected in series the capacity of both will be greatly reduced. The capacity of C, in our short-wave circuit, should be about .0005 (50 mmfds.) mfd. Now, when C is in the circuit, VC will have the capacity of a much smaller condenser, and stations tuned in by it will be more widely separated on the dial of VC.

All-Wave Coils

The plug-in system, which can also be used in any all-wave set, is not in general favor because of the necessity for manual manipulation of the r.f. coils when changing from one wave band to another. This system, however, is the ideal arrangement for perfect short-wave reception. Modern all-wave sets do not use the plug-in method but have a permanent installation of coils. They can be cut in and out of the circuit at will simply by turning a small switch. Of course, there is some loss of energy because of the *dead ends* of the coils and connections. However, in the newer types of all-wave sets the dead-end loss is held down to such a small minimum that it is not a serious matter.



At "C" is shown the circuit of a typical all-wave receiver. It does not use the plug-in method, but switches the various coils in and out by means of two switches operated simultaneously by a single knob. The individual r.f. transformers or coils used in this small all-wave set are the same plug-in coils described in Chapter Eleven and used in that short-wave set. The circuit, too, is identical. There is no difference between the two circuits except that the coils are permanent and connected at will by means of switches. An additional r.f. coil is used to cover the broadcast band.

The Broadcast R. F. Coil

However, the coils wound for the short-wave receiver were made only to cover the short-wave bands up to 200 meters. Provision must be made to cover the broadcast band as well, so an additional coil is wound for the 200 to 550 meters band. Since this coil is tuned by the variable condenser VC, which is too small in capacity fully to tune the coil, a small fixed condenser, FC, of about .0001 mfd. capacity, is shunted across the broadcast coil, L_6, as a permanent feature. The antenna condenser AC is not needed when the broadcast band is being used. The coil used for the broadcast band should have 80 turns of wire on the secondary and 22 turns on the primary, wound to the same specifications given in the previous chapter.

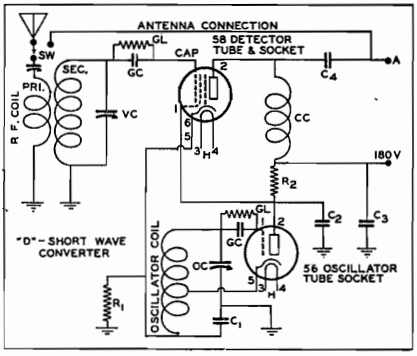
An all-wave receiver having many tubes and a superheterodyne circuit becomes very complicated. Several sets of coils are needed so as to cover all the wave bands. If the reader will consider the superheterodyne circuit shown at "C" in Chapter Ten, and then apply in his mind the many coils indicated at "C" in this chapter to all the radio-frequency and oscillator circuits, he will obtain some idea of the circuit of a modern multi-tube all-wave receiver. All of the coils, antenna, radio-frequency and oscillator circuits, require simultaneous shifting with a single switch-knob in one operation when changing from one wave band to another.

Short-Wave Converter

It is possible to utilize any broadcast superheterodyne or tuned-radio-frequency receiver when listening to the short waves. In order to tune below 200 meters we must connect a separate unit to our standard broadcast receiver. This unit is called a *short-wave converter.*

Next to a carefully built all-wave receiver for efficiency comes the short-wave converter. It is merely a small short-wave set. But it contains an oscillator which is used to produce local radio-frequency oscillations that are mixed with the high-frequency short-wave signals coming in from the antenna. The mixing of these two different frequencies creates a *lower* frequency, which, if the converter has been properly designed, will fall within the tuning range of the broadcast receiver. The action of the oscillator and the production of these beat frequencies was described in detail in Chapter Ten.

The converter takes the incoming short-wave signals, mixes them with the locally produced r.f. oscillations, and passes the resulting beat frequency to the broadcast receiver. This output, since it is a beat frequency, has a lower frequency that is within the range of the broadcast set—200 to 550 meters. In other words, the converter *converts* the short-wave radio signals to longer wave signals so they can be applied to the broadcast receiver just as if they were broadcast station signals. The broadcast receiver, however, must be tuned to the output frequency of the converter. It requires no further tuning or adjustment except for volume. All signal tuning is controlled by the converter dials.



Typical Converter Circuit

At "D" is shown the circuit of a short-wave converter. As in the typical all-wave circuit, shown at "C", the r.f. coils used are those described for the short-wave receiver illustrated in Chapter Eleven. Either the plug-in method or the all-wave scheme can be used for changing the coils. Of course, the broadcast coil will not be required in the converter. In the converter circuit it will be noted, however, that a different arrangement is used. The tickler winding of the r.f. coils becomes the antenna primary of the converter circuit.

An oscillator must also be added. And a series of oscillator coil units must be made, one for each of the different r.f. coils illustrated and described in "D" of Chapter Eleven. The oscillator coils are wound on similar forms. The oscillator coil to be used with the 10-20 meters r.f. coil, has 4 turns with a tap taken off 1 1/3 turns from the *bottom.* For the 20-40 meters coil wind on 8 turns with a tapped connection taken 2 2/3 turns from the bottom; for the 40-80 meters oscillator coil wind on 18 turns with a tap taken off at 6 turns from the bottom; and for the 80-200 meters oscillator coil wind on 40 turns with a tap taken 15 turns from the bottom.

One contact of the socket that is used to hold the plug-in oscillator coils connects to the tap on the coil and to the cathode of the oscillator tube. This is shown in "D". Only three prongs of the coil base and three contacts of the socket are used. The output of the converter connects to the antenna terminal of the broadcast receiver. The filaments of the converter tubes may be heated by current taken from the

(*Continued on page* 26)

Hitting *the* BULL'S EYE

• • • Readers Report Remarkable Reception

THERE is an old saying, "What is one man's meat is another man's poison." Does this apply to radio? In every issue of this magazine, readers in almost every part of the United States and Canada report the reception of overseas stations. Yet other readers with the same sets and located in the same sections, are unable to get across the water. Is it merely a matter of persistence, careful and intelligent tuning, and knowing when and where to tune? Or must some of us in spite of our efficient receivers, give up hope and reluctantly conclude that these foreign stations are not for us?

All Stations But Two

We sometimes question whether reading the accounts of super-logs has the effect of discouraging beginners in DX or whether it acts as an incentive in showing the vast possibilities latent in the hobby. One of the best-known of the DX fraternity in the U. S. is S. R. Lewis, Rt. 3, Box 688-A, Toledo, Ohio. "The total of my b. c. b. log at the present time is 860 verified stations in 27 countries," writes Mr. Lewis. "I believe that I came as close as anyone I ever heard of in the matter of completing our USA list of stations. Last June, I needed only two active USA stations to have verified them all. With the addition of the many new ones this fall, I now need twelve or so although I have already verified six of the new calls. I began to DX and verify stations in 1930—just four years ago today. In this time I have lost a lot of sleep, yes, but think of the genuine, clean fun I've had. I wouldn't trade my DX experiences for anything. I want to say here and now that without RADEX I could never have made my DX hobby what it is today. RADEX has helped more than any one thing to explain the many, many problems that confront a DX fan. May I add my little vote of thanks for your efforts toward making DX and radio in general, a distinct success?

"The TPs are pounding through in great style and this week I've heard 2CO, 7ZL, 2YA, 3AR, 5CK, 2FC, 5CL, 3YA, 1YA, 4QG, 3LO, 2BL, 4RK, 3US, 2GB and 5DN—looks pretty good for a fine DX season, doesn't it? I find that the best distance for early in the evening here is LS2 of Buenos Aires using 1190 kcs. and 40 kw. in power. They are heard at 7 p. m. EST.

"In find that a good antenna and ground go a mighty long way toward bringing in these distant stations. I have a new transposed leadin on one antenna that works nicely on s. w. reception."

How Do They Do It?

"I'd like to know what it's all about," protests Phil Simmons, 1618

Introducing the official announcer of Short Wave Radio Station COC, Havana, Cuba, Senor Ernesto Casas R. This genial announcer uses both English and Spanish.

Juneway Terrace, Chicago, Ill. "I have been a s. w. l. for a couple of years now and I think it's pretty good when I get J1AA but when I read of these other fellows pulling in Japan, Australia, etc., *on the broadcast band,* I think that's something. I used to tune on the b. c. b. and thought I was good when I got WAAF, WCSL, WKBI, WEHS, WSBC, WWAE and WASH. Then one day I got hold of a copy of RADEX and saw where these fellows were picking up 50-watt Californians from New York and such. I don't see how they do it. My receiver is an Alan International, a four-tube set and I am using a 200-foot doublet antenna with no ground. I know how to tune a radio all right but it's hard to believe some fellow in Colorado is picking up Australia and Japan." Phil had better try the b. c. b. again and try for some of those distant 50-watters himself although one must not expect too much with a four-tube set. If Phil could look over the verifications of some of the DXers right there in Chicago—Frank A. Johnson's, for instance—he would have a real awakening as to the possibilities of reception on the b. c. b.

Here is another reader who just doesn't see how others pull in those foreign stations on the b. c. b. "How do these fellows all over the country manage to receive trans-oceanic stations on the b. c. b.?" inquires Geo. W. Acker, of Wadsworth, Ohio. "Of course, trans-Pacifics are best received in the West, and trans-Atlantics in the East. Many are hearing these stations already. Just what sort of a rig-up do these fellows have? Are their antennas all of the straight or of the L or V type? Do they use phones in order to be able to hear these stations?

"I ask this because, so far, I have never been able to hear a single transoceanic station. I tried hard last winter but with no luck. Now I have an 11-tube all-wave Philco with two Lynch cage antennas. Are these cage antennas as efficient on the b. c. b. as a straight or L or V antenna? I have two cages twenty and a half feet long which work well on the lower meters. My other newer one has cages 33 feet long which work far better on the higher short waves and the b. c. b. except from about 1200 to 1500 kcs. For some reason or other, my shorter antenna works better on this section. Is this region too far inland for reception across either ocean? Or am I in a dead spot?"

Perhaps some of our other readers in Ohio who have been successful with the overseas stations will write Mr. Acker the best stations and the best hours to tune them in. Mr. Acker, by the way, is one of our most successful s. w. listeners.

Texas vs. New York

"My log has increased from 391 to 455 on the b. c. b. and my veries from 148 to 305," reports Samuel A. Meyer, Jr., 83 Canterbury Road, Rochester, N. Y. "Among my newer veries are KFVD, CJCA, and LR5. I am spending my vacation here in Laredo, Texas. Radio reception down here on the border is pretty fair. WSM, WHAS, WLW, WBBM roar in nightly at 8 p. m. A new station in Nuevo Laredo, Tamps., is XEAM, 750 kc., 50 watts. Mr. Lozano, the announcer, said XEAM would be willing to give a DX program next winter. Their address is XEAM, El Vocero Tamaulipeco, Edificio Banco Longoria, Nuevo Laredo, Tamps. XENT is off the air at present. Will return to Rochester in September and resume my DXing."

Five Hours: 82 Calls

"As a rule, I do not do any DXing in the summer," says James B. Crusan, 424 Smithfield St., Mount Pleasant, Pa. "But on August 7th, at 8 o'clock p. m., I began twisting the dial. Between then and 1:00 a. m., I heard 82 stations announce their call letters, representing channels between 540 and 1670. Signals were heard from the U. S., Canada, Cuba, Mexico and Alaska. This was accom-

plished with a 1932 7-tube Airline WG 24. Would enjoy hearing from other users of the same set."

From one of our many shut-in friends, R. N. Putnam, 920 12th Ave. N., Fargo, N. Dak., comes this message. "I have just purchased a new Philco 16 Baby Grand. It surely is one swell outfit and drags 'em in in great style and what a tone for a table model. For example, at 7:30 p. m. tonight with broad daylight outside, I just had WRUF, Gainesville, Fla., right through KO A, Denver, on the same band. Have just listened to WJZ for half an hour steady, from 7:30 to 8 p. m. It is still daylight and I am getting stations from all over the country."

"I began DX with a 'Lark' four-tube receiver on which I was thrilled by KNX, KFI, XEK and Poste Parisien," recalls Lloyd J. French, 328 North Main St., West Hartford, Conn. "In September, 1933, I went up in the world with a Philco nine-tube superhet. During the past season I received Radio Normandie, IMI, Frankford-am-Main, Stuttgart, Heilsburg, Beromuenster, KWG, KDB, KXO, KXL, KPQ, KOOS, and many others, all verified. WDRC is constructing a new transmitter and will put out 2500 watts day and 1000 at nights. I have a log of 400 all verified."

Art E. Foerster, 1213 Bosart Ave., Indianapolis, Ind., says that he is looking forward to another successful DX season. In the past two years he has compiled a log of 702 stations of which 606 verified include LR5, CX26, PP, YV1BC, HJN, 4QG, 2YA, KPPC, KPQ and 10-AT. He would like more correspondents among the fraternity.

"I have been a DX hound for some time but it is only with the purchase of my Philco all wave 16-B that I have been interested in the short waves," remarks H. M. Thomas, 534 Prospect St., Maplewood, N. J. "I have a log of 363 stations on the b. c. b. and all the usual s. w. catches. However, I expect to do lots more this year with eleven tubes instead of six. I would like to correspond with DXers using the 16-B and will answer all letters."

That good-looking girl and great singer, Grace Moore, was the first guest star of the new Atwater Kent series. Stage, screen and speaker have presented Miss Moore's artistry to the world.

Writes a Junior DXer, Harry Warner, eleven years old, of 390 N. Prospect St., Hagerstown, Md. "I am in a very bad locality having six factories within four blocks, however I usually can receive both KSL and KVOO with plenty of power at 8:30 p.m. on my Philco 16X. I think one of my best catches was WDGY. I have also received KFI and WINS at 8:00 p.m. WJEJ, Hagerstown, is a good little station. WORK is also good. I don't do much tuning on the s.w. but have received both PRA3 and HJ1ABB."

"I have raised my log to 636 and my veries to 187," totals Don Reynolds, "The Newburg Nite Owl," 84 Chambers St., Newburgh, N. Y. "I have been very busy erecting new aerials for the coming season. I have added a few new stations to my log but I still think KGMB in Honolulu is my best."

"My log at present stands at 786 stations heard, 676 of which are verified," reports E. A. Feichtner, 53 Holmes Street, Erie, Pa. "I have logged and verified 34 100-watt or less on the West Coast. Have 2YA, 4QG, 5CO verified, also Poste Parisien, YV1BC, CX26, HJN and LR5."

Miscellaneous Matters

"In the eight months the KDKA DX Club has been on the air, we have been reported from India, New Zealand, Australia, Jamaica, Canada, England, Scotland, Porto Rico, Cuba, Argentine, Hawaii and 43 states," writes Joseph Stokes, M. C. of the Club.

"I have been in personal touch with the program staff of WIOD and W4XB and their policy from now on will be to verify all true reports as soon as possible," reports Emmett Wallace, Pompano, Fla. "A good many reports of reception of W4XB have been received when the station has not been in operation and these reports were naturally not answered. It is expected that W4XB will be in operation regularly this winter. I will try to let you know as soon as they start up again."

Songs and humor of Walter O'Keefe "will swing through the air with the greatest of ease" when he fronts the mike with the Camel Caravan, Tuesdays at 10:00 p. m. and Thursdays at 9:00 p. m. EST. On the Columbia.

"In and about Salem, Mass.," writes Charles P. Atherton, "there is a small group of Radexers which is interested in associating with themselves a few other 100 per cent radio enthusiasts especially those interested in reception on the b. c. band, with the thought of forming a small local co-operative club. This is to be an entirely co-operative club with no dues or profit to anyone. Anyone interested in joining this group should communicate by letter, addressing 'Radio,' Box 951, Boston, Mass."

"I want to get into touch with somebody who is interested in the technical and s.w. sides of radio," writes Robert S. Lawson, 55, Kingsway, Wembley Park, Middlesex, England.

Briefing Some Reports

"Since writing you last I have received a few new veries on the b. c. b.," says J. A. Shanks, Russellville, Tenn. "They are JOAK-1, Poste Parisien, LR4 and 4BH. This year was the best for DX I have ever seen; it netted me ten new veries from foreign stations on the b.c. b. so far. Heard LR5 and CP4 on their special broadcasts but have not heard from them as yet. WLW sure comes in here now since they are using 500,000 watts power regularly. I can't notice much difference as to spreading but their strong carrier certainly brings them well above the static here."

"On my five-year-old Atwater Kent 7-tube, I have finally brought my log up to a total of 425 stations with 410 verified," reports Nathan Handler, 642 Ave C, Bayonne, N. J. "Of this number 250 were verified this past season. I have finally been able to get off this continent. I very much prize my veri from Poste Parisien. I had the good luck to pick up LR5 on

March 11. Next season I expect to do much better as I intend to get a Midwest receiver."

"I am writing to tell you of my luck in the past DX season," contributes D. A. Chilton, P. O. Box 310, Draper, N. C. "My best catches are WISN, CKLW, CKOC, CKAC, KFI, KDYL, KECA, KGBS, KFAB, KNX, KVOO, WASH, XEPN, XENT, XER, WBOW, and WHBU. The last two were using 100 watts power. I also got the 10-watt station WNBW at Carbondale, Pa. All came in with good loudspeaker volume. My set is a 6-tube midget 'Sky Rover' cover the regular b.c.b. with police calls. I have logged some 90 stations in the six months I have had it. I am thinking of buying a 6-tube all-wave 'Pilot.'"

"I had very good results on my Zenith 12-tube (b.c.b.) from last February to the close of the DX season," reports Henry Wilkinson, Jr., 1202 N. Ellwood Ave., Baltimore, Md. "My veries are 3AR, 4QG, 4RK. CP4, LR5. I1TO, PP, Radio Normandie and Heilsberg. I DX only for foreigners and would like to correspond with DXers living near San Francisco who are interested also in tuning in foreign stations. I am a member of the IDA and the NZDXRA."

Rubbing it In

"Greetings to you," salutes Warren E. Winkley, P. O. Box 12, Hughson, Calif. "I hope you have had a very pleasant summer and haven't melted away in the heat you have had. Out here in California, we have had a rather comfortable summer. In between trips to my summer cabin, I have taken many nights-out to sit up with the radio. I have found the following stations very consistent during the whole summer—WLW, WCCO, XEW, WHO, WSB, CFCN, XEB and WOAI. I've heard WLW and WSB every night now for the past year. Although reception has been good, the static has prevented

The "Easy Aces" have turned time backward in its flight and their comedy series now deals with the courtship of Jane and Goodman. Those hectic days are broadcast over the Columbia net each Wednesday, Thursday and Friday at 8:00 p. m. EST, beginning October 3rd.

me from adding many new stations to my log which stands at 599 with 152 verified. My latest catches are 4ZP and LR4. The latest veries are KOOS, JOGK, JOPK and XOST. My veri from the latter states that I am the only person in the U. S. to report them which fact makes me somewhat proud of my six-year-old AK. I wonder if it would be possible to find out whether the station on 590 or 592 in the early morning of August 1st. was Vienna, Austria. The music was in German as was the talking. Both were the weakest a signal could be and still be heard. I can hear 28 of the Japanese stations now with absolutely local volume; I wonder what it will be like when they go to 150 kw. as planned?"

Some SA Tips

For those interested in South American and Central American reception, Rudolph Kure, Cincinnati, Ohio, contributes the following helpful information: LU-7, Bahia Blanca, Argentine, is on the air from 8:00 to 14:30 and 16:00 to 22:30 Chilean time. CE-103, Valdivia, Chile, is now on 1380 and is on the air from 12:00-13:45; 16:30-17:30 and 20:00-22:30 Chilean time. CE106 is transmitting until 1:00 a.m. EST. Mr. Kure re-

ports hearing TGW again with 10,000 watts. He heard them on 565 kcs.

"All my enjoyment is in my radio," writes G. L. Briggs, R. D. No. 1, Sherburne, N. Y. "I am a disabled veteran, bed-ridden since 1921. I have one of the new 15 Scott's. I had the 12-tube Scott before. I find them the best of anything I have ever had."

The Cheaters Again

"I would appreciate it very much, if in future issues of RADEX, you would place the symbols against our station that denote "Verify for return postage' as that is what we intend doing faithfully," writes Charles Hesterman, Radio Station CFQC, Saskatoon, Sask. "On October 13th, we intend transmitting a special DX program dedicated to the Canadian DX Relay and to the IDA. This will be our first DX using our new Marconi 1000 watt crystal control equipment and we are hoping to be well received as far as New Zealand. To this date we have had no correct reports from that country although we have received several reports which unfortunately were suspiciously like downright 'fakes.' Reports of that description are not conducive to stations agreeing to broadcast special DX programs. We begin to expect all foreign reports to be faked. We know, of course, that this is not so as there are many foreign DXers who refuse to write to a station unless they are reasonably certain of the accuracy of their reports and it is for their benefit we are intending this October program. A word of warning to these careless DXers would not be amiss in your magazine as it is apparently the most widely read radio magazine in the world." In an article on "Organized DX in New Zealand" published in our October issue, mention was made of the activities of the New Zealand DX Radio Association in curbing the fakers. We are sure that this Association would welcome the forwarding to them of any suspicious reports from New Zealand received by any radio station. It will be necessary to make an example of two or three of these frauds in order to clean up this regrettable situation. New Zealand is not their only habitat; they thrive in every country although we do feel that the efforts this magazine has been making for several years, have considerably reduced their number in the USA.

DXing As You Travel

William S. Vincent writes us an interesting letter from the high seas. "I seldom miss an issue of your magazine and find it most interesting to note the experiences of some of your readers—different aerial and ground systems employed, as well as what each regards as his pet catch. My present trip started at New Orleans,

Zella Sexton, went from Denver to Hollywood by way of New York. She was one of the twelve finalists in the "Hollywood Hotel" national audition but failed to win the coveted star's role in that program. Her dramatic work so impressed the judges, however, that she was given a speaking part in the program. Now she will be heard with Dick Powell, Rowene Williams and Ted Fiorito's orchestra on the broadcasts of the CBS, Fridays at 9:30 p. m. EST.

then Mobile, Baltimore, Norfolk, New York, Panama Canal, Hilo, Kahului and Honolulu, T. H., Shanghai, China; Calcutta, India; Colombo, Ceylon; and am bound for Aden, Arabia; Port Said, Egypt; New York, Baltimore and New Orleans. I wonder what some of your DXers would do on a trip of this kind—the mails would be clogged by requests for verifications. I have carried a receiving set with me for several years. This particular one (Lafayette Model 1020) since May, 1933. It is consistent and I got my money's worth. I use a Janette Rotary Converter to change the current from 110 volts d. c. to the required d. c. I find that the Daventry s. w. stations are received better than any other group in most places."

Mr. Vincent sends us the daily programs of VPB, Colombo, Ceylon, on 700 kcs. which he clipped from the Ceylon Daily News. For the benefit of our readers this station's sked is 11:30 a. m. to 1:00 p. m. and 7 p. m. to 10:30 p. m. local time which, according to the RADEX Time Converter, is ten hours and thirty minutes ahead of EST.

A Monthly Log

"I heartily endorse the practices set forth by M. R. Billings on page 27 of the September RADEX," affirms Howard L. Spies, Canton, Ohio. "I sometimes wonder if new DXers are not discouraged by reports of such mammoth logs as sometimes appear in RADEX. If there are any such persons, and I feel sure there are, it might be encouraging to assure them that in all probability, these logs cover a period of years and may list as high as four different changes of call letters for the same station. They may show stations which have not existed for so long that they have been forgotten by everyone except those who include them in their logs. They may show two sets of call letters for the same transmitter and may even count the same station separately when it changes frequencies.

Dennis King, romantic singer of stage and screen, now broadcasts weekly with Louis Katzman's orchestra over a C-to-C hookup of the NBC-WJZ net, Wednesdays at 10:00 p m. EST. You probably saw him in "The Vagabond King" and "The Three Musketeers."

"In view of all this, I think the idea of the monthly log will put everyone on the same basis—from the beginner with his first set to the old-timer who has worn out countless pairs of pants in front of his radio. Of course the same stations may be counted when received in a succeeding month but it is surprising how difficult it is to repeat on some stations which seemed very easy to receive the first time. The current number of RADEX supplies a very convenient method of keeping a record of the stations received during any one month—just jot an X opposite the call in the Index by Call Letters."

Those "N" Calls

"Regarding the USNR members, the N prefix to their calls may be used only after permission is received," explains Clement Van Vel-

(*Continued on page* 44)

The Dramatic Story *of* TAMARA

• • • *By* "BETTY"

TAMARA is an exotic name, one which might well be the title of a story. The owner of the name, a vivacious young Russian singer heard over NBC networks, would be the heroine . . . For in the life of Tamara have been tragedy, danger, adventure and courage, all the elements of a stirring epic.

Tamara was born in Odessa, Russia, 25 years ago. The fact that the date was Friday, October 13, has never caused Tamara any superstitious qualms, because at that time in Russia every day meant a round of hardships.

When the war started her father was called into the service of the Tsar. After Russia withdrew from the conflict Tamara and her family moved from the city to a nearby village. There her father tilled the land, and hoped for peace. But it didn't come.

A Life of Terror

It was while living in the tiny village that Tamara faced an incident which forever after, she says, will leave her cold with terror in memory. Russia was in revolution. Tamara told her story of that horrible day, when blood ran free in the houses of their village, and the sky was overcast with smoke from burning barns and public buildings.

There was a clack of a few firearms and the rattle of sabers. Most of the people scurried to hiding. Tamara's grandmother, her tired face grim with terror, ran with other women and children from the village. With her she had Tamara and Tamara's baby brother. The three took refuge in an old straw stack. Hour after hour they smothered in the dank mass. Toward morning, just

when Tamara and her grandmother hoped the danger had passed, they heard the sound of voices and hoofbeats. Then a voice—"Fire that stack."

With terror in their hearts they heard the bandits striking matches to ignite the straw. The acrid odor penetrated their covering. Then, with drunken laughs, the bandits rode on. With darkness for shelter, Tamara, her brother and grandmother fled from the stack to find the wet straw had refused to burn.

At Hard Labor

Tamara tells of many months she labored in the fields—for sugar and salt and a few yards of cheap calico. These commodities, to Tamara and her family, were as precious as gold. They represented the "extras" which could not be produced on the scant acres tilled by her father and mother.

Tamara's father had a vision of a promised land—America. Month

after month he slaved to recoup his modest fortune. And then their dream came true. One morning Tamara, her father, mother and brother, with hundreds of other immigrants, landed on Ellis Island.

Into "the Melting Pot"

Their knowledge of the language was meager. In Russian schools they had learned to read and write English just slightly. The first autumn found Tamara and her brother enrolled in a public school. They learned to play American games. American movies gave Tamara the determination to go on the stage. Amateur theatricals staged at her high school allowed her to gain some training.

When Tamara completed school she looked for a job. The producer of a show hired her and Tamara struggled to change her style of Russian folk dances to the jazz tempo, until one day the producer saw her in the chorus. Realizing that she was out of place in the chorus, he asked Tamara if she could sing.

Tamara could sing—and in the last six years she has become one of the best known entertainers on the air and on Broadway. "Crazy Quilt," "Free For All," "The New Yorkers," Americana" and "Roberta" are a few of the shows in which Tamara has played important roles.

Dreams of Drama

Tamara has never realized her great ambition in life. She loves to sing, but dreams some day of becoming a great dramatic actress. Because she spends so much time in broadcasting studios and in the theatre, she has little interest in night clubs. But she rarely misses a dramatic show on Broadway.

Tamara plans to return for a visit to Russia sometime. "I want to see the new Russia," she said. "It is my fondest hope that I will not be disappointed."

She devotes much time to the study of Negro jazz and spirituals.

Orphanage to Orchestra

From an orphan home to the pinnacles of radio is a steep climb. But Freddy Martin, radio maestro, has fought his way up from such a humble beginning to an outstanding position among orchestra leaders during the short span of his 27 years.

When he was very young, Freddy lost his parents and was sent to the Knights of Pythias orphanage in Springfield, Ohio. One of his proudest memories was of the time when, dressed in the school band's uniform, adorned with much braid and many stripes, he banged away on the drum, parading by his friends who lined the curb. Right then and there he was determined to become an orchestra leader—an ambition which vied with his already deep desire to become a big league baseball player.

His dismissal from the band a short time later convinced the future maestro that life was but a vicious cycle. Freddy was discharged from the band for crying in school. His tears, which he failed to explain,

were occasioned by his missing a band rehearsal because the teacher was keeping him after school. The sun shone once more, though, when he arrived in high school. The erstwhile drummer not only found time to realize his two ambitions, leading an orchestra and playing baseball, but also clerked in a grocery store for six dollars a week.

Saving a little each week, Freddy bought a saxophone and worked diligently to master the instrument. After graduation at 17, Freddy consulted the classified ads to see if he could find some field of endeavor a little more suitable to his talents than clerking. He found that a four-piece orchestra needed a saxophonist three nights a week and secured the job. Forthwith, Professor Smith of Cleveland had a new saxophone student.

Meets the Lombardos

It was while he worked as salesman for a musical instrument manufacturer that Freddy met the Lombardos. They didn't become customers, but they did become very good friends of the ambitious youngster. That friendship gave Freddy his first real break. Guy and his brother, Carmen, taught him a lot about playing the saxophone, the technique of directing, and orchestration. When the Lombardos left Cleveland to fill another engagement, they used their influence to see that Freddy and his band were engaged to take their place.

At the end of the engagement, Freddy joined a band touring Finland, Denmark and England. On his return to America he toured in vaudeville and landed back in New York with the resolve to again organize a band of his own. He was booked immediately to play at the Marine Roof of the Bossert Hotel in Brooklyn. His broadcasts from there and later from the Commodore Hotel in New York won him a host of followers.

Freddy hates cold weather, holes

Burgess Meredith of the stage comedy hit, "She Loves Me Not," makes his radio debut in the title role of "Red Davis," which returns to the frequencies on Monday October 1st, at 7:30 p. m. EST. This feature will be heard three times weekly.

in his socks and going to the dentist . . . makes a hobby of taking moving pictures for home use . . . his favorite comedian is Groucho Marx, his favorite dish spaghetti, and his favorite type of woman, a slender brunette . . . is five feet, seven inches tall, has brown hair and brown eyes, and weighs 148 pounds . . . directs from the midst of his band, with which he still plays the saxophone . . . is known for the sweet, melodious and danceable style of his arrangements. Listen in on Sundays at 5:00 p. m. EST over the CBS network.

* * *

Lee Wiley learned to sing in her Oklahoma home when 17 and while suffering from temporary blindness. Her sight failed her as a result of an injury to the optic nerve when thrown from a horse and doctors despaired of restoring it. To occupy her mind Lee turned to voice cul-

(*Continued on page* 26)

November Meeting *of the* S. W. CLUB

• • • *With* PAGE TAYLOR

WHILE the conventional broadcast band offers only a range of 950 kilocycles in which to work, a shortwave fan with a receiver covering all the s. w. frequencies, has 28,500 kilocycles in which to tune, and in addition to stations featuring exclusively musical programs (and advertising blurbs), there are many different kinds of commercial transmitters, each offering its own thrilling reception. When 25 or 31 or 49 meters seem "dead," one can go higher in wavelengths, or lower in wavelengths, searching for new worlds to conquer. A California reader has recently explored the band covering the longest of the shortwaves, and found new experiences; more interesting than the amateurs; more thrilling than the police, and wonderful DX, considering the power used by the stations.

Visits National Parks

"Recently, having had rather poor reception of the stations between 25 and 60 meters, I have turned to the longer waves, 70 meters and over, and have been rewarded by some interesting catches," commences a highly informative letter from William C. Vestal, P. O. Box 430, Redlands, Calif. "For example, on 2604 kcs. are a number of National Park stations; just how many, I do not know, but these stations deserve mention as they are powerful enough to get into a half dozen states and do quite a bit of transmitting. A few I have heard are KNIA, Glacier National Park; KNKS, Yosemite; KNKY at Devil's Post Pile National Monument, and KNKU and KNKW, whose locations I have not yet determined.

"Then, on about 2750 kcs. the Los Angeles Flood Control District is using three experimental stations. Two are at San Gabriel Dam No. 2 (KIIW and KIIX), and the other, KIIY, is at the Central offices in Los Angeles.

The "M" Stations

"More interesting, from the point of view of reception, are the forestry stations. These are between 3350 and 3400 kcs. I understand that there are about 85 such stations in California, and perhaps many others in other states. These stations, being authorized by Presidential proclamation, are not directly under the FCC (Federal Cummunications Commission), therefore do not have the regular W or K calls (I suppose that a similar case is that of the queer calls used by the army). The "M" stations (indicating "mobile") are 24 watt transmitters with receiver and portable generator, used mostly at national forest headquarters. Then the "SP" stations, 5 watt transceivers, are used on lookouts, CCC camps, etc. (SP for "semi-portable"). The "PF" sets are portable and field sets with an output of .7 of one watt. To show that these sets cover ground, and are of more than local interest, the "M" sets have contacted all parts of the Pacific Coast. I have heard the "M" and "SP" sets at distances of 600 miles and also, what is even better, I have heard the .7 watt PF sets 160 miles away, which isn't bad at all for such small power.

With the Japanese

"In former letters I have mentioned my reception of the Japanese stations, and to date have logged seven of them, as follows: JVE calls

Java in the early evenings. JVF calls KWU at Dixon near 6 p. m. EST. JVH works Europe in the early mornings. JVM broadcasts musical programs between 1:45 and 2:30 a. m. and 4 to 7:30 a. m. Each morning, world news is given in English at 4:55 a. m., EST JVN works European stations in the mornings. JVQ broadcasts programs simultaneously with JVM, and JVT works USA stations in the mornings. I wonder what the call sign is of the Nazaki station that tests in English at various times of the day and night on about 10500 kcs."

The Brazilians

Several reports were received here concerning the new frequency used by the Radio Club of Brazil, and various call signs, such as PRA3, PRE5, PRAB and PRBA were given. To Edith Reeks of Chicago goes the credit of first identifying this station correctly as PRF5, "F for Friday," but following close on the heels of her report came many others confirming her identification. F. M. French, Port Fire Department, Marine Barracks, Quantico, Va., says, "This afternoon I heard a station in Rio de Janeiro for the second time and they gave their call letters as PRF5 and their frequency as 9505 kcs. They invited comments on the program, which consisted of a talk about coffee, first in Portuguese, then in English. It came in very clear and loud. I am using a Philco 66-B and it is a wonderful little set, both for distance and selectivity. The German and English stations come in very strong and clear, also EAQ, but I cannot get Pontoise at all."

We believe that PRF5 is just another phantom call for a telephone station owned by Companhia Radio Internacional do Brasil, but as usual, reports should be sent directly to the Radio Club do Brasil, "A Vox do Brazil," Rio de Janeiro. Kenneth L. Roberts of Monticello, Me., mentions "Saudacoes Cordeias" in the street address, but this is Portuguese for "Sincerely Yours." Jerome Shiltz, 120 Courtland St., Wellington, Ohio, reports PRF5, and a station on 49.48 meters calling "Allo Baraka." We believe this station is YV5RMO in Maracaibo, calling YV4RC in Caracas.

South American Chain

According to information received from various sources (Wm. C. Vestal of Redlands, Calif.; Robert L. Weber of W. McHenry, Ill., and Geo. Glass of Detroit), a new network, known as the Cadena Indo-Americana, has been formed. Amateur station HC1FG in Riobamba, Ecuador, was heard by Mr. Glass, acting as interpretor for Lucy W. Mida of W9LW, Chicago and Sr. Eduardo Pinto of T12EP in San Jose, Costa Rica, and during the conversation it was learned that the following stations make up the chain:

YV5RMO, Maracaibo, Venezuela, 6.070 megs.

HJ4ABB, Manizales, Colombia, 7.200 megs.

PRADO, Riobamba, Ecuador, 6.620 megs.

HJ1ABB, Barranquilla, Colombia, 6.447 megs.

YV4RC, Caracas, Venezuela, 6.000 megs.

TIEP, San Jose, Costa Rica, 6.660 megs.

The Chicago SW Radio Club adds stations HJ3ABD, Bogota, Colombia, 7.400 megs, and YNLF, Managua, Nicaragua, 6.950 megs.

It is also believed that the new COC in Havana, Cuba on 6.010 megs. is a member of the chain.

Two of these stations, PRADO and TIEP, are known by the call letters HC1FG and TI2EP respectively when engaged in traffic with the other stations. PRADO and HC1FG are two separate transmitters, but the chief engineer of PRADO is the amateur-owner of HC1FG.

YV5RMO uses the slogan "Ecos del Caribe" when broadcasting. It

The "Peter" half of the famous "Billy Batchelor" twins, eleven year old Bobby Jordan. A new series of Wheatenaville sketches returned to the air on August 27th. They are heard regularly on the CBS at 6:45 p. m. and at 8:15 p. m., daily except Sunday. The latter period is for western listeners.

is owned by Santiago M. Vegas, Box No. 214, and when the other stations are in communication with him, they call him "Amigo Vegas" instead of using the call letters of his station.

HJ4ABB is the well-known station "Radio-Manizales" which uses the theme song "Just a Gigolo." It is not as active as some of the other stations on the network, but when talking with Manizales, the other operators refer to it as "Amigo Roberto," after the name of its owner, Roberto Baena V.

Carlos Cordovez is the operator of HC1FG and is known as "Amigo Carlos," while Eduardo Pinto H. of TIEP-TI2EP is called "Amigo Pinto." TIEP, when broadcasting, uses the slogan "La Voz del Tropico."

Others in the Net

Postal cards from James T. Spalding, 2012 Alexander Ave., Louisville, Ky., and Carl M. Hansman, Bethel, Me., suggest that there might be even more stations on this hook-up. Mr. Spalding heard TIEP mention Calli, Colombia on one of its broadcasts, and Mr. Hansman heard a station on 44.6 meters announcing after each musical number as "La Voz de Centro America."

Margaret Hamilton, Coopersville, Mich., advises that reception has been very poor below 28 meters. "The South Americans had a Round Robin the other night continuing into the small hours of the morning," she continues. "I listened until the last 'Buenos noches' was said. I got their calls as Maracaibo (YV5RMO), "La Voz del Tropico," (TI2EP), YV4AC, TI2RC, Maracay and El Prado. I understand there will be two new S. A. stations shortly, at 3355 and 3619 kcs. Hope they'll be better about giving exact calls!"

"The other night I nearly went crazy over Spanish speaking stations," admits John L. Peppard, Evans School, Tucson, Ariz. "PRADO, YV5RMO, TIEP and some on 6275, 6320, 5910 and 6150 kcs.

And here is "Pam", the feminine portion of the "Billy Batchelor" twins who are nearly as famous as the Dionne quintuplets. "Pam" is played by Emily Vass, 11-year old actress of stage and radio.

This last one might be YV3RC. HJ1ABG on 6040 kcs. announced that he works every day until 10 p. m. EST, and asked that reports be sent to P. O. Box 4451, Barranquilla, Colombia." We understand that HJ1ABG uses 4 chimes as an interval signal, and we have seen the address given as Box 445.

COC on Air Again

Mr. Luis Casas Jr., Chief Engineer of COC at Havana, Cuba, tells us that this popular station returned to the air on Sept. first after having been silent for about three months due to a fire which destroyed the original transmitter on May 24th. The new COC uses the most modern equipment, including crystal microphones, and several readers have already noted the great improvement in quality of reception from COC. Sr. Casas says they broadcast daily on 6010 kcs. from 9:30 to 11 a. m. and 4 to 6 p. m., EST, and special programs featuring typical Cuban music are transmitted on Saturdays from 11:30 p. m. to 12:30 a. m. These latter programs are dedicated to members of all shortwave radio clubs in America. Listeners are requested to report on their reception, addressing letters to Estacion Radiotelefonica de Onda Corta COC, Apartado 98, Havana, Cuba.

After sending the list of the 100 Best Shortwave Stations to the printer, the latest operating schedule was received from the Reichs Rundfunk Gesselschaft of Berlin. The schedules of the German stations are correct as given, except for these two additional transmissions: DJA, 5:15 to 9:15 p. m. EST and DJB, 4 to 5:30 a. m. EST. Sundays.

Verifying TGX

Sr. Mejicano Novales, owner and operator of station TGX, advises us that his station works daily except Sunday from 8 to 10 a. m. from 1 to 2:30 p. m. and from 8 p. m. to midnight, EST, on 50.50 meters (5937 kilocycles). Sr. Mejicano adds: "Sundays, 1-3 a. m. testing irregularly, specially Saturday mornings," which we believe means that he tests on either Saturday or Sunday. Sr. Mejicano does not hand out verifications carelessly, and will not confirm one's reception unless he is sure that the writer has really heard station TGX. Therefore, readers are cautioned to use particular care in taking notes, and they should not fail to mention the identification signal which is used. An International Reply Coupon must be enclosed if a reply is expected.

D. I. Gross, Box 6052, W. Asheville, N. Car., postcards that the Seth Parker uses frequencies 8840 and 12340 kcs. most often, usually working just before 8 p. m. EST. According to latest reports, Mr. Gross says, Skipper Lord is on his way to the Galipagos Islands and the South Seas.

It was at first believed that the Bombay, India programs on 9.565 megs. were relayed from long wave station VUB over one of the telephone transmitters at Kirkee, but according to information given in the Indian Radio Times, shortwave station VUB on 9565 relays long wave VUB on 855 kcs. and none of the Kirkee telephone stations are used. Listeners in Great Britain, Continental Europe and the Antipodes, as well as in Asia, are enjoying good reception of this station on Wednesdays and Saturdays, but as yet it has not been heard in North America.

A "Blues" Report

"At present the shortwave situation is very discouraging around here. Nothing can be relied upon any more," complains Geo. W. Acker, 267 N. Lyman St., Wadsworth, Ohio. "The 25 meter band is practically shot, and the 30-31 meter band has improved a little although still unreliable. Some nights and afternoons DJD and GSD can be heard but faintly, and other times only

one or the other will come through. DJD begins to get jerky and fades away near 7:30 p. m. EAQ is getting steadily better, providing good listening some evenings. There is a new one in this band, though, which is a very good stand-by; it is the new Brazilian, PRF5, on about 9500 kcs. Its schedule seems to be from 5:30 to about 6:15 p. m. every evening except Sunday. Programs are mostly talks in Portuguese, but at 6 p. m. EST. English is spoken, concerning mostly Brazil's national affairs."

Graduates to S. W.

"The last time I wrote you I was a BC DXer, but last February became interested in shortwaves and now am strictly a s.w. fan," confesses Chas. Miller, 309 View Place, Covington, Ky. "I use a 4 tube home built t. r. f. receiver and in eight month's DXing have verified all twelve of the USA relay stations, in addition to Canadian 9GW and 9DN, CJRO-X, XEBT, COC, HI1A, HJ1ABB, HJ3ABI, HC2RL, PRADO, CP5, PRA3, YV3RC, YV5RMO, Daventry, Zeesen, Pontoise, Rome, PHI, and the two Melbourne, Australia stations. My receiver uses band spread tuning which enables me to tune and separate DJA, W1XAZ, GSC, 3XAU and HBL while they are all working at once, with no QRM. My antenna at present is a single wire 125 feet long, but I expect to put up a doublet soon as the man-made interference around here is heavy at all times. My ground is a galvanized pipe, about 4 feet long, buried in the ground. I would like to hear from any s.w. fan who is interested in amateur DX and will exchange SWL cards."

Donald W. Shields, Box 345, Roseville, Ohio, using a Philco 16-B, submits a list of 44 stations which he has heard, among them being VK2 and 3ME, PHI, HI1A, KNRA, YV3RC, and of course the German, French and British stations. He is particularly interested in the 20

Miss Gina Vanna, young operatic soprano, is the featured soloist of the "House by the Side of the Road" program which appears on the NBC-WEAF net Sundays at 4:30 p. m. EST with a rebroadcast at 5:30 p. m. Miss Vanna, who is twenty years old, did her first public singing over the air, after which she won a place with the Chicago Grand Opera Company.

meter amateurs and has logged several Europeans in this band. His prize catch is W1OXDA on board the schooner Effie M. Morrisey, which he heard while she was crossing the Hudson Strait at the Southern end of Baffin Land. Donald would like to correspond with s.w. fans everywhere.

S.W. on Two Tubes

"This is the first time I've written to RADEX," commences a letter from Wilbur Nyberg, 533 Jessamine St., St. Paul, Minn. "I have a small two tube short wave, and on it have heard about 65 phone and relay stations. This does not include amateurs, police, etc. One Saturday morning I heard DJE on 17.76 megs. between about 8:30 and 9:05 a. m. CST. The English station GSB and GSD are about the best stations in the afternoons; GSF came in fine here every afternoon until its sched-

ule was changed. As yet I haven't logged Australia or Russia, but I haven't stayed up past 11 o'clock." And Wilbur doesn't have to stay up past 11 o'clock to hear these countries. Between the hours of 11 p. m. and 5 a. m. there is very little doing on shortwaves; if Mr. Nyberg will tune about 6 a. m. any morning for VK3LR, and about 9 a. m. on Sunday for RNE, he will no doubt log the countries he wants.

YVQ does Verify

"Regarding station YVQ in Venezuela, I believe that its symbol should be changed to 'b' as I have a verification from this station," suggests Guy R. Bigbee, 66th Infantry (Light Tanks), Fort Benning, Ga. "An official communication from VWY in Poona, India, gives their wavelength as 17.1 meters and states that they transmit to GAU between 1130 and 1145 GMT. Their address is Indian Radio and Cable Communications Co., Ltd., Beam Wireless Station, Poona 6, India. This is the wavelength on which I reported reception. The official name of the company operating VQ7LO is now Cable and Wireless Ltd. and their program manager is Mr. Geo. C. Kenworthy."

Short News Notes

H. Arbic, Action, Ont.; "At 10:35 p. m. EDST I picked up KFZ on 6660, QSA2, R3. I held them for about 15 minutes, 16, 19 and 31 meters have not been very good lately, R8 signals being down to R4 and 5 with a lot of fading. The 49 meter band is excellent though."

Roy E. Robinson, 133 Mitchell St., Providence, R. I.; "Much to my disappointment, the shortwaves have been very poor this summer. I haven't been able to get Australia at all and England, France, Spain and Germany have been very unsatisfactory. DJD and GSD have interfered with each other considerably."

Answers to Questions.

Bob Jackson, 1416 N. 20th St., St. Louis, Mo. The station near 5900 megacycles using a cuckoo call as an interval signal announcing in Spanish is XEBT, Mexico City, D. F.

Alfred H. Abernethy, Box 3009 Penn. Station, Daytona Beach, Fla. The station speaking in German near 5990 megs at 11 p. m. is most possibly DJC, Zeesen, which is, to be precise, on 6020 kilocycles.

Ezra K. Baer, K-T Ranch, Meeker, Colo., asks for a list of the programs broadcast over the American shortwave stations. The shortwave transmitters relay the identical programs transmitted by their sister stations on the broadcast band, and in so far as we are able, these programs are given in RADEX each month in "What's On The Air Tonight?" It is only on very special occasions that the s.w. station takes its own individual program.

Robert Scott, 140 Small Ave., Caldwell, N. J.; The former YV4BSG of Caracas is now YV4RC, and YV2AM is now YV5RMO.

The I.D.A. Winners

THE great contest of the International DXers Alliance of Bloomington, Illinois, for the grand prize of a Lincoln Receiver, has closed and the winners of the contest are announced as follows:

Grand Award, D. L. Davis, Jr., Pearl Harbor, Hawaii, with 114 verifications.

Second Award, F. W. Barnett, Dunedin, New Zealand, with 84 verifications.

Third Award, H. Harding Jones, Honolulu, Hawaii, with 74 verifications.

Fourth Award, R. T. Coales, Hants, England, with 71 verifications.

Fifth Award, John S. Bohm, Malnng, Sweden, with 70 verifications.

Sixth Award, Francis Wiseman, London, England, with 69 verifications. This award is tentative sub-

ject to final examination of Mr. Wiseman's verifications by the judges.

District of U. S. and Canada:

First, Award, Evan B. Roberts Danvers, Mass., with 61 verifications.

Second Award, Don Townsend, Fallon, Nevada, with 51 verifications.

District of Great Britain:

First Award, Frank Crowder, Hull, England, with 54 verifications.

Second Award, R. Ellis, Lanarkshire, Scotland, with 48 verifications.

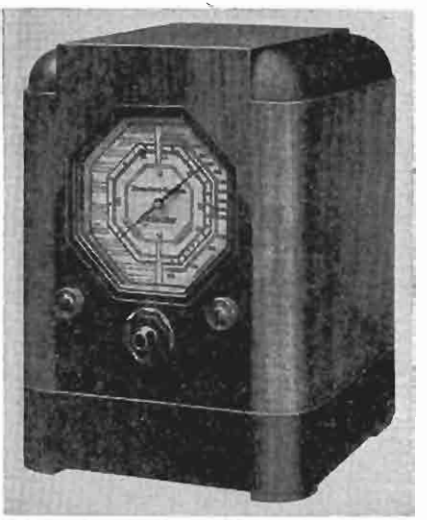
A. C. Lyell, Cape Town, South Africa, not being located in any of the districts provided for the contest, is awarded a Special Prize for his remarkable list of 53 verifications. All of Mr. Lyell's stations were more than 4000 miles distant.

Only stations 2000 miles or more distant from the receiver were counted in the contest. All stations were in the broadcast band. This contest is a striking demonstration of the receipt of foreign stations on the broadcast band and it should be an incentive to those who have never received such stations, to keep everlastingly at it.

Converting Broadcast Sets *to* ALL-WAVE

THE new Stromberg-Carlson Model 69 "Selector" is a four-tube, self-powered converter which, when attached to any standard broadcast receiver, converts that receiver to an all-wave set, covering the channels from 1,500 kilocycles to 25,000 kilocycles (200 meters down to 12 meters), in addition to the broadcast-band range of the receiver. The converter covers the important 49, 31, 25, 19 and 16 meters foreign and domestic short-wave bands.

The "Selector" has a large, full-vision, airplane type dial. It is octagonal in shape, divided into four sections, and is similar to any mod-



ern all-wave tuning dial except, of course, it does not have a band for standard broadcasts. The outer, right-hand section covers the tuning range from 1,500 kilocycles to 4,000 kilocycles; the inner, left-hand section covers the short-wave channels from 4,000 to 10,000 kilocycles; and the inner, right-hand segment covers the channels from 10,000 to 25,000 kilocycles. Three sets of pilot lights, operated by contacts, are used so that only the section in actual operation is illuminated, thus avoiding any guesswork as to which band is in use.

Four tubes are used in a "frequency reducing" superheterodyne circuit. The output of the converter, which is tuned permanently to 545 kilocycles, is fed into the broadcast receiver. The tuning dial of the receiver must be set at the same frequency.

The tubes are as follows: Radio-frequency, 6D6; driver and oscillator, 76; mixer or detector, 6A7; and the separate rectifier, 5Z3. The 76 driver-oscillator is arranged so as to insure a forced output from the oscillator circuit when the converter is being tuned to the higher frequency

signals. So many converters and all-wave receivers fail to respond to the very short waves because frequently the oscillator tube will not function at the very high frequencies.

Installation of the new Stromberg-Carlson "Selector" is simple. It requires no change whatever, and may be used in conjunction with any make of standard broadcast receiver —superheterodyne or tuned-radio-frequency. The only connection to be made between the converter and the broadcast receiver is the antenna and ground cable.

The new Stromberg-Carlson Model 69 "Selector" sells for $69.50.

The Beginners' Story

(*Continued from page* 8)

broadcast receiver with a *wafer adapter* placed beneath one of the broadcast-set tubes. The 180 volts plate supply for the converter is taken from some point in the broadcast receiver that is close to the filtered B supply from the voltage divider system.

(Next month there will be a discussion of the power supply of electric radio receivers, rectifiers and battery eliminators.)

"Betty's" Story

(*Continued from page* 18)

ture. At the end of a year of total blindness she was able to see again —and sing like a lark.

* * *

The Warings named their newborn daughter "Dixie" because Papa Fred was enroute to Virginia for a one-night engagement and when he returned to Manhattan he was a papa. Mrs. Waring is the former Evelyn Nair, who danced with the band during its stage engagements several years ago. The couple were secretly married in Chicago last year. Fred said he was so excited down in Virginia awaiting the call that made him a father he almost went "stork mad."

* * *

Buddy Rogers, who, with Jeanie Lang, is starred on those Ward Family Theatre programs, Sunday at 7:30 p.m. EST on CBS, does not read music but plays entirely by ear. When he was ten years old Buddy astounded his parents by learning to play the trombone, without benefit of any formal instruction. Today, the handsome young maestro plays 16 different instruments, all by ear!

* * *

Frank Parker has never forgotten that he made his start in life on New York's poverty-stricken and crowded East Side. As a boy he dreamed that some day he would sing on Broadway, be able to buy a fine automobile and live in a sumptuous apartment uptown. Parker has realized all these ambitions and more than occasionally goes back to the street where he once played ball as a youngster "just to pinch myself to prove I'm not dreaming," says Frank.

* * *

Peter Van Steeden, who looks more like a college Junior than the well known orchestra director that he is, is one of radio's champion ping-pong players. But Peter's favorite sport for keeping that schoolboy waist-line is—mowing the lawn of his home at Stony Brook, Long Island.

* * *

If Billy Jones hadn't bumped into Ernie Hare in a New York recording studio just sixteen years ago, the team of Jones and Hare would probably never have been formed. The boys were originally soloists and a chance duet that first day started the now famous pair off on the road to popularity. For sixteen years they have been inseparable.

Is Your Antenna 100 Per Cent Effective

Part Two

• • • *By* B. FRANCIS DASHIELL

THE Marconi single-wire antenna is better adapted to broadcast and long-wave reception. The Hertz doublet antenna is more efficient on the short waves. The problem, then, is a devise an antenna that will have the good properties of both, yet be able to eliminate man-made static noises.

The Marconi antenna uses a single lead-in wire. The receiver is placed in series between the antenna and the ground. The Hertz antenna places the receiver in series between its two sections, and no ground connection is required.

Transformer Coupling

Last month we saw how the lead-in is shielded so as to prevent nearby man-made static from reaching the wire. Shielding can also be applied to the twisted, double-wire lead from a doublet antenna. Some experimenters have found, however, that the losses are so severe that steps must be taken to overcome them. The transformer method of coupling the antenna to the receiver has become almost universal. In some cases a transformer is attached to the antenna top and another placed close to the receiver, and other cases use a single transformer at the radio receiver. This scheme is shown in Figure 6.

It should be remembered, however, that shielding of the lead-in is not necessary when Marconi or Hertz antennas are used in static-free localities. Shielding around the lead-in wire or wires must be used only as a last resort.

The two leads from the Hertz antenna really are part of the antenna, for they permit the receiver to be placed in the center of the wires. Of course we cannot hang the receiver up in mid-air so we use two leads to bring the antenna down to the set. Twisting of the lead-in wires eliminates signal pickup and does not add to the natural wave length of the antenna top.

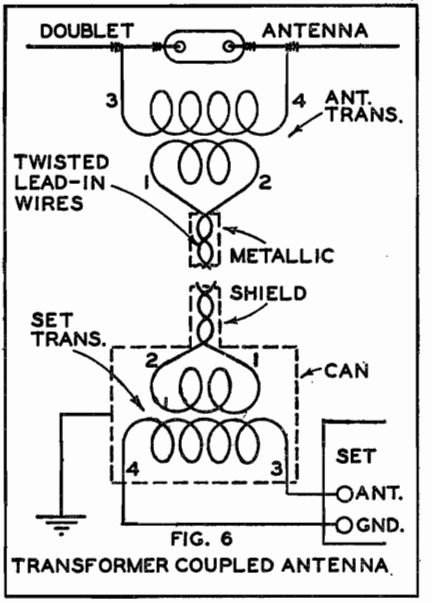


FIG. 6
TRANSFORMER COUPLED ANTENNA

Using Transformers

A shielded lead-in introduces considerable signal loss. Capacity action takes place between the outer metallic shield and the inner wire or pair of wires, depending upon the type of antenna. Such condenser effects cannot be prevented, but it is possible to lower the potential of the signal picked up by the antenna. A small *step-down* transformer or coupler is placed be-

tween the antenna-top and the lead-in, as shown in Figure 6. Lowering the signal voltage tends to reduce the capacity effect. It is then a simple matter to increase the potential again by means of a *step-up* transformer connected between the lead-in and the receiver. The coils of the transformers contain 12 turns and 5 turns of No. 22 wire wound on a tube about one inch in diameter, the whole being shielded in a can.

The doublet antenna, shown in Figure 4, is superior on the entire short-wave band to the "L" or "T" types. In place of the transposed leads, as shown in Fig. 4, a special twisted pair of wires, Figure 5, can be used without shielding. Both the transposed and twisted pair will eliminate local static.

All-Wave Antennas

Broadcasting station antennas are set permanently to a certain frequency. But the receiving antennas are not built for operation at one frequency only. Now with the short wave beckoning, an antenna erected to bring in signals over a wide range, between 5 and 600 meters (60,000 to 500 kilocycles, respectively), is called an *all-wave* antenna. It can be used with any of the all-wave radio receivers now sold. In fact, some of the newer sets have separate all-wave doublet antenna terminals and built-in coupling transformers.

Most persons do not know of the direct relationship between antenna length and wave length being picked up. This has an important bearing on the length of the antenna. If we could insert a sensitive ammeter at a number of places along the antenna wire it would indicate the amount of current being induced at those points. And the current would be found to vary from maximum at one place to minimum at another.

Half Wave Antennas

Beginning at the end of the antenna wire the current increases steadily until a distance equal to a quarter-wavelength of the signal being received is reached; from this point the current decreases steadily until a place just a half-wavelength away from the original end is reached. Therefore, the shortest possible antenna is one that will just hold a *complete* rise and fall of current or half a wavelength. An antenna, with its length equal to a half-wavelength of the signal in question, will be resonant to that signal and pick it up with a maximum amount of energy. Assume the wave length of the signal to be 19 meters: A half-wave is 32 feet, and a quarter-wave is 16 feet. The shortest effective resonant length of a Marconi antenna, then, is 32 feet; and, if a doublet or Hertz type is used, each half should be a quarter-wave, or 16 feet, long.

Since we cannot build an elastic antenna so as to provide different lengths equal to half the wavelength of the signal being received, we must be contented with an antenna of a length that will be *approximately* one-half of the wavelengths of a good many stations.

It has been found that a 41-foot antenna of the "L" or "T" type, or a doublet antenna with each half measuring 20½ feet in length, will work well on wave lengths of 13, 16, 19, 24, 31, 49 and 70 meters. These are the most commonly used short-wave bands to which we listen.

Directional Effects

Antennas have decided directional effects. A high degree of permanent directivity is not always a desirable feature unless one is receiving frequently from some certain quarter of the globe. A single-wire antenna, such as the Marconi inverted "L" type, has definite directional qualities. It tends to pick up signals best from stations toward which its *heel* or lead-in end points. Sometimes the "L" antenna receives best if it is *tilted* by raising its open or free end higher than the lead-in end. This slant may vary from 15 to 35 degrees from the horizontal.

The doublet antenna, however, should be erected horizontally in all cases. It receives best when placed at

right angles to the direction in which the station lies. This must be remembered when erecting a doublet for short-wave reception only. A true non-directional antenna is the *vertical* type. A single wire, rather high, is very satisfactory.

The Loop Antenna

A directional antenna can be made by building it in the form of a diamond-shaped *loop*. The frame should be mounted so it can be rotated. The loop antenna will receive best when its vertical plane lies in the line that points toward the location of the stations to be received.

On shipboard, the loop antenna is fitted with a scale and compass. It becomes valuable as an efficient direction finder. The loop can be rotated so that two or three land stations can be heard. From the angular positions of the stations noted, by means of intersecting lines drawn on a chart, the position of the vessel can be determined.

A support, 5 feet high, fastened to a base so it can revolve, and with a cross arm four feet long, is used for the loop. A single No. 14 copper wire is strung around the frame. The two ends connect to the receiver, as shown in Figure 7. This loop, of course, is limited in its pickup of distant stations, but is valuable as a means to cut through interference from nearby stations that lie in other directions.

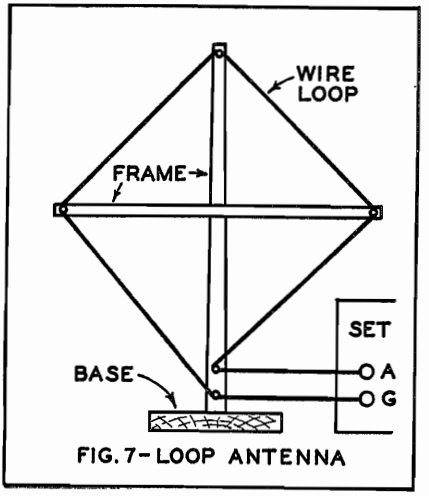


FIG. 7 - LOOP ANTENNA

A number of ready-to-erect noise-reducing all-wave antennas are available. They are put up in assembled kits so as to be easily installed. Outstanding in these new developments are the R. C. A. "World-Wide" all-wave antenna; the Lynch "Simplex" all-wave antenna; and the Atwater Kent type "D" all-wave doublet system. Several of the earlier noise-reducing antenna systems were discussed in full in the October, 1933, issue of RADEX.

The "Double Doublet"

The R. C. A. system is a radical departure from the usual doublet type. Its antenna is a *double doublet*. We know that a doublet antenna is an efficient collector of short-wave signals. A doublet antenna, each section of which is a quarter-wave long, is more efficient at or near the point at which it is resonant to the incoming wave. An antenna 33 feet long, therefore, works best when receiving signals of 20 meters in length, or the harmonics of higher wave lengths. This means, then, that the antenna also will pick up signals of 40, 60, 80 or 100 meters, of which the fundamental length of the antenna is the second, third, fourth and fifth harmonics, respectively.

Now, if we connect a pair of *unequal* doublets to the same lead-in or transmission line, the actual receiving scope of the antenna is vastly increased. This is what is accomplished by the R. C. A. World-Wide antenna system, which is shown in Figure 5. The antenna proper consists of *two* long, horizontal sections, each 29 feet long. Immediately below, and in the same vertical plane, are two short sections, each 16½ feet long. They are *tilted* down from the center of the top doublet at an angle of about 35 degrees. The left, long section connects to the same lead-in wire as the right, lower short section, to make one unequal doublet; and the right, long sec-

tion goes to the same lead as the left, lower short section to make the second unequal doublet. A special insulating cross-over block is used for these connections, as shown in Figure 5.

Lynch "Hi-Fi" Coupler

The new Lynch "Hi-Fi" coupler and antenna system tends to overcome the deficiency of the short-doublet antenna when receiving broadcast waves. Its doublets are not equally divided, but closely resemble the inverted "L" type of Marconi antenna. The Lynch system is shown in Figure 8.

Any type of doublet antenna will be greatly improved if the Lynch "Hi-Fi" (High-Fidelity) coupler or transformer is used. It can be used with the types of antennas shown in Figures 4, 5, 6 and 8. Only one coupler is required. It is connected directly to the radio set, and has a simple method of tuning by pin jacks which are plugged into several holes so that the impedance of the coupler can be made to match the impedance of the receiver.

Lynch "Simplex" Antenna

The special Lynch antenna, called the "Simplex" system, is shown in Figure 8. It is not a doublet antenna, in the sense that we have been discussing doublets. The lead-in cable is taken from one end instead of from the center. The antenna, too, is long, being 114 feet. It need not be erected in a straight line if space is limited, but can be zig-zagged about in order to place the entire length in a short space. The short section of the doublet is only 2 feet in length.

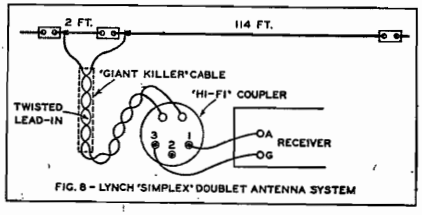


FIG. 8 – LYNCH "SIMPLEX" DOUBLET ANTENNA SYSTEM

Atwater Kent "D" System

The new Atwater Kent doublet antenna is a simple doublet system utilizing a *parallel* pair of lead-in transmission wires. Other doublet schemes make use of shielded, twisted and transposed transmission lines to balance out any induced man-made static. It is said that this untuned antenna does not require any definite length either for the doublet top or the lead-in wires, as is the case with all other doublet systems. The transmission line is a pair of heavy rubber-covered wires spaced 2 inches apart with insulating separators.

Length is not an essential matter when this system is used. Both sections of the doublet, however, must be equal in length; if one section is 20 feet long the other must be the same. If the two sections are 30 feet in length the antenna will give best results.

The A-K "DT" Transformer

For older receivers, which are not provided with doublet antenna connections, it is necessary to use the Atwater Kent type "DT" doublet transformer with the "D" antenna. It has a bracket so as to permit mounting on the rear of the radio set. Connection is made to the two parallel leads from the doublet, and then to the antenna and ground terminals of the receiver. The usual ground wire may be left in place. The transformer has two switch contacts; one is for short-wave reception and the other for broadcast reception. The coupling transformer is designed especially so that any interference picked up by the parallel transmission line is balanced out in the transformer instead of relying upon a twisted or transposed transmission line to perform this essential action.

The RADEX Time Converter is a large map of the world on the front cover of which is a dial. Turn this dial until the hour you wish to convert is opposite your zone and instantly the time for all places in the world is shown. The dial indicates whether the time is yesterday, today or tomorrow. No adding nor subtracting. Just turn the dial. The price is 25c postpaid.

NOTES *from the* Editor's Mail

HERE'S an interesting letter from a reader in Cuba whose name we deem it best to withhold: "Sorry I couldn't give better attention to your request for information regarding the Cuban stations but a series of events prevented my doing so. In the first place, your letter arrived here while the post-office strike was in progress. (In this country radio is under the control of the Secretary of Communications.) When the strike was over and the old employes went back to work, it was decided to make certain changes in the allocation of channels. The result is the enclosed list of stations in Havana and suburbs.

"Radio programs are constantly affected because a number of stations broadcast political news and speakers attack opposite parties with the result that these stations are continually being assaulted by civilians or raided by the army or police, destroyed or shut down. This happened last night to CMCU while a broadcast was in progress.

"During Machado's reign we, the ABC, (Cuba's secret revolutionary society) had a small portable which Machado evidently enjoyed for he offered $5,000 reward for its capture. I was tempted to write you about it at the time for it would have been an extremely good catch for your fans. If it should ever be operated again, I will let you know."

When Is An Expert?

"I was very much interested in the point raised by Ewing's Radio Service regarding the use of servicemen when repairs are needed," states Chas. A. Steele, 3119 Seventh St., Port Arthur Texas. "Now I would like to raise a couple of more points and inquire: 1. What constitutes a good service man and how is anyone to tell whether he is good, bad or indifferent until after he has wrecked your machine beyond all hope. Mr. Ewing cites two cases where owners put their sets on the bum but I know two cases where a so-called serviceman did the same thing and then demanded their outrageous bill. Mine is one of the cases and the other is a friend that lives just back of me on the next street. The same holds good on aerial jobs; I have had four men from different concerns and none but the last was worth a nickel. They not only bungled the erection of a Philco three-purpose short-wave special and a Birnbach all-wave by failing to follow simple instructions but also knocked their own products." No one can deny that many incompetent servicemen are to be found in business. Some day, perhaps, they will be licensed by the state like barbers and beauty-parlor operators. In the meantime, the reputable servicemen in the larger cities are forming into guilds in which only the competent are accepted for membership. In the smaller cities the incompetent soon come to be known —and shunned.

"Vas You Dere, Sharlie?"

Although many readers throughout the country advise us that the super-power of WLW has made little or no difference so far as selectivity is concerned (some even say they notice no increase in volume) yet down in Mason, Ohio, where the transmitter is located, strange happenings are occurring, according to Rudolph Kure, Cincinnati, Ohio. "There are plenty of rumors going around down here that sound like spooky stories but they seem to be on the level. Out in Mason there is a rainspout on a barn that actually plays tunes. Light bulbs burn with the switch turned off. Climbing up on a tin roof and touching it with a screw driver, will make it spit fire.

They have been lighting a tourist camp up there all summer by merely putting up an antenna. I, myself, when I wish to listen to WLW, am compelled to turn off my volume control and disconnect my aerial, otherwise I get nothing but distortion."

Another Whopper

Try this on those faint signals from far-off stations: A newly developed loudspeaker, so powerful that it can magnify the human voice one million times, has been in operation for the first time at the international yacht races. It is five hundred times more powerful than the ordinary loudspeaker. At full power it hurls sound into the air with the force of a 50-pound hammer blow. Under favorable conditions, it can project intelligible speech a distance of several miles. The voice can be made louder than a clap of thunder. The new superspeaker is a product of the Western Electric Co.

Two Spot Tuning

Clyde E. Lowe, 730 K Street, Merced, Calif., runs to earth one instance of a station coming in at different points on the dial. "Recently I picked up our local KTRB on 660 and 820 in addition to the proper frequency of 740. It also could be heard faintly on 980. I called the manager of KTRB and he found the trouble in his 860 r. f. amplifier which he had changed the night previously and which was developing those other frequencies for no good reason. He stated that he worked a number of hours that night after receiving my message before he found the source of the trouble. In looking over the May, 1933, RADEX, I read of a man claiming to hear KNX on half-harmonics—525 kc. This may have been due to a similar cause." Clyde uses the Perfect Phone Adapter and says: "In the wee hours when everything is quiet, I can give the old set all the volume and listen to my heart's content without disturbing the baby."

With The Clubs

"On September 7th, the Globe Circlers Radio DX Club was two years old," writes Edward N. Bachman, president, 211 Passaic Street, Hackensack, N. J. "During that time we have absorbed the Greater Chicago DX Club, the Interstate Radio Association, the North American Radio Club, and the Anglo-American Radio Society, in an effort to eliminate the small clubs and form one large organization. Beginning October 15th, we will publish our six-page bulletin every other week instead of monthly. This bulletin will contain many of our regular features, among them our Singleton-Eliminator contest, Calling CQ column, memory contest, and a s.w. page edited by Elmer F. Orne. We will publish tip-cards every week."

The British section of the IDA is now publishing a six-page edition of the British Globe Circler filled with chatty news regarding the activities of the members in that country. Frank R. Crowder is European Representative and Arthur C. Baker is editor of the BGC. Mr. Baker, by the way, is also the British representative of RADEX and carries in stock a supply of the current issue of this magazine, the *DX Log of the World*, and the Time Converter. In the August issue, Robert Ellis of Bellshill, Scotland, describes the thrill he got in hearing a description of the "Loch Ness Monster" over WABC, New York, this "monster" being an inhabitant of one of their Scottish lakes. According to the BGC, interest in the short waves fully equals that in the b. c. b.

Some Station Notes

Luther E. Grim, 505 S. Main St., Red Lion, Pa., writes that it is probable that WORK will not be on their new frequency of 1320 before November first. As soon as they are, however, WORK will have full time. This station carries a period of DX tips conducted by Robert Weaver, president of the National Radio Club.

The time is 2:45 p. m. EST Fridays. The application of the York station to move to 1320 kcs. was delayed by protest from WADC, Akron, but the latter station finally withdrew its objection. To us it seems that Akron and York are altogether too close together to permit stations in those cities to operate at the same time on the same frequency. We fear a great many between the two stations will get neither.

The construction permit granted to Marion K. Gilliam, Staunton, Va., WSVA for a daytime stations of 500 watts on 550 kcs. was withdrawn upon protest field by KSD, St. Louis. The latter station has now withdrawn its objection and the permit has been reinstated.

The FCC has authorized the removal of KICK from Carter Lake, Iowa, to Davenport. The frequency will be changed from 1420 to 1370 and the call letters to WOC. The station belongs to the Palmer family of School of Chirpractic fame. It will sound like old times to hear "WOC at Davenport, Iowa," again.

The Canadian Radio Broadcasting Commission states that they do not consider it advisable to give out the information relative to the frequency checks of the Canadian stations for the reason that the checking is done at odd times when clear of interference particularly from the stations on this side of the line. These times are changed frequently and it is not possible to adhere to a list.

Miscellany

"May I suggest that, now that most receiving sets are calibrated fairly accurately in kilocycles, you list the kcs. instead of the call letters in 'What's on the Air Tonight'," submits R. K. Neller, 2486 Weston Ave., Niagara Falls, N. Y. "This will facilitate finding the desired program as it will eliminate the necessity of looking up the dial setting." We had the same thought a year or two ago and printed the programs in this way for one issue. Then we received hundreds of letters protesting against the use of frequencies in place of calls and so we reluctantly returned to the old method.

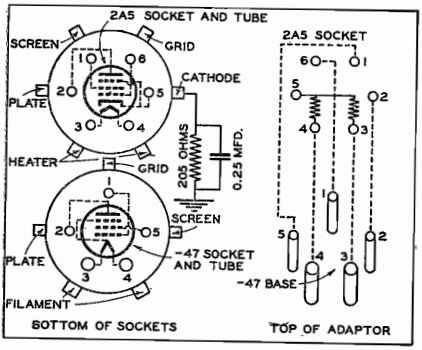
In our September issue, C. M. Hodge, 3156 Olive St., Huntington Park, Calif., stated that he believed proper reports would always bring verifications. He mentioned his reception of PLE in Bandoeng, Netherland India, and the fact that he would take a bet that his report would bring a verification. Mr. Hodge now advises us that this telephone station has verified his reception. It is signed by H. Van Der Veen, Engineer in Charge, Java Wireless Station, Bandoeng, Java, and they even thank Mr. Hodge for making the report. "Never refused yet," adds CMH.

A. C. Lyell of Cape Town, South Africa, made some strenuous efforts with the authorities of the British Broadcasting Corp. to secure verifications of his BBC reception in order that he might enter them in the IDA contest. After correspondence with various officers of the BBC, the Chief Engineer finally writes that they cannot change their policy in regard to verifying and cannot make any exceptions. They indicate that they find the reception reports of great value but that the policy not to verify will not be changed.

Robert W. Gorsuch, 431 Main Street, Grinnell, Iowa, writes that everything is all set for the big DX event, "Iowa on the Air" the morning of Sunday, December 16th. Added to the list of stations taking part as published in our September issue, are WSUI and KSCJ. This makes the broadcast truly a state-wide event. Full details will appear in our December issue.

TIMELY TIPS *for* Technical Troubles

• • • *By the* TECHNICAL EDITOR



WILL you please publish a diagram and give instructions for connecting the cathode of the 2A5 tube to a circuit in which a type -47 tube is being used? I would like to use a 2A5 in my receiver in place of the -47, but do not understand how to replace the old 5-contact socket with a new 6-contact socket.

Complete details for using the 2A5 tube in place of the -47 are given because this is a matter that will interest many of our readers. The 2A5 tube can be used in place of a type -47. There is some advantage in this substitution because of the natural reduction in hum, for the 2A5 is a cathode heater type. The -47 is a pentode-filament tube which hums unless provided with a special resistor and center-tap connections.

But the 2A5 is a 6-prong tube; the prongs connecting to the heater, plate, screen-grid, control-grid and the cathode. The -47 is a 5-prong tube with connections to the filament, plate, control-grid and screen-grid. The suppressor connection is made internally, just as in the 2A5 tube.

The 5-contact socket of the -47 tube should be removed from the chassis of the receiver and a 6-contact socket substituted. The filament connections, 3 and 4, of the old -47 socket, as shown in the illustration, are attached to the similar heater connections, 3 and 4, of the new 6-contact socket. The same plate wire to contact 2 of the -47 socket goes to position 2 of the new socket. These are the only connections that have similar positions in both sockets.

The control-grid wire that is removed from contact 1 of the -47 socket is connected to the grid contact 6 of the new 2A5 socket. The screen-grid contact 5 of the old socket should be connected to contact 1 of the 6-contact socket. This takes care of the five wires removed from the old socket. But the new socket has one additional contact, No. 5, which up to now remains disconnected.

This contact is the cathode of the 2A5 tube. It should be connected to the grounded chassis through a 250-ohm resistor that is shunted with a 0.25 bypass condenser.

Adaptors are available so the 2A5 tube can be used in place of a -47 without changing the sockets. The wiring of the adaptor is shown in the illustration. The base has 5 prongs and the top has 6 contacts for the 2A5 tube.

Low-Wave Sensitivity

My Crosley "Jewel box" receiver seems to bring in stations more loudly on the higher frequencies than on the long wave end of the dial. How do you account for this?

The fact that a set of this type brings in stations which are broadcasting on high frequencies better than on low frequencies indicates that its r.f. circuits are responding more favor-

ably to the higher frequencies. This is often the case, and has been found to be a common occurrence with many of the older types of receivers. There is little that can be done about it, for the construction of the set tends to favor the lower waves. However, a complete overhauling and readjustment of the balancing of the set should help.

Hum In Silver-Marshall

There is a loud hum in my Silver Marshall, model D, and I am forced to use the volume control to its limit in order to drown out the noise. What can be done to prevent this annoyance?

This receiver, we understand, is circuit D of model 30. We suggest that you make sure that the center-tap adjustment attached to the small resistor connected across the filament leads to the socket of the first audio tube, just ahead of the push-pull pair of power tubes, is properly centered, and also that the unit is in good condition. This is a hum preventing device.

The porcelain resistors in this model sometimes go bad, causing various kinds of trouble. It is wise to test and replace these units. Also, the smaller bypass condensers give similar trouble. Hum can also be caused by a defect in the power pack filter condensers. Then, too, a defective tube will give much trouble like this, particularly if it is one of the audio tubes. An open or broken wire in the grid circuit of one of the amplifier tubes will cause hum.

Tubes Burn Out

The tubes in my Philco 90 seem to burn out too soon. Static has always seemed to be present in this set. What shall I do to remedy this expensive and annoying trouble?

The fact that the tubes burn out so frequently indicates they are getting a higher voltage across the filaments than is intended. The proper way to test this is to connect an a.c. voltmeter across the tube terminals of each tube, one at a time, as the set is operating. The filaments should read about 2.3 volts on the -35s, -24As, -27s and -47s. That for the -80 should read about 5 volts. If the potential is too high you must look for a defective power transformer, voltage dividing resistors, or a partial short some place in the circuit.

The persistant static noises you complain about may be caused by a defective resistor, condenser, or dirt and dust in between the plates of the variable tuning condensers. Bad tubes, loose contacts or broken wires also contribute to these noises.

Hum In Zenith Set

There is a bad hum in my Zenith receiver. What can I do to stop this?

You have failed to name the model of the Zenith set in question. The screen-grid detector tube, if there is one in your receiver, as some Zeniths do, has been repeatedly found responsible for this kind of trouble. The tube, however, will usually test perfect. The thing to do is to try replacing it with a new one. Then of course, there are other causes, such as broken down filter or electrolytic condensers, or a cathode-to-heater short in the tubes of the circuit. Broken grid leads and other open wires may also give rise to serious hum.

Phono-Pickup "Blasts"

The phonograph pickup used with my Edison radio gives a "blasting" sound. Can it be adjusted so as to stop this noise?

Hardening of the rubber cushioning material or poor centralization of the armature of the pickup may account for this trouble. Make sure that the armature is correctly centralized in the pole of the pickup. Replace, if necessary, the rubber mounting supports in the pickup. Make sure that the fulcrum on which the needle swivel pivots is not unduly worn, as this would cause similar trouble.

Phonograph-Radio Hums

There is a bad mechanical hum when the motor in my electric phonograph-radio is running. I would like to prevent this if it is possible.

It is probable that some wear in the

phonograph motor bearings has unbalanced the mounting of the motor causing it to transmit vibrations to the mounting board. It is probably transmitted in such a direction that it is not radiated as sound until some other agent such as the tone arm can produce lateral vibration. It is quite possible that a remedy may be had by cushioning the tone arm. Otherwise some replacements and costly repairs will be involved.

Where Is Voice Coil?

How can I locate the voice coil wires in my model 60 Philco receiver?

These wires are difficult to locate. However, it is best to work backward. Examine the parchment cone of the speaker. As the apex or inner end of the cone is a small coil which fastened to the cone. The end of the cone with its coil swings freely so it can vibrate within the field magnet. There are two fine, flexible wires that come from this coil—the voice coil—and go to the output terminals of the output audio transformer. In most of the Philco sets the voice coil flexible leads are white in color.

"73"

I have noticed the figures "73" used in the signature of letters and on the short-wave broadcasts I pick up. What is the significance of this number?

The "73" in the signature of letters and at the end of telegrams and radio talks between operators is an old telegraphic sign-off signal, used between friendly operators, and means "best regards," "good luck," "friendly wishes," etc.

Locating Tubes In Sparton

Please tell me the locations and functions of the tubes in my Sparton 25-26 receiver. Can any of them be replaced with new types?

Looking down upon the receiver from the front: At the right is a row of four tubes extending in a line from front to rear. The front or first tube is a 427, automatic volume control; next, 427, the second detector; third, 435, the second i.f. stage tube; and rear or fourth, 435, the first i.f. stage. The center front tube is a 427 oscillator; in the rear of this tube is a 435, the first detector; and in the back, the last tube in this center row, is a 435 radio-frequency tube. To the left of the center row, toward the front of the chassis are two 445 power tubes, and at the left rear is the 480 rectifier tube.

The 427 second detector is about the only tube that can be replaced with another type—a 56.

Faulty Tracking

What can I do about the faulty tracking of the tuners in my Kennedy A-72 receiver?

Refer to the April, 1934, issue of RADEX for information telling how to realign receivers. Proper adjustment of the trimmer condensers should correct the trouble. In aligning a receiver see that the intermediate-frequency transformers are properly set. Tune to a station on about 1500 kcs. and adjust the trimmers. They are reached through holes in the condenser shield, or removable plates, in some models of Kennedy. Then set to a station on 550 kcs. and align by adjusting the padding condenser that is reached through a hole in the rear of condenser gang unit shield.

"Superhette" Adjustments

It seems that constant adustments of the condensers in my R. C. A. R-7 receiver seem necessary so that it will bring in stations in the day time. Why is this?

Day-time reception is not nearly as good as at night. It is weaker because of the absorption of the radio waves by the sun, and therefore we do not get the volume that is possible at night on certain distant stations.

It is possible, also, that your "Superhette" requires a re-balancing of its trimmer condensers. The 600 kilocycle trimmer is accessible by means of a screw adjustment located on top of the chassis, to the right of the electrolytic condensers and between the cams and the r.f. trans-

former. The 1400 kcs. lineup condensers are accessible through three holes in the bottom of the cabinet. The extreme left-hand hole is for the r.f. condensers; the middle hole for the detector condenser; and the extreme right-hand hole is for the oscillator condenser. The i.f. tuning condensers are accessible from the rear of the chassis. Two holes near the terminal board for the pickup device are for the second i.f. transformer. See the April issue of RADEX for further instructions on alignment of sets.

Flickering Filaments

A condenser connection broke in my power-pack filter unit. The trouble was repaired, but now a noise can be heard and the lights in the tubes flicker. What do you believe was done to cause this trouble when the set was repaired?

The description, to us, seems to indicate an intermittently shorted filament supply possibly caused by a defective center-tap resistor. In reconnecting the wires that broke off some error may have been made, and this may have resulted in puncturing one of the filter condensers. This trouble also very closely corresponds to all the symptoms you have cited. We suggest that the supply and wiring of that particular part of the circuit be checked when you examine the units of the condenser block.

Faulty Filter

I can turn the volume control of my Atwater Kent model 52 receiver on all the way, but volume is not there and stations above 50 on the dial can hardly be heard. A serviceman claims the trouble may lie in the filter condenser section of the power pack. I do not wish to buy this unit unless necessary. I wonder if the trouble can be in the r.f. plate circuit resistance strip, or in either the detector or first a.f. resistance in the power pack, or both?

It is quite probable that this trouble is due to a defective detector-plate resistor. This resistor is located immediately under the power-pack cover across the two contacts at the end of the unit—where the cable comes in. Its value is 60,000 ohms, and it should be replaced with one of the metallized types of resistors.

Raven-haired Aimee Deloro, coloratura soprano, is among the proteges of the veteran showman, Roxy, whom the latter is introducing in the forty-five minute shows over the CBS each Saturday at 8:00 p. m. EST.

A Resonance Meter

Is there some form of visual regulation of volume so that different people with differing opinions about sound intensity can regulate a radio to one sound level?

It is believed that this problem may be solved by using a resonance tuning meter, which is a d.c. milliammeter placed in the plate circuit of the output tube. The needle of the meter swings to its farthest position when the set is tuned to full resonance. This needle can be used to gage the volume of sound as set by the volume control regardless of individual errors of hearing.

Double-Spot Tuning

I have a Pilot all-wave receiver, model 10. *When I tune a station on the short-wave band I hear it in two places close together on the dial. This happens on every short-wave station, but not on the broadcast band. For example, if I tune in a station at* 50 *I also get it on* 52. *How can this be remedied?*

There are several possible causes of this trouble. If the pretuner and oscillator are out of adjustment, at one setting of the dial the pretuner will attenuate the signal although the resulting intermediate frequency that is created will be favorable for passing the i.f. transformer. At another setting of the dial, close to the first one, the pre-tuner will be resonant to the signal, but the i.f. that is formed will not be correct for the i.f. amplifier peak. In between, these points both will be unfavorable, hence the double spot tuning.

Faulty adjustment of the i.f. amplifier alone may produce this trouble. Overloading of either the first or second detector will often cause double-spot tuning, although this would not necessarily cause such an effect on all short waves. In fact, it would affect the broadcast signals in the same way. We feel confident that proper adjustments to the circuit will clear up the trouble, and that a good serviceman, with good instruments, can do the job in short order.

Converter on Philco 60

How can I connect a Stewart-Warner short-wave converter, 301A *model, to a Philco* 60 *receiver?*

It is possible to connect this converter to the Philco 60. However, since the Philco operates with 6 volts on its tubes, and the converter with 2.5 volts, it will be necessary to reduce the filament voltage to the converter. But. because the converter has its own filament transformer, this connection to the Philco receiver is not needed. All you have to do is to connect the plate pin of the converter to a source of 180 to 220 volts in the Philco set. This source will be found at the plate of the —78 tube— the intermediate frequency stage. A wafer adapter beneath this tube will provide a suitable means of making the contact.

New Tubes

Can the tubes in my Philco 90 *receiver be replaced with the newer types?*

You have not indicated whether your model 90 uses one -47, two -47s or two -45s. There are three styles of model 90. Two of the -27s, detector-rectifier and detector-amplifier, can be replaced with 56s. The -24A and the -35s are best as they are in this particular circuit. The -47 or two -47s can be replaced with 2A5s and suitable adaptors, if your set uses the -47 type of power tube.

Pathe Set Dies Out

I have a Pathe, 1933, *t.r.f. set. Sometimes it plays for* 10 *minutes and then dies out, but by advancing the volume control the diminishing volume returns for* 5 *or ten minutes more. This happens more often when the volume is almost turned off, but sometimes occurs when it is all the way on.*

The trouble you are experiencing sounds as if it were due to a defective resistor or some tube with a thermal contact that varies when the set becomes warm. Look at the grid-return leads, series plate-resistors, and any plate, grid or cathode-filter resistor. Or a defective grid-suppressor in one of the tubes, warping when it becomes hot, can very easily cause this trouble.

Signals Are Weak

I get weak signals on my Philco 90 *set when it is working on stations between* 1220 *and* 1500 *kilocycles. Why is this?*

It is likely that the oscillator tube either ceases oscillating or becomes weak when tuned to frequencies be-

(*Continued on page* 50)

HINTS *on* TUNING *a* S. W. Converter

• • • *By* PAGE TAYLOR

LAST month several different types of shortwave receivers were mentioned in RADEX, and it was suggested that for successful reception on the high frequencies, only three different types of receivers should be considered by a beginner, the regenerative, the super-heterodyne, or a converter.

Regenerative sets of less than four tubes are often offered by "bargain" houses for beginners, but these are just the sets which should be avoided. These receivers are usually so critical that only an experienced hand can tune them, and results are so unsatisfactory that it is not worth the trouble. The lone exception is a very fine three tube regenerative set built by one of the leading precision manufacturers and not available through the usual gyp channels.

Two or three tube "superhets" may also appeal to the bargain hunter, but when one is reminded that a superheterodyne circuit requires at least on oscillator, two detectors, and radio, intermediate, and audio frequency stages, one realizes that a minimum of six tubes is required to build a superheterodyne.

Using B. C. Sets for S. W.

Many of our readers already own good broadcast receivers and do not wish to dispose of them for all-wave sets, nor do they care to entail the expense of another receiver for shortwaves. The converter, then, is the answer to the problem. Converters are comparatively inexpensive, and in nearly all cases, fully as satisfactory as shortwave receivers.

A converter is a device which makes any broadcast band receiver into a shortwave superheterodyne by changing the shortwave signals to longer waves within the band covered by the conventional broadcast receiver. The radio frequency stages of the receiver become the intermediate frequency stages of a superheterodyne.

Some converters take their power supply from the broadcast set, while others have a built-in power supply. Mr. Daschiell gave complete instructions for building a converter of the former type in the May and June, 1933, numbers of RADEX. This unit is very satisfactory, and the method of hooking the filament circuit into the broadcast set is easy enough so that anyone can do it.

Converters with a built-in power supply require no mechanical connection to the receiver other than a wire running from the output end of the converter to the antenna post of the receiver. Some users even dispense with this wire, although this practice is not recommended.

The Beat Frequency

Readers who have followed the Beginners' Story of Radio in this magazine, understand that when two different frequencies are mixed, two additional frequencies are produced, one equal to the sum of the original frequencies, and the other equal to their difference. That is to say, if 6000 kc/s. and 6575 kc/s. are beat together, additional frequencies of 12,575 and 575 kc/s. are produced. The sum, 12,575, in this case is useless, but the difference, 575 kc/s., falls within the range of a broadcast receiver. This converted signal is then input to the antenna terminal of the receiver, then amplified, de-

tected, and reamplified, exactly as though it were a broadcast band signal picked up on the antenna.

Every converter is built to produce a predetermined intermediate frequency, and the broadcast set should be permanently tuned to this frequency while using the converter.

Because of the proximity of the converter to the b. c. set, the intermediate frequency is usually not very critical, tuning over several kilocycles. In tuning a converter it is necessary first to set the dials of the broadcast set to or near the frequency on which the converter is supposed to work. If a broadcast station should be heard at that point, the closest quiet spot should be located. After this has been done and the change-over switch has been thrown to the s. w. position, all the s. w. tuning is done with the converter dial.

Some converters, like Mr. Dashiell's, are designed to have an i. f. covering quite a wide range so that the user will have a better chance of finding a quiet spot. Some others, however, (like the Postal Deluxe) have the i. f. quite sharply defined. The Postal is designed to tune to precisely 545 kcs.

A converter is really a miniature broadcasting station, emitting on its assigned frequency, and the b. c. receiver picks it up. However, as stated above, this miniature broadcaster is placed so close to the receiver that it tunes quite broadly and this permits the user to move the dials of his b. c. set back and forth on either side of the i. f.

During the past several years so many articles on tuning the shortwaves have appeared in various radio papers that nearly everyone is now aware that very careful and patient tuning is required to bring in a shortwave station. Of course, veteran tuners can turn quickly to a desired station, but this is a result of much practice, and beginners should never tune haphazardly.

The Tuning Technique

The method of tuning a converter is the same as of tuning any shortwave set, except that after the signal has been brought up to maximum on the converter, a final adjustment of the broadcast receiver controls is sometimes required.

The volume control of any s.w. receiver or converter, to begin with, should be set about half way between minimum and maximum, so that some static can be heard. "No static, no signals," is an old adage, but true. If the receiver or converter is equipped with a "static eliminator" or "cross talk suppressor" or some such device, set it for maximum static. These things work fine on BC sets, but completely cut out average strength shortwave signals. When the set sounds as though it has some life and powerful code signals can be heard when the dial is turned, commence tuning very slowly.

If the dial is calibrated in kilocycles or megacycles, start some evening near the 6000 kilocycle mark (6 megacycles), and move the dial very slowly. Do not pay much attention to the dial calibrations, as these are seldom accurate. Tune slowly until a "rushing" sound is heard in the speaker (sometimes there will be a slight whistle instead of the rushing sound, or if the set is regenerative, a good whistle will be heard). Sometimes this rushing noise will not be very loud and only slow tuning and careful listening will detect it.

If the receiver is equipped with a tone control, it seems that better success can be had if the control is set for reproduction of "high" notes, as it is easier to detect the rushing sound in this position. As the dial continues to move, the rush will decrease, finally disappear, then reappear, suggesting a V. The point where the "rush" is at its minimum (the bottom of the V), is the point where the station is exactly in tune.

If the station is audible, its voice or music will be heard at this point. If the station is weak the program may not be audible at this peak, but the rushing sound becomes a soft "roar" or "rumble." In this case, very careful adjustment of other controls, such as an antenna trimmer, if one is provided, or an increase in volume, will bring in the station if it is possible to bring it in. It must be noted that any additional tuning, such as an antenna trimmer, will require retuning of the main tuning control.

When the signal has been brought up to maximum volume and intelligibility on the converter, it is often possible to improve it by careful adjustment of the tuning condensers of the broadcast set. After the station is tuned in, the tone control can be changed to the "low note" position, as intelligibility seems to be increased at this setting.

Keep Volume Down

The volume of any shortwave set should rarely be set at maximum. Even stations which are coming through with little volume can be heard and more easily understood if the volume control is set slightly below the noise level. It has also been found that with a little practice, it is easier to understand a weak station if one sits back in his chair and tries to listen naturally, rather than put his head into the loudspeaker. When using headphones, we find that stations are more easily understood if the head pieces are allowed to extend below the ears instead of being clamped tightly to the ears.

When it seems impossible to bring up the volume of a station to make it understood, it sometimes pays to hold it in tune for a while and allow the volume to naturally increase. Shortwaves are subject to fading, and many times a station is tuned in when on the low end of a fade. Every old time tuner has at some time or other, started out with the faintest suggestion of a whisper, and, through careful tuning, and patient waiting, been rewarded by good reception of some prize catch.

Editor's Note: Next month Mr. Taylor will discuss the calibration of the receiver and the proper methods for determining at what points on the dial the various frequencies will be tuned in. He will describe the making of a graph which serves two purposes, i.e., to tell the frequency of any station that is being received, and to tell where to set the dials for any frequency that may be desired.

Has Anyone *a* SINGLETON?

THE Singleton and Eliminator contests as carried on by the National Radio Club and by the New Zealand DX Radio Association, have proven very popular with the members of those organizations. For the uninitiated we explain that a Singleton is a verified station claimed by any one member. This stands to his credit until he is eliminated by some other member producing a verification from the same station.

With the limited membership that any club has, it is possible for some members to retain their singleton honors for a considerable time. But would it be possible for any DXer to hold a singleton for any length of time in the face of competition from the entire country? In other words, is it possible that any reader of RADEX has heard a station which no other reader has heard? If they have, that would be an honor indeed.

So let's start a Singleton contest of our own and see if we can find anyone with the unique distinction of having a verification from an existing station which no other listener in the United States or Canada has verified. We must limit this contest to the two countries

named for, obviously, readers in South Africa, for instance, have naturally received stations that have not been heard on the North American continent.

We are publishing in this article a few stations which we have picked at random from the last few issues of this magazines, together with the names of those who have verified these stations. Who can eliminate these singletons? If you, too, have received verifications from any of these stations, advise us at once so that you can be listed as an Eliminator. If, on the other hand, you have a verification which you believe may entitle you to be entered as possessing a Singleton, advise us at once and we will then see who can eliminate you.

It is obvious that only foreign stations have any chance of being a Singleton for, naturally, there is no station in North America which has not been logged by many of our readers. The station claimed must be now on the air in order to give others the opportunity of logging it and thereby eliminating the Singleton. Do not forward your verifications but, on the other hand, do not report any station either as a Singleton or as an Eliminator for which you cannot forward a *bona fide* verification if it should be called for in case of a dispute.

This Month's Singletons

To start things off we are listing below stations claimed to have been heard and verified by our readers:

ZTD, Durban, South Africa. C. E. Lowe, Merced, California.

SBA, Stockholm, Sweden. James Blase, 855 Home St., Bronx, N. Y.

HAL, Budapest, Hungary. Richard W. Watts, 19695 Beach Cliff Blvd., Rocky River, Ohio.

4BC, Brisbane, Australia. Frank W. Hoxie, Box 15, South Orrington, Maine.

2ZP, Wairoa, New Zealand. Charles Hesterman, 610 3rd Ave., N., Saskatoon, Sask.

3DB, Melbourne, Australia. William E. Johnson, Vinahaven, Maine.

XOST, Tsinan, China. Warren E. Winkley, P. O. Box 12, Hughson, Calif.

The CDXR Contest Cups

THESE beautiful silver cups were donated to the Canadian DX Relay by two members of that efficient organization. The winning of these cups is open to all CDXR members and the contests cover every branch of DX. The three largest are for annual competition. The two smaller cups become the permanent possession of the winners and they will be replaced by new cups each year. The largest cup is nearly fifteen inches in height; this is the highest award of the CDXR.

Reading from left to right the cups are (1) the Singleton-Eliminator Contest Cup, (2) Special Cup for the club member who verifies the greatest number of the CDXR special DX programs, (3) the Championship Cup, (4) the Seasonal Verification Cup for the club member who verifies the largest number of radio stations during the season, and (5) the Foreign Cup for the member who verifies the largest number of foreign stations during the season. Full details regarding the contest may be secured from the Canadian DX Relay, Goderich, Ontario.

Canadian vs. American Broadcasting

IN EVERY questionnaire addressed to the radio listener, "Eliminate the advertising" ranks high in the returns. Is this radio advertising really as objectionable as it would seem from the complaints or is it merely a bugaboo upon which it is convenient to hang our criticisms? It is a self-evident fact that the listeners must pay for their radio programs in some form. Only two methods have so far been devised—the British and Canadian, in which an annual tax is levied upon the listener, and the American in which the listener pays by lending his ear to the seductive voice of the sponsor who provides him with the program.

If we were required to vote on this question tomorrow, we can say honestly that we do not know just how we would mark our ballot. We yield to no one in our dislike of the constant flow of repetitive and uninteresting advertising content of the radio programs. But, on the other hand, we can't say that we would like an annual radio tax of ten or fifteen dollars in addition to all the other taxes we are now required to pay.

The people of Canada are in a position, however, to vote intelligently on this question. They have not only had the advertising system in their own Canadian stations but they can tune in the blurbs and plugs with the programs from the U. S. stations any evening. For more than a year now, they have had the British system in operation in Canada with the programs free from sales ballyhoo BUT a tax on receiving sets.

We want to ask a great favor of our Canadian readers. We want them to act as a jury in this case of TAX vs. BLURBS. We want them to fill out the ballot below and return it to us. We are sure their decision, reached after experiencing both system of broadcasting, will be of great interest to everyone connected with radio. May we count on their cooperation?

As a very small token of our appreciation for their helpfulness in this matter, we will send to every Canadian reader who fills out the ballot, his choice of the three articles named thereon.

The Radex Press, Inc., 705 Hanna Building, Cleveland, Ohio.

☐ **I prefer the Canadian system of broadcasting without advertising.**

☐ **I prefer the American system of broadcasting without a tax.**

Please send me

☐ **The Map of North America.**

☐ **The Radio Program "Slate."**

☐ **The DX Radio Log of the World.**

(Signed) .....

Street and No. .....

City and Province.....

(This offer expires December 1, 1934)

If you do not wish to cut your magazine send your vote on a postal card.

Hitting the Bull's Eye

(*Continued from page* 15)

sor, 1033 Sanford Ave., Irvington, N. J. "Just being a member doesn't automatically give authority to use the N." Clement has now graduated to the amateur ranks and bears the appellation, W2HNX. "I never thought in August, 1933," he adds, "that I would be looking down upon BCLs a year later. During the 1933-34 season I stayed up every Sunday morning after New Years in order to reach my goal of 450 stations. I wound up in April or early May with 454. In September I am beginning a year's course in the New York school of the RCA Institute to study radio engineering. We get actual practice at the Radio City studios of the NBC and the technical rooms of the Camden RCA-Victor plant.

Bed Pad Interference

"Monday, the power company made a house-to-house investigation to see what causes a terrible howl in my set. They found it to be—of all things—an electric pad! I have refused to make any further complaint as the user of the pad is a woman past eighty who has not long to live. I am sure she needs her pad more than I need my radio." This explanation of a perplexing interference by Miss Margaret Lynn Hamilton, of Coopersville, Mich., indicates what simple sources of interference may be troubling some of our other readers. Miss Hamilton is an enthusiastic tuner of both the b. c. b. and the s. w. In the 48 hours after installing the Perfect Phone Adapter and the Featherweight phones, she heard KSL, KPO, KGO, KFI, KHQ, KFRC and KDYL on the b. c. b. and the following on the s. w.: YV2RC, YV3RC, HJ1ABB, HJ5ABB, HJ3-ABF, HC2RL. Prado, Pontoise, Daventry, Zeesen, EAQ and CT1AA.

DX From CFCO

John Beardall of Radio Station CFCO, Chatham, Ontario, writes that they hope to present a series of DX programs throughout the entire season approximately once every two or three weeks. The station will be on the air on each occasion between 2:30 and 2:45 a. m. EST and will continue from that time until sunrise. Unfortunately for us, no set date will be made for the broadcasts because they depend upon favorable atmospherical conditions. This means that a decision for a broadcast must be made only a few hours before the time of starting. A cash prize will be offered for the most distant report and special mention will be made in their reply cards to those who send return postage, of the fan who sends the most useful report. In the past hundreds of reports were of little or no value and the station hopes to encourage listeners to send useful reports. Those who are at their sets mornings between 2:45 and sunrise would do well to try 600 for CFCO. This station has a Club broadcast every Sunday morning from 9:30 to 10:15 EST to which readers of RADEX are especially invited to listen.

The Canadian Changes

"I can't understand the CRC changes," complains H. Arbic, Acton, Ont. "CRCT was on 840 in the first place and now they are back again. They completely spoiled CKCR when they put them up on 1510 (for me anyway.) There is a skip distance there or something for we can't get them very well now. I am only 30 miles from Kitchener. The b. c. b. is getting good again and my interest in it has begun to come back. I have heard XEAL several mornings now, also KWWG, Port Arthur; they are both new ones to me. The Californians, KFAC, KTM and KFSD, are heard here till 6:50 EDST, KFAC being the best, almost like a local. My total b. c. stations between 540 and 1510 are 522, not counting deleted ones. I have veries from the smallest station on the b. c. b., VE9EK, 10 watts, and a veri from

one of the far ones, 2BL, 10,120 miles away. Also have KGU."

Can't Receive "Down-Unders"

"I was DXing this morning and heard WHEF on a special test," reports Wm. Wheatley, "The Kew-DXer," of 254 Cleveland St., Brooklyn, N. Y. "This is the second time I have heard them and I have a verification from them on my first reception. You list W2XR as silent but they are on every night excepting Saturdays, Sundays and holidays, from 4 p. m. to 6 p. m. EST. (When we list a station as silent it is, of course only for the day shown—Sunday in the October number. Ed.) W2XR is the old television station W2XBR and the address is 41 Park Row, New York City. WMEX in Chelsea has been testing quite often lately from 1 a. m. EST until after 3 a. m. So far I have sent them three reports but have not received a verie; has anyone? At last, after two years, I have received a verification from that stubborn station, WLVA. My log now stands at 589 with 445 verified—but no Aussies nor Zedders. I try night after night for these stations but just can't seem to pull them in although I have such stations verified as KRE. HJN. LR5, CX26, YV1BC, WKAQ, HIX, KUMA, and KGAR. Would appreciate letters on the best time to receive the down-under stations and will answer all promptly."

134 Stations In Summer

"The off-season having drawn to its close, I would like to report the results I secured during those months when reception is not at its best," states Howard L. Spies, 1217 Louisiana Ave., N. W., Canton, Ohio. "My count shows a total of 134 stations received with my Midwest 10 on the b. c. b. in the period June-July - August. Outstanding among these were KWTO, WATR, WDAS, WEBR, WFEA, WKBB, WNBX, WNRA, WPHR, WROL and WSAJ. Added to these were 17 s. w. commercials, 24 police and three or four

Presenting Walter Paterson, blond, blue-eyed and charming, who plays the fascinating "Captain Nicky" in "One Man's Family." He was a rancher in South Africa where he was born, before he came to America and made his radio debut in "Tropic Terrors," an NBC series which he wrote, produced and enacted.

'pick-up' stations. Among the s. w. were VK3LR, OXY and CJRO. While I do not consider this a remarkable performance, I have spent comparatively little time at DX.

"One of my most interesting experiences on the s. w. was a conversation between the operators who engineered one of the Byrd broadcasts. The pole transmitter was barely R1 but readily distinguishable at times. The Long Island pick-up was R-9 and it took some close attention to jerk the volume for the remote transmitter and then shoot it down for the pick-up to avoid blasting out the ears. (I was using the Perfect Phone Adapter with whose performance, by the way, I am very well pleased). This came through at about 7.2 megacycles."

Only a Beginner!

Who was it wanted reports from Kentucky? Well, here's one that makes up for lost time. "I wonder

if you would be interested in publishing a beginner's letter," inquires Kenneth C. McCartt, 213 State Street, Lexington. "I have been DXing only a year but during that time I have done fairly well. On August 31st, I ended my first year of DX with a total of 1063 stations in 38 countries. This total is divided up as follows: Long wave, 4; b. c. b., 404; police, 64; 'ham', 307; other s. w. stations, 284. Of the 404 on b. c. b. 164 are of 100 watts or less. Some of my best in this list are two of 15 watts and 11 of 100 watts on the west coast. On s. w., I received Surinam, Somaliland, Rumania, Denmark, Sweden, Syria, Japan, Poland, Curacao and Czechoslovakia. Most of the latter were heard on CW.

"I use a Midwest G-10 receiver, a one-tube home-made preamplifier, a 30-foot 5-wire cage aerial 25 feet high, and ten feet of copper tubing as a ground. I find this combination to be so sensitive that I can bring in hundred-watters on the west coast at R7 to R8 volume. I am a member of the IDA and of the NNRC and would be glad to correspond with any who care to write." Better send Kenneth return postage or he won't be able to buy stamps enough to answer all those who will want to know about this record.

Choice of Three Aerials

"The September RADEX has arrived which officially opens the 1934-35 DX season for me," proclaims Jack Watrous, La Canada Road, San Mateo, Calif. "This will be my first in this location. It promises to be the best ever for, between ninety degree weather and summer static, I have managed to pull in such stations as CJCA, XEAW, KSD, CJAT and KDFN, all on their regular schedules too. By the time this Indian summer ends and November weather begins, the J's and Aussies should be rolling in very well. I have done a great deal of experimenting with antenna and ground and have reached a fairly satisfactory arrangement. For a ground, I use an eight-foot curtain rod driven into the soil, kept watered always. I have a choice of three aerials at the flip of a switch; one is a 15-foot inverted L, one a cage type and one a doublet. The cage type works about the best of them all probably on account of its being so much higher than the others. I have it mounted on the top of a pole well above the trees. My set is a nine-tube Zenith but only seven tubes are used for b. c., the other two being s. w."

Gets 2 BL Every Night

"I started another DX season on September first and added XEXX as my first catch," writes Warren E. Winkley, P. O. Box 12, Hughson, Calif. "I have finally surmounted the 600 mark but my veries are very slow in arriving. I have letters out to 8 Japanese and a few others. CMCO refuses to answer in spite of six requests but I'm going to keep on trying. I think that DX this season is going to be fine. Here is a list of what I heard the other night. In the R8 class comes my old dependable 2BL; I can hear him 99 out of 100 nights with good volume. With R6: 2YA, JOIK, JOAK-1, JOFK, JOHK. R5: 2CO, JOCK-1. R4 to R2; 3YA, 3AR, JOQK, JODK-1, JOBK-1, XGOA. I think that is pretty good considering that it is still hot out here. According to a letter from Lieh Fu Chang of XOST, I am the only person in the USA to report them."

From Puerto Rico

"Without the least experience, and DXing only after five o'clock every morning, I was able to catch 125 stations last season on my five-tube superhet," states Manuel A. Cadilla, P. O. Box 337, San Juan, P. R. "These included WEXL when it was 50 watts and a 500-watter in Hollywood which is about 4000 miles away. On October first I will start a new season and a new log, disregarding my old one. It is not pos-

sible to start on September first because the thermometer is still 82 at its lowest on the first September morns in Puerto Rico. October is cooler and static more tolerable. I caught CRCT at 5:15 a. m. on September first."

Reports In Brief

"Just a line to let you know that I heard TGW, Guatemala City on 565 kcs. on August 26th," postcards Paul V. Trice, 379 Grant St., Sharon, Pa. "They came in with very good volume." If it is true as reported that TGW has increased its power to 10,000 watts, many of our other readers ought now to be able to add them to their log on 565 kcs. C. H. W. Nason, Technical Director of TGW, advises us that their hours are 12:00 to 2:30 p.m. daily and 6:30-7:30 and 9-11 p.m. CST week days. Saturday nights they are on until 1 a.m. Sunday. "Others received well during the last part of August include KOH, KWG, KFXM, KMAC, KGB, KIDW, and KHJ. I heard them on a home-made two-tube a. c. set." adds Paul who also reports his first TP, 4QG.

Says Chas. A. Redick, 137 Elgin St., Sarnia, Ont.: "I purchased a Philco 6-tube radio on September 23rd. Since that time I have logged 45 stations in the U. S., Canada, Cuba, Porto Rico, and, best of all, GSD and GSB in Daventry, England. The call letters of the Massillon, Ohio, police station are WPHC!"

"I thought I would write and tell you of my success in radio DX," begins Norquay Scott, 279 Briar Hill Ave., Toronto, Ont. "I am only 17 years old but have been a fan for about four years. I have a grand total of 569 on the b. c. b. with over 400 verified. I have a verie from KGU in Honolulu which people here say is a great catch to have verified. I would like to know if any others in Toronto have KGU. I have 200 odd verifications on the s. w. and these were displayed at the Canadian National Exhibition in the RCA-Victor radio booth. My set is an RCA-Victor all-wave."

"I was listening to WINS, 1180 kcs, at about 12:30 p. m. EST, and moved the dial to about 1190 kc. and there was a noise that sounded like a siren but I could not get a call. Do you have any idea what this could be?" queries John Iles, 1645 Ortnodox Street, Philadelphia. "I heard the time signals at noon over NAA, 690 kcs., and the announcers gave the location as Washington, D. C., whereas your magazine says it is at Arlington, Va." NAA is operated by the U. S. Navy. The transmitter is located at Arlington, Va., just across the river from Washington. They do not have a studio in the accepted use of the word.

One who signs himself "The DXing Fool" takes exception to the letter by "An 'OM' De-Exer" in the September issue. The latter ought to know, thinks the former, that time, patience and a good set will complete any state due to the frequency tests and the various DX clubs who arrange programs with the hard-to-get stations and especially the daytime stations. "I correspond with a DXer," writes the DF, "who has just logged KTRB to complete California and as soon as his veri arrives, the state will be completely logged and verified. This chap is a square honest shooter and they don't come any better."

"I am only twelve years old and have only 65 stations but a Radiola 28 tunes fairly wide," reports Harry Will, 1406 Montreal, Dallas, Texas. "I could get KGKO clear as a whistle when they had 250 watts but now I can't get a budge out of them since they have 500 watts. I consider KOB my best station but it is hard to get on account of WOAI in San Antonio. I don't verify stations 'cause Daddy says it would cost too much. I would like to correspond with any other DXers as young as I am."

A new recruit to RADEX ranks,

Ernest Lockyer Wills, 138 Lelieure Street, Montreal, Que., writes: "My radio is a Marconi model 35, 11-tubes. Two weeks ago I bought a Philco converter. I am getting excellent results. Have received VE9GW, W8XK, COC, W3XAL, HVJ, GSE, GSB, GSA, DJD and EAQ."

"My log stands at 294," summarizes Manual J. Hamilton, 1753 Kensington Ave., Youngstown, Ohio, "and my best catches are KXO, KGEK, CHGS, 10-BP and 10-BQ. Last but not least is 3YA. I have DXed with about everything from a crystal set to a ten-tube super. The present set is home-made, using two 24 t. r. f., one 24 detector, 27 and 45 as audio. I would like to hear from others using home-made t. r. f. sets, also DXers in Central and South America."

"Down here in south Georgia, DX has started off with a bang," exclaims Joel H. Armantrout, 602 E. Magnolia St., Fitzgerald, Ga. "Already have heard 2BL, 4RK, 4BC, JOCK-2, JOBK-2. After revising from summer changes, my log stands at 612 with 133 verified and 25 reports out. Heard LR5 the other a. m. LS2 has failed so far to come through at all; WSAZ is too much for them. Would like to hear from any DX fans who have had experience in hooking loop aerial to radio; would also like to hear from any foreign fans who will exchange postage stamps with me."

"The only time I can do any DXing is on Sunday mornings from September first to April 15th of each year," laments John J. Swatko, 216 East 5th Ave., Homestead, Pa. "I have heard 493 stations to date and have 430 of them verified. My best catches are KFWI, KCAX, CFCN, WRDO, KHQ, KOY, KMPC, KDFN, CHGS, WKAQ, CMCA, HIX, CFNB and KBTM. I have been a member of the NNRC for the past three years. On September 8th, I had the pleasure of speaking on the KDKA Radio Club program. It was an interesting experience."

"During September, I added LS2, CMCO, KOTN, WMEX, WLNH and WHBI to my log of 714 stations which also includes LR5, PP, RN, IMI, FON, CX26, HJN, YV1BC, 2BL, 4QG, CFCT, KPPC, KFPM, VONA, KGU and 10AB. LS2 came through the transmission of WOAI and at times completely blanketed the latter. It was received at 8:15 p. m. EDST." This report is from Stuart Leland, St. John Place, New Canaan, Conn.

"My summer DX was not so hot," admits H. H. Searles, 349 Broadway, Rochester, N. Y. "But I did manage to add two new stations, WMEX and WTEL, bringing my log to 460 with 126 verified. My best are LR5, YV3BC, 10-BQ, WKAQ, KWG and XES, all verified. I heard XENT the other night asking for reports on their reception."

"My log now stands at 295 with my Crosley 173," reports Robert Hoffman, 306 West School Lane, Germantown, Philadelphia. "My latest additions are KJR, KGO, KVOD and others. I have just installed an Ollie Ross ground and have joined the CDXR and the NRC. Reception is picking up."

"Am about to begin the '34-35 DX season with 558 stations logged," report Llody Harrison, 130 S. Hague Ave., Columbus, Ohio. "My best are LR5, KFPM, CHGS, CJCA. KXL, KGFJ, WKAQ. Does any other DXer use a McMillan set?"

Last-Minute Tips

Sunday Mornings

		Nov. 4		
3:00-3:30	CJGX	630	500	Yorkton
		Nov. 11		
4:00-4:30	CKBI	1210	100	Prince Albert
		Nov. 18		
3:00-3:45	CJLS	1310	100	Yarmouth
		Nov. 25		
2:00-3:00	CKGB	1420	100	Timmins
2:30-4:00	LS-2	1190	500	Buenos Aires
3:00-4:00	CJKL	1310	100	Kirkland Lake
4:00-5:00	CFCH	930	100	North Bay

Using Head-Phones

NOW and then an inventor brings out a device for the improvement of a radio receiver which causes one to wonder why the set manufacturer himself does not install it. Such an invention is the Perfect Phone Adapter introduced by Radio Parts Co., 1401 Prospect Ave., Cleveland, Ohio.

The Perfect Phone Adapter is extremely simple but most effective. It consists of a small jack-box which can be screwed to the underside of the console where it is out of sight but yet readily accessible. Leading from this box is a cable to which is attached either one or two small socket adapters. The power tube or tubes are removed and the small adapters placed in their sockets; the tubes are replaced in the adapters and the device is installed.

The tips on the cords of the phones are placed in a phone-plug. When this plug is inserted in the jack, the signals are automatically transferred to the phones and the speaker is silenced. There is no change whatever in the wiring of the receiver which is fortunate, for cutting wires in a set is a hazardous undertaking. Neither is there any change in the load or balance of the set.

Thousands of radio listeners want to use head phones. This applies particularly to those who are hard of hearing, those who like to DX in the small hours of the night while the rest of the family sleep in peace, and those who want to identify those faint calls from far-distant stations which they cannot distinguish on the speaker.

"The first night I used the Perfect Phone Adapter," writes Clyde E. Lowe, 730 K St., Merced, Calif., "I identified three Australians I was never able to do on the speaker. I wouldn't be without my adapter and phones for four times the price." And Howard L. Spies, 1217 Louisiana Ave., N. W., Canton, Ohio, who had the interesting experience of listening to a conversation between the operators who engineered one of the Byrd broadcasts, says: "I was using the Perfect Phone Adapter with the performance of which I am very well pleased." Irving Goodeve, 1619 Krom Ave., Kalamazoo, Mich., adds: "The first hour I used the Perfect Phone Adapter I picked up ON4BZ, a Belgian amateur on 20 meters. You can tell the world the Perfect is *perfect*."

A Timely Warning

I HAVE a 1934 Grunow 8-tube superhet. I was fooling around with the adjustments on the tuning condensers and the two adjustments underneath the set. Now I cannot get the dial to read properly. Below 1130 it goes off up to 20 points. The set is no longer selective. Would appreciate any help you can give me." We are very sorry that it is impossible for us to help this reader undo what he has done. It is quite impossible to tell at this distance just what he has done to his set. We can only say in the immortal words of Joe Penner "Don't do that." We hope the experience of this reader will be a warning to thousands of others. Don't think that you can improve upon the work of the skilled engineers who built your receiver. When one buys a new set of the latest type, he can feel sure that the engineers who designed it and the workmen who built it and inspected it before it was shipped to him, have done the very best possible and that no adjustments he can make will improve upon their work. If one bought a fine watch, he would never dream of taking a screw driver and trying to improve upon the mechanism. Why then does he yield to the urge to "monkey" with his radio set?

If one has an old set which has

gone wrong or which is no longer performing as it did then one knows that there is a trouble and this trouble is capable of being corrected. but to tinker with a new set is just inviting trouble and expense.

To this word of warning, Howard L. Spies, Canton, Ohio, adds: "I was glad to see you publish in the September issue a strong word against persons without technical knowledge attempting to change wires or make 'hit-or-miss' tests. I have read numerous things which I would like to try out but not knowing just how to go about it, I rather wisely, I think, left 'well enough alone.' I am very satisfied with the performance of my Midwest and although I am always eager to improve the reception, I would hate to have some experimenting on my part result in blowing a set of tubes, two or three condensers, or what not."

IDA Embraces Short Waves

THE expansion of the field of radio to include the short waves in a popular sense, is indicated by the recent action of the International DXers Alliance in broadening their organization to include the short wave as well as the broadcast band. Interest in s.w. radio has been growing by leaps and bounds for the past few years. The introduction of short wave converters and all-wave sets has interested thousands whose tuning has heretofore been limited to the broadcast band.

The IDA has in the past limited its field to the stations on the b. c. b. at least 2000 miles distant from the listener. Now however a DXer may be eligible for membership who has verifications from foreign broadcasting stations on the s. w. band in at least three different continents. The degree of DSW will be conferred upon any member furnishing proof of 100 or more s. w. verifications with at least three from each of the six major continents. Captain Horace L. Hall of New York City, a well-known short wave authority, has been named director of the club's short wave activities.

The IDA now has more than 400 members in over 34 countries as well as 40 states of the Union. The dues are $1.00 annually. Charles E. Morrison, Bloomington, Illinois, is the president of the organization.

Technical Tips

(*Continued from page* 38)

tween 1200 and 1500 kilocycles, which is the lower wave end of the dial. We advise that you check the coupling between the plate and grid circuits of the oscillator tube. Examine the tuning condenser that controls oscillation to see whether it is shorted when tuned to positions between 1200 and 1500 kcs. See that all contacts are perfect and that shields are tight. It is necessary that the oscillator tube itself be in good condition, a situation that does not always show up on a test. Replace the tube with another to see if there is any improvement.

Editor's Note: Only the reader will know whether he possesses the technical knowledge and correct instruments to warrant him in making these changes and corrections. In case of doubt, call in an experienced serviceman. Bear in mind that a radio receiver is an extremely delicate and sensitive instrument and may very easily be thrown out of adjustment.

In each of the next several issues, Mr. Dashiell will describe one of the new 1935 receivers and point out its most interesting features. Be sure to read these articles if you are thinking of buying a new set.

November DX Calendar

(*Continued from page 4*)

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
	WLBF	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
	November 30			
10:00-6:00	WJAX	900	1000	Jacksonville
	November 2, 9, 16, 23, 30			
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			
	November 3			
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
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
	November 10			
2:00-4:00	10-BQ	1200	15	Brantford
	November 17			
2:00-3:00	COK	1150	250	Havana
3:00-6:00	WTRC	1310	50	Elkhart
4:30-6:00	VONF	950*	5000	St. John's
5:00-6:00	KMAC	1370	100	San Antonio
	*May be on 940 or 960.			
	November 24			
12:00-8:00	KGIR	1360	1000	Butte
3:00-5:00	XED	1160	500	Guatemala City
	November 3, 10, 17, 24			
12:00-12:30	WGAR	1450	500	Cleveland
12:30-1:00	KDKA	980	50000	Pittsburgh
12:00-3:00	WGES	1360	500	Chicago
1:00-3:00	TGX	1400	150	Guatemala
	CMCW	540	150	Havana

Particularly for those who have never logged WBOQ, the Columbia Broadcasting System will provide a special DX program dedicated to the NNRC on Sunday morning, December 9th, from 3:00 to 4:00 a.m. EST. The call WBOQ will be used.

THE MONTH'S CHANGES IN STATION DATA

FREQUENCIES

540	CMCW	Havana, Cuba, from 965
609	FQN	St. Pierre, Miquelon, from 574
610	CMCF	Havana, Cuba, from 780
635	CMBY	Havana, Cuba, from 965
725	CMK	Havana, Cuba, from 730
765	CMX	Havana, Cuba, from 890
840	CMQ	Havana, Cuba, from 645
845	XEXX	Mexico City, Mexico, from 850
915	CMBS	Havana, Cuba, from 780
920	WSPA	Spartanburg, S. C., from 1420
930	CMW	Havana, Cuba, from 595
950	VONF	St. John's, Nfld., from 1195
955	CMCD	Havana, Cuba, from 925
971.5	CMGF	Matanzas, Cuba, from 987
1005	CMBZ	Havana, Cuba, from 1010
1040	CMBC	Havana, Cuba, from 1270
1150	COK	Havana, Cuba, from 1230
1175	COA	Havana, Cuba, from 890
1200	CMCJ	Havana, Cuba, from 1185
1255	CMCU	Havana, Cuba, from 1100
1280	CMCO	Havana, Cuba, from 1145
1350	CMBD	Ciego de Avila, Cuba, from 1010
1370	WOC	Davenport, Iowa, from 1420
1375	CMBG	Havana, Cuba, from 1060
1400	CMCR	Havana, Cuba, from 1375
1425	CMBX	Havana, Cuba, from 1185
1450	CMCQ	Havana, Cuba, from 680
1475	CMCG	Havana, Cuba, from 1140
1500	CMCN	Havana, Cuba, from 1375

NEW

550	WSVA	Staunton, Va.
850	WWPA	Clarion, Pa.
1320	CMCK	Havana, Cuba

CALLS

1210	WCOL	Columbus, Ohio, formerly WSEN
1370	WOC	Davenport, Iowa, formerly KICK

LOCATION

1370	WOC	Davenport, Iowa, from Carter Lake, Iowa

DELETE

1085	VOKW	St. John's, Nfld.

POWER

920	WSPA	Spartanburg, S. C., 100 to 1000

PERMIT TO CHANGE LOCATION

1080	WCBD	Zion, Ill., to Waukegan
1210	WALR	Zanesville, Ohio, to Toledo, Ohio
1420	WHDL	Tupper Lake, N. Y., to Olean

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-6:00 p.m., C-5:00, M-4:00, P-3:00
C — Buck Rogers; 25th Century
CKLW WAAB WABC WBNS WCAO WCAU WFBL WHEC WHK WJAS WJSV WKBW WKRC WOKO

E-6:30 p.m., C-5:30, M-4:30, P-3:30
C — The Shadow; Drama
WAAB WABC WCAO WCAU WDRC WEAN WFBL WHEC WIBX WJSV WKBW WOKO WORC

E-6:45 p.m., C-5:45, M-4:45, P-3:45
R — Billy Batchelor
WBEN WCAE WCSH WEAF WEEI WFBR WFI WGY WJAR WRC WTAG WTAM WTIC WWJ

B — Lowell Thomas
CFCF CRCT KDKA WBAL WBZ WBZA WFLA WGAR WHAM WIOD WJAX WJR WJZ WLW WMAL WRVA WSYR

E-7:00 p.m., C-6:00, M-5:00, P-4:00
C — Myrt and Marge
WABC WADC WBT WCAO WCAU WDAE WDBO WEAN WFBL WGR WJAS WJSV WKRC WNAC WOKO WQAM WSPD WTOC WWVA

B — Amos 'n' Andy
CRCT KDKA WBAL WBZ WBZA WCKY WENR WFLA WGAR WHAM WIOD WJR WJZ WLW WMAL WPTF WRVA

E-7:15 p.m., C-6:15, M-5:15, P-4:15
R — Gene and Glenn
WBEN WCSH WEAF WEEI WFBR WFLA WGY WIOD WIS WJAR WJAX WPTF WRC WTAG WWNC

B—Willard Robison; Mildred Bailey
KDKA KOIL KSO KWCR KWK WBAL WBZ WBZA WCKY WENR WHAM WJR WJZ WMAL WSYR

E — 7:30 p.m., C-6:30, M-5:30, P-4:30
C — Silver Dust Serenaders
WABC WCAO WCAU WDRC WFBL WGR WHEC WHP WJAS WJSV WMAS WOKO WORC WWVA

C — Buck Rogers; 25th Century
KMBC KMOX KRLD KTRH KTSA WBBM WBT WCCO WDSU WFBM WGST WHAS WMBG

R — Al Bernard and Paul Dumont
KSD WCSH WDAF WEAF WGY WHO WJAR WMAQ WOC WRC WSAI WTAG WTAM WWJ

B — Red Davis; Drama
KDKA KOIL KPRC KSO KSTP KTBS KWCR KWK WAVE WBAL WBZ WBZA WEBC WENR WFLA WHAM WIBA WIOD WIS WJAX WJDX WJZ WKY WMAL WMC WPTF WREN WRVA WSB WSM WSMB WSYR WTAR WWNC

E-7:45 p.m., C-6:45, M-5:45, P-4:45
C — Boake Carter for Philco
CKLW KMBC KMOX WABC WBBM WBT WCAO WCAU WCCO WGR WHAS WHK WJAS WJSV WNAC

R — Frank Buck Program
KSD WBEN WCAE WCSH WDAF WEAF WGY WLIT WMAQ WOW WRC WSAI WTAM

B — Dangerous Paradise; Drama
KDKA KOIL KSO KTBS KVOO KWCR KWK WBAL WBZ WBZA WENR WFAA WGAR WHAM WJR WJZ WKY WMAL WOAI WREN WSB WSM WSMB WSYR

E-8:00 p.m., C-7:00, M-6:00, P-5:00
C — Bar X Days; Carson Robison
CKLW KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KSL KVI KWG WABC WBBM WBNS WCAO WCAU WCCO WDRC WEAN WFBL WFBM WGR WHAS WHEC WHK WJAS WJSV WKRC WNAC WOKO

R — Richard Himber and Orchestra
KPRC KSD KTBS KVOO WBAP WBEN WCAE WCSH WDAF WEAF WEEI WFAA WGY WHO WJAR WKY WMAQ WOAI WOC WOW WRC WSAI WTAG WTAM WTIC

B — Jan Garber and Orchestra
KDKA KDYL KFI KGO KGW 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
CKLW KMBC KMOX WABC WADC WBBM WCAO WCAU WCCO WDRC WEAN WFBL WFBM WGR WHAS WHK WJAS WJSV WKRC WNAC WOKO WSPD

C — Billy Batchelor
KDB KERN KFBK KFPY KFRC KGB KHJ KMJ KOIN KOL KVI KWG

E-8:30 p.m., C-7:30, M-6:30, P-5:30
C — Atwater Kent Program
CKLW KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMBC KMOX KMT KOIN KOL KRLD KSL KVI KWG WABC WADC WBBM WBT WCAO WCAU WCCO WDOD WDRC WDSU WEAN WFBL WFBM WGR WHAS WHK WJAS WJSV WKRC WMT WNAC WOKO WOWO WQAM WSPD

R — Voice of Firestone
CFCF CRCT WBEN WCAE WCSH WDAF WEAF WEEI WFBR WGY WJAR WLIT WLW WMAQ WRC WTAG WTAM WTIC WWJ

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

R — A & P Gypsies
KSD WBEN WCAE WCSH WDAF WEAF WEEI WGY WHO WJAR WLIT WMAQ WOC WOW WTAG WTAM WTIC WWJ

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

E-9:30 p.m., C-8:30, M-7:30, P-6:30
C — The Big Show
CKAC CKLW KFAB KLZ KMBC KMOX KSL WABC WADC WBBM WBNS WBT WCAO WCAU WCCO WDRC WDSU WEAN WFBL WFBM WHAS WHK WICC WJAS WJSV WKBW WKRC WNAC WOKO WOWO WREC WSPD

R — Colgate House Party
KDYL KFI KFYR KGO KGW KHQ KOA KOMO KPRC KSD KSTP KTBS KVOO WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI

MONDAY (*Continued*)

WFAA WFBR WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKY WLIT WLW WMAQ WMC WOAI WOC WOW WPTF WRC WRVA WSAI WSB WSM WSMB WTAG WTAM WTMJ WWJ WWNC

B — Princess Pat Players

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
C — Wayne King and Orchestra

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

R — Contented Program

CFCF CRCT KDYL KFI KFYR KGO KGW KHQ KOA KOMO KPRC KSD KSTP WBEN WCAE WCSH WDAF WEAF WEBC WEEI WFAA WFBR WGY WHO WJAR WKY WLIT WLW WMAQ WMC WOAI WOC WOW WRC WSB WSM WTAG WTAM WTIC WTMJ WWJ

E-10:30 p.m., C-9:30, M-8:30, P-7:30
C — Emery Deutsch and Orchestra

CFRB CKAC CKLW KFH KGKO KLRA KLZ KMBC KOH KRLD KTRH KTSA KVOR KWKH WAAB WABC WACO WADC WALA WBIG WBNS WBRC WBT WCAO WCAU WDAE WDBJ WDBO WDNC WDOD WDSU WEAN WFBL WFBM WFEA WGLC WGR WHEC WHK WHP WICC WISN WJAS WJSV WKRC WLAC WLBW WLBZ WMAS WMBD WMBG WMBR WMT WNAX WNOX WOKO WORC WPG WQAM WREC WSBT WSFA WSJS WSPD WTOC

E-10:45 p.m., C-9:45, M-8:45, P-7:45
C — Talks on Health Problems

CFRB CKLW KFH KLRA KLZ KMBC KOH KRLD KTRH KTSA KVOR KWKH WAAB WABC WACO WADC WALA WBIG WBNS WBRC WBT WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDSU WEAN WFBL WFBM WFEA WGLC WGR WHEC WHK WHP WIBW WICO WISN WJAS WJSV WKRC WLAC WLBW WLBZ WMAS WMBD WMBG WMBR WMT WNAX WNOX WOKO WORC WPG WQAM WREC WSBT WSFA WSJS WSPD WTOC

E-11:00 p.m., C-10:00, M-9:00, P-8:00
C — Myrt and Marge

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

B — Amos 'n' Andy

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

E-11:15 p.m., C-10:15, M-9:15, P-8:15
C — Leon Belasco and Orchestra

KLRA WABC WALA WBRC WBT WCAO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFEA WJSV WLAC WLBZ WMAS WMBG WMBR WNAC WNOX WORC WPG WQAM WREC WSFA WSJS WTOC

C — Edwin C. Hill

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

R — Gene and Glenn

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

E-11:30 p.m., C-10:30, M-9:30, P-8:30
R — Voice of Firestone

KDYL KFI KFSD KFYR KGHL KGIR KGO KGU KGW KHQ KOA KOMO KSD KSTP KTAR WDAF WDAY WEBC WHO WIBA WKBF WOC WOW WTMJ

TUESDAY

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

E-6:30 p.m., C-5:30, M-4:30, P-3:30
C — Musical Appreciation Program

CKLW KLRA WABC WALA WBIG WBRC WBT WCAO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFEA WGLC WHEC WHK WHP WJAS WJSV WKBW WKRC WLAC WLBW WLBZ WMAS WMBG WMBR WNOX WOKO WORC WQAM WREC WSFA WSJS WSPD WTOC WWVA

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
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 — Whispering Jack Smith

WABC WCAO WCAU WDRC WEAN WFBL WGR WJAS WJSV WNAC WOKO WORC

B — Household Musical Memories

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

C — Buck Rogers, See Monday

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

R — Frank Buck, See Monday

E-8:00 p.m., C-7:00, M-6:00, P-5:00
C — Frank Munn; Gustav Haenschen

CKLW KMBC KMOX WABC WADC WBBM WCAO WCAU WDRC WEAN WFBL WFBM WGR WHAS WHK WJAS WJSV WKRC WNAC WOKO

R — Leo Reisman and Orchestra

WBEN WCAE WCSH WEAF WEEI WFBR WFI WGY WJAR WMAQ WRC WTAG WTAM WTIC WWJ

B — Eno Crime Clues

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

E-8:15 p.m., C-7:15, M-6:15, P-5:15
C — Billy Batchelor, See Monday

E-8:30 p.m., C-7:30, M-6:30, P-5:30
C — Abe Lyman; Vivienne Segal

CFRB CKLW KMBC KMOX WABC WADC WBBM WCAO WCAU WCCO WDRC WEAN WFBL WFBM WGR WHAS WHK WJAS WJSV WKRC WNAC WOKO WOWO WSPD

R — Wayne King and Orchestra

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

B — Lawrence Tibbett

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

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

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 WDRC WDSU WEAN WFBL WFBM WGST WHAS WHK WJAS WJSV WKBW WKRC WNAC WOKO WOWO WREC WSPD

R — Ben Bernie and Orchestra

KFYR KOA KPRC KSD KSTP KTBS WBAP WBEN WCAE WCSH WDAY WEAF WEEI WFBR WFI WGY WJAR WJDX WKY WMAQ WMC WOAI WOW WRC WSB WTAG WTAM WTIC WTMJ WWJ

E-9:15 p.m., C-8:15, M-7:15, P-6:15
B — Story Behind Claim; Drama

KDKA KOIL KSO KWCR WBAL WBZ WBZA WCKY WGAR WHAM WJR WJZ WLS WMAL WREN WSYR

E-9:30 p.m., C-8:30, M-7:30, P-6:30
C — Isham Jones and Orchestra

CKLW KDB KERN KFAB KFBK KFH KFPY KFRC KGB KGKO KHJ KLRA KLZ KMBC KMJ KMOX KOH KOIN KOL KOMA KRLD KSCJ KSL KTRH KTSA KTUL KVI KWG KWKH WABC WACO WADC WALA WBBM WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WICC WIND WISN WJAS WJSV WKBN WKBW WKRC WLAC WLBW WMAS WMBD WMBG WMBR WMT WNAC WNAX WNOX WOKO WORC WOWO WPG WQAM WREC WSFA WSJS WSMK WSPD

R — Ed Wynn; Eddie Duchin

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

E-10:00 p.m., C-9:00, M-8:00, P-7:00
C — Glen Gray; Walter O'Keefe

CKLW KFAB KFH KLRA KMBC

TUESDAY (*Continued*)

KMOX KOMA KRLD KSCJ KTRH KTSA KTUL KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGST WHEC WHK WHP WIBW WICC WISN WJAS WJSV WKBN WKBW WKRC WLAC WLBW WLBZ WMAS WMBD WMBG WMBR WMT WNAC WNAX WOKO WORC WOWO WPG WQAM WREC WSFA WSJS WSPD WTOC

R — Palmolive Beauty Box

CFCF CRCT KDYL KFI KFSD KFYR KGHL KGIR KGO KGW KHQ KOA KOMO KPRC KSD KSTP KTAR KTBS KVOO WAVE WBAP WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFBR WFLA WGY WHO WIOD WIS WJAR WJAX WJDX WKBF 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 — George Givot

CFRB CKAC CKLW KDB KFH KGKO KLRA KLZ KMBC KOH KOMA KRLD KSCJ KTRH KTSA KVOR KWKH WAAB WABC WACO WADC WALA WBIG WBNS WBRC WBT WCAO WCAU WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGLC WGR WHEC WHK WHP WIBW WICC WJAS WJSV WKRC WLAC WLBW WLBZ WMAS WMBD WMBG WMBR WMT WNAX WNOX WOKO WORC WPG WQAM WSBT WSFA WSJS 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

E-11:15 p.m., C-10:15, M-9:15, P-8:15
C — Harry Salter and Orchestra

CKAC CKLW KDB KFH KGKO KLRA KLZ KOH KOMA KRLD KTRH KTSA KVOR KWKH WABC WACO WADC WALA WBNS WBRC WBT WCAO WDAE WDBJ WDBO WDNC WDRC WDSU WEAN WFBL WFEA WGLC WHEC WHK WHP WIBW WJAS WJSV WKBW WKRC WLAC WLBW WLBZ WMAS WMBG WMBR WMT WNAC WNAX WNOX WOKO WORC WPG WQAM WSBT WSFA WSJS WSPD WTOC WWVA

R — Gene and Glenn, See Monday

E-11:30 p.m., C-10:30, M-9:30, P-8:30
C — Henry Busse and Orchestra

CFRB CKAC CKLW KFH KGKO KLRA KLZ KMBC KOH KOMA KRLD KSCJ KTRH KTSA KVOR KWKH WABC WADC WBBM WBNS WBRC WBT WCAO WCAU WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFEA WHEC WHK WHP WIBW WICC WISN WJAS WJSV WKBW WKRC WLAC WLBW WLBZ WMAS WMBD WMBR WMT WNAC WNAX WNOX WORC WPG WQAM WSBT WSFA WSJS WSPD WTOC WWVA

R — Leo Reisman and Orchestra

KDYL KFI KGO KGW KHQ KOA KOMO KSD KSTP WDAF WHO WLW WOC WOW WSB WSM WSMB WTMJ

WEDNESDAY

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

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
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

B — Willard Robison, See Monday

E-7:30 p.m., C-6:30, M-5:30, P-4:30
C — Silver Dust, See Monday

C — Buck Rogers, See Monday

B — Red Davis, See Monday

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

R — Frank Buck, See Monday

B — Dangerous Paradise, See Monday

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

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

R — Mary Pickford and Company

CFCF CRCT KDYL KFI KFYR KGO KGW KHQ KOA KOMO KPRC KSD KSTP KTAR KTBS KVOO WAVE WBAP WBEN WCAE WCKY WCSH WDAF WDAY WEAF WEBC WEEI WFBR 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 WTMJ WWJ WWNC

B — Eno Crime Clues, See Tuesday

E-8:15 p.m., C-7:15, M-6:15, P-5:15
C — Edwin C. Hill, See Monday

C — Billy Batchelor, See Monday

E-8:30 p.m., C-7:30, M-6:30, P-5:30
C — Everett Marshall; Victor Arden

CKLW KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KSL KVI KWG WABC WADC WBBM WBT WCAO WCAU WDRC WDSU WEAN WFBL WFBM WGR WHAS WIBW WJAS WJSV WKRC WLAC WNAC WOKO WOWO WSPD

B — Lanny Ross and Orchestra

KDKA KOIL KSO KWCR WBAL WGAR WHAM WJR WJZ WLS WMAL WREN WSYR

R — Wayne King, See Tuesday

E-9:00 p.m., C-8:00, M-7:00, P-6:00
R — Fred Allen; Lennie Hayton

KPRC KSD KSTP KTBS KVOO WBEN WCAE WCSH WDAF WEAF WEBC WEEI WFBR WGY WIOD WIS WJAR WJAX WKY WLIT WLW WMAQ WMC WOAI WOW WPTF WRC WRVA WSB WSM WSMB WTAG WTAM WTIC WTMJ WWJ

B — Warden Lawes; Drama

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

C — Chesterfield Program, See Mon.

E-9:30 p.m., C-8:30, M-7:30, P-6:30
C — George and Gracie

CKLW KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KSL KTRH KTSA KVI KWG WABC WADC WBBM WBIG WBT WCAO WCAU WCCO WDRC WDSU WEAN WFBL WFBM WHK WJAS WJSV WKBW WKRC WNAC WOKO WORC WOWO WSPD

B — John McCormack, Tenor

KDKA KDYL KFI KGO KGW KHQ KOA KOIL KOMO KSO KWCR KWK WBAL WBZ WBZA WCKY WENR WGAR WHAM WJR WJZ WKBF WLW 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 KFH KFPY KFRC KFZ KGB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KSL KTRH KTSA KVI KWG WABC WACO WADC WBBM WBNS WBT WCAO WCAU WCCO WDAE WDRC WDSU WEAN WFBL WFBM WGST WHAS WHEC WHK WHP WIBW WJAS WJSV WKBW WKRC WLAC WLBZ WMBG WMT WNAC WNAX WOKO WORC WOWO WQAM WREC

R — Guy Lombardo and Orchestra

KPRC KSD KTBS KTHS KVOO WAVE WBEN WCAE WCSH WDAF WEAF WEEI WFAA WFBR WFLA WGY WHO WIOD WIS WJAR WJAX WJDX WKBF WKY WLIT WLW WMAQ WMC WOAI WOC WOW WPTF WRC WRVA WSB WSM WSMB WTAG WTAM WTIC WWJ WWNC

B — Dennis King; Louis Katzman

CRCT KDKA KDYL KFI KFSD KFYR KGIR KGO KGW KHQ KOA KOIL KOMO KSO KSTP KWCR KWK WBAL WBZ WBZA WCKY WDAY WEBC WENR WGAR WHAM WIBA WJR WJZ WMAL WREN WSYR WTMJ

E-10:15 p.m., C-9:15, M-8:15, P-7:15
B — Madame Sylvia, Talks

KDKA KDYL KFI KGO KGW KHQ KOA KOIL KOMO KSO KSTP KWCR KWK WBAL WBZ WBZA WEBC WENR WGAR WHAM WJZ WMAL WREN WRVA WSYR WTMJ

E-10:30 p.m., C-9:30, M-8:30, P-7:30
C — Howard Barlow; Mary Eastman

CFRB CKAC CKLW KDB KFH KGKO KHJ KLRA KLZ KMBC KOH KOMA KRLD KSCJ KTRH KTSA KVOR KWKH WAAB WABC WACO WADC WALA WBBM WBIG WBRC WBT WCAO WCAU WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGLC WGR WHEC WHP WIBW WICC WISN WJAS WJSV WKRC WLAC WLBW WMAS WMBD WMBR WMT WNOX WOKO WORC

WEDNESDAY(*Continued*)

WQAM WSBT WSFA WSJS WSPD WTOC

B — Harry Richman; Jack Denny
KDYL KFYR KOA KOIL KPRC KSO KSTP KVOO KWCR KWK WBAL WCKY WDAY WEBC WENR WFAA WHAM WJR WJZ WKY WMAL WREN WRVA WSYR WTMJ

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

E-11:15 p.m., C-10:15, M-9:15, P-8:15
C — Frank Dailey and Orchestra
KLRA WABC WALA WBRC WBT WCAO WCAU WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFEA WJSV WLAC WLBZ WMBR WNAC WNOX WORC WPG WQAM WSFA WSJS WTOC

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 — Ozzie Nelson and Orchestra
KLRA WABC WALA WBRC WBT WCAO WCAU WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFEA WICC WISN WJSV WLAC WLBZ WMAS WMBR WNAC WNOX WORC WPG WQAM WSFA WSJS WTOC

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

B — Lanny Ross and Orchestra
KDYL KFI KFSD KGO KGW KHQ KOA KOMO

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

E-6:30 p.m., C-5:30, M-4:30, P-3:30
C — Eddie Dooley; Football
CKLW WABC WBIG WBNS WBT WCAO WCAU WDBJ WDNC WDRC WEAN WFBL WFEA WHEC WHK WHP WIBX WICC WJAS WJSV WKBW WKRC WLBZ WMAS WMBG WNAC WNBF WNBH WOKO WORC WSJS WSPD

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
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 — Red Grange; Football
KLZ KMBC KMOX KTRH KTUL WBBM WBRC WCCO WDSU WFBM WGL WGST WHAS WMT WREC

B — Gems of Melody
KDKA KOIL KSO KTBS KWCR WBAL WBZ WBZA WENR WHAM WJZ WMAL WREN WSYR

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

C — Buck Rogers, See Monday

R — Al Bernard, See Monday

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

R — Frank Buck, See Monday

E-8:00 p.m., C-7:00, M-6:00, P-5:00
R — Rudy Vallee and Orchestra
CFCF CRCT KDYL KFI KFYR KGO KGW KHQ KOA KOMO KPRC KSD KSTP KTAR KVOO WAPI WBAP WBEN WCAE WCSH WDAY WEAF WEBC WEEI WFBR WFI WFLA WGY WHO WIOD WIS WJAR WJAX WJDX WKY WLW WMAQ WMC WOAI WOC WOW WPTF WRC WRVA WSB WSM WSMB WTAG WTAM WTIC WWJ WWNC

C — Easy Aces, See Wednesday

E-8:15 p.m., C-7:15, M-6:15, P-5:15
C — Fats Waller's Rhythm Club
CKLW KDB KFH KGKO KHJ KLRA KLZ KMBC KOH KOMA KRLD KSCJ KTRH KTSA KVOR KWKH WABC WACO WADC WALA WBIG WBNS WBRC WBT WCAO WCAU WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGLC WGR WHP WIBW WICC WISN WJAS WJSV WKRC WLAC WLBW WLBZ WMAS WMT WNAC WNAX WNOX WOKO WORC WQAM WSBT WSFA WSJS WTOC WWVA

C — Billy Batchelor, See Monday

E-8:30 p.m., C-7:30, M-6:30, P-5:30
C — Edwin C. Hill
CKLW KMBC KMOX WABC WADC WBBM WCAO WCAU WDRC WEAN WFBL WFBM WGR WHAS WHK WJAS WJSV WKRC WNAC WOKO WOWO WSPD

E-9:00 p.m., C-8:00, M-7:00, P-6:00
C — Glen Gray; Walter O'Keefe
CKLW KFAB KFH KLRA KMBC KMOX KOMA KRLD KSCJ KTRH KTSA KTUL KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WICC WISN WJAS WJSV WKBN WKBW WKRC WLAC WLBW WLBZ WMAS WMBD WMBG WMBR WMT WNAC WNAX WOKO WORC WOWO WPG WQAM WREC WSFA WSJS WSPD WTOC

R — Maxwell House Show Boat
KDYL KFI KFSD KGHL KGIR KGO KGW KHQ KOA KOMO KPRC KSD KSTP KTAR KTBS WAPI WAVE WBAP WBEN WCAE WCSH WDAF WEAF WEEI WFBR 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 WTIC WTMJ WWJ WWNC

B — Death Valley Days; Drama
KDKA KOIL KSO KWCR KWK WBAL WBZ WBZA WGAR WHAM WJR WJZ WLS WLW WMAL WREN WSYR

E-9:30 p.m., C-8:30, M-7:30, P-6:30
C — Fred Waring's Pennsylvanians
CFRB CKLW CRCM KDB KERN KFAB KFBK KFH KFPY KFRC KGB KGKO KHJ KLRA KLZ KMBC KMJ KMOX KOH KOIN KOL KOMA KRLD KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG WABC WACO WALA WBBM WBIG WBNS WBRC 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 WKBW WKRC WLAC WLBW WLBZ WMAS WMBD WMT WNAC WNAX WNOX WOKO WORC WPG WQAM WSBT 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 KFH KLZ 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 WKBW WKRC WLAC WMBR WNAC WOKO WQAM WSPD

R — Paul Whiteman's Music Hall
CFCF CRCT KDYL KFI KFYR KGO KGW KHQ KOA KOMO KPRC KSD KSTP KTAR KTBS KTHS KVOO WAPI WAVE WBAP WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFBR WFI WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKY WLW WMAQ WMC WOAI WOC WOW - WPTF WRC WRVA WSB WSM WSMB WTAG WTAM WTIC WTMJ WWJ WWNC

E-10:45 p.m., C-9:45, M-8:45, P-7:45
C — Fray and Braggiotti
CFRB CKAC CKLW KDB KFH KGKO KHJ KLRA KOH KRLD KSCJ KSL KTRH KTSA KVOR WAAB WABC WACO WADC WALA WBIG WBNS WBRC WBT WCAU WDAE WDBJ WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGLC WGR WHEC WHP WIBW WJAS WJSV WKRC WLAC WLBW WLBZ WMAS WNOX WOKO WORC WPG WQAM WSBT WSJS 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

E-11:15 p.m., C-10:15, M-9:15, P-8:15
C — Henry Busse and Orchestra
CFRB CKAC CKLW KDB KFH KGKO KLRA KLZ KOH KOMA KRLD KSCJ KTRH KTSA KVOR KWKH WABC WACO WADC WALA WBBM WBNS WBRC WBT WCAO WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGLC WHEC WHK WHP WIBW WISN WJAS WJSV WKBW WKRC WLAC WLBW WLBZ WMAS WMBD WMT WNAC WNAX WNOX WOKO WORC WPG WQAM WSBT WSFA WSJS WSPD WTOC WWVA

R — Gene and Glenn, See Monday

E-11:30 p.m., C-10:30, M-9:30, P-8:30
C — Glen Gray; Walter O'Keefe
KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMJ KOH KOIN KOL KSL KVI KVOR KWG

FRIDAY

E-6:00 p.m., C-5:00, M-4:00, P-3:00
C — H. V. Kaltenborn
CKLW KFH KGKO KLZ KMBC KOH KOMA KRLD KSCJ KSL KTRH KVOR KWKH WAAB WABC WBBM WCAO WCAU WDNC WDRC WFBL WGLC WHEC WHK WISN WJAS WJSV WKBW WLAC WLBW WMT WOKO WORC WSPD

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
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 — Red Grange, See Thursday
R — Gene and Glenn, See Monday
B — Willard Robison, See Monday

E-7:30 p.m., C-6:30, M-5:30, P-4:30
C — Silver Dust, See Monday
B — Red Davis, See Monday

E-7:45 p.m., C-6:45, M-5:45, P-4:45
C — Boake Carter, See Monday
R — Frank Buck, See Monday
B — Dangerous Paradise, See Monday

E-8:00 p.m., C-7:00, M-6:00, P-5:00
R — Cities Service Concert
CRCT KDYL KOA KPRC KSD KSTP KTBS KTHS KVOO KYW WBAP WBEN WCAE WCSH WDAF WEAF WEBC WEEI WFAA WFBR WGY WHO WJAR WKY WLIT WOAI WOC WOW WRC WRVA WSAI WTAG WTAM WTIC WWJ
B — Irene Rich; Drama
KDKA KOIL KSO KWCR WAVE WBAL WBZ WBZA WHAM WJZ WLS WMAL WMC WREN WSB WSM WSYR
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
C — Billy Batchelor, 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 WDRC WEAN WFBL WGR WHK WJAS WJSV WKRC WNAC WOKO
B — Emerson Drug Program
KDKA KOIL KSO KWCR KWK WBAL WBZ WBZA WGAR WHAM WJR WJZ WLS WMAL WREN WSYR

E-9:00 p.m., C-8:00, M-7:00, P-6:00
C — March of Time
CKLW KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMJ KMOX KOIN KOL KRLD KSL KVI KWG WABC WADC WBBM WCAO WCAU WCCO WDRC WDSU WEAN WFBL WFBM WGST WHAS WHK WJAS WJSV WKBW WKRC WNAC WOKO WOWO WSPD
R — Frank Munn; Abe Lyman
KSD WBEN WCAE WCSH WDAF WEAF WEEI WFBR 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-9:30 p.m., C-8:30, M-7:30, P-6:30
C — Hollywood Hotel
CFRB CKAC CKLW KDB KERN KFAB KFBK KFH KFPY KFRC KGB KGKO KHJ KLRA KLZ KMBC KMJ KMOX KOH KOIN KOL KOMA KRLD KSCJ KSL KTRH KTSA KTUL KVI KVOR KWG KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGST WHAS WHEC WHK WHP WIBW WIBX WICC WISN WJAS WJSV WKBH WKBW WKRC WLAC WLBW WLBZ WMAS WMBD WMBG WMBR WMT WNAC WNAX WNOX WOKO WORC WOWO WPG WQAM WREC WSBT WSFA WSJS WSPD WTOC
R — Pick and Pat
KSD WBEN WCAE WCSH WDAF WEAF WFBR WGY WHO WJAR WLIT WMAQ WOC WOW WRC WSAI WTAG WTAM WTIC WWJ
B — Armour Program; Phil Baker
KDKA KDYL KFI KGO KGW KHQ KOA KOIL KOMO KPRC 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 KPRC KSD KSTP WBEN WCAE WCSH WDAF WEAF WEBC WEEI WFAA WFBR WGY WHO WJAR WKY WLIT WLW WMAQ WMC WOAI WOC WOW WRC WSB WSM WSMB WTAG WTAM WTIC WTMJ WWJ

E-10:30 p.m., C-9:30, M-8:30, P-7:30
C — Kate Smith
CFRB CKAC CKLW KDB KFH KGKO KHJ KLRA KLZ KMBC KOH KOMA KRLD KSCJ KTRH KVOR KWKH WAAB WABC WACO WADC WALA WBIG WBNS WBRC WBT WCAO WDAE WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGLC WGR WHP WIBW WICC WISN WJAS WJSV WKRC WLAC WLBW WLBZ WMAS WMBD WMT WNAX WNOX WOKO WORC WPG WQAM WSFA WSJS 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

E-11:15 p.m., C-10:15, M-9:15, P-8:15
C — Little Jack Little
KLRA WABC WALA WBRC WBT WCAO WDAE WDBO WDNC WDOD WDRC WDSU WEAN WFEA WHK WJSV WLAC WLBZ WMAS WNAC WNOX WORC WPG WQAM WSFA WSJS WTOC
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 KGB KHJ KLZ KMJ KMOX KOIN KOL KSL KVI KWG WFRC WHAS WOWO

SATURDAY

E-6:00 p.m., C-5:00, M-4:00, P-3:00
C — Frederic William Wile
CKLW KDB KFH KGKO KHJ KLRA KLZ KOH KOMA KRLD KSCJ KSL KTRH KTSA KVOR KWKH WAAB WABC WACO WALA WBBM WBIG WBNS WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WFBL WFBM WGLC WHEC WHK WHP WIBW WISN WJAS WKRC WLAC WLBW WMT WNAX WNOX WOKO WORC WQAM WSBT WSFA WSJS WSPD WTOC

E-6:15 p.m., C-5:15, M-4:15, P-3:15
C — Mischa Raginsky and Orchestra
CKAC CKLW KDB KFEA KFII KGKO KHJ KLRA KLZ KMBC KOH KOMA KRLD KSCJ KSL KTRH KTSA KVOR KWKH WAAB WABC WACO WALA WBBM WBIG WCAO WCAU WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WFBM WGLC WHEC WHK WHP WIBW WICC WISN WJAS WKRC WLAC WLBW WLBZ WMAS WNAX WNOX WOKO WORC WQAM WSFA WSJS WSPD WTOC

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
R — Thornton Fisher; Football
KSD WBEN WCSH WEAF WEEI WFBR WFI WGY WJAR WLW WMAQ WOW WRC WTAG WTAM WTIC WWJ

E-7:00 p.m., C-6:00, M-5:00, P-4:00
C — Leon Belasco and Orchestra
CFRB CKAC CKLW KDB KGKO KHJ KLRA KLZ KMBC KOH KRLD KSCJ KTRH KTSA KVOR KWKH WABC WACO WADC WALA WBIG WBNS WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WFBL WFBM WFEA WGLC WGR WHP WICC WISN WJAS WJSV WKRC WLAC WLBW WLBZ WMAS WMT WNOX WOKO WORC WQAM WSBT WSFA WSJS WSPD WTOC WWVA

E-7:15 p.m., C-6:15, M-5:15, P-4:15
C — Red Grange, See Thursday

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 — Lawyer and The Public
CFRB CKAC CKLW KDB KFH KGKO KHJ KLRA KLZ KMBC KOH KOMA KRLD KSCJ KTRH KTSA KVOR KWKH WABC WACO WADC WALA WBIG WBNS WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDSU WEAN WFBL WFBM WFEA WGLC WGR WHEC WHP WIBW WICC WISN WJAS WJSV WKRC WLAC WLBW

SATURDAY (*Continued*)

WLBZ WMAS WMT WNAC WNAX WOKO WORC WQAM WSBT WSFA WSJS WSPD WTOC WWVA

R — Floyd Gibbons
KPRC KSD WAPI WBEN WCSH WDAF WEAF WFAA WFI WFLA WGY WHO WIOD WIS WJAR WJAX WKY WLW WMAQ WMC WOC 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 and His Gang
CFRB CKAC CKLW KDB KERN KFBK KFPY KFRC KGB KHJ KLRA KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KSL KTRH KTSA KVI KWG WABC WBBM WBRC WCAO WCAU WCCO WDOD WDRC WDSU WEAN WFBL WFBM WGR WGST WHAS WHK WIBW WJAS WJSV WKRC WLAC WMT WNAC WOKO WORC WREC WSPD

R — Swift Hour; Sigmund Romberg
KDYL KFI KGO KGW KHQ KOA KOMO KPRC KSD KSTP KTBS WBAP WBEN WCAE WCSH WDAF WEAF WEBC WEEI WFBR WFI WGY WIBA WJAR WKY WLW WMAQ WOAI 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
CFRB CKAC CKLW KDB KFH KGKO KLRA KLZ KMBC KOH KOMA KRLD KSCJ KTRH KTSA KVOR WABC WACO WADC WALA WBBM WBIG WBNS WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDSU WEAN WFBL WFBM WFEA WGLC WGR WHEC WHK WHP WIBW WICC WISN WJAS WJSV WKRC WLAC WLBW WLBZ WMAS WMT WNAC WNAX WNOX WOKO WORC WPG WQAM WSBT WSFA WSJS WSPD WTOC

E-9:00 p.m., C-8:00, M-7:00, P-6:00
R — Songs You Love
KFYR KSD KSTP WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFBR WFI WGY WIBA WJAR WLW WMAQ WOW WRC WTAG WTAM WTIC WTMJ WWJ

B — Radio City; Frank Black
KDKA KDYL KFI KGO KGW KHQ KOA KOIL KOMO KSO KWCR KWK WBAL WBZ WBZA WCKY WGAR WHAM WJR WJZ WLS WMAL WREN WSYR

C — Chesterfield Program, see Monday

E-9:30 p.m., C-8:30, M-7:30, P-6:30
C — Richard Himber and Orchestra
CFRB CKAC CKLW KDB KFH KGKO KHJ KLRA KLZ KMBC KOH KOMA KRLD KSCJ KSL KTRH KTSA KVOR WABC WACO WADC WALA WBBM WBIG WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WEAN WFBL WFBM WFEA WGLC WGST WHEC WHK WHP WIBW WICC WISN WJAS WJSV WKBW WKRC WLAC WLBW WLBZ WMAS WMBD WMT WNAC WNAX WNOX WOKO WORC WPG WQAM WSBT WSFA WSJS WSPD WTOC WWVA

R — Gibson Family Musical
KDYL KFI KFYR KGO KGW KHQ KOA KOMO KSD KSTP WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFBR WFI WGY WIBA WJAR WLW WMAQ WOW WRC WTAG WTAM WTIC WTMJ WWJ

B — National Barn Dance
KDKA KOIL KSO KWCR KWK WBAL WBZ WBZA WGAR WHAM WJR WJZ WKBF WLS WMAL WREN WSYR

E-10:00 p.m., C-9:00, M-8:00, P-7:00
C — Carborundum Band
CKLW KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KSL KVI KWG WAAB WABC WBBM WBT WCAO WCAU WCCO WHAS WHK WJAS WKBW WKRC

E-10:30 p.m., C-9:30, M-8:30, P-7:30
C — Saturday Revue
CFRB CKLW KDB KFH KGKO KHJ KLRA KLZ KMBC KOH KOMA KRLD KSCJ KTRH KTSA KVOR KWKH WAAB WABC WACO WADC WALA WBIG WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGLC WGR WHEC WHP WIBW WICC WISN WJAS WJSV WKRC WLAC WLBW WLBZ WMAS WMBD WMT WNAX WNOX WOKO WORC WPG WQAM WSBT WSFA WSJS WSPD WTOC WWVA

E-11:00 p.m., C-10:00, M-9:00, P-8:00
C — Glen Gray and Orchestra
CKAC CKLW KLRA WAAB WABC WBT WDAE WDBJ WDBO WDOD WDRC WDSU WFBM WGLC WGR WHEC WHP WIBW WJAS WJSV WKRC WLAC WORC WQAM WSBT WSFA WSJS WTOC

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

B — National Barn Dance
KDYL KFI KGO KGW KHQ KOA KOMO WAVE WJDX WLS WMC WSB WSMB

E-12:00 p.m., C-11:00, M-10:00, P-9:00
C — Ozzie Nelson and Orchestra
CKAC CKLW KDB KFH KGKO KLRA KLZ KMBC KOH KOMA KTRH KTSA KWKH WABC WBNS WCAU WDBO WDNC WDOD WEAN WFBL WFBM WGLC WHP WIBW WICC WJSV WKBW WKRC WLAC WLBW WNAC WNOX WOKO WPG WQAM WSBT WTOC

R — Floyd Gibbons
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 KFH KGKO KLRA KLZ KOH KRLD KSCJ KSL KTRH KTSA KWKH WABC WACO WADC WALA WBBM WBMS WCCO WDAE WDBO WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGLC WHK WHP WIBW WICC WISN WJAS WJSV WLAC WLBW WLBZ WMAS WMBD WMBR WMT WNAC WNAX WNOX WOKO WORC WQAM WREC WSFA WSPD

R — Major Bowes' Family
KDYL KFYR KOA KPRC KSTP KTBS KVOO WAPI WCAE WDAF WDAY WEAF WEBC WFAA WFBR 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 WDRC WEAN WFBL WFBM WGR WHAS WJAS WJSV WKH WKRC WMAS WNAC WOKO WORC WOWO WSPD

B — Radio City Symphony
CFCF CRCT KDKA KDYL KFI KFYR KGO KGW KHQ KOA KOIL KOMO KPRC KSO KVOO WAPI WBAL WBZ WBZA WCKY WDAY WEBC WGAR WHAM WIS WJDX WJR WJZ WKY WMAL WOAI WREN WSMB WSYR WWNC

E-1:00 p.m., C-12:00, M-11:00, P-10:00
C — Church of the Air
CFRB CKLW KFH KGKO KHJ KLRA KLZ KOH KRLD KSCJ KSL KTRH KTSA KWKH WAAB WABC WACO WALA WBBM WBIG WBNS WBT WCAO WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WFBL WGLC WGR WHEC WHP WIBW WJAS WJSV WKRC WLAC WLBW WLBZ WMBR WMT WNOX WOKO WORC WPG WQAM WREC WSBT WSFA WSJS WSPD WWVA

R — Dale Carnegie, Talks
WBEN WCAE WEAF WEEI WFBR WFI WGY WJAR WRC WSAI WTAG WTAM WTIC WWJ

E-1:30 p.m., C-12:30, M-11:30, P-10:30
C — Eton Boys
CFRB CKAC CKLW KFH KHJ KLRA KLZ KMBC KRLD KSCJ KTRH KTSA KWKH WABC WACO WADC WALA WBIG WBNS WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WFBL WFBM WGLC WGR WHEC WHK WHP WIBW WJAS WJSV WKRC WLAC WLBZ WMBR WMT WNOX WOKO WORC WPG WQAM WREC WSBT WSFA WSJS WSPD WTOC WWVA

R — Miss Bab-o's Surprise
WBEN WCAE WCSH WDAF WEAF WEEI WFBR WFI WGY WJAR WMAQ WOW WRC WSAI WTAG WTAM WWJ

E-1:45 p.m., C-12:45, M-11:45, P-10:45
C — Pat Kennedy; Art Kassel
CFRB CKLW KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KRLD KSL KVI KWG WABC WBBM WBNS WCAO WCAU WCCO WDSU WFBM WGR WGST WHAS WHK WJAS WJSV WKRC WMT WOWO WSPD

E-2:00 p.m., C-1:00, M-12:00, P-11:00
C — Lazy Dan, Minstrel Man
CKLW KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KSL KVI KWG WABC WADC WBBM WBNS WBT WCAO WCAU WCCO WDBJ WDRC WDSU WEAN

SUNDAY (*Continued*)

WFBL WFBM WGST WHAS WHEC WHK WIBW WJAS WJSV WKBW WKRC WLAC WMBG WMT WNAC WOWO

R — Mohawk Treasure Chest
WBEN WCAE WCSH WDAF WEAF WEEI WFBR WFI WGY WJAR WMAQ WOW WRC WSAI WTAG WTAM WWJ

B — Breitenbach Program
KDKA KOIL KSO KWCR KWK WBAL WBZ WBZA WENR WGAR WJR WJZ WMAL WREN WSYR

E-2:15 p.m., C-1:15, M-12:15, P-11:15
B — Becker's Chats About Dogs
KDKA KOIL KSO KWCR KWK WBAL WBZ WBZA WGAR WJR WJZ WLS WMAL WREN WSYR

E-2:30 p.m., C-1:30, M-12:30, P-11:30
C — Royal Hawaiian Band
CKLW KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KOMA KRLD KSL KVI KWG WABC WADC WBBM WBT WCAO WCAU WCCO WDBJ WDRC WDSU WEAN WFBL WFBM WGST WHAS WHEC WHK WIBW WJAS WJSV WKBW WKRC WLAC WMBG WMT WNAC WOWO

R — Gene Arnold and Commodores
WCAE WCSH WEAF WEEI WFBR WGY WJAR WMAQ WOW WRC WSAI WTAG WTAM

B — Lux Program; Dramas
KDKA KDYL KFI KFYR KGO KGW KHQ KOA KOIL KOMO KPRC KSO KSTP KTBS KTHS KVOO KWCR KWK WBAL WBZ WBZA WDAY WEBC WFAA WGAR WHAM WIBA WJR WJZ WKY WLW WMAL WOAI WPTF WREN WRVA WSYR WTAR

E-3:00 p.m., C-2:00, M-1:00, P-12:00
C — N. Y. Philharmonic Symphony
CFRB CKAC CKLW KFH KGKO KHJ KLRA KLZ KOH KRLD KSCJ KSL KTRH KTSA KVOR KWKH WABC WADC WALA WBIG WBNS WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGLC WGR WHEC WHK WHP WIBW WICC WISN WJAS WJSV WKRC WLAC WLBW WLBZ WMAS WMBD WMBR WMT WNAC WOKO WORC WQAM WREC WSBT WSFA WSJS WSPD WTOC

R — Talkie Picture Time
WAPI WBEN WCAE WCSH WDAF WEAF WEEI WFBR WGY WHO WJAR WJDX WLIT WMAQ WMC WOC WOW WRC WSAI WSB WSM 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 KOMO KSD WBEN WCAE WCSH WDAF WEAF WEEI WFBR WGY WHO WJAR WLIT WLW WMAQ WOC WOW WRC WTAG WTAM WTIC WWJ

E-4:00 p.m., C-3:00, M-2:00, P-1:00
R — Gems of Melody
WBEN WCSH WEAF WEEI WFBR WGY WJAR WKBF WLIT WMAQ WRC WSAI WTAG WTAM WTIC WWJ

Rev. Charles E. Coughlin
KSTP KWK WCAO WCAU WDRC WEAN WFBL WFEA WGAR WGR WHB WHO WICC WIND WJAS WJJD WJR WLBZ WLW WMAS WNAC WNBH WOC WOKO WOL WOR WORC

B — Philharmonic Orchestra
KDKA KDYL KFI KGO KGW KOA KOIL KOMO KPRC KSO KTBS KWCR WAPI WAVE WBAL WBAP WBZ WBZA WEBC WFLA WHAM WIBA WIOD WJAX WJDX WJZ WMAL WMC WOAI WREN WRVA WSB WSM WSMB WSYR

E-4:30 p.m., C-3:30, M-2:30, P-1:30
R — Tony Wons
KDYL KFI KFSD KFYR KGO KGW KHQ KOA KOMO KSTP KTAR WAPI WEBC WJDX WMC WSB WSM WSMB

B — Land of Beginning Again
KDKA KGO KOIL KWCR WBZ WBZA WENR WHAM WJZ WMAL WREN WSYR

E-4:45 p.m., C-3:45, M-2:45, P-1:45
R — Dream Drama
WBEN WCAE WCSH WDAF WEAF WEEI WFBR WFI WGY WJAR WMAQ WRC WSAI WTAG WTAM WTIC WWJ

E-5:00 p.m., C-4:00, M-3:00, P-2:00
C — Freddy Martin and Orchestra
CKLW KFH KLRA KLZ KMBC KMOX KOMA KRLD KSL KTRH KTSA KTUL WAAB WABC WADC WBBM WBIG WBRC WBT WCAO WCAU WCCO WDOD WDRC WDSU WEAN WFBL WFBM WGR WGST WHAS WHEC WHK WIBW WJAS WJSV WKBN WKRC WLAC WLBZ WMAS WMBG WOKO WORC WOWO WREC WSPD

R — Sentinels Serenade
CFCF CRCT KDYL KFI KFYR KGO KGW KHQ KOA KOMO WAVE WBEN WCAE WCSH WDAF WEAF WEBC WEEI WFBR WFI WGY WHO WIBA WJAR WKBF WMAQ WMC WOC WOW WRC WSAI WSB WSM WTAG WTAM WTIC WTMJ WWJ

B — Roses and Drums
KDKA KOIL KPRC KSO KTHS KWCR KWK WBAL WBAP WBZ WBZA WENR WGAR WHAM WJR WJZ WKY WLW WMAL WOAI WREN WSYR

E-5:30 p.m., C-4:30, M-3:30, P-2:30
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 WIBX WICC WJSV WMAS WOKO WORC WSPD WWVA

R — Tony Wons
CFCF CRCT KPRC KTHS KVOO WBAP WBEN WCAE WCSH WDAF WEAF WEEI WFI WGY WHO WIS WJAR WKY WMAQ WOAI WOC WOW WPTF WRC WRVA WTAG WTAM WTIC WWJ WWNC

B — American Bosch Explorers
KDKA KDYL KFI KFYR KGO KGW KHQ KOA KOIL KOMO KSO KSTP KWCR KWK WAPI WAVE WBAL WBZ WBZA WCKY WDAY WEBC WENR WGAR WHAM WIBA WJDX WJR WJZ WKBF WMAL WMC WREN WSB WSM WSMB WSYR WTMJ

E-5:45 p.m., C-4:45, M-3:45, P-2:45
B — Terhune Dog Drama
KDKA KDYL KFI KGO KGW KHQ KOA KOIL KOMO KSO KWCR KWK WBAL WBZ WBZA WENR WGAR WHAM WJR WJZ WMAL WREN WSYR

E-6:00 p.m., C-5:00, M-4:00, P-3:00
C—George Gershwin; Louis Katzman
CFRB CKLW KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMBC KMJ KMOX KOIN KOL KRLD KSL KVI KWG WAAB WABC WBBM WBNS WBT WCAO WCAU WCCO WDRC WDSU WFBL WFBM WGST WHAS WHEC WHK WJAS WJSV WKBW WKRC WOKO

E-6:15 p.m., C-5:15, M-4:15, P-3:15
B — Sparton Triolians
KDKA KOIL KSO KWCR KWK WBAL WBZ WBZA WENR WHAM WJR WJZ WMAL WREN

E-6:30 p.m., C-5:30, M-4:30, P-3:30
C — Smilin' Ed McConnell
CKLW KDB KERN KFAB KFBK KFPY KFRC KGB KHJ KLZ KMJ KMOX KOIN KOL KRLD KSL KVI KWG WAAB WABC WBBM WBNS WBRC WBT WCAU WCCO WDRC WDSU WEAN WFBL WFBM WFEA WGST WHAS WHK WHP WICC WISN WJAS WJSV WKBW WKRC WLAC WLBW WLBZ WORC WQAM WREC WWVA

R — Armco Iron Master
KPRC KSD KTBS KVOO WBAP WBEN WCAE WDAF WEAF WFBR WGY WHO WKY WLIT WLW WMAQ WOAI WOC WOW WRC WTAM WWJ

B — Compana Grand Hotel
KDKA KDYL KFI KGO KGW KHQ KOA KOIL KOMO KSO KSTP KWCR KWK WBAL WBZ WBZA WEBC WENR WGAR WHAM WJR WJZ WMAL WREN WSYR WTMJ

E-6:45 p.m., C-5:45, M-4:45, P-3:45
C — Voice of Experience
CKLW KMBC KMOX WAAB WABC WBBM WBT WCAO WCAU WCCO WDRC WEAN WFBL WHAS WHK WJAS WJSV WKBW WKRC WNAC WOWO WWVA

E-7:00 p.m., C-6:00, M-5:00, P-4:00
C — California Melodies
CKAC KLRA KLZ KMBC KTRH WABC WADC WBIG WBNS WCAO WCCO WDAE WDBJ WDBO WDRC WDSU WEAN WFBL WFBM WFEA WHK WHP WICC WLBW WLBZ WMT WNAC WNAX WOKO WORC WPG WREC WSJS WSPD

B — Jack Benny; Don Bestor
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 — Ward's Family Theatre
CKLW KMOX WABC WADC WBBM

SUNDAY (*Continued*)

WBNC WBRC WCAO WCAU WDRC WEAN WFBL WFEA WHK WICC WJAS WKBN WLBZ WMAS WMBR WNAC WOKO WORC WSBT WSFA WWVA

R — American Radiator Program
KSD WCSH WEAF WGY WJAR WMAQ WOW WRC WSAI WTAG WTAM WWJ

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

E-7:45 p.m., C-6:45, M-5:45, P-4:45
R — Fitch Program; Wendell Hall
CFCF KSD WBEN WCAE WCSH WEAF WFBR WGY WHO WJAR WKBF WLIT WMAQ WOC WOW WRC WSAI WTAG WTAM WTIC WWJ

E-8:00 p.m., C-7:00, M-6:00, P-5:00
C — Ford Symphony
CFRB CKLW KDB KERN KFBK KFH KFPY KFRC KGB KGKO KHJ KLRA KLZ KMBC KMJ KMOX KOH KOIN KOL KOMA KRLD KSCJ KSL KTRH KTSA KTUL KVI KVOR KWKH WABC WACO WADC WALA WBBM WBIG WBNS WBRC WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGLC WGR WGST WHAS WHEC WHK WHP WIBW WIBX WICC WISN WJAS WJSV WKBH WKBN WKRC WLAC WLBW WLBZ WMAS WMBR WMT WNAC WNAX WNOX WOKO WORC WOWO WQAM WSBT WSFA WSJS WSPD WTOC WWVA

R — Chase and Sanborn Hour
CFCF CRCT KDYL KFI KFYR KGO KGW KHQ KOA KOMO KPRC KSD KSTP KTAR KVOO WAPI WAVE WBEN WBZ WBZA WCAE WCSH WDAF WDAY WEAF WEBC WFAA WFBR WFLA WGY WHO WIOD WIS WJAR WJAX WJDX WKY WLIT WLW WMAQ WMC WOAI WOC WOW WPTF WRC WRVA WSB WSM WSMB WTAG WTAM WTIC WTMJ WWJ WWNC

E-9:00 p.m., C-8:00, M-7:00, P-6:00
C — Alexander Woollcott
KDB KERN KFBK KFPY KFRC KGB KHJ KLZ KMBC KMOX KOIN KOL KSL KVI KWG WABC WBBM WCAO WCAU WCCO WDRC WFBL WGR WHAS WHK WJAS WJSV WKRC WNAC WOKO

R — Manhattan Merry-Go-Round
CFCF KDYL KFI KGO KGW KHQ KOA KOMO KSD KSTP WDAF WEAF WEBC WFBR WFI WGY WHO WJAR WMAQ WOC WOW WRC WSAI WTAG WTAM WTIC WTMJ WWJ

B — Silken Strings; Charles Previn
KDKA KDYL KFI KGO KGW KHQ KOA KOAI KOIL KOMO KPRC KSO KSTP KWCR KWK WBAL WBAP WBZ WBZA WEBC WGAR WHAM WIBA WJR WJZ WKY WLS WLW WMAL WREN WSYR WTMJ

E-9:30 p.m., C-8:30, M-7:30, P-6:30
C — Gulf Headliners; Will Rogers
CKLW KLRA KRLD KTRH KTSA WABC WACO WADC WALA WBIG WBNS WBRC WBT WCAO WCAU WDAE WDBJ WDBO WDOD WDRC WDSU WEAN WFEA WGST WHAS WHEC WHK WJAS WJSV WKRC WLAC WLBZ WMAS WMBG WMBR WNAC WOKO WORC WOWO WQAM WREC WSPD WTOC

R — Album of Familiar Music
CFCF CRCT KDYL KFI KGO KGW KHQ KOA KOMO KPRC KSD KSTP KVOO WBEN WCAE WCSH WDAF WEAF WEEI WFAA WFBR WFI WFLA WGY WHO WIOD WIS WJAR WJAX WJDX WKY WMAQ WMC WOAI WOC WOW WPTF WRC WRVA WSAI WSB WSM WSMB WTAG WTAM WTMJ WWJ WWNC

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

E-9:45 p.m., C-8:45, M-7:45, P-6:45
B — Tastyeast 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
CFCF CRCT KDYL KFI KGO KGW KHQ KOA KOMO KPRC KSD KSTP KTBS KTHS WBEN WCAE WCSH WDAF WEAF WEEI 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 — American Universities Program
CKAC CKLW KFH KGKO KHJ KLRA KLZ KMBC KOH KRLD KSCJ KTRH KTSA KVOR KWKH WABC WACO WADC WALA WBIG WBNS WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFBM WFEA WGLC WGR WHEC WHP WIBW WICC WISN WJAS WJSV WKRC WLAC WLBW WLBZ WMAS WMBD WMBR WMT WNAX WNOX WOKO WORC WPG WQAM WREC WSBT WSFA WSJS WSPD WTOC

R — Pontiac Program; Jane Froman
KDYL KFI KFSD KFYR KGHL KGIR KGO KGW KHQ KOA KOMO KPRC KSTP KTAR KTBS KTHS WAPI WAVE WBAP WBEN WCAE WCSH WDAF WDAY WEAF WEBC WEEI WFBR WFI WFLA WGY WHO WIBA WIOD WIS WJAR WJAX WJDX WKBF WKY WLW WMAQ WMC WOAI WOC WOW WPTF WRC WRVA WSB WSM WSMB WSOC WTAG WTAM WTIC WTMJ WWJ WWNC

E-11:00 p.m., C-10:00, M-9:00, P-8:00
C — Henry Busse and Orchestra
CFRB CKAC CKLW KFH KGKO KLRA KLZ KOH KRLD KSCJ KTRH KTSA KVOR KWKH WABC WACO WADC WBBM WBNS WBT WCAO WCAU WCCO WDAE WDBJ WDBO WDNC WDOD WDRC WDSU WEAN WFBL WFEA WGLC WGR WHEC WHK WHP WIBW WISN WJAS WJSV WKRC WLAC WLBW WLBZ WMAS WMBD WMBR WMT WNAC WNAX WNOX WOKO WORC WPG WQAM WREC WSBT WSFA WSJS WSPD WTOC

R — Fitch Program; Wendell Hall
KDYL KFI KFYR KGO KGW KHQ KOA KOMO KPRC KSTP KTBS KTHS WAPI WAVE WBAP WDAF WDAY WEBC WIBA WJDX WKY WMC WOAI WSB WSM WSMB 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 WOAI

E-11:30 p.m., C-10:30, M-9:30, P-8:30
C — Joe Haymes and Orchestra
CKAC KLRA KLZ KRLD KTRH KTSA KWKH WABC WBNS WDBJ WDSU WFBL WFBM WHK WLBW WMBR WMT WOKO WREC WSPD

CLASSIFIED INDEX TO CHAIN PROGRAMS

Time in Eastern Standard

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

CONCERTS

American Radiator Program, 7:30 p.m. Sunday, R
Armco Iron Master, 6:30 p.m. Sunday, R
Atwater Kent, 8:30 p.m. Monday, C
Ford Concert, 8:00 p.m. Sunday, C
Kansas City Philharmonic, 4:00 p.m. Sunday B
N. Y. Philharmonic, 3:00 p.m. Sunday, C
Radio City Music Hall, 12:30 p.m. Sunday, B
Mischa Raginsky, 6:15 p.m. Saturday, C
Swift Hour, 8:00 p.m. Saturday, R

DANCE BANDS

Victor Arden, 8:30 p.m. Wednesday, C
Leon Belasco, 9:30 p.m. Friday, B; 11:15 p.m. Monday; 7:00 p.m. Saturday, C

Ben Bernie, 9:00 p.m. Tuesday, R
Don Bestor, 7:00 p.m. Sunday, B
Frank Black, 10:30 p.m. Sunday, R; 9:00 p.m. Saturday, B
Henry Busse, 11:00 p.m. Sunday; 11:30 p.m. Tuesday; 11:15 p.m. Thursday, C
Frank Dailey, 11:15 p.m. Wednesday, C
Jack Denny, 10:30 p.m. Wednesday, B
Eddie Duchin, 9:30 p.m. Tuesday, R
Jan Garber, 8:00 p.m. Monday, B
Lud Gluskin, 9:30 p.m. Monday, C
Glen Gray, 10:00 p.m. Tuesday; 9:00 and 11:30 p.m. Thursday, C
Phil Harris, 9:00 p.m. Friday, B
Joe Haymes, 11:30 p.m. Sunday, C
Lennie Hayton, 9:00 and 12:00 p.m. Wednesday, R
Richard Himber, 8:00 p.m. Monday, R; 9:30 and 11:00 p.m. Saturday, C
Isham Jones, 9:30 p.m. Tuesday, C
Art Kassel, 1:45 p.m. Sunday, C
Louis Katzman, 10:00 p.m. Wednesday, B; 6:00 p.m. Sunday, C
Wayne King, 8:30 p.m. Tues. and Wed., R; 10:00 p.m. Sunday and Monday, C
Little Jack Little, 11:15 p.m. Friday, C
Guy Lombardo, 10:00 p.m. Wednesday, R
Abe Lyman, 9:00 p.m. Friday, R; 8:30 p.m. Tuesday, C
Freddy Martin, 5:00 p.m. Sunday, C
Ozzie Nelson, 7:30 p.m. Sunday, B; 11:30 p.m. Wed.; 12:00 p.m. Saturday, C
Raymond Paige, 7:00 p.m. Sunday, C
Charles Previn, 9:00 p.m. Sunday, B
Leo Reisman, 8:00 and 11:30 p.m. Tuesday, R
Willard Robison, 7:15 p.m. Mon., Wed. and Fri., B
Buddy Rogers, 7:30 p.m. Sunday, C
Harry Salter, 11:15 p.m. Tuesday, C
Rudy Vallee, 8:00 p.m. Thursday, R
Fred Waring, 9:30 p.m. Thursday, C
Paul Whitman, 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
Phil Baker, 9:30 p.m. Friday, B
Jack Benny, 7:00 p.m. Sunday, B
Block and Sully, 9:30 p.m. Monday, C
Eddie Cantor, 8:00 p.m. Sunday, R
Joe Cook, 9:30 p.m. Monday, R
Easy Aces, 8:00 p.m. Wed., Thurs. and Fri., C
George and Gracie, 9:30 p.m. Wednesday, C
George Givot, 10:30 p.m. Tuesday, C
Jake and Lena, 7:15 and 11:15 p.m. daily, except Sat. and Sun., R
Walter O'Keefe, 10:00 p.m. Tuesday; 9:00 and 11:30 p.m. Thursday, C
Joe Penner, 7:30 p.m. Sunday, B
Pick and Pat, 9:30 p.m. Friday, R
Ed Wynn, 9:30 p.m. Tuesday, R

DRAMA

Bar X Days, 8:00 p.m. Monday, C
Billy Batchelor, 6:45 p.m. daily, except Sat. and Sun., R; 8:15 p.m. daily, except Sat. and Sun., C
Frank Buck, 7:45 p.m. daily except Sat. and Sun., R
Dangerous Paradise, 7:45 p.m. Mon., Wed. and Fri., B
Red Davis, 7:30 p.m. Mon., Wed., and Fri., B
Death Valley Days, 9:00 p.m. Thursday, B
Dream Drama, 4:45 p.m. Sunday, R
Eno Crime Clues, 8:00 p.m. Tues. and Wed., B
First Nighter, 10:00 p.m. Friday, R
Grand Hotel, 6:30 p.m. Sunday, B
Warden Lawes, 9:00 p.m. Wednesday, B
Lux Program, 2:30 p.m. Sunday, B
Myrt and Marge, 7:00 and 11:00 p.m. daily, except Sat. and Sun., C
Mary Pickford, 8:00 p.m. Wednesday, R
Princess Pat Players, 9:30 p.m. Monday, B
Irene Rich, 8:00 p.m. Friday, B
Buck Rogers, 6:00 and 7:30 p.m. Mon. to Thurs., inc., C
Roses and Drums, 5:00 p.m. Sunday, B
The Shadow, 6:30 p.m. Mon. and Wed., C
Story Behind Claim, 9:15 p.m. Tuesday, B
Talkie Picture Time, 3:00 p.m. Sunday, R
Tastyeast Theatre, 9:45 p.m. Sunday, B
Terhune Dog Dramas, 5:45 p.m. Sunday, B
True Story Court, 8:30 and 11:30 p.m. Friday, C

PIANO

Fray and Braggiotti, 10:45 p.m. Thursday, C
George Gershwin, 6:00 p.m. Sunday, C
Ohman and Arden, 9:30 p.m. Sunday, R

POPULAR PROGRAMS

A & P Gypsies, 9:00 p.m. Monday, R
Album Familiar Music, 9:30 p.m. Sunday, R
Gene Arnold's Commodores, 2:30 p.m. Sunday, R
Miss Bab-o's Surprise, 1:30 p.m. Sunday, R
Bernard and Dumont, 7:30 p.m. Mon. and Thurs., R
Major Bowes, 11:30 a.m. Sunday, R
Breitenbach Program, 2:00 p.m. Sunday, B
Byrd Expedition, 10:00 p.m. Wednesday, C
Carborundum Band, 10:00 p.m. Saturday, C
Chase and Sanborn, 8:00 p.m. Sunday, R
Chesterfield Program, 9:00 p.m. Mon., Wed. and Sat., C
Cities Service Concert, 8:00 p.m. Friday, R
Colgate House Party, 9:30 p.m. Monday, R
Contented Program, 10:00 p.m. Monday, R
Emerson Drug Program, 8:30 p.m. Friday, B
Fleischmann Variety, 8:00 p.m. Thursday, R
Forty-Five Minutes in Hollywood, 10:00 p.m. Thursday, C
Forum of Liberty, 8:30 p.m. Thursday, C
Gems of Melody, 4:00 p.m. Sunday, R; 7:15 p.m. Thursday, B
Gibson Family Musical, 9:30 p.m. Saturday, R
Gulf Headliners, 9:30 p.m. Sunday, C
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
Land of Beginning, 4:30 p.m. Sunday, B
Manhattan Merry-Go-Round, 9:00 p.m. Sunday, R
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
Music Appreciation, 6:30 p.m. Tuesday, C
National Barn Dance, 9:30 and 11:00 p.m. Saturday, B
Palmolive Beauty Box, 10:00 p.m. Tuesday, R
Pontiac Program, 10:30 p.m. Sunday, R
Roxy and His Gang, 8:00 p.m. Saturday, C
Royal Hawaiian Band, 2:30 p.m. Sunday, C
Saturday Revue, 10:30 p.m. Saturday, C
Sentinels Serenade, 5:00 p.m. Sunday, R
Silver Dust Serenaders, 7:30 p.m. Mon., Wed. and Fri., C
Sinclair Minstrels, 9:00 p.m. Monday, B
Songs You Love, 9:00 p.m. Saturday, R
Sparton Triolians, 6:15 p.m. Sunday, B
Voice of Firestone, 8:30 and 11:30 p.m. Monday, R
Ward's Family Theatre, 7:30 p.m. Sunday, C
Tony Wons, 4:30 and 5:30 p.m. Sunday, R

RELIGIOUS

Church of the Air, 1:00 p.m. Sunday, C
Salt Lake Choir, 11:30 a.m. Sunday, C

SINGERS

Mildred Bailey, 7:15 p.m. Mon., Wed., Fri., B
Bing Crosby, 9:00 p.m. Tuesday, C
Mary Eastman, 10:30 p.m. Wednesday, C
Eton Boys, 1:30 p.m. Sunday, C
Jane Froman, 10:30 p.m. Sunday, R
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, 10:00 p.m. Tuesday; 9:00 and 11:30 p.m. Thurs., C
Pat Kennedy, 1:45 p.m. Sunday, C
Dennis King, 10:00 p.m. Wednesday, B
Ralph Kirbery, 2:00 p.m. Sunday, R
Jeanie Lang, 7:30 p.m. Sunday, C
Frances Langford, 9:30 p.m. Monday, R
Lazy Dan, 2:00 p.m. Sunday, C
Elizabeth Lennox, 8:30 p.m. Wednesday, C
Everett Marshall, 8:30 p.m. Wednesday, C

Nino Martini, 9:00 p.m. Wednesday, C
John McCormack, 9:30 p.m. Wednesday, B
Martha Mears, 9:30 p.m. Friday, B
James Melton, 9:00 and 12:00 p.m. Wednesday, R
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
Frank Parker, 9:00 p.m. Monday, R; 7:00 p.m. Sunday, B
Rosa Ponselle, 9:00 p.m. Monday, C
Virginia Rea, 9:30 p.m. Sunday, R
Harry Richman, 10:30 p.m. Wednesday, B
Carson Robison, 8:00 p.m. Monday, C
Lanny Ross, 9:00 p.m. Thursday, R; 8:30 and 11:30 p.m. Wednesday, B
Sanderson-Crumit, 5:30 p.m. Sunday, C
Madame 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
Smilin' Ed McConnell, 6:30 p.m. Sunday, C
Kate Smith, 10:30 p.m. Friday, C
Grete Stueckgold, 9:00 p.m. Saturday, C
Gladys Swarthout, 8:30 and 11:30 p.m. Sunday; 10:00 p.m. Tuesday, R
Conrad Thibault, 9:00 p.m. Thursday, R
Lawrence Tibbett, 8:30 p.m. Tuesday, B
Fats Waller, 8:15 p.m. Thurs.; 8:45 p.m. Sat., C
Whispering Jack Smith, 7:30 p.m. Tues.; Thurs. and Sat., C

TALKS

American Bosch Explorers, 5:30 p.m. Sunday, B
Becker s Dog Chats, 2:15 p.m. Sunday, B
Dale Carnegie, 1:00 p.m. Sunday, R
Boake Carter, 7:45 p.m. daily, except Sat. and Sun., C
Rev. Charles E. Coughlin, 4:00 p.m. Sunday
Eddie Dooley, 6:30 p.m. Thurs., Fri., and Sat., C
Thornton Fisher, 6:45 p.m. Saturday, R
Floyd Gibbons, 7:45 and 12:00 p.m. Saturday, R
Red Grange, 7:15 p.m., Thurs., Fri. and Sat., C
Health Talks, 10:45 p.m. Monday, C
Edwin C. Hill, 8:15 and 11:15 p.m. Mon., Wed., Fri.; 8:30 p.m. Thursday, C
H. V. Kaltenborn, 6:00 p.m. Friday, C
John B. Kennedy, 8:30 p.m. Tues; 10:30 p.m. Wed.; 9:00 p.m. Sat., B
Lawyer and Public, 7:45 p.m. Saturday, C
Madame Sylvia, 10:15 p.m. Wednesday, B
Lowell Thomas, 6:45 p.m. daily, except Sat. and Sun., B
Voice of Experience, 6:45 p.m. Sunday; 11:30 p.m. Wednesday, C.
Frederic William Wile, 6:00 p.m. Saturday, C
Walter Winchell, 9:30 p.m. Sunday, B
Alexander Woollcott, 9:00 p.m. Sunday, C

Book Reviews

S0-0-0, You're Going on the Air,' published by Rodin Publishing Co., Inc., 200 West 57th Street, New York, N. Y. Price $1.75.

Here is a book for the million or more who aspire to become radio stars. It is written by Robert West, M. A., Director of the Radio Arts Guild of America. "The amateur who aspires to place and reputation should know what steps to take in order to obtain a hearing, what chance of artistic success awaits, and also how much can be expected in the way of financial reward." What the neophyte should know begins in the first chapter—"Let us assume that the time has come for you to take your place before the microphone."

Subsequent chapters cover "Facing the Microphone," "Comics of the Ether," "Music for the Multitude," "Radio Drama," "The Rise of the Sponsors," "The Cult of the Announcers," "Women and Radio Success," "The Future of Radio," and "The Radio Speech Primer." The last-named is noteworthy and if universally studied by stars and announcers would make listening to speech on the radio a much pleasanter occupation.

"Servicing Superheterodynes," written and published by John F. Rider, 1440 Broadway, New York, N. Y. This is a revised edition of a former work by the same author and brings the subject up to the minute. Intended as it is for servicemen, it is quite naturally technical in character but it is written in such a way that it should be most helpful to advanced students of radio.

It begins with a chapter devoted to the principles underlying the operation of the superheterodyne receiver, explaining beats or heterodyning and the part it plays in the operation of this popular circuit. The subject of harmonics is rather fully covered with a table showing the harmonics of fundamental frequencies up to the fifth. Among many important phases of the question covered are the following: "The Autodyne Type of Superheterodyne," "Second Harmonic System," "Superheterodyne Converters," "The Radio Frequency Amplifier," "Image Frequency," "Cross Talk," "Breakdown of the Receiver," "Oscillators," "The Intermediate Frequency Amplifier," "The Second

Detector," "Automatic Volume Control Systems," "Visual Tuning," "Troubles and Symptoms," and "Vibrator Units." An addenda gives a list of the intermediate frequencies used in a long list of modern sets.

* * *

A weekend at Joe Cook's Lake Hopatcong home, "Sleepless Hollow," always includes a game of golf on Joe's daffy golf course. The course, incidentally, is so constructed that there is one hole where you can't do anything but make a hole-in-one!

* * *

Frank Luther is pinch-hitting for Lewis James, tenor of the Revelers. Luther used to sing with the Revelers but left to form his own trio, The Men About Town. Luther volunteered to sit in with the Revelers again so that James could get away for a much needed rest—which is further proof that radio singers are the most amicable group in the business.

* * *

Virginia Rea is proud of the fact that she is a bit old-fashioned. She doesn't drive a car or go in for athletics, but she does like to cook, is handy with a needle and finds housekeeping a joy rather than a drudgery. As might be expected of a girl of such inclinations, Miss Rea is no night club habitue.

* * *

That was a real sable cape Frances Langford wore to the House Party show Monday night but it wasn't hers. The blues singer's slim figure is so perfect that fur manufacturers besiege her to model their most costly wares—and pay her handsomely for displaying them.

* * *

Ten thousand words written—two thousand words used! That's the weekly contribution of Courtney Ryley Cooper, novelist and author of "The Gibson Family." "Coop" does his own editing and always writes about five times as much as he finally uses after he boils his radio script down to working order. He uses a Noiseless typewriter in his penthouse home so as not to disturb the wife.

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 Brdcstg. Commission.
N National "Red" and "Blue" networks.
P Has construction permit only.
R National "Red" network.
S Sunday only.
Sy Synchronized.
X Has permit to increase power.
Y Has permit to change location.
Z Has permit to change frequency.

a-b-c. Small letters show stations using same transmitter.
1-2-3. Figures denote stations sharing time.
..... No information.

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).

KCYS. 600 DIAL

540 kilocycles 555.2 meters

CJRM	ak	1000	F	Moose Jaw, Sask.	M—7-23
CMCW	dk	150	.....	Havana, Cuba	E—12-18; 1-3

550 kilocycles 545.1 meters

CFNB	ak	500	F	Fredericton, N. B.	A—8:10-24
KFUO	ae	500	2 (1)	St. Louis, Mo.	C—7-8; 12:15-12:40; 15-15:40; 22-23
KFYR	ae	1000	N (2.5)	Bismarck, N. D.	C—7-24
KOAC	ak	1000	.....	Corvallis, Ore.	P—9-22
KSD	ak	500	2R (1)	St. Louis, Mo.	C—.....
KTSA	ak	1000	C	San Antonio, Texas	C—7-14; 15-23:30
TISO	ak	250	.....	San Jose, C. R.	C—.....
WDEV	ae	500	D	Waterbury, Vt.	E—7:30-10; 11:30-14; 15-19
WGR	ae	1000	C	Buffalo, N. Y.	E—7:30-24
WKRC	ak	1000	C (2.5)	Cincinnati, Ohio	E—7-1
WSVA	z	500	DP	Staunton, Va.	E—.....

560 kilocycles 535.4 meters

KFDM	ak	500	(1)	Beaumont, Texas	C—7:15-14; 16-22
KLZ	ae	1000	C (2.5)	Denver, Colo.	M—6:45-23:30
KTAB	ak	1000	.....	San Francisco, Calif.	P—7-1
KWTO	ak	1000	D	Springfield, Mo.	C—6-17:45
TGW	ak	10000	565	Guatemala City	C—12-14:30; 18:30-19:30; 21-23
WFI	ae	500	1R (1)	Philadelphia, Pa.	E—6:45-9; 9:45-11; 13-14; 15-16:30; 18-24
WIND	ak	1000	(2.5)	Gary, Ind.	C—7-1
WLIT	ak	500	1R (1)	Philadelphia, Pa.	E—9-9:45; 11-13; 14-15; 16:30-18
WNOX	ak	1000	C (2)	Knoxville, Tenn.	C—6:45-24
WQAM	ae	1000	C	Miami, Fla.	E—7:30-24
XEAO	ak	250	(.15)	Mexicali, B. C.	P—8-22

570 kilocycles 526.0 meters

KGKO	ak	250	C (1)	Wichita Falls, Texas	C—7:30-23:30
KMTR	ak	500	.....	Hollywood, Calif.	P—6:45-23:30
KVI	ak	1000	.....	Tacoma, Wash.	P—6-24
WKBN	ae	500	1C	Youngstown, Ohio	E—7:30-9; 11-13; 15-20; 22-24
WMCA	ak	500	.....	New York, N. Y.	E—7-1
WNAX	ak	1000	C (2.5)	Yankton, S. D.	C—6-24
WOSU	ak	750	1 (1)	Columbus, Ohio	E—1-24
WSYR	ak	250	B	Syracuse, N. Y.	E—7:30-1
WWNC	ae	1000	N	Asheville, N. C.	E—7:30-0:30

580 kilocycles 516.9 meters

CHRC	ak	100	F	Quebec, Que.	E—9-0:30
CKCL	ae	100	F	Toronto, Ont.	E—8-23:30
CKUA	ak	500	.....	Edmonton, Alta.	M—13-15:15; 19-21
KMJ	ak	500	C	Fresno, Calif.	P—7-24
KSAC	ak	500	2 (1)	Manhattan, Kans.	C—9:30-10:30; 12:30-14; 16:30-17:30
WCHS	ak	500	(1)	Charleston, W. Va.	E—7-23
WDBO	ae	250	C (1)	Orlando, Fla.	E—7:30-24
WIBW	ak	1000	C2 (2.5)	Topeka, Kans.	C—6-9:30; 10:30-12:30; 14-16:30; 17:30-24
WTAG	ae	500	R (1)	Worcester, Mass.	E—8-24

590 kilocycles 508.2 meters

KHQ	ak	1000	N (2.5)	Spokane, Wash.	P—6:45-24
WEEI	ak	1000	R	Boston, Mass.	E—.....
WKZO	ae	1000	D	Kalamazoo, Mich.	E—7:30-18
WOW	ae	1000	R (2.5)	Omaha, Neb.	C—6:30-0:30
XEPN	ak	50000	.....	Piedras Negras, Coah.	C—5-24

600 kilocycles 499.7 meters

CFCF	ae	500	.....	Montreal, Que.	E—8-24
CFCO	ak	100	F	Chatham, Ont.	E—7:30-9; 11-13:30; 17-23
CJOR	ak	500	.....	Vancouver, B. C.	P—7:30-23:15
FQN	z	250	609	St. Pierre, Miquelon	L—Silent
KFSD	ae	1000	N	San Diego, Calif.	P—7-24
WCAC	ak	500	2	Storrs, Conn.	E—Silent
WCAO	ae	500	C	Baltimore, Md.	E—7-24
WICC	ae	250	2 C (1)	Bridgeport, Conn.	E—7:45-12:30; 13-1
WMT	af	1000	C (2.5)	Waterloo, Iowa	C—7-24
WREC	ak	1000	C (2.5)	Memphis, Tenn.	C—7-24

CUT OUT ON DOTTED LINES

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610 kilocycles 491.5 meters

CMCF	ak	250	.....	Havana, Cuba	E—12-14; 18-20; 21-23
KFRC	ak	1000	C (2.5)	San Francisco, Calif.	P—7-24
KZRM	ak	50000	618.5	Manila, P. I.	L—6:30-7:30; 12:15-13:15; 17:10-24
TIXA	z	7.5	614	San Jose, C. R.	C—.....
WDAF	ak	1000	R (2.5)	Kansas City, Mo.	C—6:30-24
WIP	ae	500	(1)	Philadelphia, Pa.	E—7-1
WJAY	ae	500	D	Cleveland, Ohio	E—6-17:15
XFX	ak	500	.....	Mexico City, D. F.	C—7-11; 20-22

620 kilocycles 483.6 meters

KGW	ak	1000	N (2.5)	Portland, Ore.	P—7-24
KTAR	ae	1000	N	Phoenix, Ariz.	M—7-23:15
WFLA	ae	1000	Na (2.5)	Clearwater, Fla.	E—7:30-24
WHJB	z	250	P	Greensburg, Pa.	E—7-sunset
WLBZ	ak	500	C	Bangor, Maine	E—8-24
WSUN	ae	1000	Na (2.5)	St. Petersburg, Fla.	E—7:30-24
WTMJ	ae	1000	N (2.5)	Milwaukee, Wis.	C—6:45-0:30
.....	z	250	P	Pittsburgh, Pa.	E—.....

630 kilocycles 475.9 meters

CFCY	ae	500	F	Char't'w'n, P.E.I.	A—12-13:30; 18-23:30
CJGX	ck	500	F	Yorkton, Sask.	C—8:30-9:15; 10:30-12; 19:30-21:30
CKOV	ak	100	F	Kelowna, B. C.	P—8-10; 11:30-13:30; 17:30-22:30
CMBY	z	250	635	Havana, Cuba	E—.....
KFRU	ak	500	1	Columbia, Mo.	C—6-9; 14-sunset; 19-22
KGFX	ak	200	D	Pierre, S. D.	C—9:30-sunset
WGBF	ae	500	1	Evansville, Ind.	C—7-23
WMAL	ak	250	B (.5)	Washington, D. C.	E—6:45-1
WOS	ak	500	1D	Jefferson City, Mo.	C—9-14
WPRO	ak	250	.....	Providence, R. I.	E—8-1:15

640 kilocycles 468.5 meters

KFI	ak	50000	N	Los Angeles, Calif.	P—6:30-24
WAIU	ae	500	B	Columbus, Ohio	E—6:15-17:30
WOI	ae	5000	D	Ames, Iowa	C—6:45-15
XEOX	ak	250	.....	Saltillo, Coah.	C—.....

650 kilocycles 461.3 meters

WSM	ae	50000	N	Nashville, Tenn.	C—6:30-24

660 kilocycles 454.3 meters

WAAW	ak	500	D	Omaha, Neb.	C—6-18:15
WEAF	ak	50000	R	New York, N. Y.	E—6:45-1
XEAL	z	1000	.....	Mexico City, D. F.	C—.....

670 kilocycles 447.5 meters

WMAQ	ck	50000	N	Chicago, Ill.	C—7-1

680 kilocycles 440.9 meters

CMAF	ak	1000	.....	Havana, Cuba	E—17:30-23
HJN	ak	500	681	Bogota, Colombia	L—12-13:30; 20-23
KFEQ	ae	2500	D	St. Joseph, Mo.	C—6-17:45
KPO	ak	50000	N	San Francisco, Calif.	P—7:30-24
RDN	z	500	.....	San Salvador, E. S.	L—.....
VAS	ak	2000	685	Glace 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—7:30-sunset

690 kilocycles 434.5 meters

CFRB	ae	10000	C	Toronto, Ont.	E—8-0:30
CJCJ	ak	100	F	Calgary, Alta.	M—.....
NAA	ak	1000	.....	Arlington, Va.	E—10:10-10:15; 11:55-12; 21:55-22
XET	ck	500	.....	Monterrey, N. L.	C—12-14; 16-22

700 kilocycles 428.3 meters

WLW	ak	500000	N	Cincinnati, Ohio	E—6:30-3

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710 kilocycles 422.3 meters

KMPC	ae	500	Dn	Beverly Hills, Calif.	P—6:45-0:30
KPCB	ae	250	.....	Seattle, Wash.	P—5:30-sunset; 22-4
TIFB	z	30	714	San Jose, C. R.	C—6-10
WOR	ak	5000	.....	Newark, N. J.	E—6:45-0:30
XEN	ak	1000	711	Mexico City, D. F.	C—9-12; 13-16; 17-24

720 kilocycles 416.4 meters

CMK	ae	3150	725	Havana, Cuba	E—11-13; 19-24
KZEG	ak	1000	.....	Manila, P. I.	L—7:30-12:15; 13:15-17
WGN	ck	50000	.....	Chicago, Ill.	C—7-1:30
XEFI	ae	250	.....	Chihuahua, Chih.	C—13-16; 20-22:30

730 kilocycles 410.7 meters

CFPL	ak	100	F	London, Ont.	E—8:15-10:30; 12-13:30; 17-23:30
CJCA	ah	500	F	Edmonton, Alta.	M—7:30-13:30; 16:30-1
CKAC	ak	5000	C	Montreal, Que.	E—7:30-1

740 kilocycles 405.2 meters

KMMJ	ae	1000	D	Clay Center, Neb.	C—5-18
KTRB	ak	250	D	Modesto, Calif.	P—.....
WHEB	ak	250	D	Portsmouth, N. H.	E—8-13:30; 15:15-18
WSB	ah	50000	N	Atlanta, Ga.	C—6:55-24

750 kilocycles 399.8 meters

KGU	aj	2500	N	Honolulu, T. H.	L—6:30-22:30
WJR	ak	10000	B	Detroit, Mich.	E—6-24
XEAM	z	50	.....	Nuevo Laredo, Tams.	C—.....

760 kilocycles 394.5 meters

CMX	ae	1000	765	Havana, Cuba	E—12-14; 20-23
KXA	ae	250	(.5)	Seattle, Wash.	P—.....
WBAL	ae	10000	BSy	Baltimore, Md.	E—21-24
WEW	ae	1000	D	St. Louis, Mo.	C—8-17
WJZ	ck	50000	BSy	New York, N. Y.	E—8-1
XEBC	ak	5000	.....	Agua Caliente, L. C.	P—.....

770 kilocycles 389.4 meters

KFAB	ae	5000	CSy	Lincoln, Neb.	C—6-17:45; 20:30-21:30; 22-24
WBBM	ae	25000	CSy	Chicago, Ill.	C—6:50-2:15

780 kilocycles 384.4 meters

CHWK	ak	100	F	Chilliwack, B. C.	P—12-13:30; 18-22:30
KELW	ae	500	2	Burbank, Calif.	P—10-13; 17-20; 4-6
KFDY	ae	1000	D	Brookings, S. D.	C—12:30-14
KFQD	ck	250	.....	Anchorage, Alaska	L—18-24
KGHL	ak	1000	N (2.5)	Billings, Mont.	M—8-23
KTM	ak	500	2 (1)	Los Angeles, Calif.	P—6-10; 13-17; 20-4
WEAN	ae	500	C (.25)	Providence, R. I.	E—7:30-1
WMC	aj	1000	N (2.5)	Memphis, Tenn.	C—7-24
WTAR	ae	500	N	Norfolk, Va.	E—7-24
XEYZ	z	10000	.....	Mexico City, D. F.	C—10-23

790 kilocycles 379.5 meters

CMJK	ak	150	.....	Camaguey, Cuba	E—11:30-12:30; 17-23
KGO	ak	7500	N	San Francisco, Calif.	P—7-24
WGY	ak	50000	R	Schenectady, N. Y.	E—6:45-1

800 kilocycles 374.8 meters

TIGP	z	75	.....	San Jose, C. R.	C—.....
WBAP	ak	50000	Na	Fort Worth, Tex.	C—8:30-10:30; 12:30-15; 17:30-18:30; 19-22
WFAA	ak	50000	Na	Dallas, Tex.	C—6:45-8:30; 10:30-12:30; 15-17:30; 18:30-19; 22-23:30
WTBO	ae	250	.....	Cumberland, Md.	E—6-19:15

KCYS.
800
DIAL

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810 kilocycles 370.2 meters

WCCO	ae	50000	C	Minneapolis, Minn.	C—7-24
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	50000	C	Louisville, Ky.	C—7-24
XEP	z	500	.....	Mexico City, D. F.	C—.....
XETW	dk	500	.....	Mexico City, D. F.	C—12-24

830 kilocycles 361.2 meters

CMC	ae	500	835	Havana, Cuba	E—10:30-11:30; 20-23
KOA	ak	50000	N	Denver, Colo.	M—7-24
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-sunset in Denver
WRUF	ae	5000	Dn	Gainesville, Fla.	E—8-18:45

840 kilocycles 356.9 meters

CFQC	ak	1000	F	Saskatoon, Sask.	M—8-13:30; 17:30-23
CMQ	z	340	.....	Havana, Cuba	E—6:55-1
CRCT	ak	5000	F	Toronto, Ont.	E—6:45-24
VOGY	ak	400	.....	St. John's, Nfld.	L—10-11:30; 13-14:30; 18-21
XEXX	z	500	845	Mexico City, D. F.	C—10-23

850 kilocycles 352.7 meters

KIEV	aj	250	D	Glendale, Calif.	P—6-16:45
WWL	ae	10000	.....	New Orleans, La.	C—8-20:30

860 kilocycles 348.6 meters

WABC	ae	50000	C	New York, N. Y.	E—7:30-1:30
WHB	ae	500	D	Kansas City, Mo.	C—6-17
XEMO	ak	2000	865	Tijuana, B. C.	P—.....

870 kilocycles 344.6 meters

WENR	ak	50000	Na	Chicago, Ill.	C—10:15-11:45; 15:30-19
WLS	ae	50000	Na	Chicago, Ill.	C—6-10:15; 11:45-15:30; 19-24

880 kilocycles 340.7 meters

CFJC	ak	100	F	Kamloops, B. C.	P—7:30-10:30; 12-14; 18-21
CRCO	ak	1000	F	Ottawa, Ont.	E—8-9; 12-14; 17:45-24
KFKA	ak	500	2 (1)	Greeley, Colo.	M—6-7:30; 9-14:30; 16:30-18; 21:30-24
KLX	ae	1000	.....	Oakland, Calif.	P—8-23
KPOF	ak	500	2	Denver, Colo.	M—7:30-9; 14:30-16:30; 18-19:30
KSEI	ck	250	(.5)	Pocatello, Idaho	M—7:30-23
WCOC	ae	500	(1)	Meridian, Miss.	C—7:30-14; 17-22:30
WGBI	ae	500	1	Scranton, Pa.	E—9:30-12:30; 13:30-16:30; 17:30-24
WPHR	z	500	.....	Petersburg, Va.	E—8-17; 18-21
WQAN	ae	250	1	Scranton, Pa.	E—12:30-13:30; 16:30-17:30
WSUI	ae	500	.....	Iowa City, Iowa	C—9-10; 11-12; 13-17; 18-22
YV2RC	z	100	882	Caracas, Venz.	L—.....

890 kilocycles 336.9 meters

CJIC	z	100	D	S. Ste. Marie, Ont.	E—8:30-9:30; 11-13:30; 16:30-18
KARK	ak	250	(.5)	Little Rock, Ark.	C—7-22:30
KFNF	ak	500	2 (1)	Shenandoah, Iowa	C—5:30-8; 11-16; 18-21
KUSD	ae	500	2	Vermillion, S. D.	C—Irregular
WGST	aeh	250	C (1)	Atlanta, Ga.	C—7-24
WILL	ak	250	2 (1)	Urbana, Ill.	C—8-11; 16-18; 22-24
WJAR	ae	500	R	Providence, R. I.	E—8-1
WMMN	ae	250	(.5)	Fairmont, W. Va.	E—9-21:30
XEW	ak	50000	.....	Mexico City, D. F.	C—.....

900 kilocycles 333.1 meters

KGA	ak	5000	N	Spokane, Wash.	P—6-24

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KGBU	ak	500	.....	Ketchikan, Alaska	L—.....
KHJ	ae	1000	C (2.5)	Los Angeles, Calif.	P—7-1
KSEI	ck	250	(.5)	Pocatello, Idaho	M—7:3-23
WBEN	ae	1000	R	Buffalo, N. Y.	E—6:45-1
WJAX	aeh	1000	N	Jacksonville, Fla.	E—7-1
WKY	ae	1000	N	Oklahoma City, Ok.	C—6:45-0:30
WLBL	ak	2500	D	Stevens Point, Wis.	C—8-1

910 kilocycles 329.6 meters

CJAT	ak	250	F	Trail, B. C.	P—8-22:30
CMBS	ak	150	915	Havana, Cuba	E—10-12; 15:30-18
CMHW	z.	100	....	Cienfuegos, Cuba	E—11-13; 18:30-21:30
CRCM	ak	5000	F	Montreal, Que.	E—.....
TICR	z	75	911	San Jose, C. R.	C—16:30-22

920 kilocycles 325.9 meters

HHK	ae	1000	.....	Port-au-Prince, Haiti	E—Silent
KOMO	ak	1000	N	Seattle, Wash.	P—7-24
KPRC	ae	1000	N (2.5)	Houston, Texas	C—6:30-24
KVOD	ak	500	.....	Denver, Colo.	M—8:30-10; 12:30-15; 16:30-18; 19:30-1
WAAF	ak	500	D	Chicago, Ill.	C—6-Sunset
WBSO	ae	500	D	Babson Park, Mass.	E—8:30-16:30
WPEN	ak	100	(.25)	Philadelphia, Pa.	E—7:30-22
WRAX	ak	250	D	Philadelphia, Pa.	E—7:30-22
WSPA	ae	1000	D	Spartanburg, S. C.	E—5:30-22
WWJ	ak	1000	R	Detroit, Mich.	E—7-24
XEAA	z	200	.....	Mexicali, B. C.	P—12-14; 18-20
XEKL	z	500	.....	Leon, Guan.	C—10:30-16; 17-23
XEOK	z	2500	.....	Tijuana, B. C.	P—.....

930 kilocycles 322.4 meters

CFAC	ak	100	F	Calgary, Alta.	M—7:30-20
CFCH	ak	100	F	North Bay, Ont.	E—12-13:30; 17:30-23:30
CFLC	ae	100	.....	Prescott, Ont.	E—8-10; 12-14; 17-19:30
CHNS	ae	500	F	Halifax, N. S.	A—18-24
CKPC	ae	100	F	Brantford, Ont.	E—7-24
CKPR	ak	50	F	Fort William, Ont.	E—.....
CMJF	z	200	.....	Camaguey, Cuba	E—.....
CMW	ae	1400	.....	Havana, Cuba	E—.....
KGBZ	ak	1000	2 (2.5)	York, Neb.	C—5-6; 7:30-9; 11-12:30; 14-15:30; 17-18:30; 20:30-24
KMA	ak	1000	2 (2.5)	Shenandoah, Iowa	C—6-7:30; 9-11; 12:30-14; 15:30-17; 18-30-20:30
KROW	ak	500	(1)	Oakland, Calif.	P—7-1
WBRC	ak	1000	C	Birmingham, Ala.	C—7-23
WDBJ	ae	1000	C	Roanoke, Va.	E—8-24

940 kilocycles 319.0 meters

CMKM	z	100	.....	Manzanillo, Cuba	E—.....
KOIN	ak	1000	C (2.5)	Portland, Ore.	P—6:30-24
VOAS	ak	100	.....	St. John's, Nfld.	L—11-12:30; 16-17:30; 19:45-21:30
WAAT	ae	500	D	Jersey City, N. J.	E—6:30-18
WAVE	ak	1000	N	Louisville, Ky.	C—7-24
WCSH	ae	1000	R (2.5)	Portland, Maine	E—8-24
WDAY	ae	1000	N (2.5)	Fargo, N. D.	C—7-24
WHA	ak	1000	D (2.5)	Madison, Wis.	C—8-Sunset
XEFO	ak	5000	.....	Mexico City, D. F.	C—11-15; 18-24

950 kilocycles 315.6 meters

CMCD	ah	500	955	Havana, Cuba	E—12-23:30
CMHD	dk	250	.....	Caibarien, Cuba	E—20-21
CRCS	z	100	F	Chicoutimi, Que.	E—13:30-23
KFWB	ak	1000	(2.5)	Hollywood, Calif.	P—7-23:30
KMBC	ae	1000	C (2.5)	Kansas City, Mo.	C—6:25-24
VONF	ak	5000	.....	St. John's, Nfld.	L—12-14; 18-21
WRC	ae	500	R (1)	Washington, D. C.	E—6:30-1
XEAW	ak	10000	.....	Reynosa, Tams.	C—17-1

960 kilocycles 312.3 meters

CKY	ak	15000	F	Winnipeg, Man.	C—8:30-14; 16-24
CMJL	z	50	.....	Camaguey, Cuba	E—.....
YV1RC	ak	5000	.....	Caracas, Venz.	L—12-13:30; 18-22

970 kilocycles 309.1 meters

CMGF	ak	100	971.5	Matanzas, Cuba	E—15-17; 20-22:30

KCYS.
970
DIAL

CUT OUT ON DOTTED LINES

KJR	z	5000	N	Seattle, Wash.	P—7:30-24
WCFL	ae	1500	B	Chicago, Ill.	C—7-24
WIBG	ak	100	D	Glenside, Pa.	E—6-Sunset
XES	dk	250	.....	Tampico, Tams.	C—9:30-14:30; 17-22; 1-2:30

980 kilocycles 303.9 meters

KDKA	bk	50000	B	Pittsburgh, Pa.	E—7-1
XEAE	ak	200	.....	Mexicala, B. C.	P—9-24
XEU	ak	250	.....	Veracruz, Ver.	C—7-9; 10-14; 17-23

990 kilocycles 302.8 meters

TITV	z	7.5	999	San Jose, C. R.	C—15-17; 19-23
WBZ	ak	50000	BSy	Boston, Mass.	E—7-1
WBZA	ak	1000	BSy	Springfield, Mass.	E—7-1
WJEM	z	500	DP	Tupelo, Miss.	C—.....
XEK	ak	100	.....	Mexico City, D. F.	C—11-16; 18-2

1000 kilocycles 299.8 meters

CMBZ	ak	100	1005	Havana, Cuba	E—7-12; 18-2
KFVD	ak	250	Dn	Los Angeles, Calif.	P—6:30-Sunset; 22-24
WHO	ak	50000	R	Des Moines, Iowa	C—7-24

1010 kilocycles 296.9 meters

CHML	ael	50	F	Hamilton, Ont.	E—8-23:30
CHWC	ak	500	3F	Regina, Sask.	M—7-9; 10-11; 12-13; 15:30-23
CKCD	ak	100	.....	Vancouver, B. C.	P—7:30-23:30
CKCK	ak	500	3F	Regina, Sask.	M—9-10; 11-12; 13-15:30
CKCO	z	100	.....	Ottawa, Ont.	E—6-23
CKIC	ak	50	.....	Wolfville, N. S.	A—18-19
CKWX	ak	100	.....	Vancouver, B. C.	P—7-19:30; 23:30-1
CMJO	ak	50	.....	Ciego de Avila, Cuba	E—9-13; 18-22
KGGF	ak	1000	2	Coffeyville, Kans.	C—7-14; 17-22:30
KQW	ae	1000	.....	San Jose, Calif.	P—6:30-22
TIGA	z	30	1014	Cartago, C. R.	C—.....
WHN	ae	1000	.....	New York, N. Y.	E—8-1
WIS	ae	1000	N (2.5)	Columbia, S. C.	E—8-24
WNAD	ae	500	2	Norman, Okla.	C—Silent

1020 kilocycles 293.9 meters

KYW	ak	10000	NY	Chicago, Ill.	C—8-1
XEJ	ak	250	.....	Juarez, Chih.	C—10-14; 17-23:30

1030 kilocycles 291.1 meters

CFCN	ak	10000	F	Calgary, Alta.	M—.....
CKLW	ae	5000	C	Windsor, Ont.	E—6:45-1
CMHI	ak	150	1037	Santa Clara, Cuba	E—11-12; 20-21
CMKC	z	150	1034	Santiago, Cuba	E—.....
XEB	ak	10000	.....	Mexico City, D. F.	C—9-24

1040 kilocycles 288.3 meters

CMBC	ae	150	.....	Havana, Cuba	E—.....
CMGH	ak	15	.....	Matanzas, Cuba	E—14-15; 17-18; 19:30-20:30
KRLD	ae	10000	C	Dallas, Texas	C—6:30-24
KWJJ	ak	500	.....	Portland, Ore.	P—6-Sunset; 21-3:15
WKAR	ak	1000	D	East Lansing, Mich.	E—12-12:30; 13:45-16:45
WTIC	ak	50000	R	Hartford, Conn.	E—7-24

1050 kilocycles 285.5 meters

CMJG	z	50	.....	Camaguey, Cuba	E—.....
CRCK	z	1000	.....	Quebec, Que.	E—.....
KFBI	ak	5000	Dn	Abilene, Kans.	C—5-18:45
KNX	ak	50000	.....	Hollywood, Calif.	P—7-24

1060 kilocycles 282.8 meters

CMCB	ak	150	.....	Havana, Cuba	E—13-16; 20-24
KTHS	ae	10000	N	Hot Springs, Ark.	C—7-24
WBAL	ae	10000	B	Baltimore, Md.	E—7-21
WJAG	ak	1000	D	Norfolk, Neb.	C—7-Sunset
XEA	ak	125	.....	Guadalajara, Jal.	C—8:30-9; 18-23

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1070 kilocycles 280.2 meters

KJBS	ak	100	Dn	San Francisco, Calif.	P—0-Sunset
WCAZ	dk	100	D	Carthage, Ill.	C—9:30-14
WDZ	ak	100	D	Tuscola, Ill.	C—7:30-15:30
WTAM	ck	50000	R	Cleveland, Ohio	E—6:30-1

1080 kilocycles 277.6 meters

WBT	ae	50000	C	Charlotte, N. C.	E—7:30-24
WCBD	ak	5000	1Dny	Zion, Ill.	C—7:30-10:30; 13:30-14:30; 15:30-24
WMBI	ae	5000	1Dn	Chicago, Ill.	C—7-7:30; 10:30-13:30; 14:30-15:30
XEAF	z	750	.....	Nogales, Son.	C—.....
XEMA	z	50	.....	Tampico, Tams.	C—.....

1090 kilocycles 275.1 meters

CMGI	z	30	1094	Colon, Cuba	E—.....
KMOX	ak	50000	C	St. Louis, Mo.	C—5:30-24
WESG	ak	1000	.....	Elmira, N. Y.	E—7:30-18:15

1100 kilocycles 272.6 meters

CMHA	z	50	1103	Sagua la Grande, C.	E—.....
COX	z	200	.....	Havana, Cuba	E—.....
CRCV	ak	1000	F	Vancouver, B. C.	P—11-14; 17:30-23
KGDM	ak	250	D	Stockton, Calif.	P—6-Sunset; 0-6
KWKH	ae	10000	C	Shreveport, La.	C—.....
TIRCA	ak	500	.....	San Jose, C. R.	C—.....
WLWL	ae	5000	1	New York, N. Y.	E—6-20
WPG	ak	5000	1C	Atlantic City, N. J.	E—9-18; 20-1
XEFG	ak	250	1105	Mexico City, D. F.	C—.....

KCYS. 1160 DIAL

1110 kilocycles 270.1 meters

KSOO	ak	1000	Dn (2.5)	Sioux Falls, S. D.	C—6:30-18:30
WRVA	ae	5000	N	Richmond, Va.	E—7-24

1120 kilocycles 267.7 meters

CHLP	z	100	.....	Montreal, Que.	E—9-14; 17-24
CHSJ	ae	100	F	St. John, N. B.	A—.....
CKOC	ae	500	F (1)	Hamilton, Ont.	E—7:45-14:30; 16-24
CMHJ	ae	40	1125	Cienfuegos, Cuba	E—11-13; 17-21
KFIO	ak	100	D	Spokane, Wash.	P—6-17
KFSG	ag	500	a	Los Angeles, Calif.	P—6:30-7:15; 19:30-24
KRKD	ae	500	a	Los Angeles, Calif.	P—7:45-19:30
KRSC	ck	100	D	Seattle, Wash.	P—6-Sunset
WDEL	ak	250	(.5)	Wilmington, Del.	E—9-22
WISN	ak	250	(1)	Milwaukee, Wis.	C—.....
WTAW	ae	500	.....	College Station, Tex.	C—11:50-0:30
XENT	ck	50000	.....	Nuevo Laredo, Tams.	C—7:30-24

1130 kilocycles 265.3 meters

KSL	ae	50000	C	Salt Lake City, Utah	M—6:30-24
WJJD	ak	20000	Dn	Chicago, Ill.	C—6-18:45
WOV	ag	1000	D	New York, N. Y.	E—8-18

1140 kilocycles 263.0 meters

KVOO	ak	25000	1N	Tulsa, Okla.	C—6:30-17:45; 21-24
WAPI	ae	5000	1N	Birmingham, Ala.	C—6-21

1150 kilocycles 260.7 meters

CMJH	ak	50	.....	Ciego de Avila, Cuba	E—8-8:30; 10-15; 17:30-22:30
COK	z	250	.....	Havana, Cuba	E—.....
WHAM	ae	50000	B	Rochester, N. Y.	E—8-1
XEH	ak	250	.....	Monterrey, N. L.	C—9-20
XEWZ	z	100	.....	Mexico City, D. F.	C—.....

1160 kilocycles 258.5 meters

WOWO	ae	10000	1C	Fort Wayne, Ind.	C—7-18:45; 19:30-20:30
WWVA	ak	5000	1C	Wheeling, W. Va.	E—6:30-20:30; 21:30-2
XED	ck	500	.....	Guadalajara, Jal.	C—8-9; 12-15:30; 19-23

CUT OUT ON DOTTED LINES

1170 kilocycles 256.3 meters

CMJE	z	50	.....	Camaguey, Cuba	E—.....
COA	z	500	1175	Havana, Cuba	E—.....
WCAU	ae	50000	C	Philadelphia, Pa.	E—8-1

1180 kilocycles 254.1 meters

KEX	ak	5000	2N	Portland, Ore.	P—6:30-17:30; 20-24
KOB	ae	10000	2	Albuquerque, N. M.	M—11-21
WDGY	ak	1000	D (2.5)	Minneapolis, Minn.	C—6:30-20:15
WINS	ae	1000	.....	New York, N. Y.	E—7-19:30
WMAZ	ak	1000	.....	Macon, Ga.	E—7-19
XEFA	z	500	.....	Mexico City, D. F.	C—.....

1190 kilocycles 252.0 meters

HIJ	z	15	1195	Santo Domingo, D. R.	E—.....
VE9EK	ak	10	1195	Montmagny, Que.	E—2-3
WATR	ak	100	D	Waterbury, Conn.	E—9-17:15
WOAI	ak	50000	N	San Antonio, Texas	C—6:55-24
WSAZ	ak	1000	.....	Huntington, W. Va.	E—7-18:45

1200 kilocycles 249.9 meters

CHAB	ak	100	.....	Moose Jaw, Sask.	M—7:30-22
CKTB	ak	100	F	St. Catharines, Ont.	E—8-13:30; 16-23:30
CMCJ	ak	400	.....	Havana, Cuba	E—.....
KADA	z	100	PD	Ada, Okla.	C—.....
KBTM	ak	100	D	Jonesboro, Ark.	C—6-17
KFJB	ak	100	(.25)	Marshalltown, Iowa	C—6-9; 12-15; 18-21
KFXD	ae	100	.....	Nampa, Idaho	M—7-21
KFXJ	ak	100	.....	Grand Junction, Col.	M—9-21
KGDE	ak	100	(.25)	Fergus Falls, Minn.	C—7-21
KGEK	ak	100	.....	Sterling, Colo.	M—11:30-13:30
KGFJ	ae	100	.....	Los Angeles, Calif.	P—24 hours
KGHI	ak	100	(.25)	Little Rock, Ark.	C—8-13; 15-22
KGVO	ak	100	.....	Missoula, Mont.	M—8-22
KMLB	ak	100	.....	Monroe, La.	C—.....
KOOS	ae	100	.....	Marshfield, Ore.	P—8-Sunset
KSUN	ck	100	D	Lowell, Ariz.	M—Sunrise-Sunset
KVOS	ak	100	.....	Bellingham, Wash	P—7:30-22:30
KWG	ak	100	C	Stockton, Calif.	P—7-24
WABI	ak	100	.....	Bangor, Maine	E—9-14; 18-22
WBBZ	ak	100	.....	Ponca City, Okla.	C—6:30-21:45
WBHS	z	100	.....	Huntsville, Ala.	C—.....
WBNO	ck	100	1	New Orleans, La.	C—12-17; 20-23
WCAT	ak	100	D	Rapid City, S. D.	C—12:30-13:30
WCAX	ak	100	.....	Burlington, Vt.	E—12-1
WCLO	ak	100	.....	Janesville, Wis.	C—7-20
WFAM	ak	100	8	South Bend, Ind.	C—6:30-24
WFBE	ak	100	(.25)	Cincinnati, Ohio	E—7-23
WHBC	ak	100	2	Canton, Ohio	E—7-9; 12-15; 18-21
WHBY	ak	100	.....	Green Bay, Wis.	C—7:30-23
WIBX	ak	100	(.3)	Utica, N. Y.	E—8-24
WIL	ak	100	(.25)	St. Louis, Mo.	C—7-23
WJBC	ak	100	6	Bloomington, Ill.	C—9-12:30; 15-19:30
WJBL	ae	100	6	Decatur, Ill.	C—6:30-9; 12:30-15; 19:30-22
WJBW	ak	100	1	New Orleans, La.	C—8-12; 17-20
WKBO	ak	100	3	Harrisburg, Pa.	E—8-11; 15-24
WKJC	ae	100	3 (.25)	Lancaster, Pa.	E—11-15; 18-20
WLVA	ck	100	.....	Lynchburg, Va.	E—7-14; 17-22
WMPC	ak	100	.....	Lapeer, Mich.	E—Silent
WNBO	ae	100	2	Washington, Pa.	E—9-12; 15-18; 21-24
WRBL	ak	100	.....	Columbus, Ga.	C—7-21
WWAE	ae	100	8	Hammond, Ind.	C—7-8:30; 11-13; 16-24
YV3RC	ak	1000	.....	Caracas, Venz.	L—11-14; 17-22:30
10-AK	ak	15	.....	Stratford, Ont.	E—12-13; 17:30-19
10-BP	ak	25	.....	Wingham, Ont.	E—12-13
10-BQ	ak	15	.....	Brantford, Ont.	E—11-20
10-BU	ak	50	.....	Canora, Sask.	C—.....

1210 kilocycles 247.8 meters

CHNC	ak	100	F	New Carlisle, Que.	A—12:30-13:30; 15-24
CKBI	ak	100	F	Prince Albert, Sask.	M—.....
CKCH	ak	100	F	Hull, Que.	E—11:30-13:15; 17:30-23
CKMC	ak	50	.....	Cobalt, Ont.	E—.....
CMJI	ak	150	.....	Ciego de Avila, Cuba	E—.....

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KASA	ck	100	.....	Elk City, Okla.	C—6-8; 9-13:30; 14:30-20
KDLR	ak	100	.....	Devils Lake, N. D.	C—8-14:15; 18-20
KFJI	ak	100	.....	Klamath Falls, Ore.	P—8:30-21
KFOR	ak	100	(.25)C	Lincoln, Neb.	C—7-22:30
KFPW	ak	100	.....	Fort Smith, Ark.	C—6-14; 17:30-21:30
KFVS	ae	100	6 (.25)	Cape Girardeau, Mo.	C—9-12; 16-19:30; 21-24
KFXM	ak	100	9	San Bernardino, Cal.	P—6-24
KGY	ak	100	.....	Olympia, Wash.	P—7-23
KIEM	ak	100	.....	Eureka, Calif.	P—7:30-22
KPPC	ak	50	9	Pasadena, Calif.	P—Silent
KWEA	z	100	.....	Shreveport, La.	C—.....
KWFV	z	100	.....	Hilo, Hawaii	L—.....
KWTN	ak	100	.....	Watertown, S. D.	C—7-21
WALR	ak	100	Y	Zanesville, Ohio	E—.....
WBAX	ae	100	1	Wilkes Barre, Pa.	E—7-12; 18-24
WBBL	ak	100	7S	Richmond, Va.	E—Silent
WBRB	ak	100	3	Red Bank, N. J.	E—17-19
WCBS	ak	100	2	Springfield, Ill.	C—11:15-15; 18:45-20:30
WCOL	ak	100	.....	Columbus, Ohio	E—8-23
WCRW	ae	100	4	Chicago, Ill.	C—11-14; 17-19
WEBQ	ae	100	6 (.25)	Harrisburg, Ill.	C—6-9; 12-16; 19:30-21
WEDC	ae	100	4	Chicago, Ill.	C—8:30-10; 15:30-17; 19-20; 22-23; 0-2
WFAS	ak	100	3	White Plains, N. Y.	E—9-11:30; 15-17; 19-22
WGBB	ae	100	3	Freeport, N. Y.	E—Silent
WGCM	ae	100	(.25)	Gulfport, Miss.	C—9-13; 19-21
WGNY	ak	100	3	Chester, N. Y.	E—6:45-9; 11:30-15
WHBF	ak	100	.....	Rock Island, Ill.	C—7:30-23
WHBU	ak	100	.....	Anderson, Ind.	C—7-21
WIBU	ak	100	.....	Poynette, Wis.	C—7-19
WJBY	ak	100	.....	Gadsden, Ala.	C—9-21
WJEJ	ah	100	D	Hagerstown, Md.	E—Sunset
WJIM	z	100	P	Lansing, Mich.	E—.....
WJW	ak	100	.....	Akron, Ohio	E—9-23:30
WKFI	ak	100	Y	Greenwood, Miss.	C—7-19
WKOK	ak	100	1P	Sunbury, Pa.	E—12-18
WMBG	ak	100	7C	Richmond, Va.	E—7-24
WOCL	ak	50	.....	Jamestown, N. Y.	E—10:30-22:30
WOMT	ae	100	.....	Manitowoc, Wis.	C—7-21
WQDX	ae	100	.....	Thomasville, Ga.	E—8-21
WSBC	ae	100	4	Chicago, Ill.	C—6-8:30; 10-11; 14-15:30; 20-22; 23-24
WSIX	ak	100	.....	Springfield, Tenn.	C—6-14:30; 17-20:30
WSOC	ak	100	N (.25)	Charlotte, N. C.	E—7-24
WTAX	ak	100	2	Springfield, Ill.	C—.....
XEC	z	50	.....	Toluca, D. F.	C—.....
XEE	z	50	.....	Durango, Dgo.	C—
XEFJ	ak	100	.....	Monterrey, N. L.	C—11-14; 18-22
XEFV	ak	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; 19-24

KCYS.
1240
DIAL

1220 kilocycles 245.8 meters

CMHK	z	50	1225	Cruces, Cuba	E—10-11:30
KFKU	ae	1000	a	Lawrence, Kas.	C—14:30-16:30; 18-18:15
KTW	ak	1000	S2	Seattle, Wash.	P—Silent
KWSC	ae	1000	2 (2)	Pullman, Wash.	P—6:45-8; 10:30-21:30
WCAD	ak	500	D	Canton, N. Y.	E—12:30-13:30
WCAE	ak	1000	R	Pittsburgh, Pa.	E—6:45-1
WDAE	ae	1000	C (2.5)	Tampa, Fla.	E—8-24
WREN	ak	1000	Ba	Lawrence, Kas.	C—7-24

1230 kilocycles 243.8 meters

CJOC	ak	100	F	Lethbridge, Alta.	M—8-14; 16:30-22
CMCA	z	150	2	Havana, Cuba	E—12-14; 17-23
KGGM	ak	250	(.5)	Albuquerque, N. M.	M—6-12; 16-20
KYA	ae	1000	N	San Francisco, Calif.	P—7-24
WFBM	ae	1000	1C	Indianapolis, Ind.	C—6:30-24
WNAC	ak	1000	C (2.5)	Boston, Mass.	E—6:30-1

1240 kilocycles 241.8 meters

CJCB	ak	1000	F	Sydney, N. S.	A—10-13:30; 18-23:30
CMHB	z	30	1245	San Spiritus, Cuba	E—.....
KGCU	ak	250	1	Mandan, N. D.	M—12-17; 18:45-21
KLPM	ak	250	1	Minot, N. D.	C—7-13; 18-19:45
KTAT	ak	1000	C	Fort Worth, Texas	C—7-24
KTFI	ae	1000	(1.5)	Twin Falls, Idaho	M—5:45-0:15

CUT OUT ON DOTTED LINES

WKAQ	ae	1000	.....	San Juan, P. R.	E—11:15-12:45; 17:15-24
WXYZ	ak	1000	.....	Detroit, Mich.	E—7-24
XEAI	z	100	.....	Mexico City, D. F.	C—.....

1250 kilocycles 239.9 meters

CMCU	ak	150	1255	Havana, Cuba	E—12-18
KFOX	ae	1000	.....	Long Beach, Calif.	P—6-24
WCAL	ah	1000	2 (2.5)	Northfield, Minn.	C—9:45-10:15; 20-22
WDSU	ak	1000	C	New Orleans, La.	C—7-24
WHBI	ak	1000	1 (2.5)	Newark, N. J.	E—14-19; 20-22
WLB	ak	1000	2	Minneapolis, Minn.	C—14-19
WNEW	ae	1000	1 (2.5)	Newark, N. J.	E—7-4
WTCN	ak	1000	2	Minneapolis, Minn.	C—6:15-9:45; 22:35-24

1260 kilocycles 238.0 meters

CFTP	ak	100	.....	Edmonton, Alta.	M—7:30-13:30; 15-16; 17:30-19
KOIL	ak	1000	B (2.5)	Council Bluffs, Iowa	C—6-1
KPAC	z	500	D	Port Arthur, Texas	C—.....
KRGV	ak	500	.....	Weslaco, Texas	C—7-21
KUOA	ak	1000	D	Fayetteville, Ark.	C—7-13; 16-19
KVOA	ak	500	.....	Tucson, Ariz	M—6-9; 12-15; 18-21
WLBW	ae	1000	C	Erie, Pa.	E—7-1
WNBX	ak	500	D	Springfield, Vt.	E—7:15-Sunset
WTOC	ae	1000	C	Savannah, Ga.	E—7-1

1270 kilocycles 236.1 meters

CMCP	z	150	.....	Havana, Cuba	E—.....
HIX	ak	1000	.....	Santo Domingo, D.R.	E—11:40-20:10
KGCA	ak	100	2D	Decorah, Iowa	C—8:30-9:45; 10:45-11:30; 12:30-14:30
KOL	ae	1000	C (2.5)	Seattle, Wash.	P—6:45-24
KVOR	ae	1000	C	Colorado Spgs., Colo.	M—7-23
KWLC	ak	100	2D	Decorah, Iowa	C—7:30-8:30; 9:45-10:45; 11:30-12:30; 14:30-15:30
WASH	ak	500	a	Grand Rapids, Mich.	E—7-24
WFBR	ae	500	R	Baltimore, Md.	E—7-24
WJDX	ae	1000	N (2.5)	Jackson, Miss.	C—7-23
WOOD	ak	500	a	Grand Rapids, Mich.	E—7-24
XFB	ak	1000	.....	Jalapa, Ver.	C—8-9; 13-14:30; 20-23:30

1280 kilocycles 234.2 meters

CMCO	z	150	.....	Havana, Cuba	E—.....
KFBB	ae	1000	(2.5)	Great Falls, Mont.	M—8-22
WCAM	ae	500	1	Camden, N. J.	E—Silent
WCAP	ae	500	1	Asbury Park, N. J.	E—6-8; 8:30-13; 14-17; 20-24
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—8-24
WRR	ak	500	.....	Dallas, Texas	C—7-23
WTNJ	ak	500	1	Trenton, N. J.	E—8-8:30; 13-14; 17-20

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—7-24
WJAS	ak	1000	C (2.5)	Pittsburgh, Pa.	E—7:30-24
WNBZ	z	50	D	Saranac Lake, N. Y.	E—.....
WNEL	z	500	P	San Juan, P. R.	A—.....

1300 kilocycles 230.6 meters

CMKJ	z	20	.....	Guantanamo, Cuba	E—.....
HIZ	z	10	.....	Santo Domingo, D.R.	E—.....
KALE	ak	500	3C	Portland, Ore.	P—7-10:30; 14:30-17; 18-19; 20-23
KFAC	ak	1000	.....	Los Angeles, Calif.	P—7-24
KFH	ak	1000	C2	Wichita, Kans.	C—7-24
KFJR	ag	500	3	Portland, Ore.	P—10:30-14:30; 17-18
VOAC	z	40	.....	St. John's, Nfld.	L—.....
WBBR	ae	1000	1	Brooklyn, N. Y.	E—Silent
WEVD	ak	1000	1	New York, N. Y.	E—7-12; 15-21; 22-23; 24-1
WFAB	ae	1000	1	New York, N. Y.	E—9-10; 12-15; 21-22
WFBC	ak	250	(1)	Greenville, S. C.	E—7:30-14:30; 17:30-22:30
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—12-13:30; 17-21

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CJKL	z	100	.....	Kirkland Lake, Ont.	E—.....
CJLS	z	100	.....	Yarmouth, N. S.	A—.....
CKCV	ak	50	.....	Quebec, Que.	E—12-14; 18:30-19:30
CMCY	ak	500	1316	Havana, Cuba	E—.....
KCRJ	ak	100	D	Jerome, Ariz.	M—7:30-9:30; 12-13; 16:30-18
KFBK	ak	100	C	Sacramento, Calif.	P—8-24
KFPL	dkh	100	.....	Dublin, Texas	C—6-15; 18-21
KFPM	ae	15	.....	Greenville, Texas	C—7:45-9; 12:30-14:45; 18-20:30
KFXR	ak	100	(.25)	Oklahoma City, Ok.	C—7:30-22
KFYO	ak	100	(.25)	Lubbock, Texas	C—7-21
KGBX	ak	100	.....	Springfield, Mo.	C—17:45-22
KGCX	ak	100	(.25)	Wolf Point, Mont.	M—7:30-9; 11:30-15; 18-19
KGEZ	aj	100	.....	Kalispell, Mont.	M—8-21
KGFW	ak	100	.....	Kearney, Neb.	C—7-13:30; 15:30-21
KIT	ak	100	.....	Yakima, Wash.	P—7-23
KMED	ck	100	(.25)	Medford, Ore.	P—8-20
KRMD	ak	100	.....	Shreveport, La.	C—7-21
KTSM	ak	100	.....	El Paso, Texas	M—6:30-13; 15-22
KXRO	ak	100	.....	Aberdeen, Wash.	P—7:30-22:15
WAML	ak	100	.....	Laurel, Miss.	C—7-10; 11-14; 16-21:30
WBEO	ae	100	.....	Marquette, Mich.	C—9:30-13:15; 17-19
WBOW	ak	100	.....	Terre Haute, Ind.	C—7-24
WBRE	ak	100	.....	Wilkes Barre, Pa.	E—8-21:45
WCLS	ae	100	.....	Joliet, Ill.	C—Silent
WDAH	ak	100	S	El Paso, Texas	M—Silent
WEBR	ae	500	.....	Buffalo, N. Y.	E—7-24
WEXL	ak	50	.....	Royal Oak, Mich.	E—8-4
WFBG	ae	100	3	Altoona, Pa.	E—10:30-14:30; 18:15-21:15
WFDF	am	100	.....	Flint, Mich.	E—7-24
WGH	ae	100	.....	Newport News, Va.	E—7-13; 16:30-24
WHAT	ak	100	4	Philadelphia, Pa.	E—9-11:30; 13-16; 21-24
WJAC	ae	100	3	Johnstown, Pa.	E—9-10:30; 16:30-18:15; 21:15-22:15
WLBC	ak	50	6 (.1)	Muncie, Ind.	C—7-22
WLNH	ak	100	.....	Laconia, N. H.	E—.....
WMBO	ak	100	.....	Auburn, N. Y.	E—9-21
WNBH	ae	100	(.25)	New Bedford, Mass.	E—7:45-23:20
WOL	ae	100	(.25)	Washington, D. C.	E—7-24
WRAW	ak	100	.....	Reading, Pa.	E—7-13; 16-22
WROL	ak	100	.....	Knoxville, Tenn.	C—7-24
WSAJ	ae	100	.....	Grove City, Pa.	E—Silent
WSGN	ak	100	(2.5)	Birmingham, Ala.	C—6-22
WSJS	ak	100	C	Winston-Salem, N.C.	E—7:45-24
WTEL	ah	100	4	Philadelphia, Pa.	E—7-9; 11:30-13; 16-21
WTJS	ak	100	(.25)	Jackson, Tenn.	C—7-13:45; 16-22
WTRC	ak	50	6 (.1)	Elkhart, Ind.	C—8-19:30
XECW	z	10	.....	Mexico City, D. F.	C—.....
XEFC	ak	100	.....	Merida, Yuc.	C—11-12
XEFW	ak	250	.....	Tampico, Tams.	C—9-11; 12-14:30; 17-21
XETB	z	125	.....	Torreon, Coah.	C—.....
XEX	ak	125	.....	Monterrey, N. L.	C—8-24

1320 kilocycles 227.1 meters

CMCK	z	100	P	Havana, Cuba	E—.....
KGHF	ak	500	.....	Pueblo, Colo.	M—7-22
KGMB	ak	250	C	Honolulu, T. H.	L—6-22:30
KID	ae	250	(.5)	Idaho Falls, Idaho	M—6-23
KSO	ak	250	B(.5)	Des Moines, Iowa	C—5:30-1
WADC	ae	1000	C (2.5)	Akron, Ohio	E—8-24
WORK	ak	1000	.....	York, Pa.	E—8-17:30
WSMB	ak	500	N	New Orleans, La.	C—7-24

1330 kilocycles 225.4 meters

KGB	ag	1000	C (2.5)	San Diego, Calif.	P—7-1
KMO	ak	250	.....	Tacoma, Wash.	P—6:45-23
KSCJ	aj	1000	1C (2.5)	Sioux City, Iowa	C—7:30-23
KTRH	z	500	C (2.5)	Houston, Texas	C—6:30-24
WDRC	ae	1000	C	Hartford, Conn.	E—8-24
WSAI	ak	1000	R (2.5)	Cincinnati, Ohio	E—7-24
WTAQ	ae	1000	I	Eau Claire, Wis.	C—7-20

1340 kilocycles 223.7 meters

KFPY	ak	1000	C	Spokane, Wash.	P—7-24
KGDY	ak	250	D	Huron, S. D.	C—.....
KGNO	ak	250	.....	Dodge City, Kans.	C—7-20
WCOA	ak	500	.....	Pensacola, Fla.	C—9-22

KCYS.
1340
DIAL

CUT OUT ON DOTTED LINES

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WFEA	ae	500	C	Manchester, N. H.	E—9-23
WSPD	ae	1000	C (2.5)	Toledo, Ohio	E—7-1
XFD	z	250	.....	Orizaba, Ver.	C—.....

1350 kilocycles 222.1 meters

CMBD	z	150	.....	Havana, Cuba	E—18-23
KIDO	ak	1000	(2.5)	Boise, Idaho	M—7:30-22
KWK	ae	1000	B (2.5)	St. Louis, Mo.	C—6:30-1:30
WAWZ	ae	250	1	Zarephath, N. J.	E—7:45-8:45; 17-18:30
WBNX	ae	250	1 s	New York, N. Y.	E—6-7:30; 9-13
WEHC	ae	500	D	Charlottesville, Va.	E—7-1:05; 16-1

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—8-23:15
WCSC	ae	500	(1)	Charleston, S. C.	E—8-15:30; 18-23
WFBL	ak	1000	C (2.5)	Syracuse, N. Y.	E—7-1
WGES	ae	500	.....	Chicago, Ill.	C—7-12; 17-20
WQBC	ak	500	(1)	Vicksburg, Miss.	C—.....
WSBT	ak	500	.....	South Bend, Ind.	C—6:30-24

1370 kilocycles 218.8 meters

CKCW	z	100	.....	Moncton, N. B.	A—.....
CMBG	z	225	1375	Havana, Cuba	E—.....
CMGE	z	30	1375	Cardenas, Cuba	E—.....
KCRC	ak	100	2 (.25)	Enid, Okla.	C—7-9; 11-14; 17-19:45
KERN	ak	100	.....	Bakersfield, Calif.	P—7-24
KFGQ	ak	100	.....	Boone, Iowa	C—.....
KFJM	ak	100	.....	Grand Forks, N. D.	C—8-20
KFJZ	ae	100	.....	Fort Worth, Texas	C—7-23
KGAR	ae	100	(.25)	Tucson, Ariz.	M—7-13; 16-22
KGFG	bk	100	2	Oklahoma City, Ok.	C—9-11; 14-19; 19:45-22
KGFL	ak	100	4	Roswell, N. M.	M—6-9:30; 14-19:30
KGKL	ak	100	(.25)	San Angelo, Texas	C—8-21:30
KICA	ak	100	4	Clovis, N. M.	M—9:30-14; 19:30-21:30
KLUF	z	100	(.25)	Galveston, Texas	C—.....
KMAC	ak	100	5	San Antonio, Texas	C—7-8:30; 10-11; 12-13:30; 16-18; 19-20; 22-0:30
KONO	ak	100	5	San Antonio, Texas	C—6-7; 8:30-10; 11-12; 13:30-16; 18-19; 20-22
KRE	ak	100	.....	Berkeley, Calif.	P—6-24
KRKO	ak	50	.....	Everett, Wash.	P—7:30-12; 16:30-20
KSLM	z	100	.....	Salem, Ore.	P—.....
KUJ	ak	100	.....	Walla Walla, Wash.	P—6:30-22
KVL	ak	100	.....	Seattle, Wash.	P—6-9; 12-15; 18-21
KWKC	z	100	.....	Kansas City, Mo.	C—.....
KWYO	z	100	.....	Sheridan, Wyo.	M—7-24
WAGF	ak	100	D	Dothan, Ala.	C—8-17:15
WBTM	ak	100	.....	Danville, Va.	E—7-14; 17-22
WCBM	ae	100	(.25)	Baltimore, Md.	E—.....
WDAS	ae	100	(.25)	Philadelphia, Pa.	E—9-23
WGL	ak	100	C	Fort Wayne, Ind.	C—8-13; 16:45-24
WGLC	ak	100	.....	Hudson Falls, N. Y.	E—7:30-1
WHBD	ak	100	.....	Mount Orab, Ohio	E—8-11:30; 12-21
WHBQ	ak	100	.....	Memphis, Tenn.	C—7:55-14; 16-22:30
WHDF	ak	100	(.25)	Calumet, Mich.	E—7-9; 11:30-13:30; 17:30-20:30
WIBM	ak	100	.....	Jackson, Mich.	E—7-24
WJTL	ae	100	.....	Atlanta, Ga.	E—.....
WLLH	ak	100	(.25)	Lowell, Mass.	E—12-15; 18-21
WMBR	ak	100	C	Jacksonville, Fla.	E—7-24
WOC	z	100	P	Davenport, Iowa	C—.....
WPFB	ak	100	.....	Hattiesburg, Miss.	C—7:30-9:30; 11-13; 18-21
WQDM	ae	100	D	St. Albans, Vt.	E—.....
WRAK	ak	100	.....	Williamsport, Pa.	E—7:30-20
WRDO	ae	100	.....	Augusta, Maine	E—7:30-13:30; 15-21
WRJN	ak	100	.....	Racine, Wis.	C—8:50-14:30; 16-22:30
WSVS	ak	50	D	Buffalo, N. Y.	E—8:30-10
XEFE	z	100	.....	Nuevo Laredo, Tams.	C—.....
XEFZ	ae	100	.....	Mexico City, D. F.	C—.....
XEI	ak	125	.....	Morelia, Mich.	C—14-15:30; 21-22
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—7-24

WALA	ae	50 0	C	Mobile, Ala.	C—8-23
WKBH	ae	1000	.....	LaCrosse, Wis.	C—7:30-14; 17-22
WSMK	ak	200	C	Dayton, Ohio	E—7:20; 22-24

1390 kilocycles 215.7 meters

CJRC	ck	100	.....	Winnipeg, Man.	C—.....
HIH	ak	15	1395	San Ped. de Macoris, DR	E—.....
KLRA	ae	1000	C (2.5)	Little Rock, Ark.	C—6:30-23:30
KOY	ae	500	(1)	Phoenix, Ariz.	M—.....
WHK	ae	1000	C (2.5)	Cleveland, Ohio	E—7:30-24

1400 kilocycles 214.2 meters

CMCR	z	150	.....	Havana, Cuba	E—12-13; 16-18; 20-21
KLO	ae	500	C	Ogden, Utah	M—7-24
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—15:45-18; 22:30-24
WBAA	z	500	.....	W. Lafayette, Ind.	C—Silent
WBBC	ae	500	2 (1)	Brooklyn, N. Y.	E—7-11; 19:30-21
WKBF	ak	500	N (1)	Indianapolis, Ind.	C—6:30-24
WLTH	ak	500	2	Brooklyn, N. Y.	E—11:30-13:30; 18-19:30
WVFW	ak	500	2	Brooklyn, N. Y.	E—13:30-15:45; 21-22:30

1410 kilocycles 212.6 meters

CKFC	ak	50	5	Vancouver, B. C.	P—15-16:30
CKMO	ag	100	5	Vancouver, B. C.	P—.....
KGRS	ae	1000	1	Amarillo, Texas	C—6-8; 10-12:30; 15-16:30; 18-19:30; 21-22
WAAB	ak	500	C	Boston, Mass.	E—8-23
WBCM	ae	500	.....	Bay City, Mich.	E—8-24
WDAG	ae	1000	1 (2.5)	Amarillo, Texas	C—8-10; 12:30-15; 16:30-18; 19:30-21; 22-24
WHBL	ae	500	4	Sheboygan, Wis.	C—6-10; 13-16:30; 18-19:30
WHIS	ak	250	2	Bluefield, W. Va.	E—7-9; 12-15; 18-20
WRBX	ae	250	2 (.5)	Roanoke, Va.	E—9-12; 15-18; 20-23
WROK	ak	500	4	Rockford, Ill.	C—10-13; 16:30-18; 19:30-22:30
WSFA	ak	500	C	Montgomery, Ala.	C—6:30-22:30

1420 kilocycles 211.1 meters

CKGB	ak	100	.....	Timmins, Ont.	E—12-13:30; 17-22:30
CKNC	ak	100	F	Toronto, Ont.	E—8-23:15
CMBX	ak	150	1425	Havana, Cuba	E—.....
KABC	ak	100	.....	San Antonio, Texas	C—7-22:30
KBPS	aj	100	4	Portland, Ore.	P—Silent
KCMC	ak	100	.....	Texarkana, Ark.	C—7-14; 16-21
KFIZ	ak	100	.....	Fond du Lac, Wis.	C—10-13; 16-22
KGFF	ak	100	.....	Shawnee, Okla.	C—7:30-15; 17-21
KGGC	ak	100	.....	San Francisco, Cal.	P—9-13; 16-23
KGIW	ak	100	1	Alamosa, Colo.	M—10-13; 17-19; 22-23
KGIX	ak	100	P	Las Vegas, Nev.	M—.....
KIDW	z	100	1	Lamar, Colo.	M—8-10; 13-17; 19-22
KORE	ae	100	.....	Eugene, Ore.	P—7:45-21
KUMA	ak	100	.....	Yuma, Ariz.	M—7-9; 11-13:30; 18-22
KXL	ae	100	4 (.25)	Portland, Ore.	P—8-24
WACO	ak	100	C	Waco, Texas	C—8-17
WAGM	ae	100	.....	Presque Isle, Maine	E—11-13; 16-19
WAZL	ak	100	2	Hazleton, Pa.	E—10:30-14:30; 16-22
WEED	ak	100	D	Rocky Mount, N. C.	E—7-21
WEHS	ak	100	a	Cicero, Ill.	C—16-18
WELL	ak	50	.....	Battle Creek, Mich.	E—7:30-23
WGPC	ak	100	D	Albany, Ga.	C—7-16:45
WHDL	ak	100	DY	Tupper Lake, N. Y.	E—.....
WHFC	ae	100	a	Cicero, Ill.	C—7-13:30; 18-1
WILM	aj	100	2	Wilmington, Del.	E—7-11; 14-17; 21-24
WJBO	z	100	D	Baton Rouge, La.	C—.....
WJMS	ak	100	.....	Ironwood, Mich.	C—7:30-19:30
WKBI	ak	100	a	Cicero, Ill.	C—13:30-16
WLAP	ak	100	(.25)	Lexington, Ky.	C—7-1
WLBF	ak	100	.....	Kansas City, Kans.	C—7-22
WLEU	z	100	DP	Erie, Pa.	E—.....
WMAS	ak	100	C (.25)	Springfield, Mass.	E—7:30-24
WMBC	ae	100	(.25)	Detroit, Mich.	E—7:30-24
WMBH	ak	100	(.25)	Joplin, Mo.	C—7:30-14; 18-21:30
WNRA	ak	100	D	Muscle Shoals, Ala.	C—7-13; 16-22
WPAD	ak	100	.....	Paducah, Ky.	C—7-9:30; 11-14; 16-22:30
XEFB	ak	100	.....	Monterrey, N. L.	E—10-14; 18-24

KCYS.
1420
DIAL

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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—7-Sunset
KWCR	ak	250	B (.5)	Cedar Rapids, Iowa	C—7-24
WBNS	ae	500	C (1)	Columbus, Ohio	E— 6:15-24
WHEC	ae	500	C (1)	Rochester, N. Y.	E—8-24
WHP	ak	500	C (1)	Harrisburg, Pa.	E—8:30-1
WNBR	ae	500	.....	Memphis, Tenn.	C—7-13; 15-22
WOKO	ae	500	C (1)	Albany, N. Y.	E—8-1

1440 kilocycles 208.2 meters

KDFN	ak	500	.....	Casper, Wyo.	M—7:30-13:30; 15-21
KLS	ae	250	D	Oakland, Calif.	P—8-Sunset
KXYZ	ak	500	.....	Houston, Texas	C—6:30-13; 14:30-23
WBIG	ae	500	C (1)	Greensboro, N. C.	E—7:30-23
WCBA	aj	250	a	Allentown, Pa.	E—7-1
WMBD	ae	500	3C (1)	Peoria, Ill.	C—6-11; 20-24
WSAN	aj	250	a	Allentown, Pa.	E—13-23
WTAD	ak	500	3	Quincy, Ill.	C—11-20

1450 kilocycles 206.8 meters

CFCT	ae	50	.....	Victoria, B. C.	P—8-12:30; 17:30-20:15; 0-2
CKX	ak	500	F	Brandon, Man.	C—.....
CMCQ	z	1000	.....	Havana, Cuba	E—.....
KTBS	ck	1000	N	Shreveport, La.	C—7-24
WGAR	ak	500	B (1)	Cleveland, Ohio	E—6:30-1
WHOM	ae	250	....	Jersey City, N. J.	E—8-24
WSAR	ae	250	.....	Fall River, Mass.	E—8-15:30; 17-22
WTFI	ak	500	.....	Athens, Ga.	E—9-21

1460 kilocycles 205.4 meters

KSTP	ae	10000	N (25)	St. Paul, Minn.	C—7-0:30
WJSV	ak	10000	C	Washington, D. C.	E—6:30-1

1470 kilocycles 204.0 meters

CMCG	z	150	1475	Havana, Cuba	E—9-12; 18-24
WLAC	ak	5000	C	Nashville, Tenn.	C—6:30-24

1480 kilocycles 202.6 meters

KOMA	ak	5000	C	Oklahoma City, Ok.	C—7-24
WKBW	ae	5000	C	Buffalo, N. Y.	E—9-1

1490 kilocycles 201.2 meters

WCKY	ae	5000	B	Covington, Ky.	E—7-2

1500 kilocycles 199.9 meters

CHGS	ae	50	F	Summerside, P.E.I.	A—7:30-8:30; 10:30-14; 16-23
CMCN	z	250	.....	Havana, Cuba	E—.....
KDB	ak	100	C	Santa Barbara, Calif.	P—7:30-24
KGFI	ak	100	(.25)	Corpus Christi, Tex.	C—7-15; 18-22
KGFK	ak	100	.....	Moorhead, Minn.	C—8-21
KGKB	ak	100	.....	Tyler, Texas	C—8-10; 12-13; 17-20:30
KGKY	ck	100	.....	Scottsbluff, Neb.	M—9-13:30; 17:30-21
KNOW	ak	100	.....	Austin, Texas	C—7:30-14; 16-22
KOTN	ak	100	D	Pine Bluff, Ark.	C—7-17:30
KPJM	ak	100	.....	Prescott, Ariz.	M—8-13:30; 17:30-20
KPQ	ak	100	.....	Wenatchee, Wash.	P—6:30-22:30
KREG	ak	100	.....	Santa Ana, Calif.	P—9-23
KXO	ae	100	.....	El Centro, Calif.	P—7-14; 16-21
WCNW	ak	100	1 (.25)	Brooklyn, N. Y.	E—15-21
WDNC	ak	100	C	Durham, N. C.	E—7:30-24
WGAL	ae	100	(.25)	Lancaster, Pa.	E—9-22
WHEF	z	100	(.25)	Kosciusko, Miss.	C—6-24
WJBK	ae	100	.....	Detroit, Mich.	E—7-Sunset; 21-24
WKBB	ae	100	.....	E. Dubuque, Ill.	C—7-21
WKBV	ak	100	.....	Richmond, Ind.	C—10-12; 18-22
WKBZ	ak	100	.....	Muskegon, Mich.	E—9-21
WKEU	ak	100	.....	LaGrange, Ga.	C—10-12; 15-18
WMBQ	ae	100	1	Brooklyn, N. Y.	E—9-11
WMEX	z	100	P (.25)	Chelsea, Mass.	E—.....

INDEX BY LOCATIONS

WNBF	ae	100	.....	Binghamton, N. Y.	E—7-22
WOPI	ae	100	.....	Bristol, Tenn.	E—6:30-23
WRDW	ak	100	.....	Augusta, Ga.	E—8-21
WRGA	ak	100	.....	Rome, Ga.	C—7-10; 12-15; 18-21
WSYB	ak	100	.....	Rutland, Vt.	E—10-13; 17-21
WWRL	ak	100	1 (.25)	Woodside, N. Y.	E—8-9; 11-15; 22-0:30
WWSW	ae	100	(.25)	Pittsburgh, Pa.	E—8-24

1510 kilocycles 198.6 meters

CFRC	ak	100	.....	Kingston, Ont.	E—.....
CKCR	ak	100	.....	Waterloo, Ont.	E—8:30-13:30; 16:30-23

1530 kilocycles 196.0 meters

W1XBS	z	1000	.....	Waterbury, Conn.	E—8:30-23:30
W9XBY	z	1000	.....	Kansas City, Mo.	C—7-1

1550 kilocycles 193.4 meters

W2XR	z	1000	.....	Long Isl. City, N. Y.	E—Silent
W6XAI	z	1000	.....	Bakersfield, Calif.	P—.....

INDEX BY LOCATIONS

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

ALABAMA

Birmingham			
WAPI	1140	5000	N
WBRC	930	1000	C
WSGN	1310	100	
Dothan			
WAGF	1370	100	
Gadsden			
WJBY	1210	100	
Huntsville			
WBHS	1200	100	
Mobile			
WALA	1380	500	C
Montgomery			
WSFA	1410	500	C
Muscle Shoals			
WNRA	1420	100	

ALASKA

Anchorage			
KFQD	780	250	
Ketchikan			
KGBU	900	500	

ARIZONA

Jerome			
KCRJ	1310	100	
Lowell			
KSUN	1200	100	
Phoenix			
KOY	1390	500	
KTAR	620	1000	N
Prescott			
KPJM	1500	100	
Tucson			
KGAR	1370	100	
KVOA	1260	500	
Yuma			
KUMA	1420	100	

ARKANSAS

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

CALIFORNIA

Bakersfield			
KERN	1370	100	C
W6XAI	1550	1000	
Berkeley			
KRE	1370	100	
Beverly Hills			
KMPC	710	500	
Burbank			
KELW	780	500	
El Centro			
KXO	1500	100	
Eureka			
KIEM	1210	100	
Fresno			
KMJ	580	500	C
Glendale			
KIEV	850	250	
Hollywood			
KFWB	950	1000	
KMTR	570	1000	
KNX	1050	50000	
Long Beach			
KFOX	1250	1000	
KGER	1360	1000	
Los Angeles			
KECA	1430	1000	
KFAC	1300	1000	
KFI	640	50000	N
KFSG	1120	500	
KFVD	1000	250	
KGFJ	1200	100	
KHJ	900	1000	C
KRKD	1120	500	
KTM	780	500	
Modesto			
KTRB	740	250	
Oakland			
KLS	1440	250	
KLX	880	1000	
KROW	930	1000	
Pasadena			
KPPC	1210	50	
Sacramento			
KFBK	1310	100	C
San Bernardino			
KFXM	1210	100	
San Diego			
KFSD	600	1000	N
KGB	1330	1000	C
San Francisco			
KFRC	610	1000	C
KGGC	1420	100	
KGO	790	7500	N
KJBS	1070	100	
KPO	680	50000	N
KTAB	560	1000	
KYA	1230	1000	N
San Jose			
KQW	1010	1000	
Santa Ana			
KREG	1500	100	
Santa Barbara			
KDB	1500	100	C
Stockton			
KGDM	1100	250	
KWG	1200	100	C

COLORADO

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

CONNECTICUT

Bridgeport			
WICC	600	250	C
Hartford			
WDRC	1330	1000	C
WT1C	1040	50000	R
Storrs			
WCAC	600	500	
Waterbury			
WATR	1190	100	
W1XBS	1530	1000	

DELAWARE

Wilmington			
WDEL	1120	250	
WILM	1420	100	

DISTRICT OF COLUMBIA

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

FLORIDA

Clearwater			
WFLA	620	1000	N
Gainesville			
WRUF	830	5000	
Jacksonville			
WJAX	900	1000	N
WMBR	1370	100	C
Miami			
WIOD	1300	1000	N
WQAM	560	1000	C
Orlando			
WDBO	580	250	C
Pensacola			
WCOA	1340	500	
St. Petersburg			
WSUN	620	1000	N
Tampa			
WDAE	1220	1000	C

GEORGIA

Albany			
WGPC	1420	100	
Athens			
WTFI	1450	500	

INDEX BY LOCATIONS

Atlanta
WGST 890 500 C
WJTL 1370 100
WSB 740 50000 N
Augusta
WRDW 1500 100
Columbus
WRBL 1200 100
LaGrange
WKEU 1500 100
Macon
WMAZ 1180 1000
Rome
WRGA 1500 100
Savannah
WTOC 1260 1000 C
Thomasville
WQDX 1210 100

HAWAII

Hilo
KWFV 1210 100
Honolulu
KGMB 1320 250 C
KGU 750 2500 N

IDAHO

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

ILLINOIS

Bloomington
WJBC 1200 100
Carthage
WCAZ 1070 100
Chicago
KYW 1020 10000 N
WAAF 920 500
WBBM 770 25000 C
WCFL 970 1500 B
WCRW 1210 100
WEDC 1210 100
WENR 870 50000 N
WGES 1360 500
WGN 720 50000
WJJD 1130 20000
WLS 870 50000 N
WMAQ 670 50000 N
WMBI 1080 5000
WSBC 1210 100
Cicero
WEHS 1420 100
WHFC 1420 100
WKBI 1420 100
Decatur
WJBL 1200 100
East Dubuque
WKBB 1500 100
Harrisburg
WEBQ 1210 100
Joliet
WCLS 1310 100
Peoria
WMBD 1440 500 C
Quincy
WTAD 1440 500
Rockford
WROK 1410 500
Rock Island
WHBF 1210 100
Springfield
WCBS 1210 100
WTAX 1210 100
Tuscola
WDZ 1070 100
Urbana
WILL 890 250
Zion
WCBD 1080 5000

INDIANA

Anderson
WHBU 1210 100
Elkhart
WTRC 1310 50
Evansville
WGBF 630 500
Fort Wayne
WGL 1370 100 C
WOWO 1160 10000 C
Gary
WIND 560 1000
Hammond
WWAE 1200 100
Indianapolis
WFBM 1230 1000 C
WKBF 1400 500 N
Muncie
WLBC 1310 100
Richmond
WKBV 1500 100
South Bend
WFAM 1200 100
WSBT 1360 500 C
Terre Haute
WBOW 1310 100
West Lafayette
WBAA 1400 500

IOWA

Ames
WOI 640 5000
Boone
KFGQ 1370 100
Cedar Rapids
KWCR 1430 250 B
Council Bluffs
KOIL 1260 1000 B
Davenport
WOC 1370 100
Decorah
KGCA 1270 100
KWLC 1270 100
Des Moines
KSO 1320 250 B
WHO 1000 50000 R
Iowa City
WSUI 880 500
Marshalltown
KFJB 1200 100
Shenandoah
KFNF 890 500
KMA 930 1000
Sioux City
KSCJ 1330 1000 C
Waterloo
WMT 600 1000 C

KANSAS

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

KENTUCKY

Covington
WCKY 1490 5000 B
Lexington
WLAP 1420 100
Louisville
WAVE 940 1000 N
WHAS 820 50000 C
Paducah
WPAD 1420 100

LOUISIANA

Baton Rouge
WJBO 1420 100
Monroe
KMLB 1200 100
New Orleans
WBNO 1200 100
WDSU 1250 1000 C
WJBW 1200 100
WSMB 1320 500 N
WWL 850 10000
Shreveport
KRMD 1310 100
KTBS 1450 1000 N
KWEA 1210 100
KWKH 1100 10000 C

MAINE

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

MARYLAND

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

MASSACHUSETTS

Babson Park
WBSO 920 500
Boston
WAAB 1410 500 C
WBZ 990 50000 B
WEEI 590 1000 R
WHDH 830 1000
WNAC 1230 1000 C
Chelsea
WMEX 1500 100
Fall River
WSAR 1450 250
Lowell
WLLH 1370 100
New Bedford
WNBH 1310 100
Springfield
WBZA 990 1000 B
WMAS 1420 100 C
Worcester
WORC 1280 500 C
WTAG 580 500 R

MICHIGAN

Battle Creek
WELL 1420 50
Bay City
WBCM 1410 500
Calumet
WHDF 1370 100
Detroit
WJBK 1500 100
WJR 750 10000 B
WMBC 1420 100
WWJ 920 1000 R
WXYZ 1240 1000
East Lansing
WKAR 1040 1000
Flint
WFDF 1310 100
Grand Rapids
WASH 1270 500
WOOD 1270 500
Ironwood
WJMS 1420 100
Jackson
WIBM 1370 100
Kalamazoo
WKZO 590 1000
Lansing
WJIM 1210 100
Lapeer
WMPC 1200 100
Marquette
WBEO 1310 100
Muskegon
WKBZ 1500 100
Royal Oak
WEXL 1310 50

MINNESOTA

Fergus Falls
KGDE 1200 100
Minneapolis
WCCO 810 50000 C
WDGY 1180 1000
WLB 1250 1000
WTCN 1250 1000
Moorhead
KGFK 1500 100
Northfield
WCAL 1250 2500
St. Paul
KSTP 1460 10000 N

MISSISSIPPI

Greenwood
WKFI 1210 100
Gulfport
WGCM 1210 100
Hattiesburg
WPFB 1370 100
Jackson
WJDX 1270 1000 N
Kosciusko
WHEF 1500 100
Laurel
WAML 1310 100
Meridian
WCOC 880 500
Tupelo
WJEM 990 500
Vicksburg
WQBC 1360 500

MISSOURI

Cape Girardeau
KFVS 1210 100
Columbia
KFRU 630 500
Jefferson City
WOS 630 500
Joplin
WMBH 1420 100
Kansas City
KMBC 950 1000 C
KWKC 1370 100
WDAF 610 1000 R

Wilkes-Barre
WBAX 1210 100
WBRE 1310 100
Williamsport
WRAK 1370 100
York
WORK 1320 1000

PHILIPPINES

Manila
KZEG 720 1000
KZRM 618.5 50000

PORTO RICO

San Juan
WKAQ 1240 1000
WNEL 1290 500

RHODE ISLAND

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

SOUTH CAROLINA

Charleston
WCSC 1360 500
Columbia
WIS 1010 1000 N
Greenville
WFBC 1300 250
Spartanburg
WSPA 920 1000

SOUTH DAKOTA

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

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
WNBR 1430 500
WREC 600 1000 C
Nashville
WLAC 1470 5000 C
WSM 650 50000 N
Springfield
WSIX 1210 100

TEXAS

Amarillo
KGRS 1410 1000
WDAG 1410 1000
Austin
KNOW 1500 100
Beaumont
KFDM 560 500
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
KFYO 1310 100
Port Arthur
KPAC 1260 500
San Angelo
KGKL 1370 100
San Antonio
KABC 1420 100
KMAC 1370 100
KONO 1370 100
KTSA 550 1000 C
WOAI 1190 50000 N
Tyler
KGKB 1500 100
Waco
WACO 1420 100 C
Wesiaco
KRGV 1260 500
Wichita Falls
KGKO 570 500 C

UTAH

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

VERMONT

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

VIRGINIA

Arlington
NAA 690 1000
Charlottesville
WEHC 1350 500
Danville
WBTM 1370 100
Lynchburg
WLVA 1200 100
Newport News
WGH 1310 100
Norfolk
WTAR 780 500 N
Petersburg
WPHR 880 500
Richmond
WBBL 1210 100
WMBG 1210 100 C
WRVA 1110 5000 N
Roanoke
WDBJ 930 1000 C
WRBX 1410 250
Staunton
WSVA 550 500

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

WEST VIRGINIA

Bluefield
WHIS 1410 250
Charleston
WCHS 580 500
Fairmont
WMMN 890 250
Huntington
WSAZ 1190 1000
Wheeling
WWVA 1160 5000 C

WISCONSIN

Eau Claire
WTAQ 1330 1000
Fond du Lac
KFIZ 1420 100
Green Bay
WHBY 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
Sheboygan
WHBL 1410 500
Stevens Point
WLBL 900 2500
Superior
WEBC 1290 1000 N

WYOMING

Casper
KDFN 1440 500
Sheridan
KWYO 1370 100

CANADA

ALBERTA

Calgary
CFAC 930 100 F
CFCN 1030 10000 F
CJCJ 690 100 F
Edmonton
CFTP 1260 100
CJCA 730 500 F
CKUA 580 500
Lethbridge
CJOC 1230 100 F

BRITISH COLUMBIA

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

MANITOBA

Brandon
CKX 1450 500 F
Winnipeg
CJRC 1390 100
CKY 960 15000 F

NEW BRUNSWICK

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

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

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
CRCM 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
CKCK 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
VONF 950 5000
VOWR 681 500

MIQUELON

St. Pierre
FQN 609 250

CENTRAL AMERICA

COSTA RICA

Cartago
TIFS 1441 7.5
TIGA 1014 30
San Jose
TICR 912 75
TIEA 833 7.5
TIEP 1450 7.5
TIFB 714 30
TIGP 800 75
TIRCA 1100 500
TISO 550 250
TITV 999 7.5
TIVL 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
XEWZ 1150 100
XEXX 845 500
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

Caibarien
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 1040 150
CMBD 1350 150
CMBG 1375 225
CMBS 915 150
CMBX 1425 150
CMBY 635 250
CMBZ 1005 100
CMC 835 500
CMCA 1230 150
CMCB 1060 150
CMCD 955 250
CMCF 610 250
CMCG 1475 150
CMCJ 1200 400
CMCN 1500 250
CMCO 1280 150
CMCP 1270 150
CMCQ 1450 1000
CMCR 1400 150
CMCU 1255 150
CMCW 540 150
CMCY 1316 500
CMK 725 3150
CMQ 840 340
CMW 930 1400
CMX 765 1000
COA 1175 500
COK 1150 250
COX 1100 200
Holquin
CMKF 1363 30
Manzanillo
CMKM 940 100
Matanzas
CMGF 971.5 100
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

CFAC 930 100 Calgary, Alta.
Calgary Herald, Southam Bldg.

CFCF 600 500 Montreal, Que.
Mt. Royal Hotel

CFCH 930 100 North Bay, Ont.
Capitol Theatre Bldg.

CFCN 1030 10000 Calgary, Alta.
Toronto Gen. Trust Bldg.

CFCO 600 100 Chatham, Ont.
Wm. Pitt Hotel

CFCT 1450 50 Victoria, B. C.
620 View St.

CFCY 630 500 Charlottetown, P.E.I.
143 Great George St.

CFJC 880 100 Kamloops, B. C.
Wilcox-Hall Bldg.

CFLC 930 100 Prescott, Ont.
Victoria Hall

CFNB 550 500 Fredericton, N. B.
York St.

CFPL 730 100 London, Ont.
Richmond St.

CFQC 840 1000 Saskatoon, Sask.
216 First Ave., No.

CFRB 690 10000 Toronto, Ont.
37 Bloor St. W.

CFRC 1510 100 Kingston, Ont.
Queens University

CFTP 1260 100 Edmonton, Alta.
Birks Bldg.

CHAB 1200 100 Moose Jaw, Sask.
Grant Hall Hotel

CHCK 1310 50 Charlottetown, P.E.I.
36 Upper Hillsboro St.

CHGS 1500 50 Summerside, P. E. I.
190 Water St.

CHLP 1120 100 Montreal, Que.
Sun Life Bldg.

CHML 1010 50 Hamilton, Ont.
47 Main St. E.

CHNC 1210 100 New Carlisle, Que.
Dr. Charles Houde

CHNS 930 500 Halifax, N. S.
Lord Nelson Hotel

CHRC 580 100 Quebec, Que.
CHRC, Ltd., Victoria Hotel

CHSJ 1120 100 St. John, N. B.
Admiral Beatty Hotel

CHWC 1010 500 Regina, Sask.
Kitchener Hotel

CHWK 780 100 Chilliwack, B. C.
Wellington Ave.

CJAT 910 250 Trail, B. C.
Trail Amateur Radio Assn.

CJCA 730 500 Edmonton, Alta.
10122—100A St.

CJCB 1240 1000 Sydney, N. S.
318 Charlotte St.

CJCJ 690 100 Calgary, Alta.
New Albertan Bldg.

CJGX 630 500 Yorkton, Sask.
188 Grain Exchange Bldg.

CJIC 890 100 S. Ste. Marie, Ont.
72 Pine St.

CJKL 1310 100 Kirkland Lake, Ont.
O. J. Thorpe

CJLS 1310 100 Yarmouth, N. S.
Laurie L. Smith, Grand Hotel

CJOC 1230 100 Lethbridge, Alta.
Marquis Hotel

CJOR 600 500 Vancouver, B. C.
G. C. Chandler, Hotel Grosvenor

CJRC 1390 100 Winnipeg, Man.
Royal Alexandra Hotel

CJRM 540 1000 Moose Jaw, Sask.
311 Main St. No.

CKAC 730 5000 Montreal, Que.
980 St. Catherine St. W.

CKBI 1210 100 Prince Albert, Sask.
Canada Bldg.

CKCD 1010 100 Vancouver, B. C.
142 Hastings St. W.

CKCH 1210 100 Hull, Que.
Standish Hall Hotel

CKCK 1010 500 Regina, Sask.
1853 Hamilton St.

CKCL 580 100 Toronto, Ont.
444 University Ave.

CKCO 1010 100 Ottawa, Ont.
272 Somerset St. W.

CKCR 1510 100 Waterloo, Ont.
24 King St. So.

CKCV 1310 50 Quebec, Que.
254 Ave. Marguerite

CKCW 1370 100 Moncton, N. B.
Moncton Brdcstg. Co., Ltd.

CKFC 1410 50 Vancouver, B. C.
Hemlock & 12th Ave.

CKGB 1420 100 Timmins, Ont.
R. H. Thompson, Press Bldg.

CKIC 1010 50 Wolfville, N. S.
Acadia University

CKLW 1030 5000 Windsor, Ont.
Guaranty Trust Bldg.

CKMC 1210 50 Cobalt, Ont.
R. L. MacAdam

CKMO 1410 100 Vancouver, B. C.
1604 Bekins Bldg.

CKNC 1420 100 Toronto, Ont.
805 Davenport Road

CKOC 1120 500 Hamilton, Ont.
Wentworth Bldg.

CKOV 630 100 Kelowna, B. C.
Okanagan Broadcasters, Ltd., Box 243

CKPC 930 100 Brantford, Ont.
Arcade Bldg.

CKPR 930 50 Fort William, Ont.
Royal Edward Hotel

CKTB 1200 100 St. Catharines, Ont.
E. T. Sandell, Welland House

CKUA 580 500 Edmonton, Alta.
University of Alberta.

CKWX 1010 100 Vancouver, B. C.
Hotel Georgia

CKX 1450 500 Brandon, Man.
Rosser Ave.

CKY 960 15000 Winnipeg, Man.
Sherbrooke St.

CMAF 680 1000 Havana, Cuba
1 y 8 Rept. Miramar

CMBC 1040 150 Havana, Cuba
Domingo Fernandez, Maximo Gomez No. 139

CMBD 1350 150 Havana, Cuba
Luis Perez Garcia, Centre Gallege

CMBG 1375 225 Havana, Cuba
John L. Stowers, Hospital No. 100

CMBS 915 150 Havana, Cuba
Calzada y H. St., Vedado

CMBX 1425 150 Havana, Cuba
Alberto Alvarez, Belascoain No. 32

CMBY 635 250 Havana, Cuba
Infanta 132 esq-Jevellar

CMBZ 1005 100 Havana, Cuba
Manuel y G. Salas, San Rafael No. 14

CMC 835 500 Havana, Cuba
Aguila y Dragones

CMCA 1230 150 Havana, Cuba
J. M. Gonzales, Galiano No. 102

CMCB 1060 150 Havana, Cuba
Metropolitan Bldg.

CMCD 955 250 Havana, Cuba
Calle G y 25, Vedado

CMCF 610 250 Havana, Cuba
Raoul Karman, P. O. Box 647

CMCG 1475 150 Havana, Cuba
Emilie Perera, San Miguel No. 62

CMJC 1200 400 Havana, Cuba
Rafael Rodriquez, Estevez No. 4

CMCK 1320 100 Havana, Cuba
Manuel Autran G., Vedado

CMCN 1500 250 Havana, Cuba
Reina y Ave. Buen Ritiroe, Marianao

CMCO 1280 150 Havana, Cuba
Ass. Detes. del Comercio

CMCP 1270 150 Havana, Cuba
Calzada de Luyane No. 132

CMCQ 1450 1000 Havana, Cuba
Vista Alegre No. 80, Vibora

CMCR 1400 150 Havana, Cuba
Milagros No. 35, Vibora

CMCU 1255 150 Havana, Cuba
San Francisco No. 13, Vibora

CMCW 540 150 Havana, Cuba
Galiano y San Lazaro Sts.

CMCY 1316 500 Havana, Cuba
Manuel D. Autran, Calle G 215, Vedado

CMGE 1375 30 Cardenas, Cuba
Genaro Sebater, Cespedes No. 180

CMGF 971.5 100 Matanzas, Cuba
G. Betancourt No. 51

CMGH 1040 15 Matanzas, Cuba
B. Byrne No. 113

CMG 1094 30 Colon, Cuba
Armando Linanza, Marti No. 35

CMHA 1103 50 SagualaGrande, Cuba
Abelardo Menocal, Carrillo No. 1

CMHB 1245 30 San Spiritus, Cuba
Independencia No. 33

CMHD 950 250 Caibarlen, Cuba
Manuel Alvarez, M. Escobar 17

CMHI 1037 150 Santa Clara, Cuba
Lavis y Paz, Independencia No. 34

CMHJ 1125 40 Cienfuegos, Cuba
Romoualde 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. Aguere 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 Marauri, 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. Central & Maceo

CMJP 1360 75 Moron, Cuba
Cesar Canall, Callejas No. 28

CMK 725 3150 Havana, Cuba
Hotel Plaza

CMKC 1034 150 Santiago, Cuba
J. A. Saco, Alta 23

CMKF 1363 30 Holquin, Cuba
Libertad esq. Arias

CMKJ 1300 20 Guantanamo, Cuba
Luis Morlote, East Giro 11

CMKM 940 100 Manzanillo, Cuba
Jesus Armeste, Merchant y P. Figuerado

CMQ 840 340 Havana, Cuba
25 Numero 445, Vedado

CMW 930 1400 Havana, Cuba
Troncoso y Gil, Apdo. 1010

CMX 765 1000 Havana, Cuba
Casa "Lavin," Ave. de la Republica 99A

COA 1175 500 Havana, Cuba
Juan Fernandez, Aguiar 126, Altes

COK 1150 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 609 250 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 Elk 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 Radiophone 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 50000 Pittsburgh, Pa.
Hotel Wm. Penn

KDLR 1210 100 Devils Lake, N. D.
KDLR, Inc., 1025 3rd Street

KDYL 1290 1000 Salt Lake City, Utah
Ezra Thompson Bldg.

KECA 1430 1000 Los Angeles, Calif.
1000 S. Hope St.

KELW 780 500 Burbank, Calif.
3702 Magnolia Park Blvd.

KERN 1370 100 Bakersfield, Calif.
Elk's Club

KEX 1180 5000 Portland, Ore.
Oregonian Bldg.

KFAB 770 5000 Lincoln, Neb.
Cornhusker Hotel

KFAC 1300 1000 Los Angeles, Calif.
E. L. Cord, 645 So. Mariposa

KFBB 1280 1000 Great Falls, Mont.
Buttrey Broadcast., Inc.

KFBI 1050 5000 Abilene, Kans.
Box 345

KFBK 1310 100 Sacramento, Calif.
Sacramento Bee

KFDM 560 500 Beaumont, Texas
Beaumont Hotel, P. O. Box 2950

KFDY 780 1000 Brookings, S. D.
South Dakota State College

KFEQ 680 2500 St. Joseph, Mo.
Schneider Bldg.

KFGQ 1370 100 Boone, Iowa
924 W. 2nd St.

KFH 1300 1000 Wichita, Kans.
124 1/2 S. Market St.

KFI 640 50000 Los Angeles, Calif.
1000 S. Hope St.

KFIO 1120 100 Spokane, Wash.
213 Riverside Ave.

KFIZ 1420 100 Fond du Lac, Wis.
18 W. 1st St.

KFJB 1200 100 Marshalltown, Iowa
1603 W. Main St.

KFJI 1210 100 Klamath Falls, Ore.
KFJI Broadcasters, Inc., Willard Hotel

KFJM 1370 100 Grand Forks, N. D.
University of North Dakota

KFJR 1300 500 Portland, Ore.
622 Lumbermen's Bldg.

KFJZ 1370 100 Fort Worth, Texas
Texas Hotel

KFKA 880 500 Greeley, Colo.
Box 735

KFKU 1220 1000 Lawrence, Kans.
University of Kansas

KFNF 890 500 Shenandoah, Iowa
407 Sycamore St.

KFOR 1210 100 Lincoln, Neb.
Howard Shuman, Hotel Lincoln

KFOX 1250 1000 Long Beach, Calif.
220 E. Anaheim St.

KFPL 1310 100 Dublin, Texas
C. C. Baxter, Box 176

KFPM 1310 15 Greenville, Texas
New Furniture Co.

KFPW 1210 100 Fort Smith, Ark.
Goldman Hotel

KFPY 1340 1000 Spokane, Wash.
Symons Bldg.

KFQD 780 250 Anchorage, Alaska
411—4th Ave.

KFRC 610 1000 San Francisco, Calif.
1000 Van Ness Ave.

KFRU 630 500 Columbia, Mo.
KFRU, Inc., 9th and Elm Sts.

KFSD 600 1000 San Diego, Calif.
U. S. Grant Hotel

KFSG 1120 500 Los Angeles, Calif.
1100 Glendale Blvd.

KFUO 550 500 St. Louis, Mo.
801 De Mun St.

KFVD 1000 250 Los Angeles, Calif.
E. L. Cord, 645 S. Mariposa

KFVS 1210 100 Cape Girardeau, Mo.
Oscar C. Hirsch, Box 275

KFWB 950 1000 Hollywood, Calif.
Warner Bros. Motion Pictures, Inc.

KFXD 1200 100 Nampa, Idaho
Frank E. Hurt, 1024 12th Ave., S.

KFXJ 1200 100 Grand Jct., Colo.
Hillcrest Manor

KFXM 1210 100 San Bernardino, Calif.
California Hotel

KFXR 1310 100 Oklahoma City, Okla.
541 Hightower Bldg.

KFYO 1310 100 Lubbock, Texas
Kirksey Bros., Hotel Lubbock

KFYR 550 1000 Bismarck, N. D.
320 Broadway

KGA 900 1000 Spokane, Wash.
1023 W. Riverside Ave.

KGAR 1370 100 Tucson, Ariz.
142 S. 6th Ave.

KGB 1330 1000 San Diego, Calif.
1012—1st St.

KGBU 900 500 Ketchikan, Alaska
Mile 5, Wards Cove Rd.

KGBX 1310 100 Springfield, Mo.
KGBX, Inc., C. of C. Bldg.

KGBZ 930 1000 York, Neb.
KGBZ Broadcasting Co., 715 Grant Ave.

KGCA 1270 100 Decorah, Iowa
Charles W. Greenley, 201 Water St.

KGCU 1240 250 Mandan, N. D.
404 W. Main St.

KGCX 1310 100 Wolf Point, Mont.
E. E. Krebsbach.

KGDE 1200 100 Fergus Falls, Minn.
C. L. Jaren

KGDM 1100 250 Stockton, Calif.
E. F. Peffer, 42 S. Calif. St.

KGDY 1340 250 Huron, S. D.
Voice of S. D., Inc., 347 Dakota Ave.

KGEK 1200 100 Sterling, Colo.
Elmer G. Beehler, 109 W. 2nd St.

KGER 1360 1000 Long Beach, Calif.
435 Pine Ave.

KGEZ 1310 100 Kalispell, Mont.
Donald C. Treloar, Box 1

KGFF 1420 100 Shawnee, Okla.
9th & Bell Sts.

KGFG 1370 100 Oklahoma City, Okla.
Okla. Broadcasting Co., 1113 N. Broadway

KGFI 1500 100 Corpus Christi, Texas
Eagle Broadcasting Co., Inc., P. O. Box 1508

KGFJ 1200 100 Los Angeles, Calif.
Ben S. McGlashan, 1417 S. Figueroa.

KGFK 1500 100 Moorhead, Minn.
722 Center Ave.

KGFL 1370 100 Roswell, N. M.
KGFL, Inc., 507 N. Main St.

KGFW 1310 100 Kearney, Neb.
Midway Hotel

KGFX 630 200 Pierre, S. D.
Dana McNeil, 510 Summit Ave.

KGGC 1420 100 San Francisco, Calif.
230 Eddy St.

KGGF 1010 1000 Coffeyville, Kans.
Coffeyville Journal Bldg.

KGGM 1230 250 Albuquerque, N. M.
Franciscan Hotel

KGHF 1320 250 Pueblo, Colo.
C. P. Ritchie, 113 Broadway

KGHI 1200 100 Little Rock, Ark.
Lloyd Judd Co., Marion Hotel

KGHL 780 1000 Billings, Mont.
5th & N. Broadway

KGIR 1360 1000 Butte, Mont.
KGIR, Inc., 121 W. Broadway

KGIW 1420 100 Alamosa, Colo.
Leonard E. Wilson, 326 N. Commercial

KGIX 1420 100 Las Vegas, Nev.
J. M. Heaton, Box 656

KGKB 1500 100 Tyler, Texas
115 S. College

KGKL 1370 100 San Angelo, Texas
KGKL, Inc., St. Angelus Hotel

KGKO 570 500 Wichita Falls, Texas
9th St. & Indiana Ave.

KGKY 1500 100 Scottsbluff, Neb.
Hilliard Co., Inc., 1517 1/2 Broadway

KGMB 1320 250 Honolulu, T. H.
Honolulu Broadcasting Co., Box 2663

KGNF 1430 500 North Platte, Neb.
Great Plains Broadcasting Co., W. 12th St.

KGNO 1340 250 Dodge City, Kans.
First Natl. Bank Bldg.

KGO 790 7500 San Francisco, Calif.
111 Sutter St.

KGRS 1410 1000 Amarillo, Texas
E. B. Gish, Bellaire Park

KGU 750 2500 Honolulu, T. H.
Kaplolani at South St.

KGVO 1200 100 Missoula, Mont.
Mosbys, Inc., 240 N. Higgins

KGW 620 1000 Portland, Ore.
325 Adler St.

KGY 1210 100 Olympia, Wash.
KGY, Inc., 11th and Capitol Way

KHJ 900 1000 Los Angeles, Calif.
7th at Bixel

KHQ 590 1000 Spokane, Wash.
Sprague Ave. & Post St.

KICA 1370 100 Clovis, N. M.
Southwest Broadcasting Co.

KID 1320 250 Idaho Falls, Idaho
Park Ave. & Broadway

KIDO 1350 1000 Boise, Idaho
Hotel Boise

KIDW 1420 100 Lamar, Colo.
Lamar Broadcasting Co., Box 688

KIEM 1210 100 Eureka, Calif.
Redwood Bdcstg. Co., Vance Hotel

KIEV 850 250 Glendale, Calif.
Cannon System, Ltd., Glendale Hotel

KIT 1310 100 Yakima, Wash.
109 1/2 E. Yakima Ave.

KJBS 1070 100 San Francisco, Calif.
1380 Bush St.

KJR 970 5000 Seattle, Wash.
Skinner Bldg.

KLCN 1290 100 Blytheville, Ark.
C. L. Lintzenich, Main and Division St.

KLO 1400 500 Ogden, Utah
405—25th St.

KLPM 1240 250 Minot, N. D.
John B. Cooley, Box 707

KLRA 1390 1000 Little Rock, Ark.
Arkansas Broadcasting Co., Box 550

KLS 1440 250 Oakland, Calif.
Warner Bros., 2201 Telegraph Ave.

KLUF 1370 100 Galveston, Texas
Geo. R. Clough, 3327 Ave. P.

KLX 880 1000 Oakland, Calif.
Tribune Tower

KLZ 560 1000 Denver, Colo.
Shirley-Savoy Hotel

KMA 930 500 Shenandoah, Iowa
Earl E. May Seed & Nursery Co.

KMAC 1370 100 San Antonio, Texas
W. W. McAllister, Blue Bonnet Hotel

KMBC 950 1000 Kansas City, Mo.
Pickwick Hotel

KMED 1310 100 Medford, Ore.
Mrs. W. J. Virgin, Sparta Bldg.

KMJ 580 500 Fresno, Calif.
Van Ness & Calaveras Sts.

KMLB 1200 100 Monroe, La.
Francis Hotel

KMMJ 740 1000 Clay Center, Neb.
The M. M. Johnson Co.

KMO 1330 250 Tacoma, Wash.
KMO, Inc., Hotel Winthrop

KMOX 1090 50000 St. Louis, Mo.
401 S. 12th St.

KMPC 710 500 Beverly Hills, Calif.
9631 Wiltshire Blvd.

KMTR 570 500 Hollywood, Calif.
KMTR Radio Corp., 915 N. Formosa Ave.

KNOW 1500 100 Austin, Texas
Driskill Hotel

KNX 1050 25000 Hollywood, Calif.
West. Broadcast Co., Inc., 1558 N. Vine St.

KOA 830 50000 Denver, Colo.
General Electric Co., 1370 Krameria St.

KOAC 550 1000 Corvallis, Ore.
Oregon State Agricultural College

KOB 1180 10000 Albuquerque, N. M.
Albuquerque Journal, Box 667

KOH 1380 500 Reno, Nev.
440 N. Virginia St.

KOIL 1260 1000 Council Bluffs, Iowa
Mona Motor Oil Co.

KOIN 940 1000 Portland, Ore.
KOIN, Inc., New Heathman Hotel

KOL 1270 1000 Seattle, Wash.
Northern Life Tower

KOMA 1480 5000 Oklahoma City, Okla.
Biltmore Hotel

KOMO 920 1000 Seattle, Wash.
Skinner Bldg

KONO 1370 100 San Antonio, Texas
Mission Broadcast. Co., St. Anthony Hotel

KOOS 1200 250 Marshfield, Ore.
H. H. Hanseth, Hall Bldg.

KORE 1420 100 Eugene, Ore.
733 Willamette St.

KOTN 1500 100 Pine Bluff, Ark.
William H. Chaplin, Hotel Pines

KOY 1390 500 Phoenix, Ariz.
621 N. Central Ave.

KPAC 1260 500 Port Arthur, Texas
Port Arthur College

KPCB 710 100 Seattle, Wash.
Tower Bldg.

KPJM 1500 100 Prescott, Ariz.
Scott & Sturm, P. O. Box 782

KPO 680 50000 San Francisco, Calif.
111 Sutter St.

KPOF 880 500 Denver, Colo.
Pillar Of Fire, 1845 Champa St.

KPPC 1210 50 Pasadena, Calif.
585 E. Colorado St.

KPQ 1500 100 Wenatchee, Wash.
KPQ Bldg.

KPRC 920 1000 Houston, Texas
2204 Shell Bldg.

KQV 1380 500 Pittsburgh, Pa.
KQV Broadcasting Co., Investment Bldg.

KQW 1010 1000 San Jose, Calif.
87 E. San Antonio St.

KRE 1370 100 Berkeley, Calif.
2345 Channing Way

KREG 1500 100 Santa Ana, Calif.
3rd & Sycamore Sts.

KRGV 1260 500 Weslaco, Texas
KRGV, Inc.

KRKD 1120 500 Los Angeles, Calif.
815 Spring Arcade Bldg.

KRKO 1370 50 Everett, Wash.
Lee Mudgett, 2814 Rucker Ave.

KRLD 1040 10000 Dallas, Texas
KRLD Radio Corp., Adolphus Hotel

KRMD 1310 100 Shreveport, La.
Jefferson Hotel

KROW 930 500 Oakland, Calif.
1803 Franklin St.

KRSC 1120 100 Seattle, Wash.
Radio Sales Corp., Washington Athletic Club

KSAC 580 500 Manhattan, Kans.
State College of Agriculture

KSCJ 1330 1000 Sioux City, Iowa
Perkins Bros. Co., 415 Douglas St.

KSD 550 500 St. Louis, Mo.
12th & Olive Sts.

KSEI 900 250 Pocatello, Idaho
Radio Service Corp., 141 S. 6th Ave.

KSL 1130 50000 Salt Lake City, Utah
Vermont Bldg.

KSLM 1370 100 Salem, Ore.
Oregon Radio, Inc.

KSO 1320 250 Des Moines, Iowa
Des Moines Register & Tribune

KSOO 1110 1000 Sioux Falls, S. D.
Sioux Falls Brdcst. Assn., Carpenter Hotel

KSTP 1460 10000 St. Paul, Minn.
St. Paul Hotel

KSUN 1200 100 Lowell, Ariz.
Copper Electrical Co., Drawer C

KTAB 560 1000 San Francisco, Calif.
5th & Mission Sts.

KTAR 620 1000 Phoenix, Ariz.
116 N. Central Ave.

KTAT 1240 1000 Fort Worth, Texas
Ft. Worth Natl. Bank Bldg.

KTBS 1450 1000 Shreveport, La.
Box 1642

KTFI 1240 1000 Twin Falls, Idaho
Radio Broadcasting Corp., Box 521

KTHS 1060 10000 Hot Springs, Ark.
Chamber of Commerce, Box 886

KTM 780 500 Los Angeles, Calif.
214 S. Vermont St.

KTRB 740 250 Modesto, Calif.
McTammany & Bates

KTRH 1330 1000 Houston, Texas
KTRH Broadcasting Co., Rice Hotel

KTSA 550 1000 San Antonio, Texas
Southwest Broadcasting Co., Plaza Hotel

KTSM 1310 100 El Paso, Texas
P. O. Box 1976

KTUL 1400 250 Tulsa, Okla.
National Bank of Tulsa Bldg.

KTW 1220 1000 Seattle, Wash.
77th Ave. & Spring St.

KUJ 1370 100 Walla Walla, Wash.
KUJ, Inc., Marcus Whitman Hotel

KUMA 1420 100 Yuma, Ariz.
Dr. A. H. Schermann, Box 267

KUOA 1260 1000 Fayetteville, Ark.
KUOA, Inc., Washington Hotel

KUSD 890 500 Vermillion, S. D.
University of South Dakota

KVI 570 1000 Tacoma, Wash.
W. R. Rust Bldg.

KVL 1370 100 Seattle, Wash.
KVL, Inc., 5th and Virginia St.

KVOA 1260 500 Tucson, Ariz.
Cons. Natl. Bank Bldg.

KVOD 920 500 Denver, Colo.
Continental Oil Bldg.

KVOO 1140 25000 Tulsa, Okla.
Wright Bldg.

KVOR 1270 1000 Colorado Spg., Colo.
Mining Exchange Bldg.

KVOS 1200 100 Bellingham, Wash.
115 W. Magnolia St.

KWCR 1430 250 Cedar Rapids, Iowa
Hotel Montrose

KWEA 1210 100 Shreveport, La.
Spring & Fannin Sts.

KWFV 1210 100 Hilo, Hawaii
Hilo Broadcasting Co., Ltd.

KWG 1200 100 Stockton, Calif.
Medico-Dental Bldg.

KWJJ 1040 500 Portland, Ore.
622 S. W. Salmon St.

KWK 1350 1000 St. Louis, Mo.
Thomas Patrick, Inc., Hotel Chase

KWKC 1370 100 Kansas City, Mo.
39th & Main Sts.

KWKH 1100 10000 Shreveport, La.
Spring & Fannin Sts.

KWLC 1270 100 Decorah, Iowa
Luther College

KWSC 1220 1000 Pullman, Wash.
State College of Washington

KWTN 1210 100 Watertown, S. D.
Citizens Bank Bldg.

KWTO 560 1000 Springfield, Mo.
KGBX Inc.

KWYO 1370 100 Sheridan, Wyo.
Big Horn Brdcstg. Co.

KXA 760 250 Seattle, Wash.
American Radio Tel. Co., 218 Bigelow Bldg.

KXL 1420 100 Portland, Ore.
KXL Broadcasters, Multnomah Hotel

KXO 1500 100 El Centro, Calif.
F. M. Bowles, Box 140

KXRO 1310 100 Aberdeen, Wash.
KXRO, Inc., Hotel Morck.

KXYZ 1440 250 Houston, Texas
Fannin & Rusk Sts.

KYA 1230 1000 San Francisco, Calif.
988 Market St.

KYW 1020 10000 Chicago, Ill.
310 S. Michigan Ave.

KZEG 720 1000 Manila, P. I.
Erlanger & Gallinger, Inc.

KZRM 618.5 50000 Manila, P. I.
601 Escolta

NAA 690 1000 Arlington, Va.
United States Navy

RDN 680 500 San Salvador, E. S.
Republic of El Salvador
TGW 565 10000 Guatemala, Gua.
Gobierno de Guatemala
TGX 1400 150 Guatemala City
TICR 912 75 San Jose, C. R.
Government of Costa Rica
TIEA 833 7.5 San Jose, C. R.
TIEP 1450 7.5 San Jose, C. R.
TIFB 714 30 San Jose, C. R.
TIFS 1441 7.5 Cartago, C. R.
TIGA 1014 30 Cartago, C. R.
TIGP 800 75 San Jose, C. R.
Gonzalo Pinto H. Apt. 225
TIRCA 1100 500 San Jose, C. R.
Perry Girton, Apt. 225
TISO 550 250 San Jose, C. R.
P. F. Saborio, Apt. 1354
TITV 999 7.5 San Jose, C. R.
TIVL 835 30 San Jose, C. R.
TIXA 614 7.5 San Jose, C. R.
Vincent Lines C
VAS 685 2000 Glace Bay, N. S.
Canadian Marconi Co., Ltd.
VE9EK 1195 10 Montmagny, Que.
J. A. Marquis, P. O. Box 52
VOAC 1300 40 St. John's, Nfld.
VOAS 940 100 St. John's N. F.
Ayre & Sons, Ltd., Water St.
VOGY 840 400 St. John's, N. F.
Newfoundland Hotel
VONF 950 5000 St. John's N. F.
Dominion Broadcasting Co., Ltd., Box 135
VOWR 681 500 St. John's, N. F.
Wesley United Church, Box 157
WAAB 1410 500 Boston, Mass.
21 Brookline Ave.
WAAF 920 500 Chicago, Ill.
836 Exchange Ave.
WAAT 940 300 Jersey City, N. J.
Bremer Broadcasting Corp., 50 Journal Sq
WAAW 660 500 Omaha, Neb.
Omaha Grain Exchange
WABC 860 50000 New York, N. Y.
485 Madison Ave.
WABI 1200 100 Bangor, Maine
First Universalist Society Park St.
WACO 1420 100 Waco, Texas
Amicable Bldg.
WADC 1320 1000 Akron, Ohio
Allen T. Simmons, P. O. Box 29
WAGF 1370 100 Dothan, Ala.
P. O. Box 25
WAGM 1420 100 Presque Isle, Me.
Aroostook Broadcasting Corp., Main St.
WAIU 640 500 Columbus, Ohio
Deshler-Wallick Hotel
WALA 1380 500 Mobile, Ala.
Battle House
WALR 1210 100 Zanesville, Ohio
First Trust & Savs. Bank Bldg.
WAML 1310 100 Laurel, Miss.
Southland Radio Corp., Box 26
WAPI 1140 5000 Birmingham, Ala.
Protective Life Bldg.
WARD 1400 500 Brooklyn, N. Y.
427 Flatbush Ave., Ext.
WASH 1270 500 Grand Rapids, Mich.
Grand Rapids Natl. Bank Bldg.
WATR 1190 100 Waterbury, Conn.
WATR Co. Inc. 47 Grand St.
WAVE 940 1000 Louisville, Ky.
WAVE, Inc., 1525 Brown Hotel
WAWZ 1350 250 Zarephath, N. J.
Pillar of Fire.
WAZL 1420 100 Hazleton, Pa.
Hazleton Broadcasting Service, Inc.
WBAA 1400 500 West Lafayette, Ind.
Purdue University
WBAL 1060 10000 Baltimore, Md.
Lexington Bldg.
WBAP 800 50000 Fort Worth, Texas
Blackstone Hotel
WBAX 1210 100 Wilkes-Barre, Pa.
John H. Stenger, Jr., 70 S. Main St.
WBBC 1400 500 Brooklyn, N. Y.
552-54 Atlantic Ave.
WBBL 1210 100 Richmond, Va.
1627 Monument Ave.
WBBM 770 25000 Chicago, Ill.
WBBM Broadcasting Corp., Wrigley Bldg.
WBBR 1300 1000 Brooklyn, N. Y.
124 Columbia Heights
WBBZ 1200 100 Ponca City, Okla.
C. L. Carrell, 407 W. South Ave.
WBCM 1410 500 Bay City, Mich.
James E. Davidson, Hotel Wenonah
WBEN 900 1000 Buffalo, N. Y.
WBEN, Inc., Hotel Statler
WBEO 1310 100 Marquette, Mich.
146 W. Washington St.
WBHS 1200 100 Huntsville, Ala.
Virgil V. Evans
WBIG 1440 500 Greensboro, N. C.
Box 408
WBNO 1200 100 New Orleans, La.
Hotel Marbero
WBNS 1430 500 Columbus, O.
33 N. High St.
WBNX 1350 250 New York, N. Y.
260 E. 161st St.
WBOQ 860 50000 New York, N. Y.
Atlantic Broadcasting Corp.
WBOW 1310 100 Terre Haute, Ind.
Banks of Wabash, Inc., 19 Beach Block
WBRB 1210 100 Red Bank, N. J.
63 Broad St.
WBRC 930 1000 Birmingham, Ala.
Bankhead Hotel
WBRE 1310 100 Wilkes-Barre, Pa.
Louis G. Baltimore, 16 N. Main
WBSO 920 500 Babson Park, Mass.
Drawer B
WBT 1080 50000 Charlotte, N. C.
Station WBT, Inc., Wilder Bldg.
WBTM 1370 100 Danville, Va.
Miller Bldg.
WBZ 990 50000 Boston, Mass.
Hotel Bradford
WBZA 990 1000 Springfield, Mass.
Hotel Kimball
WCAC 600 500 Storrs, Conn.
Connecticut State College
WCAD 1220 500 Canton, N. Y.
St. Lawrence University

WCAE 1220 1000 Pittsburgh, Pa.
6th Ave. & Smithfield St.

WCAL 1250 1000 Northfield, Minn.
St. Olaf College

WCAM 1280 500 Camden, N. J.
City of Camden, City Hall

WCAO 600 500 Baltimore, Md.
811 W. Lanvale St.

WCAP 1280 500 Asbury Park, N. J.
Convention Hall

WCAT 1200 100 Rapid City, S. D.
South Dakota State School of Mines

WCAU 1170 50000 Philadelphia, Pa.
WCAU Broadcasting Co., 1622 Chestnut

WCAX 1200 100 Burlington, Vt.
203 College St.

WCAZ 1070 100 Carthage, Ill.
97 1/2 Adams St.

WCBA 1440 250 Allentown, Pa.
B. Bryan Musselman, 39-41 10th St.

WCBD 1080 5000 Zion, Ill.
75 E. Wacker Drive, Chicago

WCBM 1370 100 Baltimore, Md.
Keith Theatre Bldg.

WCBS 1210 100 Springfield, Ill.
WCBS, Inc., 208 1/2 S. 5th.

WCCO 810 50000 Minneapolis, Minn.
Nicollet Hotel

WCFL 970 1500 Chicago, Ill.
666 Lake Shore Drive

WCHS 580 500 Charleston, W. Va.
WOBU, Inc., Ruffner Hotel

WCKY 1490 5000 Covington, Ky.
6th & Madison Sts.

WCLO 1200 100 Janesville, Wis.
200 E. Milwaukee St.

WCLS 1310 100 Joliet, Ill.
WCLS, Inc., 301 E. Jefferson St.

WCNW 1500 100 Brooklyn, N. Y.
Arthur Faske, 1525 Pitkin Ave.

WCOA 1340 500 Pensacola, Fla.
San Carlos Hotel

WCOC 880 500 Meridian, Miss.
Box 603

WCOL 1210 100 Columbus, Ohio
WCOL Inc., 30 N. High St.

WCRW 1210 100 Chicago, Ill.
Clinton R. White, 2756 Pine Grove Ave.

WCSC 1360 500 Charleston, S. C.
Francis Marion Hotel

WCSH 940 1000 Portland, Me.
579 Congress St.

WDAE 1220 1000 Tampa, Fla.
Tampa Times Co., Tampa Terrace

WDAF 610 1000 Kansas City, Mo.
1729 Grand Ave.

WDAG 1410 1000 Amarillo, Texas
Box 306

WDAH 1310 100 El Paso, Texas
Box 1976

WDAS 1370 100 Philadelphia, Pa.
WDAS Brdcstg. Co., Inc., Broadwood Hotel

WDAY 940 1000 Fargo, N. D.
WDAY, Inc., Black Bldg., 118 Broadway

WDBJ 930 1000 Roanoke, Va.
Times World Corp., P. O. Box 150

WDBO 580 250 Orlando, Fla.
555 N. Orange Ave.

WDEL 1120 250 Wilmington, Del.
WDEL, Inc., 10th and King Sts.

WDEV 550 500 Waterbury, Vt.
Harry C. Whitehill, Stowe St.

WDGY 1180 1000 Minneapolis, Minn.
Dr. Geo. W. Young, 909 W. Broadway

WDNC 1500 100 Durham, N. C.
Washington Duke Hotel

WDOD 1280 1000 Chattanooga, Tenn.
WDOD Broadcasting Corp., Hotel Patten

WDRC 1330 1000 Hartford, Conn.
WDRC, Inc., Corning Bldg., 11 Asylum St.

WDSU 1250 1000 New Orleans, La.
Jos. H. Uhalt, Hotel Monteleone

WDZ 1070 100 Tuscola, Ill.
James L. Bush, Star Store Bldg.

WEAF 660 50000 New York, N. Y.
30 Rockefeller Plaza

WEAN 780 500 Providence, R. I.
New Crown Hotel

WEBC 1290 1000 Superior, Wis.
Spaulding Hotel, Duluth, Minn.

WEBQ 1210 100 Harrisburg, Ill.
100 E. Poplar St.

WEBR 1310 100 Buffalo, N. Y.
Howell Broadcasting Co., Inc., 735 Main

WEDC 1210 100 Chicago, Ill.
Emil Denemark, 3860 Ogden Ave.

WEED 1420 100 Rocky Mount, N. C.
Wm. Avera Wynne, Box 221

WEEI 590 1000 Boston, Mass.
182 Tremont St.

WEEU 830 1000 Reading, Pa.
Berks Broadcasting Co., 533 Penn.

WEHC 1350 500 Charlottesville, Va.
7th & Main Sts.

WEHS 1420 100 Cicero, Ill.
WEHS, Inc., 6138 W. Cermak Rd.

WELL 1420 50 Battle Creek, Mich.
Enquirer News, 38 W. State St.

WENR 870 50000 Chicago, Ill.
222 N. Bank Drive

WESG 1090 1000 Elmira, N. Y.
Mark Twain Hotel

WEVD 1300 500 New York, N. Y.
Jewish Daily Forward, Hotel Claridge

WEW 760 1000 St. Louis, Mo.
St. Louis University, 221 N. Grand Blvd.

WEXL 1310 50 Royal Oak, Mich.
212 W. 6th St.

WFAA 800 50000 Dallas, Texas
Baker Hotel

WFAB 1300 1000 New York, N. Y.
Fifth Avenue Broadcasting Corp.

WFAM 1200 100 South Bend, Ind.
South Bend Tribune, 225 W. Colfax Ave.

WFAS 1210 100 White Plains, N. Y.
Hotel Roger Smith

WFBC 1300 250 Greenville, S. C.
Imperial Hotel

WFBE 1200 100 Cincinnati, Ohio
WFBE, Inc., Hotel Sinton

WFBG 1310 100 Altoona, Pa.
Gable Broadcasting Co. 12th Av. & 13th St.

WFBL 1360 1000 Syracuse, N. Y.
Onondaga Hotel

WFBM 1230 1000 Indianapolis, Ind.
48 Monument Circle

WFBR 1270 500 Baltimore, Md.
7 St. Paul St.

WFDF 1310 100 Flint, Mich.
Union Industrial Bldg.

WFEA 1340 600 Manchester, N. H.
Carpenter Hotel

WFI 560 500 Philadelphia, Pa.
WFI Broadcasting Co., 801 Market

WFLA 620 1000 Clearwater, Fla.
Box 119
WGAL 1500 100 Lancaster, Pa.
WGAL, Inc., 8 W. King St.
WGAR 1450 500 Cleveland, Ohio
WGAR Broadcasting Co., Hotel Statler
WGBB 1210 100 Freeport, N. Y.
H. H. Carman, 64 S. Grove St.
WGBF 630 500 Evansville, Ind.
519 Vine St.
WGBI 880 500 Scranton, Pa.
116 N. Washington Ave.
WGCM 1210 100 Gulfport, Miss.
Great Southern Hotel
WGES 1360 500 Chicago, Ill.
128 N. Crawford Ave.
WGH 1310 100 Newport News, Va.
2813 Washington Ave.
WGL 1370 100 Fort Wayne, Ind.
F. C. Zieg, 213 W. Main St.
WGLC 1370 100 Hudson Falls, N. Y.
Colonial Display House
WGN 720 50000 Chicago, Ill.
WGN, Inc., Tribune Tower
WGNY 1210 100 Chester, N. Y.
Peter Goelet (Orange County)
WGPC 1420 100 Albany, Ga.
Rylander Theatre Bldg.
WGR 550 1000 Buffalo, N. Y.
Rand Bldg.
WGST 890 250 Atlanta, Ga.
Ansley Hotel
WGY 790 50000 Schenectady, N. Y.
1 River Road
WHA 940 2500 Madison, Wis.
University of Wisconsin
WHAM 1150 50000 Rochester, N. Y.
100 Carlson Road
WHAS 820 50000 Louisville, Ky.
300 W. Liberty St.
WHAT 1310 100 Philadelphia, Pa.
Public Ledger Bldg.
WHAZ 1300 500 Troy, N. Y.
8th St.
WHB 860 500 Kansas City, Mo.
WHB Broadcasting Co., Scarritt Bldg.
WHBC 1200 100 Canton, Ohio
Edw. P. Graham, 319 Tusc. St., W.
WHBD 1370 100 Mount Orab, Ohio
F. P. Moler
WHBF 1210 100 Rock Island, Ill.
Hotel Harms
WHBI 1250 1000 Newark, N. J.
100 Shipman St.
WHBL 1410 500 Sheboygan, Wis.
Press Publishing Co., Press Bldg.
WHBQ 1370 100 Memphis, Tenn.
Brdcstg. Sta. WNBQ, Inc., Hotel Claridge
WHBU 1210 100 Anderson, Ind.
Anderson Broadcasting Corp., Box 816
WHBY 1200 100 Green Bay, Wis.
WHBY, Inc., Bellin Bldg.
WHDF 1370 100 Calumet, Mich.
Box 643
WHDH 830 1000 Boston, Mass.
Matheson Radio Co., 62 Boylston
WHDL 1420 100 Tupper Lake, N. Y.
Iroquois Hotel
WHEB 740 250 Portsmouth, N. H.
Box 522, 39 Congress St.
WHEC 1430 500 Rochester, N. Y.
WHEC, Inc., 40 Franklin St.
WHEF 1500 100 Kosciusko, Miss.
417 W. Adams St.
WHFC 1420 100 Cicero, Ill.
WHFC, Inc., 6138 W. Cermak Road
WHIS 1410 250 Bluefield, W. Va.
Bland St.
WHJB 620 250 Greensburg, Pa.
Penne. Radio Supply House
WHK 1390 1000 Cleveland, Ohio
1311 Terminal Tower
WHN 1010 1000 New York, N. Y.
1540 Broadway
WHO 1000 50000 Des Moines, Iowa
Central Brdcstg. Co., 914 Walnut St.
WHOM 1450 250 Jersey City, N. J.
2870 Boulevard
WHP 1430 500 Harrisburg, Pa.
WHP, Inc., 216 Locust St.
WIBA 1280 1000 Madison, Wis.
111 King St.
WIBG 970 100 Glenside, Pa.
WIBG, Inc., Keswick Bldg.
WIBM 1370 100 Jackson, Mich.
WIBM, Inc., 306 W. Michigan Ave.
WIBU 1210 100 Poynette, Wis.
Wm. C. Forrest, R. F. D. No. 3
WIBW 580 1000 Topeka, Kans.
11th & Topeka Blvd.
WIBX 1200 100 Utica, N. Y.
WIBX, Inc., 1st Natl. Bank Bldg.
WICC 600 250 Bridgeport, Conn.
Southern Conn. Broadcasting Corp.
WIL 1200 100 St. Louis, Mo.
Melbourne Hotel
WILL 890 250 Urbana, Ill.
University of Illinois
WILM 1420 100 Wilmington, Del.
920 King St.
WIND 560 1000 Gary, Ind.
504 Broadway
WINS 1180 1000 New York, N. Y.
110 E. 58th St.
WIOD 1300 1000 Miami, Fla.
Herald Bldg.
WIP 610 500 Philadelphia, Pa.
Gimbel Bldg.
WIS 1010 1000 Columbia, S. C.
Station WIS, Inc., 1811 Main St.
WISN 1120 250 Milwaukee, Wis.
123 W. Michigan St.
WJAC 1310 100 Johnstown, Pa.
WJAC, Inc., Locust St.
WJAG 1060 1000 Norfolk, Neb.
Norfolk Daily News
WJAR 890 500 Providence, R. I.
Outlet Co., Weybossett St.
WJAS 1290 1000 Pittsburgh, Pa.
Chamber of Commerce Bldg.
WJAX 900 1000 Jacksonville, Fla.
City of Jacksonville
WJAY 610 500 Cleveland, Ohio
1224 Huron Road
WJBC 1200 100 Bloomington, Ill.
Kaskaskia Broadcasting Co.
WJBK 1500 100 Detroit, Mich.
6559 Hamilton Ave.
WJBL 1200 100 Decatur, Ill.
Gushard Bldg.
WJBO 1420 100 Baton Rouge, La.
Baton Rouge Broadcasting Co., Inc.
WJBW 1200 100 New Orleans, La.
C. C. Carlson, 2743 Dumaine St.

WJBY 1210 100 Gadsden, Ala.
Gadsden Broadcasting Co., 112 N. 8th St.

WJDX 1270 1000 Jackson, Miss.
Lamar Life Bldg.

WJEJ 1210 100 Hagerstown, Md.
Lovely Dame Bldg.

WJEM 990 500 Tupelo, Miss.
Britt A. Rogers, Jr.

WJIM 1210 100 Lansing, Mich.
Capital City Brdcstg. Co.

WJJD 1130 20000 Chicago, Ill.
WJJD, Inc., 201 N. Wells St.

WJMS 1420 100 Ironwood, Mich.
WJMS, Inc., St. James Hotel

WJR 750 10000 Detroit, Mich.
WJR, Inc., Fisher Bldg.

WJSV 1460 10000 Washington, D. C.
Shoreham Bldg.

WJTL 1370 100 Atlanta, Ga.
Oglethorpe University

WJW 1210 100 Akron, Ohio
WJW, Inc., 41 S. High St.

WJZ 760 50000 New York, N. Y.
30 Rockefeller Plaza

WKAQ 1240 1000 San Juan, P. R.
Radio Corp. of Porto Rico, P. O. Box 358

WKAR 1040 1000 East Lansing, Mich.
Michigan State College

WKBB 1500 100 East Dubuque, Ill.
Richard W. Hoffman

WKBF 1400 500 Indianapolis, Ind.
540 N. Meridian St.

WKBH 1380 1000 LaCrosse, Wis.
WKBH, Inc., 409 Main St.

WKBI 1420 100 Cicero, Ill.
WKBI Inc., 6138 W. Cermak Road

WKBN 570 500 Youngstown, Ohio
17 N. Champion St.

WKBO 1200 100 Harrisburg, Pa.
Penn Harris Hotel

WKBV 1500 100 Richmond, Ind.
Knox Radio Corp., Box 308

WKBW 1480 5000 Buffalo, N. Y.
Rand Bldg.

WKBZ 1500 100 Muskegon, Mich.
Karl L. Ashbacker & Sons

WKEU 1500 100 LaGrange, Ga.
Radio Station WKEU, 906 Hill St.

WKFI 1210 100 Greenwood, Miss.
J. Pat Scully, Box 302

WKJC 1200 100 Lancaster, Pa.
16 W. King St.

WKOK 1210 100 Sunbury, Pa.
1150 N. Front St.

WKRC 550 1000 Cincinnati, Ohio
WKRC, Inc., Hotel Alms

WKY 900 1000 Oklahoma City, Okla.
Plaza Court Bldg.

WKZO 590 1000 Kalamazoo, Mich.
John E. Fetzer, Burdick Hotel

WLAC 1470 5000 Nashville, Tenn.
159—4th Ave. No.

WLAP 1420 100 Lexington, Ky.
Main & Esplanade

WLB 1250 1000 Minneapolis, Minn.
University of Minnesota

WLBC 1310 100 Muncie, Ind.
D. A. Burton, Anthony Bldg.

WLBF 1420 100 Kansas City, Kans.
WLBF Broadcasting Co., Huron Bldg.

WLBL 900 2500 Stevens Point, Wis.
Wisconsin Dept. of Agriculture and Markets

WLBW 1260 1000 Erie, Pa.
Broadcasters of Pennsylvania, Inc.

WLBZ 620 500 Bangor, Me.
Maine Broadcasting Co., Inc., 100 Main

WLEU 1420 100 Erie, Pa.

WLIT 560 500 Philadelphia, Pa.
8th & Market Sts.

WLLH 1370 100 Lowell, Mass.
Albert S. Moffat, Box D

WLNH 1310 100 Laconia, N. H.
523 Main St.

WLS 870 50000 Chicago, Ill.
1230 W. Washington Blvd.

WLTH 1400 500 Brooklyn, N. Y.
305 Washington St.

WLVA 1200 100 Lynchburg, Va.
915 Main St.

WLW 700 50000 Cincinnati, Ohio
1329 Arlington St.

WLWL 1100 5000 New York, N. Y.
415 W. 59th St.

WMAL 630 250 Washington, D. C.
712—11th St., N. W.

WMAQ 670 5000 Chicago, Ill.
Merchandise Mart

WMAS 1420 100 Springfield, Mass.
WMAS, Inc., 70 Chestnut St.

WMAZ 1180 1000 Macon, Ga.
211 Cotton Ave.

WMBC 1420 100 Detroit, Mich.
7310 Woodward Ave.

WMBD 1440 500 Peoria, Ill.
114 N. Madison St.

WMBG 1210 100 Richmond, Va.
914 W. Broad St.

WMBH 1420 100 Joplin, Mo.
1334 Roosevelt St.

WMBI 1080 5000 Chicago, Ill.
153 Institute Place

WMBO 1310 100 Auburn, N. Y.
WMBO, Inc., Metcalf Bldg.

WMBQ 1500 100 Brooklyn, N. Y.
Paul J. Gollhofer, 95 Leonard St.

WMBR 1370 100 Jacksonville, Fla.
F. J. Reynolds, Carling Hotel

WMC 780 1000 Memphis, Tenn.
WMC, Inc., Hotel Gayoso

WMCA 570 500 New York, N. Y.
1697 Broadway

WMEX 1580 100 Chelsea, Mass.
The Northern Corp.

WMMN 890 250 Fairmont, W. Va.
A. M. Rowe, Inc., 325 Main St.

WMPC 1200 100 Lapeer, Mich.
81 Liberty St.

WMT 600 500 Waterloo, Iowa
3rd & Lafayette Sts.

WNAC 1230 1000 Boston, Mass.
21 Brookline Ave.

WNAD 1010 500 Norman, Okla.
University of Oklahoma

WNAX 570 1000 Yankton, S. D.
House of Gurney, Inc., 2nd and Capital St.

WNBF 1500 100 Binghamton, N. Y.
Arlington Hotel

WNBH 1310 100 New Bedford, Mass.
251 Union St.

WNBO 1200 100 Washington, Pa.
319 E. Beau St.

WNBR 1430 500 Memphis, Tenn.
Memphis Broadcasting Co., Hotel DeVoy

WNBX 1260 500 Springfield, Vt.
WNBX Broadcasting Corp., 39 Main St.
WNBZ 1290 50 Saranac Lake, N. Y.
Smith & Mace, 70 Broadway
WNEL 1290 500 San Juan, P. R.
Box 1252
WNEW 1250 1000 Newark, N. J.
Wodaam Corp., 1060 Broad
WNOX 560 1000 Knoxville, Tenn.
WNOX, Inc., Hotel Andrew Johnson
WNRA 1420 100 Muscle Shoals, Ala.
Kathryn Jones, P. O. Box 486, Sheffield, Ala.
WNYC 810 500 New York, N. Y.
Centre & Duane Sts.
WOAI 1190 50000 San Antonio, Texas
Southland Industries, Inc., 1038 Navarro
WOC 1370 100 Davenport, Iowa
Palmer School of Chiropractic
WOCL 1210 50 Jamestown, N. Y.
A. E. Newton, 840 N. Main St.
WOI 640 5000 Ames, Iowa
Iowa State College
WOKO 1430 500 Albany, N. Y.
WOKO, Inc., Hotel Ten Eyck
WOL 1310 100 Washington, D. C.
American Broadcasting Co., Annapolis Hotel
WOMT 1210 100 Manitowoc, Wis.
Francis M. Kadow, Box 326
WOOD 1270 500 Grand Rapids, Mich.
Grand Rapids Natl. Bank Bldg.
WOPI 1500 100 Bristol, Tenn.
22nd & State Sts.
WOR 710 5000 Newark, N. J.
147 Market St.
WORC 1280 500 Worcester, Mass.
Alfred F. Kleindienst, 60 Franklin St.
WORK 1320 1000 York, Pa.
York Broadcasting Co., 15 S. Beaver St.
WOS 630 500 Jefferson City, Mo.
State Highway Control, Capitol Bldg.
WOSU 570 750 Columbus, Ohio
Ohio State University
WOV 1130 1000 New York, N. Y.
16 E. 42nd St.
WOW 590 1000 Omaha, Neb.
Woodmen of the World, 4th and Farnam
WOWO 1160 10000 Fort Wayne, Ind.
Main Auto Supply Co., 213 W. Main
WPAD 1420 100 Paducah, Ky.
2201 Broadway
WPEN 920 100 Philadelphia, Pa.
22nd & Walnut Sts.
WPFB 1370 100 Hattiesburg, Miss.
Otis P. Eure, Box 530
WPG 1100 5000 Atlantic City, N. J.
Convention Hall
WPHR 880 100 Petersburg, Va.
WLBG, Inc., Medical Arts Bldg.
WPRO 630 250 Providence, R. I.
Cherry & Webb Brdcstg. Co., 15 Chestnut
WPTF 680 5000 Raleigh, N. C.
324 Fayetteville St.
WQAM 560 1000 Miami, Fla.
Miami Brdcstg. Co., Inc., 327 N. E. 1st Ave.
WQAN 880 250 Scranton, Pa.
Scranton Times, 149 Penn Ave.
WQBC 1360 500 Vicksburg, Miss.
Delta Broadcasting Co., Hotel Vicksburg
WQDM 1370 100 St. Albans, Vt.
42 N. Main St.
WQDX 1210 100 Thomasville, Ga.
Stevens Luke, 135 E. Jackson St.

WRAK 1370 100 Williamsport, Pa.
WRAK, Inc., 244 W. 4th St.
WRAW 1310 100 Reading, Pa.
Reading Broadcasting Co., 533 Penn St.
WRAX 920 250 Philadelphia, Pa.
WRAX Broadcasting Co., 217 S. Broad St.
WRBL 1200 100 Columbus, Ga.
Royal Theatre Bldg.
WRBX 1410 250 Roanoke, Va.
P. O. Box 2389
WRC 950 500 Washington, D. C.
National Press Bldg.
WRDO 1370 100 Augusta, Me.
WRDO, Inc., Augusta House
WRDW 1500 100 Augusta, Ga.
Virgil V. Evans Co., 309 8th St.
WREC 600 500 Memphis, Tenn.
WREC, Inc., Hotel Peabody
WREN 1220 1000 Lawrence, Kans.
Jenny Wren Co., 8th and Vermont St.
WRGA 1500 100 Rome, Ga.
10 Third Ave.
WRJN 1370 100 Racine, Wis.
Racine Broadcasting Corp., Hotel Racine
WROK 1410 500 Rockford, Ill.
109 So. Water St.
WROL 1310 100 Knoxville, Tenn.
Stuart Broadcasting Corp., 524 S. Gay
WRR 1280 500 Dallas, Texas
City of Dallas, Southland Life Bldg.
WRUF 830 5000 Gainesville, Fla.
State University
WRVA 1110 5000 Richmond, Va.
Larus & Bros Co., Inc., 22nd and Gary St.
WSAI 1330 1000 Cincinnati, Ohio
Crosley Radio Corp., 1329 Arlington
WSAJ 1310 100 Grove City, Pa.
Grove City College, 418 Poplar St.
WSAN 1440 250 Allentown, Pa.
WSAN, Inc., 39 10th St.
WSAR 1450 250 Fall River, Mass.
Academy of Music Bldg.
WSAZ 1190 1000 Huntington, W. Va.
WSAZ, Inc., P. O. Box 729
WSB 740 50000 Atlanta, Ga.
Atlanta Journal, 7 N. Forsyth St.
WSBC 1210 100 Chicago, Ill.
Gene T. Dyer, 1258 S. Michigan Ave.
WSBT 1360 500 South Bend, Ind.
South Bend Tribune, 225 W. Colfax Ave.
WSFA 1410 500 Montgomery, Ala.
Jefferson Davis Hotel
WSGN 1310 100 Birmingham, Ala.
R. B. Broyles, Tutwiler Hotel
WSIX 1210 100 Springfield, Tenn.
638 Tire & Vulcanizing Co.
WSJS 1310 100 Winston-Salem, N. C.
Winston-Salem Journal Co., 416 N. Marshall
WSM 650 50000 Nashville, Tenn.
301—7th Ave. No.
WSMB 1320 500 New Orleans, La.
WSMB, Inc., Maison Blanche Bldg.
WSMK 1380 200 Dayton, Ohio
S. M. Krohn, Jr., 4th and Main St.
WSOC 1210 100 Charlotte, N. C.
WSOC, Inc., Box 730
WSPA 920 1000 Spartanburg, S. C.
Virgil V. Evans, Ravenel and Avant St.
WSPD 1340 1000 Toledo, Ohio
Toledo Broadcasting Co., 505 Jefferson
WSUI 880 500 Iowa City, Iowa
State University of Iowa

WSUN 620 1000 St. Petersburg, Fla.
Chamber of Commerce

WSVA 550 500 Staunton, Va.
Marion K. Gilliam

WSVS 1370 50 Buffalo, N. Y.
666 E. Delavan Ave.

WSYB 1500 100 Rutland, Vt.
Philip Weiss Music Co., 80 West St.

WSYR 570 250 Syracuse, N. Y.
E. Onondaga & S. Warren Sts.

WTAD 1440 500 Quincy, Ill.
Illinois Brdcstg. Corp., State and 6th

WTAG 580 500 Worcester, Mass.
18 Franklin St.

WTAM 1070 50000 Cleveland, Ohio
1367 E. 6th St.

WTAQ 1330 1000 Eau Claire, Wis.
Gillette Rubber Co., Hotel Eau Claire

WTAR 780 500 Norfolk, Va.
WTAR Radio Corp., Wainwright Bldg.

WTAW 1120 500 College Station, Tex.
Agricultural and Mechanical College

WTAX 1210 100 Springfield, Ill.
WTAX, Inc., 416 E. Capitol Ave.

WTBO 800 250 Cumberland, Md.
Associated Brdcstg. Corp., Box 794

WTCN 1250 1000 Minneapolis, Minn.
Wesley Temple Bldg.

WTEL 1310 100 Philadelphia, Pa.
Broad & Erie Ave.

WTFI 1450 500 Athens, Ga.
133 E. Washington St.

WTIC 1040 50000 Hartford, Conn.
26 Grove St.

WTJS 1310 100 Jackson, Tenn.
Sun Publishing Co., Sun Bldg.

WTMJ 620 1000 Milwaukee, Wis.
The Journal Co., 333 W. State St.

WTNJ 1280 500 Trenton, N. J.
Trenton Brdcstg. Co., Stacy Trent Hotel

WTOC 1260 1000 Savannah, Ga.
Savannah Brdcstg. Co., De Soto Hotel

WTRC 1310 50 Elkhart, Ind.
Truth Radio Corp., Hotel Elkhart

WVFW 1400 500 Brooklyn, N. Y.
Paramount Brdcstg. Co., 1 Nevins St.

WWAE 1200 100 Hammond, Ind.
402 Hammond Bldg.

WWJ 920 1000 Detroit, Mich.
Evening News Assn., 616 Lafayette Blvd.

WWL 850 10000 New Orleans, La.
Loyola University, Roosevelt Hotel

WWNC 570 1000 Asheville, N. C.
Citizen Brdcstg. Co., Inc., Flatiron Bldg.

WWRL 1500 100 Woodside, N. Y.
4130—58th St.

WWSW 1500 100 Pittsburgh, Pa.
Hotel Schenley

WWVA 1160 5000 Wheeling, W. Va.
Hawley Bldg.

WXYZ 1240 1000 Detroit, Mich.
Madison Theatre Bldg.

W1XBS 1530 1000 Waterbury, Conn.
61 Leavenworth St.

W2XR 1550 1000 Long Island City, N. Y.
John V. L. Hogan, 41 Park Row, N. Y. City

W6XAI 1550 1000 Bakersfield, Calif.
Pioneer Mercantile Co.

W9XBY 1530 1000 Kansas City, Mo.
First National Television Inc.

XEA 1060 125 Guadalajara, Jal.
Alberto Palos Souza, Apdo. 197

XEAA 920 200 Mexicali, B. C.
Apdo. 42

XEAE 980 250 Tijuana, B. C.
Apt. 42

XEAF 1080 750 Nogales, Son.
Francisco G. Elias, Hotel Central

XEAI 1240 100 Mexico City, D. F.
Carlos Gonzales Caballero, Insurgentes 366

XEAL 660 1000 Mexico City, D. F.
Apdo. 1903

XEAM 750 50 Nuevo Laredo, Tams.
Edificio Banco Longoria

XEAO 560 250 Mexicali, B. C.
Luis L. Castro, C. Altamirano 156

XEAW 950 10000 Reynosa, Tams.
Internacional Broadcasting Co., S. A.

XEAZ 1420 7 Leon, Guan.
Pocitos 47

XEB 1030 10000 Mexico City, D. F.
El Buen Tono, S. A., Apdo. 79-44

XEBC 760 2500 Agua Caliente, B. C.
Agua Caliente Hotel

XECW 1310 10 Mexico City, D. F.
Maria Elena Bravo de Cordero Ave. Juarez 104

XED 1160 500 Guadalajara, Jal.
Cia. Radiofonografica, Apdo. 197

XEE 1210 50 Durango, Dgo.
20 de Nov. 112 (Apdo. 148)

XEFA 1180 500 Mexico City, D. F.
Eduardo Limon Segui, Meditarraneo 236

XEFB 1420 100 Monterrey, N. L.
Jesus Quintanilla, P. O. Box 317

XEFC 1310 100 Merida, Yuc.
J. Molina Font. Calle 59, 517

XEFE 1370 100 Laredo, Tams.
R. T. Carranza, Km. 4 Carretera Laredo Mt.

XEFG 1100 250 Mexico City, D. F.
Ricardo Gonzales Montero, Tepic 48

XEFI 720 250 Chihuahua, Chih.
Feliciano Lopez Isles, Ap. 157

XEFJ 1210 100 Monterrey, N. L.
R. Junco de la Vega, P. O. Box 186

XEFO 940 5000 Mexico City, D. F.
Reforma No. 137

XEFV 1210 100 Jaurez, Chih.
Cordova & Prieto, Ave. Ferrocaril 104

XEFW 1310 70 Tampico, Tams.
J. E. Martinez, Salvador Diaz Miron 6

XEFZ 1370 100 Mexico City, D. F.
Manuel Zetina, Calzada Nonoalco 481

XEH 1150 250 Monterrey, N. L.
Tarnava y Cia, P. O. Box 147

XEI 1370 125 Morelia, Mich.
Carlos Gutierrez M., F. I. Madero 545

XEJ 1020 250 Juarez, Chih.
Juan G. Buttner, P. O. Box 111

XEK 990 100 Mexico City, D. F.
Arturo Martinez, Jalapa No. 51

XEKL 920 500 Leon, Guan.
5 de Mayo 26

XEMA 1080 50 Tampico, Tams.
Manuel M. Pier, Aretsanos 10

XEMO 860 1500 Tijuana, B. C.
Savoy Theatre Bldg., San Diego, Calif.

XEMZ 1210 30 Tijuana, B. C.
Adolfo Labsatida, Jr., Ave. D, 542

XEN 710 1000 Mexico City, D. F.
Cerveceria Modelo Ave. Juárez 77

XENT 1120 50000 Nuevo Laredo, Tams.
Box 410, Laredo, Texas

XEOK 920 2500 Tijuana, B. C.
Carlos de la Sierra, Calle 5 a 312

XEOX 640 250 Saltillo, Coah.
Victoria No. 4, Altos.
XEP 820 500 Mexico City, D. F.
Cia Difusora de Mexico S. A., Rembrandt 11
XEPN 590 50000 Piedras Negras, Coah.
Piedras Negras Brdcstg. Co., Madero 53
XES 970 250 Tampico, Tams.
Fernando Sada, Box 309
XET 690 500 Monterrey, N. L.
P. O. Box 203, Hidalgo
XETB 1310 125 Torreon, Coah.
Jose A. Berumen, R. Corona 317
XETH 1210 100 Puebla, Pue.
Ramon Huerta G., Calle 17, Oriente 11
XETW 820 500 Mexico City, D. F.
Rafael M. Pena, Ave. 16 de Sep. 83
XEU 980 250 Veracruz, Ver.
Fernando Pazos Sosa, Independencia 98
XEW 890 50000 Mexico City, D. F.
P. O. Box 2516
XEWZ 1150 100 Mexico City, D. F.
Medellin e Insurgentes
XEX 1310 125 Monterrey, N. L.
L. F. Petit Jean, P. O. Box 10
XEXX 845 500 Mexico City, D. F.
Av. Pino Suarez 9
XEYZ 780 10000 Mexico City, D. F.
Angel M. Diez, Ave. Juarez 48
XEZZ 1370 100 San Luis Potosi, SLP
Emilio Delgado R. Ave. Chicosein 32
XFA 1310 5 Aguascalientes Ags.
Apartado Postal 92
XFB 1270 1000 Jalapa, Ver.
Gobierno del Estado de Veracruz
XFC 810 350 Aguascalientes, Ags.
Gobierno del Estado de Aguascalientes
XFD 1340 350 Orizaba, Ver.
Gobierno Estado de Veracruz
XFO 940 5000 Mexico City, D. F.
Nat. Rev. Party, Ave. Morelos 110
XFX 610 1000 Mexico City, D. F.
Secretaria de Educacion Publica
10-AK 1200 15 Stratford, Ont.
M. I. Higgins, 151 Ontario St.
10-BP 1200 25 Wingham, Ont.
W. T. Cruickshank, Box 65
10-BQ 1200 15 Brantford, Ont.
12 Terrace Hill St.
10-BU 1200 50 Canora, Sask.
Canora Radio Assn.

STATEMENT of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of August 24, 1912,
Of Radio Index, published monthly except July and August at Cleveland, O., for Oct. 1, 1934.

State of Ohio, County of Cuyahoga, ss. Before me, a Notary Public in and for the State and county aforesaid, personally appeared Fred C. Butler, who, having been duly sworn according to law, deposes and says that he is the editor of the Radio Index, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, The Radex Press, Inc., 705 Hanna Building, Cleveland, O.; Editor, Fred C. Butler; Managing Editor, none; Business Managers, none.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member must be given.) The Radex Press, Inc., 705 Hanna Building, Cleveland, O; Fred C. Butler, 705 Hanna Building, Cleveland, O.

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

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

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is (This information is required from daily publications only.)

Fred C. Butler, Editor.

Sworn to and subscribed before me this 26th day of September, 1934.

Edith C. Phalen, Notary Public.
(My commission expires May 11, 1935.)

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 W3XAU W8XK W9XF XETE	DJB GSB GSD VK2ME W9XF	GSB GSD VK2ME	RV15	DJA DJB PK1WK RV15 VK3LR	DJA DJB HVJ RV15 VK2ME VK3LR VK3ME	GSF GSG HSJ RV15 VK2ME VK3LR VK3ME W1XAZ ZGE ZHI	GSF GSG PHI Rabat RV15 VE9GW VK2ME VK3LR W1XAZ ZGE W8XK	DJA DJB GSE GSF GSG PHI Pont. Rabat VE9GW VK2ME W1XAZ W3XAL W8XK	DJA DJB GSE GSF PHI Pont. VE9GW W1XAZ W3XAL W8XK	DJA DJB GSE GSF Pont. VE9GW W1XAL W1XAZ W8XK W3XAL	DJA DJB 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 W1XAZ W2XE W3XAL W3XAU W3XL W8XK W9XAA	DJC DJD EAQ GSB GSD I2RO ORK OXY Pont. VE9GW W1XAZ W3XAL W3XAU W3XL W8XK W9XAA XEBT XETE	DJC DJD GSB GSD I2RO OXY Rabat VE9GW W1XAZ W2XAD W3XAU W3XL W8XK W9XAA XEBT XETE	DJC DJD GSB GSD I2RO OXY Pont. Rabat RV59 VE9GW W1XAZ W2XE W3XAU W3XL W8XK W9XAA XEBT XETE	COC CT1AA DJC DJD GSB GSD I2RO OXY Pont. Rabat RV59 VE9GW W1XAZ W2XE W3XAU W3XL W8XK W9XAA XEBT XETE YV3RC	COC CT1AA DJC DJD EAQ GSB GSD HBL HBP HC2RL HIZ HJ1ABB I2RO OXY Pont. RV59 VE9GW VE9HX W1XAL W1XAZ W2XE W3XAL W8XK W9XAA W9XF XEBT XETE YV2RC YV3RC	CT1AA DJC DJD EAQ GSC GSD HBL HBP HC2RL HJ1ABB OXY Pont VE9GW VE9HX W1XAL W1XAZ W2XE W3XAL W8XK W9XAA W9XF XEBT XETE YV2RC YV3RC	DJC DJD GSA GSC HC2RL HJ1ABB HJ1ABG Pont. VE9HX W1XAL W1XAZ W2XAF W2XE W3XAL W8XK W9XAA W9XF XEBT XETE YV2RC YV3RC	CJRO CJRX CP5 DJC DJD HCJB HIX HJ1ABB Pont. VE9CS VE9HX W1XAL W1XAZ W2XAF W2XE W3XAL W3XAU W8XK W9XAA XEBT XETE YV2RC YV3RC	CJRO CJRX DJC DJD HCJB HC2RL HIX HJ1ABB HJ3ABD PRADO VE9CS VE9HX W1XAZ W2XAF W2XE W3XAL W3XAU W8XK W9XF XEBT XETE YV2RC YV3RC	CJRO CJRX DJC DJD HC2RL Pont. PRADO VE9HX WIXAZ W2XAF W2XE W3XAL W3XAU W8XK W9XAA W9XF XEBT XETE YV2RC	CJRO CJRX Pont. W1XAZ W3XAL W3XAU W8XK W9XAA W9XF 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). 14.150 and 14.250 megs.

Broadcast Pickup stations: 1.606; 1.622; 1.646; 2.102; 2.150; 2.190; 2.390.

CGA4, Drummondville, P. Q., 9.332. Phones London.

CJRO, Middlechurch, Man., 6.150. Relays Canadian Radio Com. programs, 8-11 p.m. and 11:30 to midnight.

CJRX, Middlechurch, Man., 11.720. Same schedule as CJRO, q. v.

COC, Havana, Cuba, 6.010. 4-6 p.m. daily.

CP5, La Paz, Bolivia, 6.080. 8-9 p.m.

CT1AA, Lisbon, Portugal, 9.600. Tues., Fri., 4:30-7 p.m.

DJA, Zeesen, Germany, 9.560. Sun., 4-5:30 a.m.; daily, 8-11 a.m.

DJB, Zeesen, Germany, 15.200. 12:15-2 a.m.; 8-11:30 a.m.

DJC, Zeesen, Germany, 6.020. Noon to 4:30 p.m.; 5:30-10:45 p.m.

DJD, Zeesen, Germany, 11.760. Noon to 4:30 p.m.; 5:30-10:45 p.m.

DJE, Zeesen, Germany, 17.760. Irregularly, Mornings.

EAQ, Aranjuez, Spain, 9.862. 5:30-7 p.m.; Sat. noon to 2 p.m.

GSA, Daventry, England, 6.050. 7-8 p.m.

GSB, Daventry, England, 9.510. 1:15-3:15 a.m.; 1-5:30 p.m.

GSC, Daventry, England, 9.585. 6-8 p.m.

GSD, Daventry, England, 11.750. 1:15-3:15 a.m.; 1-5:30 p.m.; 6-7 p.m.

GSE, Daventry, England, 11.865. 8:45 a.m. to 12:45 p.m.

GSF, Daventry, England, 15.140. 6-8:30 a.m.; 8:45 a.m. to 12:45 p.m.

GSG, Daventry, England, 17.790. 6-8:30 a.m.

HBL, Prangins, Switzerland, 9.595. Sat. 5:30-6:15 p.m.

HBP, Prangins, Switzerland, 7.797. Sat. 5:30-6:15 p.m.

HC2RL, Guayaquil, Ecuador, 6.659. Tues. 9:14-11:14 p.m.; Sun. 5:45-7:45 p.m.

HIX, Santo Domingo, D. R., 5.948. Tues. and Fri., 8-10 p.m.

HI1A, Santiago de los Caballeros D.R., 7.240. 7:30-9:30 p.m. daily.

HJA2, Bogota, Colombia, 5.825.

HJA3, Barranquilla, Colombia, 12.830

HJB, Bogota, Colombia, 14.930.

HJ1ABB, Barranquilla, Colombia, 6.447. 5-10 p.m.

HJ2ABC, Cucuta, Norte de Santanter, Colombia, "La Voz de Cucuta," 5.975 megs. 6-9 p.m. daily exc. Sunday.

HJ3ABD, Bogota, Colombia, 7.406. "Colombia Broadcasting." 6-9 p.m. daily.

HJ3ABF, Bogota, Colombia, 6.200. "La Voz de Bogota." Daily 7-11 p.m.

HJ4ABE, Medellin, Colombia, 5.900. 7-11 p.m.

HPF, Panama City, Panama, 14.545. Phones Hialeah.

HSJ, Bangkok, Siam, 7.980.

HVJ, Vatican City, 15.120. 5-5:15 a.m. daily except Sunday. Occasionally from 10-10:30 a.m.

I2RO, Cecchignola, Italy, 11:30 a.m. to 12:30 p.m.; 1:15 to 6 p.m. "Radio Roma-Napoli."

JVE, Nazaki, Japan, 15.660. Phones Java, nights.

JVM, Nazaki, Japan, 10.740. Phones California 1:45-2:30 a.m.; 4-7:30 a.m. News in Eng. 4:55 a.m.

JVN, Nazaki, Japan, 10.660. Phones England.

JVQ, Nazaki, Japan, 7.470. Phone.

JYK, Kemikawa-Cho, Chiba-Ken, Japan, 13.610. 4-8 a.m.

JYR, Kemikawa-Cho, Chiba-Ken, Japan, 7.880. 4-8 a.m.

JYT, Kemikawa-Cho, Chiba-Ken, Japan, 15.762. 4-8 a.m.

KAY, Manila, P. I., 14.980. Phones Dixon.

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

KWO, Dixon, Calif., 15.415. Phones Hawaii and Manila.

KWU, Dixon, Calif., 15.355. Phones Japan.

KWX, Dixon, Calif., 7.610. Phones Hawaii.

WE ARE GLAD THEY LIKE IT

"I am a great reader of your magazine and I, for one, will be glad when the summer months are over so I can get my next copy of RADEX."

Pfc. Clarence A. Saunders, Troope E, 9th Cavalry, Ft. Riley, Kans.

"I have been reading RADEX since March, 1930, steadily and find it the best radio magazine on the market."

Frank Petch, Gananoque, Ontario.

"Please send my RADEX as soon as possible; I can hardly wait for it."

Thomas Kelley, 6747 Holabird Ave., Dundalk, Md.

"—the last number of RADEX; and have I devoured it? It's worth its weight in silver (in the absence of gold)."

Mrs. A. C. Johnson, Henry, S. Dak.

"Your radio log is by far the most up-to-date and accurate that I have seen."

Philo Lindsay, Lindsey Lumber & Export Co., Mobile, Ala.

"Your magazine is a KO. How I ever got along without RADEX is a mystery to me."

John Iles, 1645 Ortnodoz St., Philadelphia, Pa.

"We missed the September issue of RADEX and now we do not know how we ever got along without it. We have never found anything to compare with it for useful and concise information."

Mrs. L. W. Dansereau, P. O. Box 780, San Juan, Porto Rico.

"Your magazine is the best of its kind. Yesterday with the help of 'Around the Clock,' I logged GSB at Daventry and DJD at Zeesen, Germany."

Thos. F. Goodman, 1911 Harney St., Omaha, Nebr.

"A word of warning to these careless DXers in foreign countries in your magazine would be helpful as it is apparently the most widely read radio magazine in the world."

Radio Station CFQC, Saskatoon, Sask.

LSX, Monte Grande, Argentina, 10.350. Phones New York and Byrd.

ORK, Ruysselede, Belgium, 10.330. Noon to 2 p.m.

PHI, Hilversuum, 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; 2.466; 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.

RNE, Moscow, U.S.S.R., 12.000

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. Thur., Fri., Sat., 7 a.m. to 4 p.m.; Sun., 10:30 a.m. to 7 p.m.

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.

W1XAL, Boston, Mass., 11.790. Wed., 5-6 p.m. and Sun., 6:30-8:30 p.m. 15.250. Sun., 10 a.m. to 1 p.m.

W1XAZ, Millis, Mass., 9.570. 6 a.m. to midnight.

W2XAD, Schenectady, N. Y., 15.340. Sun., Mon., Wed., Fri., 2-3 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. 17.780. Daily exc. Fri., 8 a.m. to 2 p.m.

W3XAU, Newton Sq., Pa., 6.060. 8 p.m. to 11 p.m. 9.590. Noon to 8 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, Bandoeng, 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.

For a complete list of the S. W. stations by frequencies see the *November DX Log of the World.*

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